

REGULAR MEETING OF THE RIVERSIDE DIVISION

TUESDAY, DECEMBER 2, 2025
GENOMICS BUILDING, ROOM 1102A
1:00 – 3:00 p.m.

ORDER OF BUSINESS	PAGE
1 Minutes	
Regular Meeting of May 20, 2025.....	5
<u>Action Requested: Approval of the Minutes</u>	
2 Announcements by the President	
President James B. Milliken is unable to attend.	
3 Announcements by the Chancellor at Riverside	
Chancellor S. Jack Hu is unable to attend.	
4 Announcements by Vice Chancellors	
5 Announcements by the Deans or other Executive Officers	
A. Secretary-Parliamentarian: Election Results	11
6 Announcements by the Chair	
7 Special Orders	
A. Consent Calendar*	
i) Approval of Curricula Changes	
a) BCOE – Electrical Engineering Major	13
b) CNAS – Environmental Science Major.....	17
c) CNAS – Math Honors Program.....	23
<u>Action Requested: Approval of the Consent Calendar</u>	
B. Annual Reports of Standing Committees, received and placed on file [†]	
i) Committee on Academic Freedom.....	25
ii) Committee on Academic Personnel, <i>to be included in the winter Division Meeting</i>	
iii) Committee on Charges	27
iv) Committee on Committees.....	29
v) Committee on Courses.....	32

* Approval of all items on the Consent Calendar requires a single unanimous vote called for as the first order of business under Special Orders. At the request of any member of the Division, any such item must be withdrawn and considered in its regular order on the agenda [bylaw 4.1.2].

[†] Reports received and placed on file "are received as presented and require no further action" [bylaw 4.1.3]. Only the reporting committee can change or withdraw these reports; however, at the request of any member of the Division, a report will be moved into its regular order on the agenda (Item 10. Reports of Standing Committees and Faculties) where it may be discussed, and motions relating to the report may be offered.

vi)	Committee on Distinguished Campus Service	34
vii)	Committee on Distinguished Teaching.....	35
viii)	Committee on Diversity, Equity, and Inclusion	36
ix)	Committee on Educational Policy.....	38
x)	Executive Council.....	42
xi)	Committee on Faculty Research Lecturer.....	47
xii)	Committee on Faculty Welfare	48
xiii)	Graduate Council	51
xiv)	Committee on Memorial Resolutions	55
xv)	Committee on Information Technology	56
xvi)	Committee on International Education.....	58
xvii)	Committee on Library & Scholarly Communication.....	60
xviii)	Committee on Physical Resources Planning	61
xix)	Committee on Planning and Budget.....	63
xx)	Committee on Preparatory Education	66
xxi)	Committee on Privilege and Tenure	68
xxii)	Committee on Research.....	70
xxiii)	Committee on Rules and Jurisdiction.....	73
xxiv)	Committee on Scholarships and Honors.....	75
xxv)	Committee on Undergraduate Admissions.....	76
xxvi)	Committee on University Extension	77
C.	Annual Reports of the Faculties, received and placed on file [†]	
i)	Executive Committee – Bourns College of Engineering.....	78
ii)	Executive Committee – College of Humanities, Arts & Social Sciences.....	82
iii)	Executive Committee – College of Natural & Agricultural Sciences.....	88
iv)	Executive Committee – School of Business	93
v)	Executive Committee – School of Education	98
vi)	Executive Committee – School of Medicine.....	104
vii)	Executive Committee – School of Public Policy.....	108
D.	Degree reports, received and placed on file [†]	109
E.	Regular Reports of Standing Committees and Faculties, received and placed on file [†]	
i)	Committee on Courses - <i>Course approvals</i>	111
ii)	Committee on Courses - <i>Instructor approvals</i>	116
iii)	Committee on Courses – <i>Courses not offered for four or more years</i>	118
iv)	Executive Council – Campus Naming and Endorsed Endowed Chair Proposals, none	
v)	Executive Council – Items Approved in Lieu of the Division	
a)	Electrical Engineering Description & Requirements	120

	b) UCR Senate Regulations – 6.1, 6.1.1, 6.1.2.2. (ENGL to WRIT).....	124
vi)	Committee on Preparatory Education – <i>Entry Level Writing Report</i>	126
vii)	Committee on Preparatory Education – <i>Mathematics Preparation Report, to be included in the Winter Division meeting</i>	
viii)	Committee on University Extension - <i>Course/Instructor approvals</i>	132
8	Report of the Representative to the Assembly	
	A. Assembly Meeting, June 12, 2025.	136
	B. Assembly Meeting, October 2, 2025.....	138
9	Report of Special Committees	
	None	
10	Reports of Standing Committees and Faculties	
	A. Proposed New Program: B.S. in Computer Science Applications – 2nd Round (CSA).....	141
	B. 4th Round Proposed Changes to SOE Regulations 1 to 4.1.1.....	290
	C. 2nd Round Bachelor of Science + Master of Science in Mathematics (Applied) Five Year (4+1) Combined-Degree Program.....	370
	D. Proposed Changes to the College of Natural and Agricultural Sciences Bylaws (Bylaw 4.1.1.1: Committee List).....	389
	E. Minor in Geospatial Analysis.....	392
	F. Proposed Changes School of Medicine Bylaw ME 5.5.....	513
	G. Proposed Changes to Undergraduate Admissions Committee Bylaw 8.23.1: Lived Name Policy.....	516
	H. Proposed Changes to Committee on Privilege and Tenure Bylaws 8.19 through 8.19.2: Lived Name Policy, Committee membership & Ex-Officio Service.....	518
	I. Proposed changes to the following regulations: 6.12 - Campus Graduation Requirements.....	522
	J. Committee on Academic Freedom Proposed Resolution to Establish Mutual Academic Defense Compacts in Defense of Academic Freedom, Free Expression, Institutional Integrity, and the Research Enterprise.....	533
	K. Proposed Changes to Senate Bylaw 2.2 through 2.2.8: Lived Name Policy.....	535
	<u>Action Requested: Individual approval of each proposed change</u>	
11	Petitions of Students	
	None	
12	Unfinished Business	
	None	
13	University and Faculty Welfare	
	None	
14	New Business	
	None	

APPENDIX

The Academic Senate Committee Attendance Report for 2024-2025 can be accessed by credentialed personnel at: <https://ucr-senate-public.s3.us-west-2.amazonaws.com/about/misc/24-25.+Master+Attendance.pdf>

November 21, 2025

Feng Xu, Secretary-Parliamentarian
Riverside Division of the Academic Senate

**MINUTES OF THE REGULAR MEETING
OF THE RIVERSIDE DIVISION**

MEETING:

The Riverside Division of the Academic Senate met on Tuesday May 20, 2025, at 1:03pm in Genomics Building, Room 1102A. Chair Barish presided. The meeting was attended by 72 members of the Riverside Division of the Academic Senate.

MINUTES:

The Minutes of the Regular Meeting of February 25, 2025, were approved as presented.

ANNOUNCEMENTS BY THE PRESIDENT:

There were no announcements by the President as he was unable to attend.

ANNOUNCEMENTS BY THE CHANCELLOR AT RIVERSIDE:

Chancellor Kim A. Wilcox addressed the Division.

Chancellor Wilcox provided brief updates surrounding several topics. The first topic discussed was the federal directives arising from Washington DC and the effects they are having on the campus community. There are a lot of things occurring and leadership is considering how and when to respond to them. Currently, the Office of the President (UCOP), the campus chancellors, provosts, and others are dedicating a lot of time planning and strategizing. Various associations, such as APLU, ACE, and AAU have sued, sought injunctions, etc. Some cases have generally had associations as the lead; UCR and other UCs have signed on to some cases. Discussions have also included the impact on junior colleagues as research funding patterns change. Chancellor Wilcox mentioned that finance and administration (F&A) considerations are being discussed in Washington DC by higher education leaders, members of Congress and staff - all trying to craft a new plan for F&A. The main question is what the long-term trajectory will look like as it relates to budget cuts. In the past, there has always been a sense of what the future will hold but to date there is uncertainty for the future.

Lastly, the Chancellor then presented Assistant Professor Miguel Arratia, Department of Physics and Astronomy, and Professor Marek Chrobak, Department of Computer Science and Engineering, with the Chancellor's award for Excellence in Undergraduate Research and Creative Achievement. The Chancellor acknowledged the achievements of Professor Arratia and Professor Chrobak, congratulated them on their work, and presented them with their awards.

ANNOUNCEMENTS BY THE VICE CHANCELLORS:

Provost and Executive Vice Chancellor (PEVC) Elizabeth Watkins addressed the Division.

Provost Watkins provided an update on UCR's 2030 strategic planning year 2. PEVC Watkins encouraged all members to visit <https://strategicplan.ucr.edu> to view progress on all initiatives and updates on unit strategic plans. Provost Watkins presented a Power Point presentation detailing the successful and unsuccessful progresses made on some objectives. These yearly check-ins have assisted leadership to pivot and think about new programs and new directions to take to achieve the goals that have been agreed upon. Provost Watkins briefly discussed the 3 strategic goals.

Goal #1: Build Financial Stability, Resiliency, and Sustainability Update

The objective is to increase net revenue. A specific initiative is to try and increase the number of non-residents who enroll and matriculate and finish at UCR. From the start of the strategic plan, there has been an increase in first year entry non-residents, but there is a significant decline in the number of transfer non-resident students resulting in an overall decline in the total non-resident student population.

Data for the year 2025 showed a slight increase in new international statements of intent to register. There was a disappointing decline for AY 2025 in domestic non-resident statements of intent to register. There was also a similar decline in Masters of non-resident enrollment of which are mostly international students. This has mostly affected the School of Business and College of Engineering. Summer sessions have provided successful results with the offering of more courses to accommodate more students who are interested in taking classes during the summer.

California undergraduate enrollment makes up 90% of the core budget. Therefore, in terms of undergraduate new students, there was a slight decline in first year freshman enrollments despite best efforts. In 2024 attempts were made to reverse a post pandemic downward trend in transfers causing a slight increase resulting in the largest incoming class for the AY 2025-2026.

Goal #2: Invest in the success of the people who teach, research, work, learn and live at UCR

Faculty professional growth and the Coro leadership collaborative has had success giving faculty the skills and resources to enter into leadership positions. The first cohort indicated that 30% of faculty members are in leadership positions such as Associate Vice Chancellors, Associate Deans, and key Senate Committee Chairs.

Graduate student success unfortunately has not been as successful. Data shows that 1 in 4 PhD grad students finished after 5 full years at UCR and 6 out of 10 within 7 full years. Looking at the years, this was impacted negatively by the pandemic. The goal is to put the students on a path to success for them to not only graduate with a PhD but for them to know what the next step in their career will be whether industry, a post doc or faculty position.

Undergraduate student success has held steady at a 6-year graduation rate. The drop from the 4-year rate was a result of the pandemic but the goal is to reverse this trend. The goal is to increase the percentage of students who are graduating whether entering as first year students or transfers. Another disappointment was the retention rates. Data showed that only 78% of students are retained after 2 years making it slightly impossible to maintain the 6-year graduation rate.

Goal #3: Expand the visibility and scope of influence of UCR locally, internationally, and globally

PEVC Watkins provided an update on the RAISE Center.(Riverside Artificial Intelligence ReSearch and Education) being the first interdisciplinary research center at UCR. A few months ago, there were 85 faculty members on the application and currently there are well over 100 that are now associated with the center actively applying for grants and collaborating on educational programs. Funding has been allocated for this enterprise for the next 5 years.

Provost Watkins concluded with reiterating to visit the website for more information and details outline for UCR's strategic planning.

There were no questions/comments from the floor.

ANNOUNCEMENTS BY THE DEANS OR OTHER EXECUTIVE OFFICERS:

Chair Barish called upon the Secretary Parliamentarian, Feng Xu, to provide the report on election results. Secretary Parliamentarian Xu informed the Division that the results of the 2025-2026 recent elections for the Division, Colleges and Schools could be found on pages 10 through page 15 of the meeting agenda.

There were several positions that had no more nominees than vacancies and there were no nominations received from the floor. The Division authorized the Secretary Parliamentarian to cast a single ballot for all open positions.

ANNOUNCEMENTS BY THE CHAIR:

Chair Barish addressed the Division.

He began his announcements with the acknowledgement of faculty for their engagement, Senate committee members, chairs, and the senate staff for their tireless work. Chair Barish began with the addressing several communication points that have been disseminating throughout the campus. The committee on Academic Freedom has circulated a primer on the importance and meaning of academic freedom and to make sure as a core value that accountability is upheld by all during these times. There is also a statement by the Academic Council on the Defense of the University. Chair Barish encouraged the Senate to read that statement.

Chair Barish acknowledged Chair Jonathan Eacott and CCGE (Coordinating Committee for General Education) for their work and the completion of the report which was received by Executive Council based on review of the current GenEd requirements, they proposed a General Ed Preamble and Learning outcomes for inclusion in the catalog. In addition to catalog suggestions, several other recommendations were put forth, including the formation of a subcommittee of EdPol or new committee to develop assessment procedure. Their recommendations are being reviewed by committees.

Chair Barish provided an update on the UCSF Memorials on senate membership. He thanked all that were able to participate in the town hall and submitted votes. The results of the survey result did not carry at UCR or UC. Chair Barish also thanked those that were able to participate

in the Common calendar town hall and poll. Results about the committee reviews and the polls that were sent to systemwide were circulated. Please review the committee reports that were distributed.

Chair Barish made mention of various town halls that have either taken place or are upcoming. He discussed the town hall that was previously held by the Committee on Planning and Budget who is partnered with the new interim VCPB Sandra Kim. The State budget outlook could have been worse. The campus will have to absorb cost increases, but unlike some of our sister campuses, we do not have a structural deficit. He also mentioned the upcoming town halls which included "Town hall on Responding to Collectively to Unprecedented Challenges" scheduled for June 4 from 11am-1pm in HUB 302 N (in-person event only). Following this Division meeting, town halls will be "The Future of Doctoral Programs at the University of California" scheduled for May 27 from 2-4pm in WCH 205/206 (in-person event only) and "Cybersecurity Town hall" scheduled for May 27 from 10:30am-12pm (zoom).

Chair Barish concluded with announcing the upcoming review of the recommendations from the joint Senate administration workgroup on faculty discipline and dismissal.

There were no questions/comments from the floor.

SPECIAL ORDER:

The Consent Calendar was unanimously approved.

The annual reports of standing committees, annual reports of the faculties, degree reports and regular reports of standing committees and faculties were received and placed on file.

REPORTS OF THE REPRESENTATIVE TO THE ASSEMBLY:

Riverside Assembly Junior Representative Manuela Martins-Green, noted that the reports from the Assembly meetings on February 13, 2025 can be found on page 147, and briefly discussed the March 25, 2025, and April 23, 2025, reports located on pages 149 and 151 of the full agenda.

Professor Martins-Green outlined that the meeting on March 25th was a special meeting requested by several faculty members to discuss 2 major issues. The first issue was the timing of salary adjustment for administrators. Faculty petitioned for the Academic Senate to recommend that all University of California administrators at the Dean's level and above receive salary adjustments at the same time as regular faculty. After discussion and voting the motion did not pass. Unfortunately, there was no discussion on the disparities between faculty and administration salaries. It was tabled to the April 23 meeting but unfortunately time did not permit further discussion. The second issue of concern was the common calendar. Discussion surrounding the common calendar included the change being too costly, will require a complete curriculum change at UCR, adverse effects on the time for faculty research and the report did not present any scientific evidence that students learn better on a semester system. Therefore, UCR strongly advised against the common calendar.

Professor Martins-Green then outlined the meeting on April 23 with the first item being voted on being the Vice Chair for Council for 2025-26. Professor Suzanne Scott, Department of Chemistry from UC Berkeley gave a presentation of her vision for her upcoming term. Professor Scott will be the Chair of Council in 2026-27. There was also discussion about faculty not

feeling as if Arts and Social Sciences are not being well represented by chairs and council and should be taken into Assembly consideration. Provost Newman answered many questions about the temporary delay in signing off on the acceptance of federal grants and how they are dealing with specific language. The President discussed 3 concerns which included the 159 international students with revoked visas and how to assist with continued education, the 15% indirect cost rates, and NIH prohibiting awarding new grants to institutions with DEI programs. The last issue discussed was the A-G Ethnic Studies requirements that the board of admissions and relations have proposed. After discussion and voting the motion did not pass.

Chair Barish mentioned that all Assembly meetings are open via zoom, and all can attend but not all have voting privileges.

There were no questions from the Division.

REPORTS OF SPECIAL COMMITTEES:

There were no reports of Special Committees.

REPORTS OF STANDING COMMITTEES AND FACULTIES:

Professor Norman Ellstrand, member of the Committee on Distinguished Campus Service and Chair Georgia Warnke's designee, introduced and moved for adoption of the nomination of Distinguished Professor Bahram Mobasher, Department of Physics and Astronomy and Professor Peter Graham, Department of Philosophy as the recipients of the Distinguished Campus Service Award for 2024-25. The contributions of Professor Mobasher and Professor Graham are summarized in the report of the Committee, found on pages 155 and 157 of the full agenda. The motion carried.

Professor Erith Jaffe-Berg, Chair of the Committee on Distinguished Teaching, introduced and moved for adoption of the nomination of Distinguished Professor Patricia Cardoso, Department of Theatre, Film, and Digital Production and Professor Richard Seto, Department of Physics and Astronomy, as the recipients of the Distinguished Teaching Award for 2024-25. The contributions of Professor Cardoso and Professor Seto are summarized in the report of the Committee, found on pages 158 and 160 of the full agenda. The motion carried.

Professor Viji Santhakumar, Chair of the Graduate Council, introduced and moved for adoption of the nomination of Associate Professor Vagelis Papalaxakis, Department of Computer Science and Engineering and Professor Jingsong Zhang, Department of Chemistry, as the recipients of the Dissertation Advisor/Mentoring Award for 2024-25. The contributions of Associate Professor Papalaxakis and Professor Zhang are summarized in the report of the Committee, found on pages 162 through 163 of the full agenda. The motion carried.

Distinguished Professor Carl Cranor, Chair of the Committee on Faculty Research Lecturer, introduced and moved for adoption of the nomination of Distinguished Professor Mary Droser, Department of Earth and Planetary Sciences, as the recipient of the Faculty Research Lecturer Award for 2025-26. The contributions of Distinguished Professor Droser are summarized in the report of the Committee, found on pages 164-165 of the full agenda. The motion carried.

Professor Elodie Goodman, Chair of the Executive Committee for the School of Business, introduced and moved for adoption of the proposed Degree Program: Online Master of Business Administration 6th round, found on page 166 of the full agenda. The motion carried.

PETITIONS OF STUDENTS:

There were no student petitions.

UNFINISHED BUSINESS:

There was no unfinished business.

UNIVERSITY AND FACULTY WELFARE:

There were no issues related to University and Faculty Welfare for this Agenda.

NEW BUSINESS:

There being no further business, the meeting was adjourned at 2:31 pm.

ATTEST:

F. Xu, , Secretary-Parliamentarian
Riverside Division of the Academic Senate

Aneesah Kelley-Henry
Recording Secretary

**SECRETARY-PARLIAMENTARIAN
REPORT TO THE RIVERSIDE DIVISION
DECEMBER 2, 2025**

2025-2026 RESULTS FROM THE CALL FOR NOMINATIONS

To be received and placed on file:

1. BOURNES COLLEGE OF ENGINEERING

A call for Nominations was issued for the following positions:

One Member, BCOE Executive Committee (3-year term)
Elected from the Department of Computer Science & Engineering.

One valid nomination received:

- Craig Schroeder

2. COLLEGE OF HUMANITIES, ARTS & SOCIAL SCIENCES

A call for Nominations was issued for the following positions:

Chair of the Faculty, CHASS Executive Committee (2-year term)
Elected at large

After a second call, no valid nominations received

One Member, CHASS Executive Committee (2-year term completion)
Elected from among Anthropology, Economics, Ethnic Studies, Political Science, Psychology and Sociology.

After a second call, one valid nomination received:

- Rachel Wu, Psychology

3. COLLEGE OF NATURAL & AGRICULTURAL SCIENCES

A call for Nominations was issued for the following positions:

One Member, CNAS Executive Committee (3-year term)
Elected from the Department of Botany & Plant Sciences.

One valid nomination received:

- Juan Pablo Giraldo Gomez

One Member, CNAS Executive Committee (3-year term)
Elected from the Department of Entomology.

One valid nomination received:

- Jessica Purcell

4. SCHOOL OF PUBLIC POLICY

A call for Nominations was issued for the following position:

One Member, SPP Executive Committee (3-year term)
Elected at large.

One valid nomination received:

- Qingfang Wang

The results from the Call for Nominations and Elections will be posted on the Academic Senate website.

**EXECUTIVE COMMITTEE
BOURNS COLLEGE OF ENGINEERING
REPORT TO THE RIVERSIDE DIVISION
DECEMBER 2, 2025**

To be adopted:

Proposed Changes to Electrical Engineering Major description,
Updates to Undergraduate EE Program Major requirements.

PRESENT:

Major

The Department of Electrical and Computer Engineering offers B.S., M.S., and Ph.D. degrees in Electrical Engineering and with the Department of Computer Science and Engineering jointly offers B.S. and M.S. degrees in Computer Engineering. For more information on the Computer Engineering degree programs, see Computer Engineering in this catalog.

Graduates of UCR's BS degree program in Electrical Engineering will meet high professional, ethical, and societal goals as demonstrated by accomplishing, at least one different item in each of two different categories:

success in post-graduation studies as evidenced by:

- satisfaction with the decision to further their education
- advanced courses completed or advanced degrees earned
- professional visibility (e.g. publications, presentations, patents, inventions, awards)
- professional responsibilities (e.g. professional mentoring, professional society membership and offices, reviewing and editorial work for professional journals)

success in a chosen profession or vocation as evidenced by:

- career satisfaction
- promotions/raises (e.g. management leadership positions or distinguished technical positions)
- professional visibility (e.g. publications, presentations, patents, inventions, awards)
- professional responsibilities (e.g. professional registration, professional mentoring, professional society membership and offices)

PROPOSED:

[no change]

[no change]

[no change]

[no change]

- entrepreneurial activities
- consulting activities

contributions to society and profession as evidenced by: [no change]

- leadership roles
- public service
- mentoring / outreach activities
- volunteer service
- establishment and maintenance of professional networks

All undergraduates in the College of Engineering must see an advisor at least annually. Visit student.engr.ucr.edu for details. [no change]

The B.S. Electrical Engineering degree program is accredited by ABET's Engineering Accreditation Commission (EAC) under the commission's General Criteria and Program Criteria for Electrical, Computer, Communications, Telecommunication(s), and similarly named Engineering Programs. For more details, see <https://www.ece.ucr.edu/abet/vopeo>. [no change]

Major Requirements [no change]

1. Lower-division requirements (73 units)

- a) One course in the biological sciences chosen from an approved list
- b) CS 010A, CS 010B, CS 061
- c) EE 016
- d) EE 010, EE 020A, EE 020B, EE 030A, EE 030LA, EE 030B
- e) MATH 009A, MATH 009B, MATH 009C, MATH 010A, MATH 010B
- f) PHYS 040A, PHYS 040B, PHYS 040C

2. Upper-division requirements (77 units)

- a) EE 100A, EE 110A, EE110B, EE 114, EE 116, CS 120A/EE 120A, CS 120B/EE 120B, EE 132, EE 133, EE 142, EE 175A, EE 175B
- b) ENGR 181W
- d) Twenty-four (24) units of technical electives chosen from CS 161, CS 162, CS 168/EE 168; EE 105, EE 106, EE 100B, EE 115, EE 117, EE 118, EE 123, EE 128, EE 135, EE 136, EE 137, EE 138, EE 139, EE 141, EE 144, EE 145/ME 145, EE 146, EE 147, EE 148, EE 150, EE 151, EE 152, EE 153, EE 155, EE 162, EE 165, EE 168, ENGR 160

To ensure depth, the choice of technical electives must include at least one coherent sequence of at least four (4) courses (two required courses plus two additional) in one focus area of electrical engineering, and two (2) other technical elective courses, as defined below.

• **Communications, Signal Processing and Networking.** Required courses: EE 115, EE 141. Sequence Courses: EE 100B, EE 117, EE 118, EE 146, EE 150, EE 152, ENGR 160

• **Control and Robotics.** Required Courses: EE 105, EE 144. Sequence Courses: EE 106, EE 141, EE 145/ME 145, EE 146, EE 151, EE 152, ENGR 160

• **Embedded Systems and VLSI.** Required Courses: EE 128, EE 168. Sequence Courses: EE 100B, EE 117, EE 118, EE 135, EE 141, EE 147, EE 165, CS 161, CS 162

• **Intelligent Systems.** Required Courses: EE 144, EE 146. Sequence Courses: EE 105, EE 106, EE 115, EE 128, EE 141, EE 145, EE 147, EE 150, EE 151, EE 152, ENGR 160

• **Nanotechnology, Advanced Materials, and Devices.** Required Courses: EE 136, EE 137. Sequence Courses: EE 100B, EE 117, EE 118, EE 135, EE 138, EE 139, EE 162, EE 168

2. Upper-division requirements (77 units)

- a) EE 100A, EE 110A, EE110B, EE 114, EE 116, CS 120A/EE 120A, CS 120B/EE 120B, EE 132, EE 133, EE 142, EE 175A, EE 175B
- b) ENGR 181W
- d) Twenty-four (24) units of technical electives chosen from CS 161, CS 162, CS 168/EE 168; EE 105, EE 106, EE 100B, EE 115, EE 117, EE 118, EE 123, EE 128, EE 131, EE 135, EE 136, EE 137, EE 138, EE 139, EE 140, EE 141, EE 144, EE 145/ME 145, EE 146, EE 147, EE 148, EE 150, EE 151, EE 152, EE 153, EE 155, EE 162, EE 165, EE 168, ENGR 160

[no change]

[no change]

• **Control and Robotics.** Required Courses: EE 105, EE 144. Sequence Courses: EE 106, EE 128, EE 131, EE 140, EE 141, EE 145/ME 145, EE 146, EE 148, EE 151, EE 152, ENGR 160

• **Embedded Systems and VLSI.** Required Courses: EE 128, EE 168. Sequence Courses: EE 100B, EE 117, EE 118, EE 131, EE 135, EE 141, EE 147, EE 165, CS 161, CS 162

• **Intelligent Systems.** Required Courses: EE 144, EE 146. Sequence Courses: EE 105, EE 106, EE 115, EE 128, EE 131, EE 140, EE 141, EE 145, EE 147, EE 148, EE 150, EE 151, EE 152, ENGR 160

[no change]

• **Power Systems and Smart Grid.** Required
Courses: EE 123, EE 155. Sequence Courses: EE
100B, EE 117, EE 128, EE 153, ENGR 160

Example course sequences are available through [no change]
the Student Affairs Office in the College of
Engineering or **student.engr.ucr.edu**

Justification:

1. Adding courses EE 131 and EE 140 to the list of technical electives.

For some reason these important courses were not included in the list of technical electives. Correcting this major omission.

2. Adding EE 131 to the list of technical electives in “Control and Robotics”, “Embedded Systems and VLSI” and “Intelligent Systems”.

For the same reason as in 1. above, including this course in the list of technical elective courses in the relevant focus areas.

3. Adding EE 140 to the list of technical electives in “Control and Robotics” and “Intelligent Systems”.

For the same reason as in 1. above, including this course in the list of technical elective courses in the relevant focus areas.

4. Adding EE 148 to the list of technical electives in “Control and Robotics” and “Intelligent Systems”.

The content of EE 148 has been recently revised and made it suitable for the suggested focus areas.

Approvals:

Approved by the Department of Electrical & Computer Engineering:	October 30, 2024
Approved by the Executive Committee of the College of Engineering:	December 11, 2024
Approved by the Committee on Educational Policy:	May 23, 2025

**EXECUTIVE COMMITTEE
COLLEGE OF NATURAL AND AGRICULTURAL SCIENCES
REPORT TO THE RIVERSIDE DIVISION
DECEMBER 2, 2025**

To be adopted:

Proposed changes to Environmental Science B.A. and B.S.

PRESENT:

PROPOSED:

Major Requirements

The major requirements for both the B.A. and the B.S. degrees in Environmental Sciences are as follows: Students must fulfill all required core courses in environmental science, biology, chemistry, math, physics, and statistics with a grade point average of 2.0 or better and no grade lower than a C-. If a grade lower than a C- is received in 2 or more core courses required for the major, either in separate courses or repetitions of the same course, the student may be discontinued from the major. Students must, under such circumstances, petition the department to remain in the major. Students in Environmental Sciences are required to demonstrate adequate progress towards earning the degree. Adequate progress is defined as completion of MATH 009B or MATH 09HB or MATH 007B prior to the beginning of the Winter Quarter of the second year of residence or Junior standing (>90 units) and at least one course from ENSC 100, ENSC 101, or ENSC 102 must be completed prior to the end of the third year of residence or senior standing (>135 units).

[no change]

Note

To gain maximum benefit from participating in the Undergraduate Research and Environmental Internship Programs, students intending to enroll in ENSC 197 and ENSC 198-I should contact their advisor during the quarter prior to enrollment in these courses.

Core Requirements

1. Lower-division requirements (77–79 units)

1. Lower-division requirements (78-80 units)

a) ENSC 001 and ENSC 002	[no change]
b) BIOL 005A, BIOL 05LA or BIOL 020, BIOL 005B	[no change]
c) CHEM 001A or CHEM 01HA, CHEM 001B or CHEM 01HB, CHEM 001C or CHEM 01HC, CHEM 01LA or CHEM 1HLA, CHEM 01LB or CHEM 1HLB, CHEM 01LC or CHEM 1HLC	[no change]
d) CHEM 008A and CHEM 08LA or CHEM 08HA and CHEM 08HLA; CHEM 008 and CHEM 08LB or CHEM 08HB and CHEM 08HLB	[no change]
e) MATH 007A or MATH 009A or MATH 09HA; MATH 007B or MATH 009B or MATH 09HB	[no change]
f) PHYS 002A or PHYS 02HA, PHYS 02LA or PHYS 02HLA, PHYS 002B or PHYS 02HB, PHYS 02LB or PHYS 02HLB, PHYS 002C or PHYS 02HC, PHYS 02LC or PHYS 02HLC	[no change]
g) POSC 010	[no change]
h) STAT 010	[no change]
i) One course from ~~ENSC 006, ECON 006~~ , PBPL 001, ECON 003, or POSC 020	i) One course from ECON 003, PBPL 001, or POSC 020
	j) <u>ENSC 092</u>
2. Upper-division requirements (18 units): ENSC 100, ENSC 101, ENSC 102, ENSC 110, ENSC 191	[no change]

Electives

Students are free to choose from the lists below to fulfill their lower-division and upper-division elective requirements: [no change]

1. Lower-division electives (8 units): [no change]

At least two electives from BIOL 005C, CHEM 005, CHEM 008C and CHEM 08LC, CHEM 08HC and CHEM 08HLC, MATH 009C or MATH 09HC or MATH 010A, GEO 001 or GEO 002 [no change]

2. Upper-division electives (20 units):

[no change]

At least 20 units of electives from the following list, with a minimum of 16 units from Environmental Sciences or Environmental Toxicology:

ENTX 101, ENTX 154, ENSC 103/ENTX 103, ENSC 104, ENSC 105, ENSC 107, ENSC 120/NEM 120, ENSC 127, ENSC 130, ENSC 133/MCBL 133, ENSC 134/BPSC 134, ENSC135/CHEM 135/ENTX 135, ENSC 136/CHEM136, ENSC 138/GEO 138, ENSC 139/GEO 139, ENSC 140, ENSC 144/ENVE 144, ENSC 163, ENSC 165, ~~ENSC 172, ENSC 174~~, ENSC 175, ENSC 177, ENSC 197, ENSC 198-I, BCH 100 or both BCH 110A or BCH 110HA and BCH 110B or BCH 110HB; BCH 110C or BCH 110HC or BIOL 107A; BIOL 102 or BIOL 121/ MCBL 121; BIOL 116, BIOL 121L/MCBL 121L, BPSC 104/BIOL 104, BPSC 146, BPSC 165, BPSC 166, CBNS 150/ENTX 150, CHEM 109, GEO 157, GEO 160

ENTX 101, ENSC 154/ENTX 154, ENSC 103/ENTX 103, ENSC 104, ENSC 105, ENSC 107, ENSC 120/NEM 120, ENSC 127, ENSC 130, ENSC 133/MCBL 133, ENSC 134/BPSC 134, ENSC135/CHEM 135/ENTX 135, ENSC 136/CHEM136, ENSC 138/GEO 138, ENSC 139/GEO 139, ENSC 140, ENSC 144/ENVE 144, ENSC 163, ENSC 165, ENSC 175, ENSC 177, ENSC 197, ENSC 198-I, BCH 100 or both BCH 110A or BCH 110HA and BCH 110B or BCH 110HB; BCH 110C or BCH 110HC or BIOL 107A; BIOL 102 or BIOL 121/ MCBL 121; BIOL 116, BIOL 121L/MCBL 121L, BPSC 104/BIOL 104, BPSC 146, BPSC 165, BPSC 166, CBNS 150/ENTX 150, CHEM 109, GEO 157, GEO 160

Suggested courses of study are also provided below for specialized areas in environmental sciences to assist students to meet minimum employment requirements for entry-level positions in government agencies, nongovernment organizations (NGO), and environmental consulting firms. Students are strongly encouraged to schedule a meeting with a Faculty in their specialization area of interest for curriculum and career advice. A list of core Faculty in each specialization area is available at envisci.ucr.edu/undergrad.

[no change]

Soil Sciences:

Recommended to meet lower-division electives: BIOL 005C, GEO 001 or GEO 002, MATH 009C or MATH 09HC or MATH 010A; Recommended to meet upper-division electives: ENSC 104, ENSC 107, ENSC 120/NEM 120, ENSC 127, ENSC 133/MCBL 133, ENSC 134/BPSC 134, ENSC 138/GEO 138, ENSC 139/GEO 139, ENSC 144, ENSC 175, ENSC 177, BPSC 146

[no change]

Hydrologic Sciences:

Recommended to meet lower-division electives: MATH 009C or MATH 09HC or MATH 010A, GEO 001 or GEO 002; Recommended to meet upper- division electives: ENSC 105, ENSC 107, ENSC 127, ENSC 136/CHEM136, ENSC 140, ENSC 163, ENSC 165, ENSC 175, ENSC 177

[no change]

Atmospheric Sciences:

Recommended to meet lower-division electives: CHEM 005, CHEM 08C and CHEM 08LC, CHEM 08HC and CHEM 08HLC, MATH 009C or MATH 09HC or MATH 010A; Recommended to meet upper-division electives: ENSC 103/ENTX 103, ENSC 130, ENSC135/CHEM 135/ENTX 135, ENSC 136/CHEM 136, ENSC 175, ENSC 177, GEO 160

[no change]

Environmental Toxicology:

Recommended to meet lower-division electives: BIOL 005C, CHEM 005, CHEM 008C and CHEM 08LC or CHEM 08HC and CHEM 8HLC; Recommended to meet upper- division electives: ENTX 101 required + at least 3 electives from ENSC or ENTX: ENSC 103/ENTX 103, ENSC 135/CHEM 135/ENTX 135, ENSC 136/CHEM 136, ENSC 177, CBNS 150/ENTX 150, ~~ENTX 154~~, BCH 100 or both BCH 110A or BCH 110HA and BCH 110B or BCH 110HB, BIOL 102 or BIOL 121, BCH 110C or BCH 110HC or BIOL 107A

Recommended to meet lower-division electives: BIOL 005C, CHEM 005, CHEM 008C and CHEM 08LC or CHEM 08HC and CHEM 8HLC; Recommended to meet upper- division electives: ENTX 101 required + at least 3 electives from ENSC or ENTX: ENSC 103/ENTX 103, ENSC 135/CHEM 135/ENTX 135, ENSC 136/CHEM 136, ENSC 177, CBNS 150/ENTX 150, ENSC 154/ENTX 154, BCH 100 or both BCH 110A or BCH 110HA and BCH 110B or BCH 110HB, BIOL 102 or BIOL 121, BCH 110C or BCH 110HC or BIOL 107A

Environmental Management:

Recommended to meet lower-division electives: BIOL 005C, GEO 001 or GEO 002, MATH 009C or MATH 09HC or MATH 010A; Recommended to meet upper-division electives: ENSC 103/ENTX 103, ENSC 144, ~~ENSC 153~~, ~~ENSC 172~~, ~~ENSC 174~~, ENSC 175, ENSC 177

Recommended to meet lower-division electives: BIOL 005C, GEO 001 or GEO 002, MATH 009C or MATH 09HC or MATH 010A; Recommended to meet upper-division electives: ENSC 103/ENTX 103, ENSC 144, ENSC 175, ENSC 177

Justifications

1) Deletion of ENSC 006/ECON 006:

ENSC/ECON 006 used to be a required core course for the ENSC bachelor's degree before AY 2020/21. Since we no longer have a core faculty in ENSC with relevant expertise to teach this course, in 2021/2022 we got the approval to add courses offered by other departments to allow our majors be introduced to social/economic/policy aspects of the environment. Now for house-keeping, we'd like to delete ENSC 006/ECON 006 from the catalog and change our major description to reflect this deletion. This decision was shared with the Chair of the Economics department on 9/19/2022. See the attached email communication.

Faculty voted on 9/14/2022 for deleting ENSC 006.

Voting results: In Favor 9, Against 3, Abstain 1, Not Available 2.

2) Addition of ENSC 092

ENSC 092 is a freshman seminar course designed to assist new ENSC students in developing peer networks, meeting with faculty to learn about research programs, exploring opportunities within the ENSC program, and exploring career options in their field of interest. We would like to add ENSC 092 to our lower-division requirements to provide early-stage support for ENSC majors.

Faculty voted on 10/25/2024 for adding ENSC 092.

Voting results: In Favor 14, Against 1, Abstain 1, Not Available 0.

3) Deletion of ENSC 153:

ENSC 153 is an elective course on Ecological Economics and Environmental Valuation. In Fall 2020, this course has been discontinued and removed from the catalog. We would like to change our major description to reflect this deletion.

Faculty voted on 10/28/2019 for deleting ENSC 153.

Voting results: In Favor 17, Against 0, Abstain 1, Not Available 0.

4) Addition of ENSC 154:

ENSC 154 is an elective course on Risk Assessment cross-listing with ENTX 154. In Fall 2024, this course has been added to the catalog. We would like to change our major description to reflect this addition.

Faculty voted on 03/20/2024 for cross-listing ENTX 154 as ENTX154/ENSC 154.

Voting results: In Favor 14, Against 0, Abstain 0, Not Available 2.

5) Deletion of ENSC 172:

ENSC 172 is an elective course on Environmental Policy. During at least the last 10 years, this course has not been offered by a core faculty in ENSC, but rather by a lecturer. Since none of our core ENSC faculty have the expertise to teach it and the last offering was in Fall 2019, we'd like to delete it from the catalog and change our major description to reflect this deletion.

Faculty voted on 10/03/2022 for deleting ENSC 172.

Voting results: In Favor 11, Against 3, Abstain 0, Not Available 1.

6) Deletion of ENSC 174:

ENSC 174 is an elective course on Environmental Laws. During at least the last 10 years, this course has not been offered by a core faculty in ENSC, but rather by a lecturer. Since none of our core ENSC faculty

have the expertise to teach it and the last offering was in Fall 2020, we'd like to delete it from the catalog and change our major description to reflect this deletion.

Faculty voted on 10/03/2022 for deleting ENSC 174.

Voting results: In Favor 12, Against 2, Abstain 0, Not Available 1.

Approvals:

Approved by the faculty of the Department of
Environmental Science:

September 14, 2023 & October 25, 2024

Approved by the Executive Committee of the College
of Natural and Agricultural Sciences:

February 18, 2025

Approved by the Committee on Educational Policy:

October 28, 2025

**EXECUTIVE COMMITTEE
COLLEGE OF NATURAL AND AGRICULTURE SCIENCES
REPORT TO THE DIVISION
DECEMBER 2, 2025**

To be adopted:

Proposed changes to the Mathematics Honors Program

PRESENT:

Mathematics Honors Program

Candidates for the Honors Program in Mathematics must complete

1. Earn an overall GPA of at least 3.50 in Mathematics.
2. Earn a grade of “B” or better in each of MATH 151A, MATH 151B and MATH 151C.
3. Earn a grade of “B” or better in each of MATH 145B and MATH 171 ~~OR~~ in each of ~~MATH 146A, MATH 146B, and MATH 146C~~ ~~OR~~ in each of MATH 149A and MATH 149B.
4. Satisfactorily complete one of the following:
 - i) A research project earning a grade of “A” in MATH 197
 - ii) Two courses chosen from one of the sequences: MATH 201A, 201B, 201C; MATH 205A, MATH 205B, MATH 205C; MATH 209A, MATH 209B, MATH 209C; MATH 210A, MATH 210B with a grade of “B” or better in each course.

It is the responsibility of the honors candidates to notify the department of their eligibility.

PROPOSED:

Mathematics Honors Program

Candidates for the Honors Program in Mathematics must complete

1. [no change]
2. Earn a grade of “B” or better in each of MATH 151A, MATH 151B and MATH 151C or in each of MATH 146A, MATH 146B, and MATH 146C.
3. Earn a grade of “B” or better in each of MATH 145B and MATH 171 or in each of MATH 135A, MATH 135B, and MATH 135C, or in each of MATH 149A and MATH 149B.
4. Satisfactorily complete one of the following:
 - i) [no change]
 - ii) Two courses chosen from one of the sequences: MATH 201A, 201B, 201C; MATH 205A, MATH 205B, MATH 205C; 206A, MATH 206B, MATH 206C; MATH 207A, MATH 207B, MATH 207C; MATH 209A, MATH 209B, MATH 209C; MATH 210A, MATH 210B, MATH 210C with a grade of “B” or better in each course

It is the responsibility of the honors candidates to notify the department of their eligibility.

Justification:

MATH 135ABC makes honors more accessible to computational math majors (roughly 20% of math majors).

MATH 146ABC is required of applied majors and is just as fundamental to the degree as MATH 151ABC is for pure majors

MATH 206ABC (probability, numerical analysis, applied mathematics) and MATH 207ABC (ordinary & partial differential equations) are more appropriate for the applied concentration.

MATH 210C was first offered in Spring 2019. It likely did not exist when the honors requirements were last updated, so it should be included now.

Approvals:

Approved by the faculty of the Department of Mathematics:

November 08, 2024

Approved by the by the Executive Committee of the College of Natural and Agricultural Sciences:

February 18, 2025

Approved by the Committee on Educational Policy:

October 16, 2025

**COMMITTEE ON ACADEMIC FREEDOM
ANNUAL REPORT TO THE RIVERSIDE DIVISION
DECEMBER 2, 2025**

To be received and placed on file:

The Committee on Academic Freedom is an important part of faculty governance and collegial responsibility in the University of California system. As a committee of the Riverside Academic Senate, Academic Freedom is appointed by the Senate's Committee on Committees and consists of five members of the Division, including as *Ex-Officio* the Chairs of the Committee on Privilege and Tenure and the Committee on Faculty Welfare. The Committee is responsible for reporting to the Division any conditions within or without the University that in the judgement of the committee may affect the freedom of the academic community at large. It is understood that academic freedom includes, but is not necessarily limited to, the free inquiry and exchange of ideas, the right to present controversial material relevant to a course of instruction, and the freedom to publish or disseminate controversial information and perform research in controversial areas. It is also understood that academic freedom is to be conjoined with academic responsibility; it is to be exercised in accordance with standards appropriate to the relevant scholarly disciplines.

The Committee on Academic Freedom met four times during the 2024-2025 academic year and conducted business via email outside of meetings.

In addition to reaffirming its Conflict-of-Interest Statement and conducting a review of its bylaws, the Committee undertook the following actions:

a. Communication with the Campus at Large

In keeping with its charge to assist in the education of the academic community regarding the rights and responsibilities relating to academic freedom, the Committee conducted a review of its bylaws and communicated a statement of its duties and mission to the general UCR academic community via the Senate email.

The Committee developed and shared with the academic community a primer that documents academic freedom resources for faculty.

The Committee received several inquiries related to academic freedom that the Committee assessed and directed the inquiries to resources and units on campus for assistance as the Committee is not an adjudicating body.

The Committee informed the academic community about the UC Systemwide Academic Freedom Congress, which was hosted by the UC Provost's Office.

b. Discussions with Campus Leadership and Recommendations to the Administration

The Committee discussed the effect of the UCOP Cyber Security Mandate on faculty's academic freedom and sent a memo to the Senate Chair to document their concerns and request thoughtful responses to the listed concerns.

The Committee proposed to the Division a Resolution to Establish Mutual Academic Defense Compacts in Defense of Academic Freedom, Free Expression, Institutional Integrity, and the

Research Enterprise in response to the recent attacks on academic freedom with the goal of pooling resources to better fend off these attacks.

The Committee discussed the issue of recommendations made by the Committee on Charges not being accepted by the administration and the effect of this issue on a faculty member's academic freedom. The Committee requested data from the Committee on Charges about this issue and sent a memo to the Senate Chair noting their concerns that the faculty's scholarly activities are not being judged by faculty peers free of outside influence.

c. Responses to issues raised by the Academic Senate

In keeping with the Committee's charge to evaluate and propose revision as needed to current institutional policies as they might relate to academic freedom, the Committee considered the following Campus and System-wide issues:

Campus Review

- Interim Policies Related to Expressive Activities on Campus
- Proposed Change to Committee on Faculty Welfare Bylaw
- Proposed Changes to Committee on Privilege and Tenure Bylaws

System-wide Review

- Proposed Revisions to the Academic Personnel Manual (APM) Section 036, General University Policy Regarding Academic Appointees/Employment
- Academic Planning Council's Systemwide Academic Calendar Workgroup Draft Report

The Committee's formal response to each issue is located on the Academic Senate website and can be found at: <https://senate.ucr.edu/issues>.

d. Representation at Systemwide Senate

The Committee on Academic Freedom continued its active participation on the systemwide University Committee on Academic Freedom (UCAF). The 2024-2025 UCAF representative was Chair, who updated Committee members of the issues under discussion at the statewide level.

Respectfully submitted by the 2024-2025 Committee on Academic Freedom (<https://senate.ucr.edu/committees/3>).

COMMITTEE ON CHARGES
ANNUAL REPORT TO THE RIVERSIDE DIVISION
December 2, 2025

To be received and placed on file:

The primary function of the Committee on Charges is to receive in writing, through the Chancellor or Chancellor's designee, unresolved complaints regarding Faculty conduct, as per procedures described in UCR Division Bylaw 8.7, SBL336 and UCR Division Appendix 5. The Committee may also be asked to opine on proposed revisions to Bylaws and Regulations which may be related to the charge of the committee.

The Committee on Charges met sixteen times and the following is a summary of Committee activities during the 2024-2025 academic year:

- Charges reviewed 14 Academic Complaints, three of which were carry-over from AY23-24 (one received in late spring and two in the summer).
- Charges completed review of one carry-over from AY23-24, and forwarded its decisions to the Chancellor's designee, the Vice Provost of Administrative Resolution (VPAR). The Complainants opted to withdraw the complaint prior to a final decision by the VPAR.
- Charges completed their review of eleven cases and forwarded their decisions to the Vice Provost of Administrative Resolution. In all cases, the VPAR agreed with the Committee on the question of Probable Cause.
- Charges began reviewing two cases received in spring quarter and requested additional information during its inquiry phase which took the intended 60-day timeline into the summer, when it is difficult to assemble a quorum. The Committee will resume review during the fall quarter.
- Charges received two data inquiries from the Senate Committees on Faculty Welfare and Academic Freedom requesting information on the number of complaints received, nature of complaints, dismissals, referrals to P&T disciplinary hearings and agreement rate with the VPAR. Charges provided ten years of case statistics and committee annual reports (2014 – 2024) in addition to response memos:
 - The memo response to Faculty Welfare outlined the role of Charges, procedures followed in review of Academic Complaints and current struggles with increasing workload. The Committee emphasized the importance of its work in maintaining shared governance, noting general agreement between the committee's recommendations and the VPAR's final decision.
 - The memo response to Academic Freedom emphasized a strong commitment to academic freedom, shared governance, and the importance of faculty peer review. The memo made a distinction between scholarly activities and inappropriate

behavior, clarifying that academic freedom does not protect misconduct. Charges acknowledged Academic Freedom's concerns about disagreements between the Committee's recommendations and the VPAR's final decision, but noted agreement among a large majority of cases, and where disagreements occurred, the committee was satisfied with the VPAR's reasoning after discussion. Charges reiterated a commitment to informing Senate leadership if the principles of shared governance are not being honored.

- The Committee discussed potential revisions to UCR Appendix 5 in effort to aid clarification and streamline the disciplinary process. It provided feedback to the VPAR which emphasized that the disciplinary process must uphold shared governance, with the Charges Committee maintaining its faculty-driven authority.
- Policy Recommendations considered by Charges included the following reviews:
 - [Campus Review] Interim Policy: UCR Interim Policies Related to Expressive Activities on Campus (700-20, 700-50, and 700-70)
 - [Systemwide Review] APM Revision: Revised Distribution re: Proposed Revisions to APM Section 500, Recruitment – General
 - [Systemwide Review] Proposed Revisions to Academic Personnel Manual (APM): Proposed Revisions to APM - 036, General University Policy Regarding Academic Appointees/Employment

The Committee's formal response to each issue is located on the Academic Senate website and can be found at: <https://senate.ucr.edu/issues>

Respectfully submitted by the 2024-25 Committee on Charges -
<https://senate.ucr.edu/committees/6>

COMMITTEE ON COMMITTEES
ANNUAL REPORT TO THE RIVERSIDE DIVISION
December 2, 2025

To be received and placed on file:

The Committee on Committees plays a critical role in selecting Senate Faculty members to serve on not only the standing committees of the Academic Senate, but also providing faculty representation on various committees, from campus services to administrative initiatives, including task forces and search committees. CoC is key in providing a voice to represent UCR faculty at all levels – department, college, campus, and systemwide – which is vital to Shared Governance.

The Committee on Committees met twenty-two times during the 2024-25 academic year and reports the following 24-25 business items since the last report of December 3, 2024:

- Discussed and responded to the following review items:
 - Bylaw Change: Committee on Privilege and Tenure Bylaws Bylaw 08.19 through 08.19.02: Lived Name Policy, Committee Membership & Ex-officio Service
 - [Systemwide Review] Report Review: APC Systemwide Academic Calendar Workgroup Draft Report
- Appointed Senate Faculty members to serve on 2 ad hocs/Special Review Committees per the request of the Chair of the Riverside Division: Transition of Student Evaluations of Teaching (TSET) Committee; Special Review Committee (SRC) - Transfer of the Microbiology Undergraduate Program to the Department of Microbiology and Plant Pathology.
- Provided 4 slates of nominees to the Chair of the Riverside Division for faculty to serve on the following administrative committees: Chancellor's Free Speech Working Group; 2024-2025 Assessment Advisory Committee (AAC); GSR Transitional Pilot Program; Assessment Advisory Committee - Replacement members for 2025-2026.
- Appointed/provided names of Senate faculty representatives to serve on the following administrative search committees: Assistant Vice Chancellor for Student Engagement; University Librarian.
- Provided nominations for 14 requests from the systemwide University Committee on Committees for the following: UCSB Chancellor Search Advisory Committee; Academic Advisory Committee for the Presidential Search; Academic Planning Council Workgroup on a Systemwide Academic Calendar; Stewardship Review of the UC Davis Chancellor; Representatives for Graduate Education and Employment Faculty Advisory Committee; UCR Chancellor's Search Committee; 2025 Academic Council Chairs Award for Mid-Career Leadership; Sustainability Steering Committee Nominations; President's Task Force on UC Black Thriving Nominations; Editorial Committee Nominations (Middle East Studies, Science, Technology Studies); Editorial Committee Nomination Request

(Premodern History/Religion); Systemwide Library and Scholarly Information Advisory Committee (SLASIAC); Nominees for President's Advisory Committee for Research in the Humanities (PACRH); UCOP Campus Climate Initiative.

2025-2026 STANDING SENATE COMMITTEE APPOINTMENTS

As members of the Academic Senate, participation on Senate Standing Committees is essential to the continued success of shared governance and is considered a chief component of faculty contribution to university service as defined in the Academic Personnel Manual. All members of the Academic Senate are eligible to participate, including Emeritus faculty. The Senate has 27 standing committees with 215 committee positions.

The Committee annually requests Senate faculty provide their committee participation preference via the online Committee Preference Form¹ in preparation for appointing faculty for the next academic service year (September 1 – August 31).

- Received 500 Committee Preference Forms²
- Number of Forms received by college:

– College of Humanities, Arts & Social Sciences	187
– College of Natural & Agricultural Sciences	179
– Bourns College of Engineering	63
– School of Business	29
– Graduate School of Education	19
– School of Medicine	14
– School of Public Policy	9
- 66 Standing Committee positions available for AY24-25³.
- Appointed 80 Senate Faculty to Standing Committee positions for AY24-25⁴.

The Committee's formal response to each issue is located on the Academic Senate website and can be found at: <https://senate.ucr.edu/issues>

A major priority of CoC is to nominate slates of candidates that have a balance in terms of gender, ethnicity, rank, and across disciplines. This has proved particularly difficult in the case of the smaller professional schools - SPP, SOE, and SOM. When making appointments, CoC takes into consideration committee workload, number of meetings, and the type of committee work, while also taking into account faculty workload at the different professorial ranks. In the case of these professional schools, senior rank professors often already are serving on executive committees or have administrative appointments which limits availability for committee service. When additionally considering a balance of gender and ethnicity, the problem only becomes

¹ The form does not include requests for college Executive Committees or the Committee on Committees since membership in these committees is determined through a separate nomination and election process.

² Previous year's numbers: Yr2024 – 479; Yr2023 – 458; Yr2022 – 380; Yr2021 – 484; Yr2020 – 355; Yr2019 – 386; Yr2018 – 271; Yr2017 – 346; Yr2016 – 245; Yr2015 – 304; Prior to 2015, forms were submitted manually via paper form

³ Based on the number of members completing a full three-year term.

⁴ Based on the total number of vacancies due to completed terms and early resignations. This number may increase prior to fall quarter due to faculty taking sabbatical, administrative positions, or other leaves.

more difficult, much of which is due to the decline in gender and ethnic diversity as one goes into the senior ranks. Finding a solution is a difficult task, but one which should be considered.

Respectfully Submitted,

2024/25 Committee on Committees

**COMMITTEE ON COURSES
ANNUAL REPORT TO THE RIVERSIDE DIVISION
DECEMBER 2, 2025**

To be received and placed on file:

The Riverside Division of the Academic Senate Committee on Courses met nine times in the 2024-2025 academic year. The Committee Chair served as the Committee's representative to the Committee on Educational Policy and other Committee members served as the representatives to the Summer Sessions Academic Steering Committee and Course Scheduling Workgroup.

A. Course and instructor approvals

In the 2024-2025 academic year the Committee approved a total of 148 new courses (105 undergraduate, 40 graduate, and 3 professional), changes to 278 courses (246 undergraduate, 19 graduate, and 5 professional), the deletion of 92 courses (70 undergraduate, 13 graduate and 9 professional), the restoration of 1 undergraduate course and 1 graduate course, the merge of 1 undergraduate course into 1 course, the split of 4 graduate courses and 2 undergraduate courses, and the approval of priority enrollment requests for 6 undergraduate courses. The Committee also reviewed University Extension proposals for courses offered for credit as follows: 4 University Extension XR1-199 instructor proposals, and 29 University Extension X1-299 instructor proposals. The Committee reviewed and approved 252 Associate-In requests for the instruction of upper division and graduate level courses. Lastly, the Committee approved 7 extensions to course submission due date requests.

The Committee notified the following departments and programs of courses that have not been instructed for four or more years: Bioengineering, Business, Chemical Engineering, Computer Science, Dance, Environmental Engineering, Ethnic Studies, and Microbiology. The Committee asked the departments and programs to either delete the courses or submit a justification for their retention. Of the 86 courses identified, the departments and programs submitted justifications for the retention of 36 courses and identified 50 courses to be deleted.

The Committee sent notifications to several departments of impending expirations of priority enrollment for courses with the reminder that a course proposal needs to be submitted for the renewal of the priority enrollment.

The Committee reviewed the course subject code proposal for CGIS to be used for courses offered by the proposed new B.S. in Cognitive and Information Science and held their approval until the proposal for the new degree program is submitted to the Senate.

The Committee approved the request for a one-time exception for BCH 185 to be offered in Fall '25 for only three units and as a lecture-only course.

B. Committee Initiative

The Committee continued to examine course modality and how it is defined at UCR and received guidance from the Registrar.

The Committee developed guidance to request from departments and programs more explicit documentation of instructor contact hours for courses to be offered online in course proposals.

The Committee made an editorial update to Appendix 4 of the General Policies Governing Courses of Instruction to ensure that the grading types listed match the Committee's policy.

C. Review of proposals and policy documents as requested by the Senate Chair

The Committee considered the following Campus and System-wide issues on behalf of their charge of courses and instruction:

Campus Review Items:

- Proposed UCR Long Term Academic Calendar
- Proposed Revisions to SoE Regulations 01. To 04.01.01
- Proposed Course Approval Workflow for Division of Undergraduate Education
- Proposed Changes to UCR Appendix 7
- Proposed Change to Course Scheduling Committee Charge
- Proposal for Summer Session Max Capacity
- Proposed Implementation of UCR Senate Regulation 6.14
- Proposed Change to CHASS Regulation 3.1.4
- Proposed B.S. in Data Science + M.S. in Statistics Five Year Degree Program
- Proposed B.S. in Computer Science Applications
- Proposed Minor in Geospatial Analysis
- Proposed B.S. + M.S. in Mathematics
- Request from Athletics for Change to Student Absences Process
- Report from Ad Hoc Coordinating Committee on General Education
- Policy for Archiving Canvas Courses

System-wide Review Items:

- Academic Planning Council's Systemwide Calendar Workgroup Draft Report

The Committee's formal response to each issue is located on the Academic Senate website and can be found at: <https://senate.ucr.edu/issues>.

D. Thanks

The Committee invited Representatives from the Registrar's Office to attend all meetings and wishes to express appreciation for the information and assistance they provided.

Respectfully submitted by the 2024-2025 Committee on Courses (<https://senate.ucr.edu/committees/8>).

**COMMITTEE ON DISTINGUISHED CAMPUS SERVICE
ANNUAL REPORT TO THE DIVISION
DECEMBER 2, 2025**

To be received and placed on file:

The Committee on Distinguished Campus Service met on March 13, 2025, via Zoom, to discuss the candidates for the Distinguished Campus Service award. Distinguished Professors Bahram Mobasher from the Department of Physics & Astronomy and Peter Graham from the Department of Philosophy were selected as the 2024-2025 recipients. The nominations were approved at the May 20, 2025, meeting of the Riverside Division of the Academic Senate, at which time Professors Mobasher and Graham were presented their awards.

Respectfully submitted by the 2024-25 committee on Distinguished Campus Service.
<https://senate.ucr.edu/rsenate/admin/committees/40/2024/manage>

**COMMITTEE ON DISTINGUISHED TEACHING
ANNUAL REPORT TO THE DIVISION
DECEMBER 2, 2025**

To be received and placed on file:

The Committee on Distinguished Teaching met on March 13, 2025, on Zoom to discuss the candidates for the Distinguished Teaching Award. Distinguished Professors Patricia Cardoso from the Department of Theatre, Film, and Digital Production and Richard Seto from the Department of Physics & Astronomy were selected as the 2024-2025 recipients. The nomination was approved at the May 20, 2025, meeting of the Riverside Division of the Academic Senate, at which time Professors Cardoso and Seto were presented with their award.

In addition, the committee also discussed tentative changes and best practices as it relates to the Call for Nomination, Student representation, and the Applicant participation and qualifications.

Call For Nomination:

Currently, the policy is that a member with a conflict of interest (such as being from the department of the nominee) cannot discuss the nominee but can vote. This raised a question among some members who felt it would be preferred if those with a conflict of interest would not vote on the specific candidate.

Student Representation:

Also discussed was the involvement and roles of student representatives. The committee had a student representative present at the meeting. The student was privy to the discussions but did not have access to the materials in advance of the meeting. We wanted more clarification from the Senate about the role of the student representatives. Are they there to observe the discussions for learning purposes? Are they there to represent the student perspective? If that is the case, to what extent should they have access to the nomination packets in advance of the meeting?

Applicant Participation and Qualifications

Finally, the committee discussed the fact that there was a very small pool of applicants (only 3 applications this year). The committee discussed ways to have a larger pool of qualified applicants, given there is a great deal of excellent teaching on campus. One suggestion was to lower the bar to nominations, given that the nomination packet is quite extensive. To that end, the committee considered the challenge of how to do that without diminishing the quality of the award. Another suggestion was targeting the initial call for nominations directly to the students. Possibly, the call for nominations could be sent to student government who may circulate the call in its weekly newsletter to students.

Respectfully submitted by the 2024-25 committee on Distinguished Teaching.

<https://senate.ucr.edu/rsenate/admin/committees/9/2024/manage>

**COMMITTEE ON DIVERSITY, EQUITY, AND INCLUSION
ANNUAL REPORT TO RIVERSIDE DIVISION
DECEMBER 2, 2025**

To be received and placed on file:

The Committee on Diversity, Equity, and Inclusion (CoDEI) is an important part of faculty governance and collegial responsibility in the University of California system. As a committee of the Riverside Division of the Academic Senate, CoDEI is appointed by the Senate's Committee on Committees and consists of eight members of the Division, including, the Vice Chancellor of Diversity, Equity, and Inclusion as non-voting ex-officio.

This Committee is charged with representing the Division on all matters of Diversity, Equity, and Inclusion at UCR. It monitors the campus for discriminatory employment practices, retention, and for issues involving diversity and campus climate, and, at its discretion, makes recommendations for improvement in specific practices and general policy. It further serves as a liaison between individuals having concerns related to diversity, equity, and inclusion at UCR and the Division, providing, at its discretion, advice and guidance when requested. It further represents the Division on all matters concerned with student diversity, equity, and inclusion including efforts to monitor and to increase the number of students from underrepresented groups who enter undergraduate, graduate and professional programs.

The Committee on Diversity, Equity, and Inclusion met six times during the 2024-2025 academic year and conducted business via Zoom and email.

In addition to reaffirming its Conflict-of-Interest Statement and conducting a review of its bylaws, the Committee undertook the following actions:

a. Advice to the Academic Senate

In keeping with its charge to make recommendations for improvement in specific practices and general policy, the Committee considered the following Campus and System-wide reviews:

Campus Review

- Riverside Senate Regulation 6 Campus Graduation Requirements to Add Campus Residency Requirement - UCR SR 6.14
- UCR Interim Policies Related to Expressive Activities on Campus (700-20, 700-50, and 700-70)
- UCR Bylaw 01 through 1.03: Gender Recognition and Lived Name
- UCR Bylaw 09 through 09.05: Gender Recognition and Lived Name
- Bylaw 02.02 through 02.02.08: Gender Recognition and Lived Name
- Faculty Research Lecturer Committee Bylaw 08.13.02: Gender Recognition and Lived Name
- Undergraduate Admissions Committee Bylaw 08.23.01: Gender Recognition and Lived Name
- Proposed Changes to Committee on Committees Bylaw 08.08 – 08.08.07: Gender Recognition and Lived Name, Service Permissions, & Name Correction
- Faculty Welfare Committee Bylaw 08.26 through 08.26.02: Membership Update

- 6th Round - Online Master of Business Administration (OMBA-SSGPDP) 11/08/2024
- BCOE Bylaws 02.01.01 through 04.01.02.08: Gender Recognition and Lived Name Policy
- CNAS Bylaws 02.01.01 through 02.01.05: Gender Recognition and Lived Name Policy
- BUS Bylaw 02.01.01 through 04.01.02.08: Gender Recognition and Lived Name Policy
- SOM Bylaw 03 through 03.01.03: Gender Recognition and Lived Name Policy
- CHASS Bylaw 02.01.01 through 02.01.04: Gender Recognition and Lived Name Policy
- SPP Bylaw 01 through 02.01.04: Gender Recognition and Lived Name Policy
- Negotiated Salary Program (NSP) Campus Procedures Review for 25-26 AY Implementation
- Approval Process of Faculty-Led Education Abroad Programs (FLEAP) and Alignment with UCOP's Anti-Discrimination Policy
- 6th Round - Online Master of Business Administration (OMBA-SSGPDP)
- 2nd Round - Approval Process of Faculty-Led Education Abroad Programs (FLEAP) and Alignment with UCOP's Anti-Discrimination Policy
- Proposed Initiative for UCR 2030: Increase the enrollment of California resident undergraduates
- Report from the Ad Hoc Coordinating Committee on General Education (CCGE)
- Revision of Retention Processes at UCR (2025)

System-wide Review

- Proposed Revisions to Senate Regulation 479 - California General Education Transfer Curriculum (CalGETC)
- APC Systemwide Academic Calendar Workgroup Draft Report

The Committee's formal response to each issue is located on the Academic Senate website and can be found at: <https://senate.ucr.edu/issues>

b. Representation at System-wide Senate and the Executive Council

CoDEI continued its active participation on the system-wide University Committee on Affirmative Action, Diversity, and Equity (UCAADE). The 2024-25 CoDEI representative was the Committee Chair, who updated committee members of the issues under discussion at the statewide level. The Chair also represented the committee on the UCR Academic Senate's Executive Council.

c. Discussions with Campus Leadership

The committee met with the University VPAP on two occasions to discuss departmental voting rights issues and the distribution of information about Bylaw 55, the Salary Equity Program, implementation of Achievement Relative to Opportunity principles in merit and promotion reviews, and support for faculty disability accommodations.

d. Collaboration with other standing Committees of the Division

The committee met with Committee on Faculty Welfare Chair to discuss the rising costs of healthcare coverage plans offered by the University and authored a memo to the Committee on Faculty Welfare addressing the issue.

Respectfully submitted,

The 2024-2025 Committee on Diversity, Equity and Inclusion:

https://senate.ucr.edu/rsenate/committee/previous_membership/5

**COMMITTEE ON EDUCATIONAL POLICY
ANNUAL REPORT TO THE RIVERSIDE DIVISION
DECEMBER 2, 2025**

To be received and placed on file:

The Academic Senate Riverside Division Committee on Educational Policy (CEP) held nine meetings this academic year. Committee members and the Chair also attended several meetings associated with undergraduate program reviews and proposed changes to undergraduate curriculum. Much of the Committee's work, such as the careful study of long and complex documents, was completed outside of meetings and through email between meetings. The Chair attended meetings of Executive Council and provided updates to the Committee at each meeting from issues discussed at the local level. The Chair, Vice Chair, and the representative to the University Committee on Educational Policy (UCEP), at the request of the administration and Chair of the Division, attended additional meetings with Senate leadership and the administration. This year, the Division was well represented on UCEP by UCR's representative who kept CEP and the Division informed about various items and systemwide developments of interest to the Committee. A CEP member served as the Committee's representative to the Summer Sessions Academic Steering Committee.

A. Undergraduate Program Reviews

A primary responsibility of CEP is undergraduate program reviews. During the academic year, six CEP subcommittees were established to conduct the external undergraduate program reviews of Chemistry (January 16 and 17, 2025), Creative Writing (April 7 to 10, 2025), Earth and Planetary Sciences (February 6 and 7, 2025), Media and Cultural Studies (November 18 and 19, 2024), Physics and Astronomy (February 27 and 28, 2025), and Sociology (January 21 to 24, 2025). The reviews of Chemistry, Earth and Planetary Sciences, Media and Cultural Studies, and Physics and Astronomy were conducted in-person while the reviews of Creative Writing and Sociology were conducted remotely using Zoom. The Chair of CEP organized and attended Action Implementation meetings with the Vice Provost and Dean for Undergraduate Education (VPDUE), College Dean, Associate/Divisional Deans, and the Department Chairs for the reviews conducted in the previous academic year for Comparative Literature and Languages, English, Environmental Sciences, and Music. Based on the positive responses to the Committee's recommendations at the Action Implementation Meetings, the Committee voted to close the reviews for English, Environmental Sciences, and Music. CEP drafted an Action Implementation Plan for the Comparative Literature and Languages undergraduate program and after receiving the program's response to the Action Implementation Plan voted to close that review.

For the next academic year, CEP will conduct external reviews of the undergraduate programs in Anthropology, Business, Economics, Philosophy, Political Science, and Theatre, Film and Digital Production. The Committee hosted an information session on April 14, 2025 for the programs scheduled for external review next academic year to help them prepare for their upcoming reviews.

The Committee updated the Procedures for Undergraduate Program Reviews to update the response options for a question on the Faculty Satisfaction Survey to include more cohesive language.

The following is a list of open undergraduate program reviews that CEP is working to close:

AY Review was Program Reviewed:

Current step:

Conducted:

2024-2025 Chemistry

The Committee will finalize the Final Findings and Recommendations Report in F'25.

2024-2025	Creative Writing	The Committee will finalize the Preliminary Findings and Recommendations Report in F'25
2024-2025	Earth and Planetary Sciences	The Action Implementation Meeting will be held in F'25.
2024-2025	Media and Cultural Studies	The Action Implementation Meeting will be held in F'25.
2024-2025	Physics and Astronomy	The Committee will finalize the Final Findings and Recommendations Report in F'25.
2024-2025	Sociology	The Action Implementation Meeting will be held in F'25.

B. Committee Initiative

After reviewing the R'Courses Governing Board's annual report, CEP recommended that the Board update their procedures for the program to include the responsibility of faculty mentors and expectations for their role of guiding student instructors. Additionally, the CEP recommended the development of a teaching practicum for student instructors to enroll in the quarter they instruct R'Courses to allow them to receive credit and a course grade for instruction.

CEP consulted with the Director of Assessment and Evaluation several times throughout the academic year to discuss and provide consultation on academic program assessment at UCR. The Committee provided feedback to the assessment of Information Literacy and Quantitative Reasoning.

CEP discussed how new UCR Senate Regulation 6.14 for a campus experience requirement can be implemented on campus and recommended to the Division that the regulation be delayed until after AY 25-26.

CEP discussed the potential for priority registration for students who update their multi-year course plans in Banner with the Associate Provost and Registrar and noted their general support for the proposal.

C. Review of proposals and policy documents as requested by the Senate Chair

The Committee reviewed six exceptions to the 180-unit graduate requirement requests.

The Committee considered the following Campus and System-wide issues on behalf of their charge of undergraduate education:

Campus Review:

- Proposed UCR Long Term Calendar 2029-2030 through 2033-2034
- Proposed Revisions to SoE Regulations 01 to 04.01.01
- Division of Undergraduate Education Proposed Course Approval Workflow
- UCR Interim Policies on Expressive Activities on Campus
- Proposed Changes to UCR Appendix 7
- Proposed Changes to UCR Course Schedule Committee Membership
- Proposed Changes to UCR Senate Regulation 1 for the Grading System
- Approval Process for Study Abroad Programs
- Summer Maximum Capacity Proposal
- UCR Registrar's Proposed Implementation of UCR Senate Regulation 6.14
- Proposed Change to CHASS Regulation 3.1.4 for Senior Residence
- Proposal for a B.S. + M.S. Combined Degree Program in Mathematics

- Proposal for a B.S. in Data Science + M.S. in Statistics Combined Degree Program
- Proposal for B.S. in Computer Science Applications
- Proposal for Minor in Geospatial Analysis
- Request from Athletics about Process for Student Absences
- Proposed Addition to UCR 2030 Strategic Plan
- Coordinating Committee for General Education Final Report
- Policy for Archiving Canvas Courses

System-wide Review:

- Proposed Revisions to Senate Regulation 479 for CAL-GETC
- Proposed Senate Regulation 627 for Posthumous Awarding of Degrees
- Proposed Revisions to Senate Bylaw 170 and Recission of Senate Bylaw 192
- Academic Planning Council's Systemwide Academic Calendar Workgroup Draft Report

The Committee's formal response to each issue is located on the Academic Senate website and can be found at: <https://senate.ucr.edu/issues>.

D. Review of Changes to Undergraduate Curriculum

CEP also took up a number of matters related to majors, minors and other undergraduate programs.

The following proposed changes to curriculum were discussed, approved, and reported to the Division:

Approved Curriculum Changes from BCoE:

B.S. in Computer Science
B.S. in Computer Science with Business Applications
B.S. in Materials Science and Engineering

Approved Curriculum Changes from BCoE & CNAS:

B.S. in Data Science
Minor in Data Science

Approved Curriculum Changes from BUSINESS:

B.S. in Business Administration
Minor in Business Administration
B.S. in Business Analytics

Approved Curriculum Changes from CHASS:

B.A. in Anthropology
Minor in Anthropology
B.A. in Art
B.A. in Black Study
Minor in Black Study
B.A. in Environmental Studies
Minor in Environmental Studies
B.A. in Global and Community Health
Minor in Global and Community Health
B.A. in Global Studies
B.A. in History
Minor Labor Studies

B.A. in Music
Minor in Music
B.A. in Music and Culture
B.A. in Political Science
B.A. in Political Science/International Affairs
B.A. in Political Science/Public Service
Minor in Political Science
B.S. in Psychology
Minor in Speculative Fiction and Cultures of Science
B.S. in Sustainability Studies
B.A. in Theatre, Film and Digital Production
Administrative Studies Majors
B.A. in Art History/Administrative Studies
B.A. in Economics/Administrative Studies
B.A. in History/Administrative Studies
B.A. in Political Science/Administrative Studies
B.A. in Religious Studies/Administrative Studies
B.A. in Sociology/Administrative Studies Major
B.S. in Sociology /Administrative Studies Major

Approved Curriculum Changes from CHASS & CNAS:

B.A. & B.S. in Neuroscience
Minor in Neuroscience

Approved Curriculum Changes from CNAS:

B.A. & B.S. in Biochemistry
B.A. & B.S. in Biology
B.A. & B.S. in Cell, Molecular and Developmental Biology Major
B.A. & B.S. in Entomology
B.A. & B.S. in Mathematics
B.S. in Mathematics for Secondary School Teachers
B.A. & B.S. in Physics
B.A. & B.S. in Statistics
B.S. + M.S. in Entomology

Approved Curriculum Changes from SPP:

B.A. in Public Policy
B.A. + MPP in Public Policy

E. Appreciation

The Committee's members are to be commended for their close attention to a broad spectrum of matters concerning educational policy and undergraduate education and their genuine concern for student welfare.

Respectfully submitted by the 2024-2025 Committee on Educational Policy
(<https://senate.ucr.edu/committees/10>).

EXECUTIVE COUNCIL
ANNUAL REPORT TO THE RIVERSIDE DIVISION
December 2, 2025

To be received and placed on file.

This Executive Council report lists items reviewed and actions taken in meetings held from October 2024 through July 2025.

Each Executive Council meeting included a report from Chair Kenneth Barish on issues reviewed at Academic Council meetings, Academic Assembly meetings, Chancellor's meetings, Provost's meetings, and other critical issues raised by the faculty or the administration. Meeting minutes are provided on the Academic Senate website.

Throughout the year, both internally and with the Administration, Executive Council discussed and deliberated on campus and systemwide issues as provided below. The first meeting of the year was immediately preceded by the annual committee chairs' orientation. During this first meeting of the year, Executive Council reviewed and approved its conflict-of-interest statement. Council noted as "Received" the conflict-of-interest statements from Senate Standing Committees and Faculty Executive Committees at remaining meetings as they were submitted. The 2024-2025 Executive Council participated in the search process to hire a new UCR Chancellor as Kim Wilcox retired in July 2025.

Issues considered and actions taken by the Executive Council include the following:

Legislative (Bylaw, Regulation & Guideline) Items

UCR Regulation 01.09.01 Grading System

2nd Round - Revisions to the School of Education Regulations 01 to 04.01.01

Proposed Riverside Senate Regulation 6 Campus Graduation Requirements to Add Campus Residency Requirement - UCR SR 6.14

2nd Round - Proposed Changes to Appendix 7 – Procedures for the Transfer, Consolidation, Disestablishment, or Discontinuance of Academic Programs and Academic Units (TCDD)

Regulation Change to UCR Regulation 1 - Grading System

UCR Bylaw 01 through 1.03: Gender Recognition and Lived Name

UCR Bylaw 09 through 09.05: Gender Recognition and Lived Name

UCR Bylaw 8.2.2 General Provisions: Annual Reports

UCR Faculty Welfare Committee Bylaw 08.26 through 08.26.02: Membership Update

UCR Bylaw 02.02 through 02.02.08: Gender Recognition and Lived Name

UCR Faculty Research Lecturer Committee Bylaw 08.13.02: Gender Recognition and Lived Name

UCR Undergraduate Admissions Committee Bylaw 08.23.01: Gender Recognition and Lived Name

BUS Bylaw 02.01.01 through 04.01.02.08: Gender Recognition and Lived Name Policy

SOM Bylaw 03 through 03.01.03: Gender Recognition and Lived Name Policy
CNAS Bylaws 02.01.01 through 02.01.05: Gender Recognition and Lived Name Policy
UCR Committees Bylaw 08.08 –08.08.07: Gender Recognition and Lived Name, Service Permissions,
& Name Correction
BCOE Bylaws 02.01.01 through 04.01.02.08: Lived Name Policy
UCR Committee on Privilege and Tenure Bylaws Bylaw 08.19 through 08.19.02: Lived Name Policy,
Committee Membership & Ex-officio Service
SPP Bylaw 01 through 02.01.04: Gender Recognition and Lived Name Policy
Proposed Changes to Charge of the Committee on Diversity, Equity & Inclusion Bylaw 8.6.1
Proposed Changes to UCR Regulations 06.01, 06.01.01, 06.01.02.02 - Campus Graduation
Requirements (ENGL to WRIT)

Campus Level Review and Other Discussion Items

Proposed UCR Long Term Academic Calendar 2029-2030 through 2033-2034
Proposed Course Approval Workflow - Division of Undergraduate Education
2nd Round-Transparency in Establishment and Operations of Centers
Final Report of the Teaching Evaluation Implementation Committee
UCR Interim Policies Related to Expressive Activities on Campus (700-20, 700-50, and 700-70)
Negotiated Salary Program (NSP) Campus Procedures Review for 25-26 AY Implementation
Confidential - Request for Consultation - Campus Naming
Transparency in Establishment and Operations of Centers - Procedures
6th Round - Online Master of Business Administration (OMBA-SSGPDP)
Approval Process of Faculty-Led Education Abroad Programs (FLEAP) and Alignment with UCOP's
Anti-Discrimination Policy
2nd Round - Course Approval Workflow - Division of Undergraduate Education
Final Report of the Coordinating Committee on General Education (CCGE)/
Summer Maximum Capacity Proposal
UCR Registrar's Implementation of UCR Senate Regulation 6.14 (UCR SR 6.14) - 35 Units in
Residence Requirement
Proposed Initiative for UCR 2030: Increase the enrollment of California resident undergraduates
2nd Round - Approval Process of Faculty-Led Education Abroad Programs (FLEAP) and Alignment
with UCOP's Anti-Discrimination Policy
Minor in Geospatial Analysis (GIS)

Proposed Changes to Electrical Engineering Major description - Updates to Undergraduate EE Program Major requirements
Proposed Policy for Archiving Canvas Courses
Athletics Request from the Faculty Athletics Representative
Round 2 – Bachelor of Science (B.S.) in Computer Science Applications (CSA)
Revision of Retention Processes at UCR (2025)

Systemwide Review Items

Proposed Revisions to Program Attachments #3–7 to the Policy on Vaccination Programs
Proposed Revisions to Presidential Policy: Externally Supplied Medications in UC Outpatient and Clinic Setting
Proposed Revisions to Senate Regulation 479 - California General Education Transfer Curriculum (CalGETC)
New Senate Regulation 627 (Posthumous Awarding of Degrees)
Memorials to the Regents Initiated by UCSF regarding Health Science Clinical and Adjunct Faculty with 50% or More Appointments
Presidential Policy on the Use of Animals in Research, Teaching, and Testing
Report on the Future of Doctoral Programs at UC
Proposed Presidential Policy on Dual Use Research of Concern and Pathogens with Enhanced Pandemic Potential
Proposed Revisions to APM - 675, Veterinary Medicine Salary Administration
Proposed Revisions to APM - 036, General University Policy Regarding Academic Appointees/Employment
Systemwide Academic Calendar (Common Calendar)
Proposed Revisions to Senate Bylaw 170 and Rescission of Senate Bylaw 192
Proposed Revisions to APM - 360, Librarian Series
Proposed Revisions to Academic Personnel Manual (APM) 230 Visiting Appointments

The following guests were received by Executive Council:

Bracken Dailey, Registrar
Darrell Jenerette, Chair, Committee on Charges
Elizabeth Watkins, Provost and Executive Vice Chancellor
Emiliano De Cristofaro, Member, Coordinating Committee on General Education
Emily Engelschall, Associate Vice Chancellor for Enrollment Services
Gerry Bomotti, Vice Chancellor for Budget and Administration

Goldberry Long, Member, Teaching Evaluation Implementation Committee
Iván Aguirre, Member, Coordinating Committee on General Education
Jonathan Eacott, Chair, Coordinating Committee on General Education
Ken Baerenklau, Co-Chair, Teaching Evaluation Implementation Committee
Kim Wilcox, Chancellor
Louis Santiago, Chair, Committee on Privilege and Tenure
Michael Richards, Associate Chancellor
Patricia Morton for Brian Siana, Physical Resources Planning
Quinn McFrederick, Chair, Committee on Academic Freedom
Richard Seto, Member, Coordinating Committee on General Education
Rodolfo Torres, Vice Chancellor for Research and Economic Development
Sandra H. Kim, Interim Vice Chancellor for Planning, Budget, and Administration
Sarita See for Vijayalakshmi Santhakumar, Graduate Council
Steven Cheung, Chair, Systemwide Academic Senate
Wesley Simms for Katherin Meltzoff, SOE Faculty Executive Committee
Ye Li for Elodie Goodman, BUS Faculty Executive Committee
Yingbo Hua, Co-Chair, Teaching Evaluation Implementation Committee

2024-2025 Executive Council Membership

Ken Barish, Division Chair
*Barry Mishra, Division Vice Chair
*Jonathan Eacott, Division Vice Chair
Feng Xu, Secretary/Parliamentarian
Jennifer Hughes, Senior Assembly Representative
Annie Ditta, Committee on Educational Policy
Brian Siana, Committee on Physical Resources Planning
Brian Siana, Committee on Physical Resources Planning
Gareth Funning, Committee on Diversity, Equity, and Inclusion
Ilya Brookwell, Committee on Information Technology
Jianzhong Wu, Committee on Preparatory Education
Jingsong Zhang, Committee on Academic Personnel
Juliann Allison, Committee on Planning and Budget
Peter Sadler, Committee on Undergraduate Admissions
Rachel Wu, Committee on Research
Salman Asif, Committee on Faculty Welfare
Sean Cutler, Committee on Committees
Vijayalakshmi Santhakumar, Graduate Council
Elodie Goodman, BUS Faculty Executive Committee
Harry Tom, CNAS Faculty Executive Committee
Katherine Meltzoff, SOE Faculty Executive Committee
Marcus Kaul, SOM Faculty Executive Committee

Richard Carpiano, SPP Faculty Executive Committee
Victor Rodgers, BCOE Faculty Executive Committee
Wesley Leonard, CHASS Faculty Executive Committee

Respectfully submitted on behalf of Senate Division Chair Kenneth Barish by Cherysa Cortez,
Executive Director

**Split vice chairship*

**FACULTY RESEARCH LECTURER COMMITTEE
ANNUAL REPORT TO THE RIVERSIDE DIVISION
DECEMBER 2, 2025**

To be received and placed on file:

The Faculty Research Lecturer Committee met on April 02, 2025, via Zoom, to discuss the candidates for the Faculty Research Lecturer Award. Distinguished Professor Mary Droser from the Department of Earth & Planetary Sciences was selected for the 2025 Faculty Research Lecturer award. This nomination was approved at the May 20, 2025, meeting of the Riverside Division of the Academic Senate. Professor Droser will give her Faculty Research lecture in 2026.

Distinguished Professor Sonja Lyubomirsky from the Department of Psychology delivered the 2024 Faculty Research Lecture on Tuesday April 22, 2025. The lecture was titled "The Science of Happiness: Experiments on the Power of Gratitude, Kindness, and Conversation"

Respectfully submitted by the 2024-25 committee on Faculty Research Lecturer.
<https://senate.ucr.edu/rsenate/admin/committees/11/2024/manage>

**COMMITTEE ON FACULTY WELFARE
ANNUAL REPORT TO THE RIVERSIDE DIVISION
December 2, 2025**

To be received and placed on file:

The Committee on Faculty Welfare (CFW) is an important part of faculty governance and collegial responsibility in the University of California system. As a committee of the Riverside Division of the Academic Senate, CFW is appointed by the Senate's Committee on Committees and consists of twelve faculty members—two of whom are emeriti/ae professors—along with one representative each from the Graduate Student Association (GSA) and Associated Students of UCR (ASUCR). It is the duty of this Committee to report to the Division on any and all matters of faculty welfare. CFW is also responsible for the award process of the Dickson Emeritus/a Professorship.

CFW met eight times during the 2024-2025 academic year (AY24-25). For more detailed information regarding what is contained herein, refer to CFW's AY24-25 meeting minutes located here (on the Academic Senate CFW webpage).

a. Edward A. Dickson Emeritus/a Professorship

The Edward A. Dickson Emeritus/a Professorship Award is presented annually to an emeritus/a professor on the basis of a compelling project in teaching, research, or public service activities. Each awardees shall be known as an Edward A. Dickson Emeritus/a Professor for the duration of the award (one year) and receive up to \$6,000 monetary award and up to \$3,000 research support, subject to all policies and requirements of the University of California and the Riverside Campus.

CFW selected the following recipients for the 2025/26 Edward A. Dickson Emeritus/a Professorship: Professor Emeritus John Briggs (English), Distinguished Professor Emeritus Carl Cranor (Department of Philosophy), and Distinguished Professor Emeritus Chandra Varma (Physics and Astronomy).

b. Discussions with Campus Leadership

On December 12, 2024, CFW met with the Charges Committee Chair and Vice Provost for Administrative Resolution to discuss issues related to campus adjudication of cases involving alleged faculty misconduct.

On December 12, 2024, CFW met with the Chief Diversity Officer to discuss issues related to disability inclusion on campus.

On February 11, 2025, CFW met with the Chief Information Security Officer and IT Committee Chair to discuss UCR's implementation of the UC Cybersecurity Mandate 2025.

On June 4, 2025, CFW met with the Provost to discuss UCR's strategic plan to increase its California undergraduate enrollment.

c. Advice to the Academic Senate

In keeping with its charge to opine on matters pertaining to faculty welfare, the Committee considered the following items received for Campus and Systemwide review:

Campus Review

- UCR Interim Policies Related to Expressive Activities on Campus (700-20, 700-50, and 700-70)
- Negotiated Salary Program (NSP) Campus Procedures Review for 25-26 AY Implementation
- Proposed Initiative for UCR 2030: Increase the enrollment of California resident undergraduates
- Report from the Ad Hoc Coordinating Committee on General Education (CCGE)
- Revision of Retention Processes at UCR (2025)

Systemwide Review

- Proposed Revisions to APM - 675, Veterinary Medicine Salary Administration
- Proposed Revisions to APM - 036, General University Policy Regarding Academic Appointees/Employment
- Proposed Revisions to APM Section 500, Recruitment – General
- APC Systemwide Academic Calendar Workgroup Draft Report
- Proposed Revisions to Academic Personnel Manual (APM) 230, Visiting Appointments

CFW's formal response to each issue is located on the UCR Academic Senate website and can be found at: Issues Under Review (ucr.edu).

CFW intends to continue addressing the following issues which should be of vital importance to the Academic Senate and campus at large:

- Working closely with Institutional Research to dig deeper into the data of the AY22-23 Senate Faculty Climate Survey as a means of yielding outcomes for proposed improvements and informed decision-making by Administration to better the campus climate for faculty.
- Monitoring action(s) from Administration to address serious concerns about the decline in funding for first-year graduate student fellowships.
- Assessing whether there are patterns with the campus adjudication of alleged faculty misconduct cases that may hinder UCR's institutional success and its goal to maintain a healthy community.
- Advocating for ITS to adequately address all privacy and security concerns related to the software tools required for the Cybersecurity Mandate, and to ensure campus awareness of related issues/solutions.

d. Representation at Systemwide Senate and the Executive Council

The Committee on Faculty Welfare continued its active participation on the systemwide University Committee on Faculty Welfare (UCFW). The 2024-2025 UCFW representative was the CFW Chair of the Riverside Division, Salman Asif. Professor Asif updated CFW members of the issues under discussion at the statewide level. Professor Asif also represented the committee on UCR

Academic Senate's Executive Council and served as an ex officio member on the Committee on Academic Freedom.

Respectfully submitted by the [2024/25 Committee on Faculty Welfare](#).

**GRADUATE COUNCIL
ANNUAL REPORT TO THE RIVERSIDE DIVISION
December 2, 2025**

To be received and placed on file:

The Graduate Council met twelve times during the period of September 2024 through August 2025. Complete records of Council activity are on file in the Office of the Academic Senate.

The Courses and Programs Subcommittee made recommendations and the Council acted on 91 courses: 40 new courses, 28 changed courses, 22 deleted courses, and 1 restored course. The Courses and Programs Subcommittee also reviewed two UNEX proposals on behalf of the Graduate Council – 1) Postgraduate Diploma in Applied Artificial Intelligence; 2) Postgraduate Diploma in Digital Marketing.

Requests for changes in requirements for graduate programs were reviewed and approved for the following programs:

Chemical & Environmental Engineering

Psychology (3)

Computer Engineering (3)

Computer Science (3)

Economics

Entomology BS+MS

MSOL

Robotics

Dance

Philosophy

BA+MPP

Computational Data Science

Entomology MS & PhD

Ethnic Studies

Political Science

Plant Biology

School of Education (3)

Graduate Council approved catalog changes clarifying oral exam/final defense modality for the following programs:

Plant Pathology

Biomedical Sciences

Political Science

Ethnic Studies

Graduate Council approved new or revised admissions rubrics (removing the GRE) for the following programs:

Neuroscience

Ethnic Studies

Statistics

Computer Engineering

MSOL

School of Business (MBA, PMBA, MFin, MPAc)

The Graduate Council Fellowships Subcommittee conducted their business remotely by email to decide on the following:

- 1) Dissertation/Master's Thesis Research grant applications. The subcommittee reviewed 30 Dissertation and Master's Thesis Research Grant applications and awarded 8 amounting to \$15,652.
- 2) Earle C. Anthony Travel award applications. The subcommittee reviewed 25 applications and awarded 7 amounting to \$11,739.
- 3) The Fellowships subcommittee reviewed applications and provided rankings to the Graduate Division Dean for the following:
 - a) Dissertation-Year Fellowship Program (DYFA) – of the 33 applications receives, 3 were awarded DYFA fellowships, each providing 3 quarters of support. An additional 25 applicants were selected for one quarter of DYP support. In total, DYFA and DYP awards amounted to \$615,026.13.
- 4) The Fellowships subcommittee reviewed 11 nominees for the 2025 Doctoral Dissertation Advisor/Mentoring Award and selected two recipients, Professor of Chemistry, Jingsong Zhang and Professor of Bioengineering, Evangelos Papalexakis.
- 5) The Fellowships subcommittee awarded 1 applicant \$500 for the Watkins award. There were 36 applications.
- 6) The Fellowships Subcommittee reviewed 1 application for the Commitment to Diversity Award. Subcommittee rankings were submitted directly to the Graduate Division for selection of award recipient, Professor of Education, Alice Lee.

The Graduate Council concluded its regularly scheduled reviews of the Bioengineering, Biophysics, Computer Engineering, Computer Science, Dance, Microbiology, and Master of Public Policy graduate programs. Graduate Council discussed these programs' responses, corresponded with, and voted to close out six of these reviews during the 2024/25 service year. Graduate Council also closed out three graduate program reviews from previous years.

Graduate Council hosted one Graduate Program Review Preparation meeting via Zoom in the spring of 2025 to prepare the programs scheduled for review in 2025/26 for the review process.

Graduate Council hosted an in-person town hall in the spring quarter to discuss the future of graduate education as a result of the UCOP report on the future of doctoral education at the UC.

Additionally, the following actions were taken by the Graduate Council during 2024/25:

- At its first meeting of the academic year, the Council adopted a statement regarding possible conflicts of interest by its members. (Sept. 2024).
- Reviewed an exception for full-time status for MBA students.
- Reviewed proposed changes to Graduate Student Academic Appeals Procedures.
- Reviewed the Annual Academic Integrity Report.

- Discussed CCGA's new mandate that eliminates double counting of units for new combined degree programs. The Council decided to phase out the existing practice of double counting in already approved combined degrees to maintain parity across programs and bring all existing programs in compliance with this guideline. Graduate Council sent a request to existing programs who allow double counting to submit a program change and applicable course changes to remove double counting from the combined degree program no later than March 6, 2026 to be effective in Fall 2026.
- Met with campus CIO Matt Gunkel and staff regarding the campus' transition from Microsoft and its impact on graduate students.
- Provided VPDGS Kos with a list of Graduate Council's priorities for the VPDGS and Graduate Division.
- Discussed and communicated concerns about DCFA Call language to the Graduate Division.
- Discussed and provided feedback to VPDGS Kos regarding the Graduate Division's implementation and roll out of the new Annual Mentoring and Evaluation Plan.
- Discussed and helped remedy issues pertaining to the administration of GAANNs for college offices and the Graduate Division.
- Met with VCPB Bomotti regarding the budget and graduate student funding.
- Held a joint meeting with the Committee on Planning & Budget that included VPDGS Kos, Provost Watkins, VCPB Bomotti, and FP&A Executive Director Flores to discuss budget issues and graduate student funding and fellowships.
- Reviewed, discussed, and voted on one graduate student grade appeal.
- A subgroup of the Council reviewed and revised graduate program review procedures and documents (confidential surveys, self-study guidelines, topics for extramural reviewers to consider, etc.) for fully online and/or self-supporting graduate programs undergoing review.
- Reviewed and discussed proposed revisions to Regulation 02 – Requirements for the Degree of Master of Arts or Master of Science, and Master of Administration; Regulation 03 – Requirements for the Degree of Master of Fine Arts; and Regulation 04 – Requirements for the Degree of Doctor of Philosophy.
- Reviewed and discussed proposed revisions to Regulation 6.12 – Campus Graduate Requirements.
- Reviewed and discussed deadline updates and exception process overview and provided feedback to the Graduate Division.

The Graduate Council discussed and responded to the following campus and systemwide requests for review and input received by Academic Senate Chair Kenneth Barish:

- [Systemwide Review] (Proposed Regulations) New Senate Regulation 627 (Posthumous Awarding of Degrees)
- [Campus Review] (Interim Policy) UCR Interim Policies Related to Expressive Activities on Campus (700-20, 700-50, and 700-70)
- [Campus Review] (Proposal) 2nd Round - Proposed Changes to Appendix 7 – Procedures for the Transfer, Consolidation, Disestablishment, or Discontinuance of Academic Programs and Academic Units (TCDD)
- [Campus Review] (Regulation Change) UCR Regulation 1 - Grading System
- [Timely Request] UCR Course Scheduling Committee
- [Campus Review] (Proposed Degree Program) 6th Round - Online Master of Business Administration (OMBA-SSGPDP)
- [Timely Request] 6th Round - Online Master of Business Administration (OMBA-SSGPDP) Proposal
- [Campus Review] (Regulation Change) 2nd Round - UCR Regulation 1 - Grading System
- [Systemwide Review] Report Review: APC Systemwide Academic Calendar Workgroup Draft Report
- [Campus Review] (Proposed Degree Program) Bachelor of Science + Master of Science in Mathematics (Applied) Five Year (4+1) Combined-Degree Program
- [Campus Review] (Consultation) Proposed Initiative for UCR 2030: Increase the enrollment of California resident undergraduates
- [Campus Review] (Proposal) Combined Data Science B.S. + Statistics M.S. Program

Respectfully Submitted,

2024/25 Graduate Council

**COMMITTEE ON MEMORIAL RESOLUTIONS
ANNUAL REPORT TO THE RIVERSIDE DIVISION
December 2, 2025**

To be received and placed on file:

The Committee on Memorial Resolutions is responsible, on behalf of the Division, for preparation and publication of commemorative statements concerning the lives and services to the University of deceased members of the Division, and other members of the University community whom the Committee, at its discretion, may choose to memorialize.

Once memorial resolutions are ratified by the Division, they are submitted to the UC Academic Senate for inclusion in the *In Memoriam* Academic Senate publication. *In Memoriam* is produced by its faculty to honor deceased colleagues with the hope that these memorials will serve as fitting tributes to those departed friends, who served the University of California so well.

Approved In Memorials

In 2024-2025, the Committee on Memorial Resolutions conducted its work via email and Zoom. The Committee met on October 31, 2024. In addition to reaffirming its Conflict of Interest Statement, the Committee reviewed and approved 4 memorials. These memorials highlighted the research, teaching, and service completed by each faculty member honored. Furthermore, the memorials were submitted to the UC Academic Senate for inclusion within the Historical Digital Archives. The memorials are listed below:

Memorials:

- Professor Edgar Wilbur Butler, Emeritus, Sociology
- Professor Armando Navarro, Emeritus, Ethnic Studies
- Professor Amnon Rapport, Emeritus, Business
- Dr. Mahsa Zakeri, Postdoctoral Researcher in Mechanical Engineering

Respectfully submitted by the 2024-25 committee on Memorial Resolutions.

<https://senate.ucr.edu/rsenate/admin/committees/74/2024/manage>

**COMMITTEE ON INFORMATION TECHNOLOGY
ANNUAL REPORT TO THE RIVERSIDE DIVISION
December 2, 2025**

To be received and placed on file:

Overview:

The Committee on Information Technology (IT) met 8 times during the 2024-2025 academic service year. The committee created a Conflict of Interest statement. During the 24-25 service year all meetings were conducted on Zoom.

Review Items and Other Consultations:

The committee reviewed and responded to the following review items:
(SR – Systemwide Review / CR – Campus Review)

1. Calendar Work Group
2. Proposed Presidential Policy on Dual Use Research of Concern and Pathogens with Enhanced Pandemic Potential
3. UCR 2030 Increase enrollment size
4. Policy for Canvas Archiving
5. UCR SR 6.14
6. Online MBA Program

All committee responses can be found here: <https://senate.ucr.edu/issues/archive/2024>

The main topics of discussion across the IT committee meetings centered heavily on Cybersecurity Mandates and Implementation, the Adoption and Policy surrounding Artificial Intelligence (AI), and campus initiatives related to Learning Outcomes and Technology Infrastructure.

A significant portion of the discussion revolved around the systemwide Cybersecurity Mandate, which requires the deployment of specific tools (such as NinjaOne, Trellox, and Qualys) for Endpoint Detection and Response (EDR). The committee received updates on security tool effectiveness, noting a massive increase in device installations and successful mitigation of breaches in administrative departments and research groups. However, the mandate generated faculty pushback and concerns, particularly regarding monitoring software on personal devices (BYOD) and potential conflicts with Institutional Review Board (IRB) requirements for research data protection. Enforcement of compliance, including potential access lockouts for non-compliant faculty and staff starting in June, was repeatedly discussed, along with the consequences for departments, such as covering increased cyber insurance costs or financial responsibility for breaches. Another aspect of this was how and when ITS communicated these changes. The committee urged better communication to campus partners to ensure smoother system transitions.

Artificial Intelligence (AI) adoption and governance were also central themes. Discussions included the widespread use of commercial AI platforms, with UCOP raising concerns that OpenAI and ChatGPT were violating UC data storage restrictions, potentially exposing 130,000 UC email addresses. The committee addressed efforts to consolidate fragmented AI councils across campus and explore systemwide

bargaining for AI tools. A major update was the planned integration of Google's Gemini AI tool into Canvas, set to be functionally available in the fall as an optional, opt-in feature for faculty. Separately, the committee discussed a Chair Initiative to redefine campus-wide learning outcomes, aiming to adapt five general outcomes (including information literacy, methodology, theories, and systems) and integrate them into Canvas, a project XCITE would support by updating the master course template. Other logistical updates included pending budget cuts, technical challenges in granting graduate students access to Microsoft desktop applications (targeting Fall 2025), and efforts toward digital accessibility compliance mandated by the federal government.

Respectfully Submitted,
Committee on Information Technology

**COMMITTEE ON INTERNATIONAL EDUCATION
ANNUAL REPORT TO THE RIVERSIDE DIVISION
DECEMBER 2, 2025**

To be received and placed on file:

The International Education Committee of the Academic Senate met four times during the 2024-2025 academic year. The Chair was the Systemwide International Education Committee representative and provided updates from the meetings. A member provided the Committee with an update from October 18, 2024, meeting of UCIE as the Chair was unable to attend. Two members provided the Committee with an update from March 21, 2025, meeting of UCIE as the Chair was unable to attend.

The committee discussed writing a proposal for FLEAP's to be counted as summer salary for faculty. However, both the UCEAP Faculty Director and Assistant Director, Education Abroad, noted that faculty already receive summer salaries for these programs. In addition, their accommodation, travel, flights, and partial per diem are also covered.

The committee also discussed writing a memo to the Committee on Academic Personnel to inform them of the amount of work needed from faculty to make FLEAP programs work. It was noted that there is a clear connection between FLEAP's and the Strategic Plan in terms of increasing summer revenue and courses. Jun Wang, Assistant Provost for Strategic Initiatives and Int'l Recruitment, noted that a letter has already been drafted and was given to faculty over the summer who led programs. The letter is sent to the faculty leading the program, the Department Chair, Dean and the VPAP. This letter is sent to each faculty member to include in their merit and promotion file and noted that these letters should be received before files are reviewed in the fall. The Committee asked to review the letter, and it did, making useful suggestions for additions to the letter that would address the work and academic importance of summer teaching.

Director of International Students and Scholars provided the committee with updates from his office at every meeting.

The committee had a lengthy discussion on the UCR Chancellor's agreement with the Students for Justice in Palestine (SJP) President. The agreement included a general statement about programs: "UCR will modify its approval process for all study abroad programs to ensure compliance with UC's Anti-Discriminatory Policies." The committee understands the urgency to respond but still voices an important concern that the committee as a body was not consulted when preparing the statement. As this is a matter that falls within their purview, it is important to make sure that the committee as a whole is given the opportunity to address this and other relevant issues. The committee drafted a letter to the Chancellor expressing these concerns. The memo was forwarded to Chancellor Wilcox, PEVC Watkins and Vice Chancellor for Student Affairs, Brian Haynes on September 25, 2024.

The Committee considered the following Campus and Systemwide issues on behalf of their charge of international education:

- Riverside Senate Regulation 6 Campus Graduation Requirements to Add Campus Residency Requirement - UCR SR 6.14
- Approval Process of Faculty-Led Education Abroad Programs (FLEAP) and Alignment with UCOP's Anti-Discrimination Policy

- APC Systemwide Academic Calendar Workgroup Draft Report
- 2nd Round - Approval Process of Faculty-Led Education Abroad Programs (FLEAP) and Alignment with UCOP's Anti-Discrimination Policy

The Committee's formal response to each issue is located on the Academic Senate website and can be found at: <https://senate.ucr.edu/issues>.

Respectfully submitted by the 2024-25 Committee on International Education.
<https://senate.ucr.edu/committees/14>.

COMMITTEE ON LIBRARY AND SCHOLARLY COMMUNICATION
ANNUAL REPORT TO THE RIVERSIDE DIVISION
December 2, 2025

To be received and placed on file:

The Committee on Library and Scholarly Communication (LSC) met 9 times during the 2024-2025 academic service year. During the 24-25 service year all meetings were conducted on Zoom.

Review Items and Other Consultations:

The committee reviewed and responded to the following review items:
(SR – Systemwide Review / CR – Campus Review)

1. SR. Community Input on Academic Planning Council's Systemwide Academic Calendar Workgroup Draft Report
2. SR. Proposed Revisions to Academic Personnel Manual (APM) 360, Appointment and Promotion, Librarian Series

All committee responses can be found here: <https://senate.ucr.edu/issues/archive/2024>

In addition to senate routed review items and regularly scheduled meetings, LSC worked closely with the University Librarian regarding the updates on Library construction, timeframes and student access. The committee also worked with the admin appointed search committee on the search for the new University Librarian. As this was the Committee Chair's last meeting, there was discussion and ideas circulated on how the committee can be better engaged with the faculty and students.

"Respectfully submitted by the 2024-25 committee on Library and Scholarly Communications.
<https://senate.ucr.edu/rsenate/admin/committees/15/2024/manage>

**COMMITTEE ON PHYSICAL RESOURCES PLANNING
ANNUAL REPORT TO THE RIVERSIDE DIVISION
2024-2025 ACADEMIC YEAR
DECEMBER 2, 2025**

To be received and placed on file:

The Committee on Physical Resources Planning met four times during the 2024-2025 academic year. The Committee revised and approved a new Conflict of interest statement and adjusted the Committee meeting schedule to a monthly standing meeting dependent on Committee needs.

The Committee continued discussion representation for new building committees, and solidified the most effective timing for faculty representation in building projects. In addition to conferring regarding building placement, committee discussions established Professor Collins as the Computer and Data Science Instructional Building Working Group meeting representative for the Committee. Other Committee members will be assigned to building projects as they arise.

Vice Chancellor of Planning, Budget, and Administration Gerry Bomotti presented updates on several UCR Capital Projects. These projects included the Batchelor Hall Renovation, North District Phase 2, Undergraduate Teaching and Learning Facility (UTLF), OASIS Park. The Computer and Data Science Instructional Building is in the active planning stage. Upcoming projects include the HUB Expansion Study, Agricultural Research, Education, and Neighborhood Advancement Center (ARENA), and North District Phase 3.

Vice Chancellor of Planning, Budget, and Administration Gerry Bomotti and Assistant Vice Chancellor and Campus Architect Jacqueline Norman returned to the Committee to present updates on expansions for the UCR run medical facilities to support the School of Medicine, the future of the campus budget, Capital projects, deferred maintenance and current and future building projects on campus.

The Committee appreciates the communicativeness and promptness of Vice Chancellor of Planning, Budget Gerry Bomotti, his willingness to consistently engage with PRP on building matters on campus, and is thankful for his collaboration during his tenure on campus.

The Committee met with a representative from the UC Riverside Graduate Student Association regarding requests for specialty water access on campus. Details of the meeting can be found in the May 5 Meeting Agenda.

The Committee has proposed a bylaw revision to clarify the selection criteria for Committee membership.

The ongoing collaboration with campus administration and commitment to transparency and faculty representation will continue to be priorities in the coming year. The Committee is looking forward to ongoing leadership from the current Chair.

Bylaw/Regulation Items

The Committee received or reviewed the following Legislative Campus Review Requests:

- 2nd Round-Transparency in Establishment and Operations of Centers
- UCR Interim Policies Related to Expressive Activities on Campus (700-20, 700-50, and 700-70)
- APC Systemwide Academic Calendar Workgroup Draft Report
- Proposed New Presidential Policy on High-Containment Research 04/30/2025
- Proposed Initiative for UCR 2030: Increase the enrollment of California resident undergraduates

The Committee's formal response to each issue is located on the Academic Senate website and can be found at: <https://senate.ucr.edu/issues>.

Respectfully Submitted,

2024 – 2025 Committee on Physical Resources Planning

https://senate.ucr.edu/rsenate/committee/previous_membership/16

COMMITTEE ON PLANNING AND BUDGET (CPB)
ANNUAL REPORT TO THE RIVERSIDE DIVISION
December 2, 2025

To be received and placed on file:

From September 1, 2024 to August 31, 2025, the Committee on Planning & Budget (CPB) met a total of 20 times, with a typical meeting length of 1.5 to 2 hours.

a. Review Items

In keeping with its charge to opine on matters pertaining to planning and budget, CPB formally discussed and considered the following items received for Campus and Systemwide review.

Campus Review

- *2nd Round-Transparency in Establishment and Operations of Centers*
- *2nd Round - Proposed Changes to Appendix 7 – Procedures for the Transfer, Consolidation, Disestablishment, or Discontinuance of Academic Programs and Academic Units (TCDD)*
- *6th Round - Online Master of Business Administration (OMBA-SSGPDP)*
- *Negotiated Salary Program (NSP) Campus Procedures Review for 25-26 AY Implementation*
- *Approval Process of Faculty-Led Education Abroad Programs (FLEAP) and Alignment with UCOP's Anti-Discrimination Policy*
- *2nd Round - Approval Process of Faculty-Led Education Abroad Programs (FLEAP) and Alignment with UCOP's Anti-Discrimination Policy*
- *Bachelor of Science + Master of Science in Mathematics (Applied) Five Year (4+1) Combined-Degree Program*
- *Combined Data Science B.S. + Statistics M.S. Program*
- *Bachelor of Science (B.S.) in Computer Science Applications (CSA)*
- *Minor in Geospatial Analysis (GIS)*
- *Proposed Initiative for UCR 2030: Increase the enrollment of California resident undergraduates*
- *Report from the Ad Hoc Coordinating Committee on General Education (CCGE)*
- *Revision of Retention Processes at UCR (2025)*
- *IR/OR Rebalancing/Changes & FTE Transfers/Changes*

Systemwide Review

- *Proposed Revisions to APM - 675, Veterinary Medicine Salary Administration*
- *APC Systemwide Academic Calendar Workgroup Draft Report*
- *Presidential Policy BFB - BUS-63: Risk Transfer and Insurance Requirements*
- *Proposed Revisions to Academic Personnel Manual (APM) 230, Visiting Appointments*

b. Discussions with Campus Leadership

In accordance with its charge to confer with the Chancellor, the Executive Vice Chancellor and Provost, and campus administrative units on matters of planning, budget, and resource allocations, CPB met with the following members of campus leadership:

- Executive Vice Chancellor and Provost
- Vice Chancellor for Planning, Budget, and Administration
- Vice Chancellor for Research and Economic Development
- Vice Provost and Dean of Graduate Studies
- Bourns College of Engineering (BCOE) Dean
- College of Humanities, Arts, and Social Sciences (CHASS) Dean
- College of Natural and Agricultural Sciences (CNAS) Dean
- School of Business (BUS) Dean
- School of Education (SOE) Dean
- School of Medicine (SOM) Dean
- CEO of UCR Health
- School of Public Policy (SPP) Dean
- Director of Emergency Management
- Graduate Council Chair and Vice Chair
- Faculty Executive Committee (FEC) Chairs from: SOBA, BCOE, CHASS, CNAS, SOM and SPP

Additionally, the CPB Chair attended monthly meetings of the Campus Finance Committee (CFC).

c. Systemwide Representation of CPB

Recognizing CPB's charge to represent the Division on matters concerning the distribution of resources, the CPB Chair attended and represented UCR's CPB at monthly meetings of the UC Committee on Planning and Budget (UCPB), which discusses and acts on systemwide budgetary, planning, and resource allocation issues.

d. Faculty Forum on the Budget

Given its duty to confer and advise on matters of short- and long-term planning, budget and resource allocation, which may include the initiation of studies and other activities, CPB organized a Faculty Forum on the Budget. 140 UCR faculty members, including deans and other campus administrators, attended the forum, which responded to simultaneous budget challenges associated with the California State budget, reductions in federal funding for research, and the increasing costs of financial support for graduate students.

The forum included a detailed budget overview, an extended Q&A with committee members, the Vice Chancellor for Planning, Budget and Administration (VCPBA) and her staff, and small group discussions on: *protecting* UCR's core teaching and research mission, opportunities for *financial flexibility*, brainstorming about alternative sources of *revenue*, and best practices for *communicating* budget and finance information on campus. Discussions underscored faculty desire for ongoing transparency around budget and finance issues, and opportunities for consultation. Faculty additionally expressed support for greater collaboration across academic units and other organizations to increase financial efficiency, instructional goals, and research productivity. Though many faculty indicated that they were not sufficiently informed to opine on

specific elements of the campus budget, results of a short survey on campus budget priorities indicate that faculty would prioritize: academic salaries and benefits, student health and financial aid, international affairs, and internal sources of research funding. Survey results also suggest that faculty might be more flexible around: funding for athletics, the Palm Desert campus, campus police, new buildings, University Extension, administrator salaries and benefits, and transportation and parking services.

In response to the forum, the VCPBA committed to launching a quarterly budget newsletter directed at faculty, and the Provost invited the entire CPB (for the 2025-26 AY) to attend the first meeting of the Campus Finance Committee. This meeting conventionally includes introductions of campus leadership and an overview of the campus budget.

Respectfully submitted by the [2024/25 Committee on Planning and Budget.](#)

**COMMITTEE ON PREPARATORY EDUCATION
ANNUAL REPORT TO THE DIVISION
DECEMBER 2, 2025**

To be received and placed on file:

The Committee on Preparatory Education met three times during the 2024-2025 academic year.

The Riverside Division of the Committee on Preparatory Education was represented on the University-wide Committee on Preparatory Education (UCOPE) by the Committee Chair. The Committee was updated by the Chair at each meeting about issues under discussion at the Systemwide level.

The Committee undertook its regular review of the Entry Level Writing Requirement (ELWR) program. The committee had several lengthy discussions and requested more data within the report (related to ELWR fulfillment, placement process, ELWR course availability, placement rationale, retention and time-to-degree, and effectiveness of preparatory education) all which were addressed in the report. The Associate Director of the University Writing Program and *ex officio* member of the Committee provided the Committee with an overview of the program and presented a report documenting the outcomes of the program for the 2023-2024 academic year. The report documented that 60% of entering freshmen at UCR had satisfied the ELWR before registering as full-time students. The remaining 40% of entering freshmen placed in entry-level writing courses and the great majority made good progress once they arrived at UCR. The committee agreed to approve the report as written and submit for inclusion on the February 25, 2025, Winter Division meeting agenda.

The Committee drafted language to forward to Institutional Research for a data request to gather additional data pertaining to time to degree (for students starting in different writing courses) and transfer courses before matriculation as these courses relate to writing. The memo requested they provide information to the University Writing Program (UWP) about time to graduation for students placed into the various ELWR courses: Basic Writing 001 (Soon to be Writing 001), Basic Writing 003 (soon to be Writing 005 five students), English 004 (soon to be Writing 007), and English 001 PA (Soon to be Writing 009) with a comparison to those students who began the composition sequence at the same time in the standard required first-year writing classes: English 1A (soon to be Writing 010), English 1B (soon to be Writing 20), and English 30 (Soon to be Writing 30). This request for data is a priority for the university as this will help the UWP to understand how students are progressing through these series of courses and what effects, if any, starting in entry level writing courses has on time to graduation.

The Committee also requested that Institutional Research provide information to the University Writing Program about grade point averages for English 1B (soon to be Writing 020) students who were given credit for taking a community college course that satisfies English 1A (soon to be Writing 010) with a comparison to grade point averages in English 01B (soon to be Writing 020) for those students who took English 1A without such credit and were initially enrolled in English 01A (soon to be Writing 010). This request for data is a priority for the university.

The Committee undertook its first review of Math Placement data to be reported to the Division. The committee reviewed the report from the Math department and agreed to approve the report as written and submit for inclusion on the February 25, 2025, Winter Division meeting agenda.

The committee readdressed the enrollment increase for Fall 2025 and noted that UCR should anticipate much more need for entry level writing and math courses.

The Committee considered the following Campus and Systemwide issues on behalf of their charge of preparatory education:

- Proposed Revisions to Senate Regulation 479 - California General Education Transfer Curriculum (CalGETC)
- Proposed Revisions to Senate Bylaw 170 and Rescission of Senate Bylaw 192
- APC Systemwide Academic Calendar Workgroup Draft Report
- Proposed Initiative for UCR 2030: Increase the enrollment of California resident undergraduates

The Committee's formal response to each issue is located on the Academic Senate website and can be found at: <https://senate.ucr.edu/issues>.

Respectfully submitted by the 2024-25 Committee on Preparatory Education.
<https://senate.ucr.edu/committees/18>.

COMMITTEE ON PRIVILEGE AND TENURE
ANNUAL REPORT TO THE RIVERSIDE DIVISION
December 2, 2025

To be received and placed on file:

The primary function of the Committee on Privilege and Tenure is to consider grievances brought by members of the Academic Senate and disciplinary charges brought by the administration against members of the Academic Senate. Details of all grievances, charges, and cases are confidential. The Committee may also be asked to opine on proposed revisions to Bylaws and Regulations which may be related to the charge of the committee.

The Committee on Privilege and Tenure met nine times and the following is a summary of Committee activities during the 2023-24 academic year:

- P&T received seven new grievance cases in addition to one carry-over from AY23-24.
 - Four cases did not meet prima facie and were dismissed.
 - Three cases met prima facie, but were not found to have sufficient reason and were dismissed prior to the hearing stage.
- P&T received four new disciplinary cases.
 - In two cases, the Hearing Committee completed the adjudication process with the Chancellor's final decision being in agreement with the Committee's recommendations.
 - One case was withdrawn by the Administration prior to the start of the hearing.
 - One case remains ongoing, pending finalization of a negotiated resolution.
- Two disciplinary hearings were continued from AY23-24.
 - One hearing was completed with the Hearing Committee not finding good cause for early termination, however the Chancellor's final decision was dismissal.
 - One hearing remains ongoing with multiple continuances granted due to Respondent's leave status. Hearing proceedings will resume in early fall quarter.
- P&T proposed a change to its committee bylaws to be in concordance with the Systemwide Gender Recognition and Lived Name Policy; align committee bylaws with membership practices reflecting increased workload; addition of ex-officio language to align with bylaws of the Committee on Academic Freedom; allow committee to appoint additional members to serve on hearing panels for the purpose of being designated among the current membership of P&T per SBL 3.3.6, SBL 3.3.5 regarding hearing procedures. The proposal remains under Senate review.
- Policy Recommendations considered by P&T include the following reviews:
 - [Campus Review] Interim Policy: UCR Interim Policies Related to Expressive Activities on Campus (700-20, 700-50, and 700-70)

- [Systemwide Review] Proposed Revisions to Academic Personnel Manual (APM): Proposed Revisions to APM - 036, General University Policy Regarding Academic Appointees/Employment
- [Systemwide Review] Report Review: APC Systemwide Academic Calendar Workgroup Draft Report
- [Systemwide Review] APM Revision: Revised Distribution re: Proposed Revisions to APM Section 500, Recruitment - General

The Committee's formal response to each issue is located on the Academic Senate website and can be found at: <https://senate.ucr.edu/issues>

P&T continued its active participation on the system-wide University Committee on Privilege and Tenure (UCPT). The 2024-25 P&T representative was Louis Santiago, who updated committee members of the issues under discussion at the statewide level.

Respectfully submitted by the 2024-25 Committee on Privilege and Tenure -
<https://senate.ucr.edu/committees/19>

**COMMITTEE ON RESEARCH
ANNUAL REPORT TO THE RIVERSIDE DIVISION
December 2, 2025**

To be received and placed on file:

Overview:

During the 2024-2025 academic year, the Committee on Research (CoR) met five times. The Committee reviewed and readopted the prior year's Conflict of Interest Statement.

Review Items and Other Consultation:

2ndRd.ResCtrsTransparency

The committee on research reviewed the proposal and had no comments.

Proposed Revisions to APM - 036, General University Policy Regarding Academic Appointees/Employment

The committee on research reviewed the proposed revisions and had no comments.

Presidential Policy on the Use of Animals in Research, Teaching, and Testing

The committee on research reviewed the proposal and had no comments.

Proposed Presidential Policy on Dual Use Research of Concern and Pathogens with Enhanced Pandemic Potential

The committee on research reviewed the proposed policy and had no comments.

APC Systemwide Academic Calendar Workgroup Draft Report

The committee on research reviewed the report and agreed that given the financial challenges systemwide and discussion from the systemwide committee on research that the common calendar proposal likely will not be pursued.

Presidential Policy BFB - BUS-63: Risk Transfer and Insurance Requirements

The committee on research reviewed the policy and felt that it could be beneficial to further review the exceptions and vendors that fall in this category.

Proposed New Presidential Policy on High-Containment Research

The committee on research reviewed the policy and believe the policy is a good idea to help harmonize the discrepancies between similar facilities.

In addition to review items the committee discussed the campuses financial situation and its impact on research. The committee noted that STEM disciplines might not be impacted as severely compared to humanities. The committee also deliberated on the severe potential

impact of changes to the Indirect Cost Recovery (ICR), noting that if the ICR were cut down to 15%, UCR would stand to lose \$10 million a year. The CoR looked for ways to request more transparency regarding the indirect cost recovery process. The committee also extensively discussed the impact of the federal grant on grant applications that contained specific “banned words”.

Grant Applications

CoR’s primary activity is to administer intramural grant competitions. The committee further clarified the applications guidelines, spending limitations and adjusted the scoring criteria to be more standardized and transparent about the overall review process. Additionally, due to COVID travel restrictions and research impacts the committee offered as needed extensions and additional funding exceptions to help faculty. A major change this year was to combine the omnibus grant applications to streamline the submission. The committee also adjusted the funding range of CoR, RFF and RFD to grant funds to everyone who applied but also reward those who achieved better review scores.

Research Grant Applications received for 2025-2026 funding included:

Total Applications: 519

Total Funded Applications: 492

Grant Type + Scoring Breakdown: (Total Funded / Total Received)

- Omnibus Research and Travel Combined = (402/428) - \$620
- CoR (54/54)
 - o \$8500 (1)
 - o \$6300 (5)
 - o \$5500 (3)
 - o \$4000 (15)
 - o \$3000 (12)
 - o \$2000 (7)
 - o \$1000 (1)
- Regent Faculty Development (10/10)
 - o \$8500 (1)
 - o \$6300 (2)
 - o \$5500 (3)
 - o \$4000 (1)
 - o \$3000 (1)
 - o \$2000 (1)
- Regent Faculty Fellowship (16/20)
 - o \$8500 (2)
 - o \$6300 (8)
 - o \$6000 (5)
 - o \$5500 (2)
 - o \$2000 (2)

- \$1000 (2)

*Omnibus recipients who receive a grant of \$5000 or more do not receive the travel funding

Total Research funds awarded for 2024-25 was \$608,240.

Respectfully Submitted,
Committee on Research

**COMMITTEE ON RULES AND JURISDICTION
ANNUAL REPORT TO THE RIVERSIDE DIVISION
DECEMBER 2, 2025**

To be received and placed on file:

The Committee on Rules and Jurisdiction conducted its work via email. Following is a summary of Committee activities from September 1, 2024, to August 31, 2025. The first item of business discussed by the Committee was to reaffirm its policy on Conflicts of Interest.

In keeping with the charge to review legislation submitted for adoption, the Committee considered the Regulations, Bylaws, and Policies below:

1. 2nd Round - Revisions to the School of Education Regulations 01 to 04.01.01
2. Riverside Senate Regulation 6 Campus Graduation Requirements to Add Campus Residency Requirement - UCR SR 6.14
3. 2nd Round - Proposed Changes to Appendix 7 – Procedures for the Transfer, Consolidation, Disestablishment, or Discontinuance of Academic Programs and Academic Units (TCDD)
4. UCR Regulation 1 - Grading System
5. UCR Bylaw 8.2.2 General Provisions: Annual Reports
6. UCR Bylaw 01 through 1.03: Gender Recognition and Lived Name
7. UCR Bylaw 09 through 09.05: Gender Recognition and Lived Name
8. Bylaw 02.02 through 02.02.08: Gender Recognition and Lived Name
9. Faculty Research Lecturer Committee Bylaw 08.13.02: Gender Recognition and Lived Name
10. Undergraduate Admissions Committee Bylaw 08.23.01: Gender Recognition and Lived Name
11. Committee on Committees Bylaw 08.08 – 08.08.07: Gender Recognition and Lived Name, Service Permissions, & Name Correction
12. Faculty Welfare Committee Bylaw 08.26 through 08.26.02: Membership Update
13. BCOE Bylaws 02.01.01 through 04.01.02.08: Gender Recognition and Lived Name Policy
14. CNAS Bylaws 02.01.01 through 02.01.05: Gender Recognition and Lived Name Policy
15. BUS Bylaw 02.01.01 through 04.01.02.08: Gender Recognition and Lived Name Policy
16. SOM Bylaw 03 through 03.01.03: Gender Recognition and Lived Name Policy
17. CHASS Bylaw 02.01.01 through 02.01.04: Gender Recognition and Lived Name Policy
18. SPP Bylaw 01 through 02.01.04: Gender Recognition and Lived Name Policy

19. Committee on Privilege and Tenure Bylaws Bylaw 08.19 through 08.19.02: Lived Name Policy, Committee Membership & Ex-officio Service
20. Proposed Changes to Charge of the Committee on Diversity, Equity & Inclusion Bylaw 8.6.1
21. UCR Registrar's Implementation of UCR Senate Regulation 6.14 (UCR SR 6.14) - 35 Units In Residence Requirement
22. Proposed Revisions to Senate Bylaw 170 and Rescission of Senate Bylaw 192
23. 2nd Round - UCR Regulation 1 - Grading System
24. APC Systemwide Academic Calendar Workgroup Draft Report
25. RESCINDED BY PROPONENT: CHASS Regulation 3.1.4 - Senior Residence
26. Proposed Changes to UCR Regulations 06.01, 06.01.01, 06.01.02.02 - Campus Graduation Requirements (ENGL to WRIT)

The above review items can be reviewed on the Senate website and can be found at: <https://senate.ucr.edu/issues>.

In addition to the above, the Committee is often asked to respond to informal requests from members, officers, or committees of the Division for information regarding the Code of the Academic Senate or the legislation of the Division. To that end, the Committee responded to the following request for advice or ruling:

- Advice – Decline to Act Ballot Option Count
- Consultation – Review of Files for the Division of Undergraduate Education
- Advice – Grade Appeal
- Advice – Changes to Riverside Senate Regulation 6.14

Respectfully submitted on behalf of the Committee on Rules and Jurisdiction,

The 2024-2025 Members of the Committee on Rules and Jurisdiction.

For membership see link: https://senate.ucr.edu/rsenate/committee/previous_membership/21

**COMMITTEE ON SCHOLARSHIPS AND HONORS
ANNUAL REPORT TO THE RIVERSIDE DIVISION
DECEMBER 2, 2025**

To be received and placed on file:

The Committee on Scholarships and Honors met on March 18, 2025, via Zoom, to discuss the candidates for the Chancellor's Awards for Excellence in Undergraduate Research and Creative Achievement. The committee submitted to the Division the nomination of Professor Marek Chrobak, from the Department of Computer Science & Engineering, and Assistant Professor Miguel Arratia, from the Department of Physics & Astronomy for the 2024-2025 Faculty Chancellor's award.

The committee also selected Sarah Howick and Shane Levin, both from the Department of Physics & Astronomy as the student recipients of the 2024-2025 Chancellor's Awards. The nominations were approved at the May 20, 2025, meeting of the Riverside Division of the Academic Senate.

In addition, the committee also discussed tentative changes to the required documents to meet the nomination requirements, such as an unofficial copy of transcripts for student nominees.

Respectfully submitted by the 2024-25 committee on Scholarships and Honors.
<https://senate.ucr.edu/rsenate/admin/committees/22/2024/manage>

**COMMITTEE ON UNDERGRADUATE ADMISSIONS
ANNUAL REPORT TO THE RIVERSIDE DIVISION
DECEMBER 2, 2025**

To be received and placed on file:

The Committee on Undergraduate Admissions (UAC) met 6 times during the 2024-2025 academic year.

The Chair represented the Committee on Executive Council.

The Riverside Division of the Committee on Undergraduate Admissions was represented on the Systemwide Board of Admissions and Relations with Schools (BOARS) by a member of the committee. BOARS held 10 meetings during the 2024-2025 academic year. The BOARS reps updated Committee members at each meeting on the issues discussed at the UC System-level and also served as an ex officio member of the Committee on Preparatory Education.

The Associate Vice Chancellor for Enrollment Services and Director of Undergraduate Admissions updated the Committee at each meeting on the Fall 2025 Freshmen admissions cycle and Winter 2025 transfer admissions cycles and other issues of note from the Office of Undergraduate Admissions. Assistant Vice Chancellor for Institutional Research provided the Committee with information about models for tracking admissions and provided consultation at meetings when data was reviewed.

The Committee reviewed and discussed the UC Eligibility Areas Proposal from BOARS. UCR's BOARS representative will provide BOARS with the committee's feedback.

The Committee considered the following Campus issues on behalf of their charge of undergraduate admissions:

- Proposed Revisions to Senate Regulation 479 - California General Education Transfer Curriculum (CalGETC)
- APC Systemwide Academic Calendar Workgroup Draft Report
- Proposed Initiative for UCR 2030: Increase the enrollment of California resident undergraduates

The Committee's formal response to each issue is located on the Academic Senate website and can be found at: <https://senate.ucr.edu/issues>.

Respectfully submitted by the 2024-25 Committee on Undergraduate Admissions.
<https://senate.ucr.edu/committees/23>.

**COMMITTEE ON UNIVERSITY EXTENSION
ANNUAL REPORT TO THE RIVERSIDE DIVISION
DECEMBER 2, 2025**

To be received and placed on file:

The Committee on University Extension met three times this Academic Year and conducted a virtual review of proposals through email in June 2025. This academic year the Committee examined and approved 327 course and instructor proposals in the X300-400 series. The Committee also approved 15 proposals for extension certificates and diplomas.

The Committee considered the Academic Planning Council's Systemwide Academic Calendar Workgroup Draft Report and provided a response based on their charge of University Extension. The Committee's formal response to this issue is located on the Academic Senate website and can be found at: <https://senate.ucr.edu/issues>.

The Committee consulted with the Dean of University of Extension at each meeting and provided recommendations for academic programs offered at University Extension.

The Committee would like to commend University Extension for their continuing efforts to expand offerings in new directions, and for the high quality of all programs. The Committee would like to thank the Dean of University Extension, the University Extension Director of Academic Quality, Integrity, and Assessment, and University Extension Academic Quality, Integrity, and Assessment Assistant Director for an excellent job in presenting the best candidates for review and approval by the Committee and for promptly providing additional information for proposals as requested.

Respectfully submitted by the 2024-2025 Committee on University Extension
(<https://senate.ucr.edu/committees/24>).

**EXECUTIVE COMMITTEE
COLLEGE OF ENGINEERING
ANNUAL REPORT TO THE RIVERSIDE DIVISION**

The Executive Committee of the College of Engineering met 9 times during the 24-25 academic year.

1. Course Proposals

41 New or Changes, 0 Deletions, 0 Restored

BIEN: 002, 003, 112
CEE: 146, 207, 246
CHE: 100, 131
CS: 009A, 009B, 010A, 010B, 042, 061, 106, 108, 120B, 163, 172, 173, 181, ENGR 180W
EE: 134, 148, 258, 268, 269; ENGR 181W
ME: 001LA, 001LB, 148, 170B, 234, 248
MSE: 001, 002A, 002B, 002C, 110, 120, 146

2. Program Changes

BS Programs (4)	MS/PHD Programs (1)
○ Proposal for Computer Science Applications ○ MSE Program Change ○ EE program changes ○ Robotics BS/MS Cover Letter and Program Change	○ Master of Science in Computational Data Science

3. Senate Items: Campus and Systemwide Request for Feedback on Issues

Campus Requests:

- Approval Process of Faculty-Led Education Abroad Programs (FLEAP) and Alignment with UCOP's Anti-Discrimination Policy
- Report from the Ad Hoc Coordinating Committee on General Education (CCGE)
- Policy for Archiving Canvas Courses
- Approval Process for Study Abroad Programs
- Summer Maximum Capacity Proposal
- Implementation of UCR SR 6.14

- Proposed changes to Regulation 1 – Grading System
- Combined Data Science BS+STAT MS Program Proposal
- Interim Policies Related to Expressive Activities on Campus, due 10/31/2024
- Grading System, due 11/01/2024
- Proposed Changes to Appendix 7 – Procedures for the Transfer, Consolidation, Disestablishment, or Discontinuance of Academic Programs and Academic Units (TCDD)
- Negotiated Salary Program Campus Procedure 25-26
- Approval Process of Faculty-Led Education Abroad Programs (FLEAP) and Alignment with UCOP's Anti-Discrimination Policy
- Report from the Ad Hoc Coordinating Committee on General Education (CCGE) Policy for Archiving Canvas Courses

Systemwide Requests

- Systemwide Review of Proposed New Presidential Policy on HighContainment Research,
- Systemwide Review of Proposed Revisions to the Academic Personnel Manual (APM) Section 036, General University Policy Regarding Academic Appointees/Employment
- Systemwide Review of Proposed Revisions to Academic Personnel Manual (APM) Section 500, Recruitment - General
- Systemwide Senate Review of Proposed Revisions to Senate Bylaw 170 and Rescission of Senate Bylaw 192
- Systemwide Review of Proposed New Presidential Policy on HighContainment Research
- Systemwide Review of Proposed Presidential Policy BFB - BUS-63: Risk Transfer and Insurance Requirements
- Systemwide Senate Review of Proposed Revisions to Senate Regulation 47
- Systemwide Review of Proposed Presidential Policy on Dual Use Research of Concern and Pathogens with Enhanced Pandemic Potential

4. Student Petitions to Executive Committee

None were received

5. Bachelors of Science Degrees Conferred

<i>COUNTA of Major</i>	<i>Graduation Term</i>					
<i>Major</i>	202440	202520	202510	202520	202530	Grand Total
Bioengineering	5	1	3	66	3	78
Bioengineering BS + MS				13	2	15
Chemical Engineering	1		2	40	7	50
Chemical Engineering BS + MS				6		6
Computer Engineering	9		8	15	1	33
Computer Engineering BS + MS	1		1	12		14
Computer Sci Bus Apps BS + MS	1		1	1		3
Computer Sci/Bus Applications	8		5	37	10	60
Computer Science	35		42	86	23	186
Computer Science BS + MS	18		12	38	8	76
Data Science	11		3	14	11	39
Electrical Engineering	9		14	34	4	61
Electrical Engineering BS + MS			1	11		12
Environmental Engineering	1			13		14
Environmental Engr BS + MS				5		5
Materials Science and Engineer	5			7		12
Mechanical Engineering	5		48	59	6	118
Mechanical Engineering BS + MS				7		7
Robotics			1		1	2
Grand Total	109	1	141	464	76	791

6. Honors at Graduation

COUNTA of Institutional Honors	Graduation Term					
Institutional Honors	202440	202520	202510	202520	202530	Grand Total
	0	0	0	0	0	0
With High Honors	9		10	18	3	40
With Highest Honors			2	9	1	12
With Honors	11		7	44	6	68
Grand Total	20	0	19	71	10	120

7. Academic Notice and Academic Discontinuation

	Fall 2024	Winter 2025	Spring 2025
Academic Notice	370	320	363
Academic Discontinuation	72	44	26

Committee Members

Chair, Victor Rodgers

Vice-Chair, Nanpeng Eric Yu, ECE rep.

Zhijia Zhao, CSE rep.

Yujie Men, CEE rep.

Hideaki Tsutsui, ME rep., Parliamentarian

Valentine Vulluv, BIEN rep.

Kadangode K. Ramakrishnan, Member at Large

Chris Lynch, Dean

Matt Barth, Asso. Dean, Graduate Education & Research

Huinan Lui, Associate Dean, Undergraduate Student Affairs

Staff Support

Rod Smith, Director, Student Academic Affairs

EXECUTIVE COMMITTEE
COLLEGE OF HUMANITIES, ARTS, AND SOCIAL SCIENCES
ANNUAL REPORT TO THE RIVERSIDE DIVISION

December 2, 2025

To be received and placed on file:

The Executive Committee of the College of Humanities, Arts, and Social Sciences met 12 times during the 2024-25 academic year.

1. Course Proposals

New courses	40	Courses changed	121
New E-Z segments	16	Courses discontinued	64
Professional courses	2	Priority Enrollment	2
Courses restored	1	Split	2
NOFY	34	Graduate Courses	13
Merge	0		

2. Majors

The Faculty approved the following new majors: NONE

The Faculty approved the following new curriculum: Black Study

The Executive Committee approved changes in the following majors: Administrative Studies; Anthropology (BA/BS); Art; Art History/Administrative Studies; Economics/Administrative Studies; Environmental Studies; Global and Community Health; Global Studies; History; History/Administrative Studies; Music; Music and Culture Major; Neuroscience; Political Science/Administrative Studies; Religious Studies/Administrative Studies; Sociology/Administrative Studies (BA/BS)

3. Minors

The Faculty approved the following new curriculum: Black Study

The Faculty approved the following new minors: NONE

The Executive Committee approved changes in the following minors: Environmental Studies; Global and Community Health; Labor Studies; Music; Neuroscience

The Executive Committee approved the moratorium for the following minor: Peace & Conflict minor (PCST)

4. Departments

The Executive Committee reviewed and approved the name change from “Department of Psychology” to the “Department of Psychological and Brain Sciences.”

5. Program, Department, and Breadth Reviews:

The committee reviewed and commented on Revising the Executive Committee Bylaws re: Executive Committee Membership

The committee reviewed and approved lower division Black Study courses to be used toward breadth (BLKS 024)

The committee reviewed and approved the Maimonides Endowed Chair in Jewish Studies for a Five-year Reappointment.

The committee reviewed and commented on SOE Breadth request

The committee reviewed and approved CHASS Award Revisions: Reviewed and revised Award calls and parameters

The committee reviewed and approved lower division courses to be used toward breadth (GNBT 010)

The committee reviewed and approved Faculty Awards (2024-25) - CHASS Teaching Award and the CHASS Faculty Excellence in Research and/or Creative Activities Award

The committee reviewed and approved lower division courses to be used toward breadth (LABR 002 and LABR 002S)

The committee reviewed, made recommendations, and approved the Program Committee Roster in the College of Humanities, Arts, and Social Sciences

6. Regulations and Bylaws

The committee approved the following **new** College Regulation: NONE

The committee approved the following **new** College Bylaw: NONE

The committee approved the following College Regulation changes: NONE

The committee approved the following College Bylaw changes: CHASS Bylaw 02.01.01 through 02.01.04: Gender Recognition and Lived Name Policy

Campus

The committee commented on and approved the following Campus Regulation: Regulation Change: 2nd Round - UCR Regulation 1 - Grading System

The committee commented and approved the following Campus Regulation: UCR Registrar's Implementation of UCR Senate Regulation 6.14 (UCR SR 6.14) - 35 Units In Residence Requirement

The committee commented and provided feedback the following Campus Regulation: Proposed Regulation Change: Riverside Senate Regulation 6 Campus Graduation Requirements to Add Campus Residency Requirement - UCR SR 6.14

The committee approved the following Campus Bylaw: Proposal: Proposed Revisions to Senate Bylaw 170 and Rescission of Senate Bylaw 192

7. Executive Committee Business and Review

The committee reviewed and commented on the [CR] Proposal: Course Approval Workflow - Division of Undergraduate Education

The committee reviewed and commented on the [SR] Proposed Regulation Revision: Proposed Revisions to Senate Regulation 479 - California General Education Transfer Curriculum (CalGETC)

The committee reviewed and commented on the [SR] Proposed Regulations: New Senate Regulation 627 (Posthumous Awarding of Degrees)

The committee reviewed and commented on the [CR] Consultation: 2nd Round-Transparency in Establishment and Operations of Centers

The committee reviewed and commented on the [CR] Interim Policy: UCR Interim Policies Related to Expressive Activities on Campus (700-20, 700-50, and 700-70)

The committee reviewed and commented on the [CR] Regulation Change: UCR Regulation 1 - Grading System

The committee reviewed and approved the Potential Local Implementation of UC Senate Regulation 479 – Transfer Curriculum (Cal-GETC)

The committee reviewed and commented on the [CR] Proposal: 2nd Round - Proposed Changes to Appendix 7 – Procedures for the Transfer, Consolidation, Disestablishment, or Discontinuance of Academic Programs and Academic Units (TCDD)

The committee reviewed and commented on the [CR] Proposal: Negotiated Salary Program (NSP) Campus Procedures Review for 25-26 AY Implementation

The committee reviewed and commented on the [Outcome of Senate Review] Proposed Changes to Riverside Senate Regulation 6 - Campus Graduation Requirements to Add Campus Residency Requirement (UCR SR 6.14)

The committee reviewed and commented on the [SR] Proposed Policy: Presidential Policy on the Use of Animals in Research, Teaching, and Testing

The committee reviewed and commented on the [CR] (Proposal) 2nd Round - Course Approval Workflow - Division of Undergraduate Education (Expedited Review)

The committee reviewed and commented on the [CR] (Consultation) Approval Process of Faculty-Led Education Abroad Programs (FLEAP) and Alignment with UCOP's Anti-Discrimination Policy

The committee reviewed and commented on the [SR] (Proposed Policy) (Systemwide Senate Review) Proposed Presidential Policy on Dual Use Research of Concern and Pathogens with Enhanced Pandemic Potential

The committee reviewed and commented on the Deadline for UC Cyber Security Mandate compliance May 28, 2025

The committee reviewed and commented on the [SR] Proposed Revisions to Academic Personnel Manual (APM): Proposed Revisions to APM - 036, General University Policy Regarding Academic Appointees/Employment

The committee reviewed and commented on the [CR] Proposal: Summer Maximum Capacity Proposal

The committee reviewed and commented on the [SR] Proposed Revisions to Policy: Presidential Policy BFB - BUS-63: Risk Transfer and Insurance Requirements

The committee reviewed and commented on the [SR] Proposed Policy: Proposed New Presidential Policy on High-Containment Research

The committee reviewed and commented on the [SR] APM Revision: Revised Distribution re: Proposed Revisions to APM Section 500, Recruitment – General

The committee reviewed and commented on the [SR] Report Review: APC Systemwide Academic Calendar Workgroup Draft Report

The committee reviewed and commented on the [CR] Consultation: Proposed Initiative for UCR 2030: Increase the enrollment of California resident undergraduates

The committee reviewed and commented on the [CR] Report Review: Report from the Ad Hoc Coordinating Committee on General Education (CCGE)

The committee reviewed and commented on the [CR] Proposed Policy: Policy for Archiving Canvas Courses

The committee reviewed and commented on the [SR] APM Revision: Proposed Revisions to APM - 360, Librarian Series

The committee reviewed and commented on the [SR] Proposal: Proposed Revisions to Academic Personnel Manual (APM) 230, Visiting Appointments

The committee reviewed and commented on the [CR] (Consultation): Revision of Retention Processes at UCR (2025)

8. Student Petitions

1—Grade appeal

1—Request for Certificate of Attendance

9. College Awards

2—CHASS Faculty Excellence and/or Creative Activities Award (Approved Name Change)

2—CHASS-Teaching Award

0—CHASS Faculty Award for Community Engagement Award (Approved Name Change)

10. Scholarship Decisions

Degrees Awarded

B.A. end of Summer Session 2024	458
B.S. end of Summer Session 2024	25
B.A. end of Fall Quarter 2024	198
B.S. end of Fall Quarter 2024	8
B.A. end of Winter Quarter 2025	250
B.S. end of Winter Quarter 2025	14
B.A. end of Spring Quarter 2025	1471
B.S. end of Spring Quarter 2025	32

11. Students/Academic Action Summer 2024 Fall 2024 Winter2025 Spring 2025

Subject to Dismissal	218	716	815	714
Dismissed	28	31	5	133
Academic Notice	85	379	436	359
ELWR Lapse	4	44	1	52

12. Honors at Graduation Cum Laude Magna Cum Laude Summa Cum Laude

Summer Session 2024	21	7	2
Fall Quarter 2024	16	3	1
Winter Quarter 2025	20	7	4
Spring Quarter 2025	152	65	30

2024-25 Executive Committee:

Wesley Leonard, Chair, Ethnic Studies
 Sahin Acikgoz, Middle East and Islamic Studies
 Iván Eusevio Aguirre, Hispanic Studies
 Jimmy Calanchini, Psychology
 Donatella Galella, Theatre Film & Digital Production
 Xóchitl Chávez, Latin American Studies
 Anthony R Jerry, Black Study
 Keith K. Miyake, Ethnic Studies
 Victoria Reyes, Gender & Sexuality Studies
 Carole-Anne Tyler, English

Ex Officio: (Non-voting)

Tyler Cohen, Graduate Student
 Gregory Hutchins, Graduate Student
 VACANT, Undergraduate Student
 VACANT, Undergraduate Student
 Ryan Lipinski, Director, Assistant Dean of Student Success, Guest
 Covadonga Lamar Prieto, Associate Dean *ex-officio*
 Gloria Gonzalez-Rivera, Associate Dean, Guest

Kiril Tomoff, Associate Dean, Guest
Daryle Williams, Dean *ex-officio*

Gabrielle Brewer, CHASS Student Academic Affairs, Executive Committee Analyst

11/3/25 GB

**EXECUTIVE COMMITTEE
COLLEGE OF NATURAL AND AGRICULTURAL SCIENCES**

ANNUAL REPORT TO THE RIVERSIDE DIVISION

NOVEMBER 3, 2025

The Executive Committee of the College of Natural and Agricultural Sciences met 11 times during the 2024-2025 academic year.

1. COURSE PROPOSALS

New Courses:	24	Course Changes:	91
Course Discontinuations:	3	Course Restorations:	2
Course Splits:	6	Professional/Grad Courses:	1

2. BS PROGRAMS

- Proposed Transfer of the Undergraduate Microbiology Program to the Microbiology & Plant Pathology Department

3. MS PROGRAMS

- CNAS FEC memo to the Senate concerning New Master's Degree Proposal: M.S. Degree in Data Science
- Proposed Degree, Master of Public Health

4. BS+MS PROGRAMS

- Proposed Changes to the B.S. + M.S. in Mathematics (Applied)
- Proposed Changes to Entomology BS + MS

5. PHD PROGRAMS

- N/A

6. MAJORS

The Committee approved curriculum changes to the following undergraduate programs:

- Proposed changes to the B.A and B.S. in Biology
- Proposed Changes to the B.S. in Data Science
- Proposed changes to Environmental Science B.A. and B.S.
- Proposed changes to the B.A and the B.S. in Entomology
- Proposed changes to the B.A. and B.S. in Mathematics
- Proposed changes to the Mathematics Honors Program

- Proposed changes to the B.S. in Mathematics for Secondary School Teachers
- Proposed changes to the B.A. and B.S. in Physics
- Proposed changes to the B.A. and B.S. in Statistics
- Proposed changes to the CMDB Major Requirements
- Proposed changes to the Neuroscience Major Requirements
- Proposed changes to Biochemistry Major Requirements

The Committee approved all of the above for the 2024-2025 Catalog regarding Major Requirements, Catalog updates, Change of Major Criteria, and Continuation in the Major Criteria.

The Committee approved the following graduate department name changes:

- N/A

7. MINORS

The Committee approved curriculum changes to the following minor:

- Proposed Changes to Data Science Minor

8. ACADEMIC PERSONNEL MANUAL

The Committee reviewed the following revisions to the Academic Personnel Manual:

- Proposed Revisions to APM – 360, Librarian Series
- Proposed Revisions to APM – 036 General University Policy Regarding Academic Appointees/Employment
- Proposed Revisions to APM – 500, Recruitment – General

9. OTHER – ISSUES UNDER REVIEW

Systemwide

The Committee reviewed the following systemwide issues:

- [Systemwide Review] Report Review: APC Systemwide Academic Calendar Workgroup Draft Report
- [Systemwide Review] APM Revision: Proposed Revisions to APM - 360, Librarian Series
- [Systemwide Review] Proposed Policy: Proposed New Presidential Policy on High-Containment Research
- [Systemwide Review] Proposed Policy: (Systemwide Senate Review) Proposed Presidential Policy on Dual-Use Research of Concern and Pathogens with Enhanced Pandemic Potential
- [Systemwide Review] Proposed Policy: Presidential Policy on the Use of Animals in Research, Teaching, and Testing
- [Systemwide Review] (Proposed Revisions to Academic Personnel Manual (APM) Proposed Revisions to APM - 036, General University Policy Regarding Academic Appointees/Employment

- [Systemwide Review] APM Revision: Revised Distribution re: Proposed Revisions to APM Section 500, Recruitment – General
- [Systemwide Review] Proposal: Proposed Revisions to Senate Bylaw 170 and Rescission of Senate Bylaw 192
- [Systemwide Review] Proposed Regulation Revision: Proposed Revisions to Senate Regulation 479 - California General Education Transfer Curriculum (CalGETC)
- [Systemwide Review] Proposed Regulations: New Senate Regulation 627 (Posthumous Awarding of Degrees)

Campus

The Committee reviewed the following campus issues:

- [Campus Review] Proposed Policy: Policy for Archiving Canvas Courses
- [Campus Review] Regulation Change: 2nd Round - UCR Regulation 1 -Grading System
- [Campus Review] Report Review: Report from the Ad Hoc Coordinating Committee on General Education (CCGE)
- [Campus Review] Proposal: Course Approval Workflow – Division of Undergraduate Education
- Response to [Campus Review] Proposed Regulation Change: Riverside Senate Regulation 6 Campus Graduation Requirement to Add Campus Residency Requirement - UCR SR 6.14
- [Campus Review] Proposal: Combined Data Science B.S. + Statistics M.S. Program
- [Campus Review] Proposal: 2nd Round - Proposed Changes to Appendix 7 Procedures for the Transfer, Consolidation, Disestablishment, or Discontinuance of Academic Programs and Academic Units (TCDD)
- [Campus Review] Regulation Change: UCR Regulation 1 - Grading System
- [Campus Review] Consultation: Approval Process of Faculty-Led Education Abroad Programs (FLEAP) and Alignment with UCOP's Anti-Discrimination Policy
- [Campus Review] Bylaw Change: CNAS Bylaws 02.01.01 through 02.01.05: Gender Recognition and Lived Name Policy
- [Campus Review] Proposal: Negotiated Salary Program (NSP) Campus Procedures Review for 25-26 AY Implementation
- [Campus Review] Proposal: UCR Registrar's Implementation of UCR Senate Regulation 6.14 (UCR SR 6.14) - 35 Units In Residence Requirement
- [Campus Review] Proposal: Summer Maximum Capacity Proposal
- [Campus Review] Consultation: Proposed Initiative for UCR 2030: Increase the enrollment of California resident undergraduates
- [Campus Review] Consultation: Proposed Initiative for UCR 2030: Increase the enrollment of California resident undergraduates
- [Campus Review] Consultation: 2nd Round-Transparency in Establishment and Operations of Centers
- [Campus Review] Interim Policy: UCR Interim Policies Related to Expressive Activities on Campus (700-20, 700-50, and 700-70)

10. DISTINCTION AND RECOGNITION

The Committee supports the appointment of the following endowed chairs:

- N/A

11. CAMPUS CONCERNS

The Committee reviewed and commented on the following issues:

- Academic Calendar
- Future of Doctoral Education and Graduate Programs.

12. SCHOLARSHIP AND DEGREES CONFERRED

	<u>B.A.</u>	<u>B.S.</u>
Fall 2024	0	106
Winter 2025	2	154
Spring 2025	7	833
Summer 2025	6	214

	Highest Honors (top 2%)	High Honors (<u>next 4%</u>)	Honors (<u>next 10%</u>)
Fall 2024	2	6	10
Winter 2025	4	12	21
Spring 2025	21	37	88
Summer 2025	2	4	13

Academic Action

	Fall 2024		Winter 2025		Spring 2025	
	Total	Percentage	Total	Percentage	Total	Percentage
Good Standing	5585	88.92%	5304	88.22%	4985	87.45%
Academic Notice	303	4.82%	295	4.91%	273	4.79%
Subject to Disq.	376	5.99%	413	6.87%	421	7.39%
Disqualified	17	0.27%	0	0.00%	21	0.37%
Total	6281	100%	6012	100%	5700	100%

2024-2025 Executive Committee Members:

Harry Tom, Chair

Richard Debus, Biochemistry

David Reznick Evolution, Ecology and Organismal Biology

Zhenyu (Arthur) Jia, Botany & Plant Sciences

Hongdian Yang, Molecular, Cell, and Systems Biology

Ryan Julian, Chemistry

Stephen Robert Kane, Earth, and Planetary Sciences

Hollis S. Woodard, Entomology

Tamara Harms, Environmental Sciences

Peter Samuelson, Mathematics

Rong Hai, Microbiology and Plant Pathology

Simon Groen, Nematology

Thomas Kuhlman, Physics and Astronomy

Wenxiu Ma, Statistics

Peter Atkinson, Dean of the College of Natural and Agricultural Sciences: Ex Officio

Stephanie Dingwall, Divisional Dean of the College, Student Academic Affairs: Ex Officio

Morris Maduro, Divisional Dean of the College, Life Sciences: Ex Officio

Patricia Springer, Divisional Dean of the College, Agricultural and Natural Resources: Ex Officio

Stefano Vidussi, Divisional Dean of the College, Physical Sciences: Ex Officio

EXECUTIVE COMMITTEE
SCHOOL OF BUSINESS
ANNUAL REPORT TO THE RIVERSIDE DIVISION
The Executive Committee of the School of Business met three times during the 2024-2025 academic year.

1. Scholarship Decisions.

• Degrees Awarded

- *Master of Business Administration*

Fall Quarter 2024:	9
Winter Quarter 2025:	7
Spring Quarter 2025:	68

- *Master of Business Administration, Professional MBA*

Fall Quarter 2024:	6
Winter Quarter 2025:	2
Spring Quarter 2025:	49

- *Master of Professional Accountancy*

Fall Quarter 2024:	25
Winter Quarter 2025:	5
Spring Quarter 2025:	26

- *Master of Finance*

Fall Quarter 2024:	22
Winter Quarter 2025:	2
Spring Quarter 2025:	17

○ *Master Science Business Analytics*

Fall Quarter 2024:	22
Winter Quarter 2025:	1
Spring Quarter 2025:	19

○ *Doctor of Philosophy*

Fall Quarter 2024:	0
Winter Quarter 2025:	0
Spring Quarter 2025:	0

○ *Bachelor of Science in Business Administration*

Summer Session 2024	176
Fall Quarter 2024	84
Winter Quarter 2025	110
Spring Quarter 2025	631
Total	1,001

○ *Bachelor of Science in Actuarial Science*

Summer Session 2024	
Fall Quarter 2024	0
Winter Quarter 2025	0
Spring Quarter 2025	3
Total	3

● **Students on Probation, 2024-2025**

○ Master of Business Administration

	Academic Notice	Disqualification
Fall Quarter 2024	0	0
Winter Quarter 2025	0	0
Spring Quarter 2025	1	0

○ Master of Business Administration, Professional MBA

	Academic Notice	Disqualification
Fall Quarter 2024	6	4
Winter Quarter 2025	7	1
Spring Quarter 2025	3	0

○ Master of Professional Accountancy

	Academic Notice	Disqualification
Fall Quarter 2024	8 (includes 1 WD)	1
Winter Quarter 2025	3	1
Spring Quarter 2025	0	0

○ Master of Finance

	Academic Notice	Disqualification
Fall Quarter 2024	0	1
Winter Quarter 2025	0	0
Spring Quarter 2025	0	0

○ Master of Science in Business Analytics

	Academic Notice	Disqualification
Fall Quarter 2024	1	0
Winter Quarter 2025	2	0
Spring Quarter 2025	1	1

- Doctor of Philosophy

	Academic Notice	Disqualification
Fall Quarter 2024	0	0
Winter Quarter 2025	0	0
Spring Quarter 2025	0	0

Bachelor of Science in Business Administration

Subject to Dismissal

F: 0

W: 0

S: 30

Dismissed:

F: 0

W: 0

S: 20

Bachelor of Science in Actuarial Science

Subject to Dismissal

F: 0

W: 0

S: 4

Dismissed:

F: 0

W: 0

S: 2

- Courses and Curriculum

- Management

- New Courses: 5

- Course Deletions: 0

- Course Revisions: 2

New Courses:

Business Administration:

Course Title: Bus 182 Business Data Analytics and Visualization

Business Analytics:

Course Title: Bus 182 Business Data Analytics and Visualization

Course Revisions

Business Administration:

Course(s) Title: Bus 124A Business Analytics renumbered to Bus 124

Business Analytics:

Course Title: Bus 124A Business Analytics renumbered to Bus 124

Course Deletions: Bus 124B Advanced Business Analytics

Business: 1

2024/25- Executive Committee

Elected Members:

Elodie Goodman (Chair) 2023-2025

Barry Mishra (ACCT) 2023-2025

Ye Li (MGT) 2024-2026

Greg Richey (FIN) 2024-2026

Adem Orsdemir (OSCM) 2024-2026

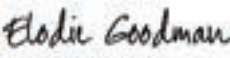
Hai Che (MKT) 2023-2025

Yunzeng Wang (Dean - ex-officio member)

Thomas Kramer (Associate Dean – non-voting ex-officio member)

Rami Zwick (Associate Dean – non-voting ex-officio member)

Margaret Campbell (Associate Dean – non-voting ex-officio member)

Signed by:

984429349BC05480

Elodie Goodman, for the Executive Committee

Executive Committee School of Education
Annual Report to the Riverside Division

To be received and placed on file:

The Faculty Executive Committee of the School of Education met 0 times in-person and 7 times via Zoom during the 2024-2025 academic year (AY).

I. 2024-2025 SOE Selected Highlights

A. Faculty Promotions

1. Dr. Uma Jayakumar was promoted to Professor.
2. Drs. Eui Kim, Alice Lee, and Rican Vue were promoted to Associate Professors.

B. 2024-2025 Faculty Recognition and Awards

1. Dr. Tara Yosso has been named a 2025 fellow by the American Educational Research Association.
2. Dr. Eunsoo Cho received the Presidential Early Career Award for Scientists and Engineers in January 2025.
3. Dr. Eunsoo Cho received the Trailblazer Award for the following publication:

Cho, E., Dahl-Leonard, K., Kehoe, K., Capin, P., Hall, C., & Solari, E. (2023). Motivational Practices in Reading Interventions for Students With or at Risk for Dyslexia. *Topics in Language Disorders*, 43(2), 119–145.
<https://doi.org/10.1097/tld.0000000000000312>
4. Dr. Ensoo Cho received the Samuel Kirk Award from the Council of Exceptional Children for her coauthored publication where she served as lead Methodologist:

Solari, E. J., Kehoe, K. F., **Cho, E.,** Hall, C., Vargas, I., Dahl-Leonard, K., Richmond, C. L., Henry, A. R., Cook, L., Hayes, L., & Conner, C. (2022). Effectiveness of Interventions for English Learners with Word Reading Difficulties: A Research Synthesis. *Learning Disabilities Research & Practice*, 37(3), 158–174. Portico. <https://doi.org/10.1111/ldrp.12286>
5. Dr. Michael Solis received the AERA Division H Outstanding Publications Competition for Category 3: Program Evaluation, 2025 for his role of sole author of the final chapter connecting report findings to research in support of recommendations for next steps:

Long, S., McCulley, L., Fitzpatrick, B., Warner, J., Jennings, J., English, K., **Solis, M.**, Ozturk, S., Nickerson, T. (2024). *Every child reads: Year three evaluation*. Evaluation report prepared for Fulton County Schools.

6. Dr. Raquell Rall was awarded the Graduate Diversity Award by the UCR Graduate Division in 2024.
7. Dr. Michael Moses was the SOE's first recipient of the UC Hellman Fellowship.
8. Drs. **Eddie Comeaux** and **Rita Kohli** have been named among the nation's top 200 education scholars in a ranking by the American Enterprise Institute.
9. Dr. Stephanie Moore received the 2024 Lightner Witmer Award for her outstanding scholarship in school psychology.
10. Dr. Alice Lee was awarded the Commitment to Graduate Diversity Award out of the Graduate Division.

C. Faculty Participation in Leadership Programs

1. Dr. Raquell Rall participated in the Scholars Strategy Network.
2. Dr. Raquell Rall participated in the HERS Next Steps Program.

D. Awarded Grants (SOE faculty names are **bolded**)

1. Spencer Foundation: *The Cultural Mismatch Theory of Inequality: Social Emotional Learning among Korean Newcomer Immigrant Adolescents*. Award \$75,000. PI: **Eui Kyung Kim**.
2. Spencer Foundation: *Advancing a Healthy Racial Climate in Teacher Education*. Award: \$75,000. Co-PI: **Rita Kohli**, Co-PI: **Uma Jayakumar**.
3. Foundation for California Community Colleges (April 2025): Creating Foundations for California Community Colleges: *Principles of Calculus—An eBook*. Award \$50,000 (K015371). PI: Yat Sun Poon; Co-PIs: David Weisbart, **Cathy Lussier**.
4. U.S. Department of Education (EIR): *Scalability, Capacity, and Learning Engagement for Underserved Populations (SCALE-UP) for Fraction Face-Off*. Award \$13,975,755 (S411A240014). Co-PI: **Michael Solis** with Ketterlin-Geller, L., Lembke, E. S., Powell, S. R., Gage, N., Therrien, W., Cook, S., King, S. G., and Myers, J.

5. U.S. Department of Education (GAANN): *Special Education GAANN*. Award \$650,000 (P200A240160). PI: **Michael Solis**; Co-PIs: **Eunsoo Cho, Katherine Meltzoff**.
6. Carnegie Corporation of New York: The Civic Impact Project. Award \$500,000. PI: **Joseph Kahne**.
7. Stuart Foundation. The Civic Impact Project. Award \$100,000. PI: **Joseph Kahne**.
8. University of California, Riverside. *Unity through Diversity: Dismantling Bias and Cultivating Inclusivity in the School of Education and Beyond*. Award: \$25,000. PI: **Raquell Rall**.
9. ECMC/Amalgamated Charitable Foundation. *Equity as Fiduciary Duty: Fortifying the Board's Role as the Cornerstone of DEI, Democratic Values, and Academic Freedom in Higher Education*. PI: **Raquell M. Rall**, Co-PI: Demetri L. Morgan.
10. Inland Empire Regional K-16 Education Collaborative. *From Classroom to Community: Building Educational Partnerships and Pipelines to Diversify the Teacher Workforce in IE*. Award: \$1,000,000. PI: **Raquell M. Rall**, Co-PIs: **Austin Johnson & Frances Valdovinos**.
11. UC Online Instructional Design & Technology Development Grant (UCOP) 2023-2025. *Utilizing Spatial Learning Strategies to Increase Equitable Engagement and Comprehension in Online Statistics Courses*. Award: \$50,000 Principal Investigator (PI): **Cathy Lussier**, Co-PI: **Kinnari Atit**.
12. National Science Foundation Grant 2024-2029. *Amplifying Diverse Voices in STEM Education*. Award \$2,484,019 (2411956). Co-PI: **Anthony Villa**.
13. Gates Foundation. *Calculus Courseware Grant: Implementation of Learnvia Platform to Improve Success Rates*. ~\$500,000 (preliminary planning grant). Senior Personnel: **Anthony Villa**.
14. Educational Credit Management Corporation Foundation. UCR LIFTED was awarded \$750,000 to build sustainable statewide infrastructure. PI: **Amos Lee**.
15. Michelson Foundation. UCR Lifted was awarded \$25,000 to expand access to incarcerated students in California. PI: **Amos Lee**.

E. Continuing Leadership on Grants (SOE faculty names are **bolded**)

1. National Science Foundation Grant (NSF Noyce) 2019-2025. *STEM Pre-Service Teacher Scholars Program with Special Training to Support English Language Learners*. Award: \$1,449,943 (1852890). Principal Investigator (PI) **Cathy Lussier**, Co-PI: Jack Eichler
2. National Science Foundation Grant 2022-2026. *Institute on Equity-Oriented Mixture Modeling for Discipline-Based Education Research Scholars*. Award \$999,345 (2224786). Co-PI: **Marsha Ing**
3. Institute for Education Sciences 2022-2026. *Applied Mixture Modeling Training Workshop and Resources for Education Researchers*. Award \$799,964 (R305B220021). Co-PI: **Marsha Ing**
4. National Science Foundation (NSF). 2023-2026. *Model-Based and Design-Based Approaches to Longitudinal Causal Decomposition Analysis*. Award \$ 273,587 (2243119). Principal Investigator (PI): **Soojin Park**.
5. National Institutes of Health (NIH). 2025-2026. *Caring Too Soon: The Cognitive Toll of Early Caregiving and Life Path Deviation*. Award \$ 40,000 (R24AG077433). Principal Investigator (PI): Chioun Lee, Co-I: **Soojin Park**
6. Office of Research and Economic Development at UCR. 2025-2026. *Caregiving and Academic Success: Examining the Dual Burdens of Minority Students on Educational Achievement and Health Outcomes*. Award \$ 50,000. Principal Investigator (PI): Chioun Lee, Co-I: **Soojin Park**

F. Other Leadership Items

1. Dr. Soojin Park is currently serving as the lead guest editor for a Topical Issue of the *Zeitschrift für Psychologie* (IF: 2.5).
2. Dr. Soojin Park served as a panelist evaluating the methodological strengths of proposals submitted to the NSF CAREER and BCSEER programs.
3. Dr. Kinnari Atit was invited to be an ad hoc reviewer for the Swiss National Science Foundation and the U.S. National Science Foundation.
4. Dr. Kinnari Atit also was invited to be a member of a grant review panel for the National Science Foundation.

5. School of Education graduates its first class of teacher credential students at UCR Palm Desert.
6. Dr. Rita Kohli, as co-director, held the 15th annual Institute for Teachers of Color Committed to Racial Justice (ITOC) summer convening and virtual programming that is funded by the California Endowment (Last academic year overlapped with the first and second year of our \$100K grant), and supported 150+ educators from the U.S. and abroad in their retention, growth and racial justice leadership development.
7. Dr. Rita Kohli served on the Editorial Team of *Journal of Teacher Education*
8. Dr. Rita Kohli served on the Presidential Invited *Journal Publications Committee* of the American Educational Research Association
9. Dr. Rita Kohli served on the Research Advisory Board for Learning Policy Institute's \$3.5million Spencer Transformative Grant.
10. Dr. Rita Kohli attended the invited convening, "New Directions in Teaching, Educator Preparation, and Learning." hosted by the Spencer Foundation and connecting policy leaders, funders, and researchers.

II. 2024-2025 SOE Degrees and Credentials awarded (includes duplicates, some students earned multiple credentials/degrees):

SOE 2024-25 Credentials and Degrees	Number Awarded
Doctor of Philosophy	11
Education Policy Analysis & Leadership	1
Education, Society, & Culture	2
Higher Education Administration & Policy	3
School Psychology	4
Special Education	1
Master of Arts	11
Education, Society, & Culture	1
Educational Psychology	1
School Psychology	6
Special Education & Autism	3
Master of Education	144
Education Policy Analysis & Leadership	1
Higher Education Administration & Policy	22

Racial Justice	1
Teacher Education	111
Teacher Education: Education Specialist	9
Preliminary Teaching Credential	158
BILA	28
Single Subject	74
Multiple Subjects	48
Education Specialist	8
Bachelor of Arts	194
Education for Social Justice	34
Learning and Behavioral Studies	160
Education Minor	77
Athletic Leadership	4
Education	73



October 21, 2025

The School of Medicine Executive Faculty Committee (FEC) conducted several meetings via Zoom during the 2024-2025 academic year.

The monthly meeting dates were as follows:

- September 19, 2024
- October 17, 2024,
- November 14, 2024
- December 19, 2024
- January 16, 2025
- February 20, 2025
- March 27, 2025
- April 24, 2025
- May 15, 2025
- June 12, 2025
- July 17, 2025
- August 21, 2025

Additional business was conducted via email throughout the year.

The following items were considered (some on multiple occasions in-person or through email):

General SOM FEC Business

1. Review Conflict of Interest Statement for 2024-2025 and nominate and elect Vice Chair
2. Review Reappointment as William R. and S. Sue Johnson Endowed Chair for Mark Wolfson, PhD
3. Review Service Awards Nominations for 2024.
4. Review and Vote on HSCP committee membership nominations
5. Reviewed and approved SOM MPH program course syllabi
6. Reviewed and approved SOM BMSC course syllabi and
7. Discussion on Peer Formative Feedback Mechanism Task Force – Monica Carson, PhD and Sherif Hassan, MD
8. Determine the maximum number of weeks that the FEC needs to respond to a student appeal request.
9. Review of FEC's Subcommittees' Conflict of Interest (COI) Statements
10. Host SOM All Faculty Meeting – December 2024

11. UCR SOM Admissions data and process update – Daniel Teraguchi, Ed.D., Associate Dean for Student Affairs
12. Quarterly Graduate Medical Education Update to FEC – Rajesh Gulati, M.D., Associate Dean of Graduate Medical Education
13. Review 2024 SOM Service Awards
14. UCR SOM Admissions Updated Workflow Proposal – Daniel Teraguchi, Ed.D., Associate Dean for Student Affairs (continued discussion)
15. FEC heard and decided a total of 3 Student appeals.
16. Vote on HSCP Committee Membership Nominations, and approved nomination of Michelle Bholat, MD.
17. UCSF Membership Memorial to the Regents_Adj_and_HSC
18. Vote on HSCP Committee Membership Nominations:
19. We received two nominations for the vacant spot on the HSCP Committee
20. Discussion of SOM bylaw changes for the PPC
21. Review endowed Chair Reappointments:
Adam Godzik – Bruce D. and Nancy B. Varner Presidential Endowed Chair
Maurizio Pellechia - Daniel Hays Endowed Chair
22. Reappointment of Admissions Committee Members 2025/2026
23. Review MPH Integrative Learning Experience Syllabus - Capstone or Thesis (To be offered 2026)
24. Review proposed bylaw changes for ME PPC Membership
25. Approved nomination of Dr. David Caba to the Clinical Appointments and Advancements Committee, as the committee was seeking nominations for (1) seat to serve on the Committee for a term of 3 years.
26. Update on UCR SOM Admissions Process – Evita Limon-Rocha, Chair of the Admissions Committee.
27. Approved nomination of Maninder Singh, MD, out of the 9 nominations received for VCAA Committee.
28. FEC review of Admissions Committee proposed committee members for the 2025-2026 cycle.
29. FEC review and approval of Medical Education Committee members for 2025-2026
30. Acknowledge FEC membership changes as of September 1, 2025
31. Discuss formation and charging of an Ad hoc Student Evaluation of Teaching Design Committee.
32. Admissions Data Update (continued discussion)

Division Requests

33. [Systemwide Review] Proposed Revised Policy: Revisions to Presidential Policy: Externally Supplied Medications in UC Outpatient and Clinic Settings
34. [Systemwide Review] Proposed Revised Policy: Proposed Revisions to Program Attachments 3-7 to the Policy on Vaccination Programs
35. [Campus Review] Consultation: 2nd Round-Transparency in Establishment and Operations of Centers
36. [Campus Review] Proposal: Course Approval Workflow - Division of Undergraduate Education

37. [Campus Review] Proposed Regulation Change: Riverside Senate Regulation 6
Campus Graduation Requirements to Add Campus Residency Requirement - UCR
SR 6.14
38. [Campus Review] Interim Policy: UCR Interim Policies Related to Expressive
Activities on Campus (700-20, 700-50, and 700-70)
39. [Systemwide Review] Proposed Regulations: New Senate Regulation 627
(Posthumous Awarding of Degrees)
40. [Campus Review] Regulation Change: UCR Regulation 1 - Grading System
41. [Campus Review] Proposal: 2nd Round – Proposed Changes to Appendix 7 –
Procedures for the Transfer, Consolidation, Disestablishment, or Discontinuance of
Academic Programs and Academic Units (TCDD)
42. [Campus Review] Proposal: Negotiated Salary Program (NSP) Campus Procedures
Review for 25-26 AY Implementation
43. [Campus Review] Bylaw Change: SOM Bylaw 03 through 03.01.03: Gender
Recognition and Lived Name Policy
44. [Systemwide Review] (Proposed Policy) Presidential Policy on the Use of Animals
in Research, Teaching, and Testing
45. [Systemwide Review] (Proposed Policy) (Systemwide Senate Review) Proposed
Presidential Policy on Dual Use Research of Concern and Pathogens with Enhanced
Pandemic Potential
46. [Systemwide Review] APM Revision: Proposed Revisions to APM - 675, Veterinary
Medicine Salary Administration.
47. [Systemwide Review] Proposed Revisions to Academic Personnel Manual (APM):
*Proposed Revisions to APM - 036, General University Policy Regarding Academic
Appointees/Employment*
48. [Campus Review] Proposal: *Summer Maximum Capacity Proposal*
49. [Campus Review] Proposal: *UCR Registrar's Implementation of UCR Senate
Regulation 6.14 (UCR SR 6.14) - 35 Units in Residence Requirement*
50. [Campus Review] Regulation Change: *2nd Round - UCR Regulation 1 - Grading
System*
51. [Outcome of Senate Review] Proposed Changes to Riverside Senate Regulation 6 -
Campus Graduation Requirements.
52. [Systemwide Review] APM Revision: Revised Distribution re: Proposed Revisions
to APM Section 500, Recruitment – General
53. [Systemwide Review] Proposed Policy: *Proposed New Presidential Policy on High-
Containment Research*
54. [Systemwide Review] Proposed Revisions to Policy: *Presidential Policy BFB - BUS-
63: Risk Transfer and Insurance Requirements*
55. [Systemwide Review] Report Review: *APC Systemwide Academic Calendar
Workgroup Draft Report*
56. *CORRECTED - Revised Distribution re: Proposed Revisions to APM Section 500,
Recruitment – General*
57. [Campus Review] Consultation: *Proposed Initiative for UCR 2030: Increase the
enrollment of California resident undergraduates.*
58. Systemwide Review of Proposed Revisions to Academic Personnel Manual (APM)
360, Appointment and Promotion, Librarian Series

59. [Campus Review] Proposed Policy: Policy for Archiving Canvas Courses
60. [Systemwide Review] Proposal: *Proposed Revisions to Academic Personnel Manual (APM) 230, Visiting Appointments*
61. [Campus Review] (Consultation): Revision of Retention Processes at UCR (2025)

SOM FEC Composition 2024-2025

Marcus Kaul, PhD, Chair
Scott Pegan, PhD, Vice Chair
Iryna Ethell, PhD
Djurdjica Coss, PhD
Rajesh (Robby) Gulati, MD
Kimberley Lakes, PhD
Andrew Subica, PhD
Emma Wilson, PhD
Lisa Fortuna, MD
Kenneth Ballou, MD (Non-senate clinical)
Pablo Joo, MD (ex officio)

EXECUTIVE COMMITTEE
SCHOOL OF PUBLIC POLICY
ANNUAL REPORT TO THE RIVERSIDE DIVISION

November 10, 2025

The Faculty Executive Committee of the School of Public Policy (SPP) conducted electronic and in-person meetings on numerous occasions during the 2024-2025 academic year. The following changes and updates were made with respect to our curriculum.

1. Approval of Geospatial Analysis Minor
2. Considered a GIS major, but did not move forward with and tabled for a future discussion in the 25-26 AY
3. Approved a Flex-MPP program
4. Courses (new and revised) reviewed and approved: PBPL 110, 121, 133, 177, 179, 184, 191

2024-2025 Faculty Executive Committee:
Richard Carpiano (Chair)

**THE GRADUATE DIVISION AND EXECUTIVE
COMMITTEES OF THE COLLEGES
REPORT TO THE DIVISION
DECEMBER 2, 2025**

To be received and placed on file:

Reports of Degrees Awarded - Winter 2025

Bourns College of Engineering	
Bachelor of Science:	141
Masters of Science.....	15
College of Humanities, Arts and Social Sciences	
Bachelor of Arts:.....	250
Bachelor of Science:	14
College of Natural and Agricultural Sciences	
Bachelor of Arts:.....	2
Bachelor of Science:	154
School of Business	
Bachelor of Science:	110
School of Education	
Bachelor of Arts:.....	20
Masters of Arts.....	3
Masters of Education.....	9
School of Medicine	
MD:.....	0
MS:	2
PhD:	0
School of Public Policy	
Bachelor of Arts:.....	9

Report of Degrees Awarded – Spring 2025

Bourns College of Engineering	
Bachelor of Science:	464
Masters of Science.....	93
College of Humanities, Arts and Social Sciences	
Bachelor of Arts:.....	1471
Bachelor of Science:	32
College of Natural and Agricultural Sciences	
Bachelor of Arts:.....	7
Bachelor of Science:	833

School of Business	
Bachelor of Science:	634
School of Education	
Bachelor of Arts:	110
Masters of Arts:	4
Masters of Education:	147
PhD:	6
School of Medicine	
Medical Doctor:	74
Masters of Science:	9
PhD:	1
School of Public Policy	
Bachelor of Arts:	44
Graduate Division	
Master of Arts:	21
Master of Business Administration:	117
Master of Education:	94
Master of Finance:	15
Master of Fine Arts:	19
Master of Professional Accountancy:	26
Masters of Public Health:	0
Master of Public Policy:	16
Master of Science:	147
Doctor of Philosophy:	104

Report of Degrees Awarded – Summer 2025

Graduate Division	
Master of Arts:	1
Master of Business Administration:	2
Master of Education:	37
Master of Finance:	0
Master of Fine Arts:	3
Master of Professional Accountancy:	0
Master of Public Policy:	1
Master of Science:	55
Doctor of Philosophy:	99

The names of the candidates are filed in the official records of the Office of the Registrar.

F. Xu, Secretary-Parliamentarian
Riverside Division of the Academic Senate

Committee on Courses
Report to the Riverside Division
December 2, 2025

To be received and placed on file:
The Committee on Courses has approved the following courses.

<u>Action:</u>	<u>Course:</u>	<u>Cross-listed</u> <u>Course(s):</u>	<u>Title:</u>	<u>Units:</u>	<u>Course</u> <u>Renumbered:</u>
<i>Undergraduate Courses:</i>					
Change	ANTH 142F		BLACK AND BLACK DIASPORA STUDIES	4 Units	
Change	BCH 010		INTRODUCTION TO NUTRITION	4 Units	
Change	BCH 162		ADVANCED BIOCHEMISTRY LABORATORY	5 Units	
Change	BIEN 111		STATISTICAL METHODS FOR BIOENGINEERING	4 Units	
Change	BIOL 161A		FUNCTIONAL ANATOMY OF THE VERTEBRATES	5 Units	
Change	BIOL 161B		FUNCTIONAL ANATOMY OF THE VERTEBRATES	5 Units	
Change	BIOL 171B		HUMAN PHYSIOLOGY I	4 Units	
Change	BLKS 002		INTRODUCTION TO BLACK STUDY 2: IMAGINED AND EMBODIED	4 Units	
Change	BUS 010		INTRODUCTION TO BUSINESS	4 Units	
Change	BUS 020		FINANCIAL ACCOUNTING AND REPORTING	4 Units	
Change	CBNS 004		CONCEPTS IN MEDICAL CELL BIOLOGY	3 Units	
Change	CHEM 155		ADVANCED INORGANIC CHEMISTRY: SYNTHESIS AND METHODS	4 Units	
Change	CLA 045		THE ANCIENT WORLD IN FILM AND TELEVISION	4 Units	
Change	CPLT 001		INTRODUCTION TO CLOSE READING	4 Units	
Change	CPLT 021		INTRODUCTION TO FILM, LITERATURE, AND CULTURE	4 Units	
Change	CPLT 027		FOOD IN FILM	4 Units	
Change	CPLT 027	MCS 036	FOOD IN FILM	4 Units	
Change	CPLT 063	SEAS 063; AST 063	READING SOUTHEAST ASIAN STORIES	4 Units	
Change	CPLT 126	GER 126	FROM NOVEL TO SCREEN: FILM ADAPTATIONS OF GERMAN LITERATURE	4 Units	
Change	CPLT 176		THE HOLOCAUST IN LITERATURE, FILM AND CULTURE	4 Units	
Change	CPLT 181	FREN 181	EXISTENTIALISM IN LITERATURE, FILM, AND CULTURE	4 Units	
Change	EDUC 103W		MINDFULNESS APPROACHES TO ACADEMIC WRITING IN EDUCATION	4 Units	
Change	EE 114		PROBABILITY, RANDOM VARIABLES, AND RANDOM PROCESSES IN ELECTRICAL ENGINEERING	4 Units	
Change	ENGL 025		MODERN AND CONTEMPORARY LGBTQI ARTS AND MEDIA	5 Units	
Change	ENGL 035		INTRODUCTORY TOPICS IN VISUAL, SCREEN, AND PERFORMANCE STUDIES	4 Units	
Change	ENGL 120A		NATIVE AMERICAN LITERATURE TO 1900	4 Units	
Change	ENGL 130		BODIES AND TEXTS OF THE EARLY AMERICAS	4 Units	
Change	ENGL 146	MCS 146	SPECIAL TOPICS IN TECHNOCULTURE AND COMPUTATIONAL MEDIA	4 Units	
Change	ENGL 151A		MIDDLE ENGLISH LITERATURE: 1066-1500	4 Units	
Change	ENGL 151B		MEDIEVAL ROMANCE	4 Units	
Change	ENGL 151C		STUDIES IN MEDIEVAL LITERATURE	4 Units	
Change	ENGL 179C		SCREEN SPECULATIVE FICTION	4 Units	
Change	ENTM 125	ENTX 125; PLPA 125	PESTICIDE SCIENCE	4 Units	
Change	ETST 001		INTRODUCTION TO THE STUDY OF RACE AND ETHNICITY	4 Units	
Change	ETST 001H		HONORS INTRODUCTION TO THE STUDY OF RACE AND ETHNICITY	4 Units	
Change	ETST 002		INTRODUCTION TO CHICANO STUDIES IN COMPARATIVE PERSPECTIVE	4 Units	
Change	ETST 002H		HONORS INTRODUCTION TO CHICANO STUDIES IN COMPARATIVE PERSPECTIVE	4 Units	
Change	ETST 007		INTRODUCTION TO NATIVE AMERICAN STUDIES IN COMPARATIVE PERSPECTIVE	4 Units	
Change	ETST 007H		HONORS INTRODUCTION TO NATIVE AMERICAN STUDIES IN COMPARATIVE PERSPECTIVE	4 Units	
Change	EUR 125	GER 125; CPLT 125	GERMAN FAIRY TALES: FROM BROTHERS GRIMM TO HOLLYWOOD	4 Units	GER 125
Change	FREN 045	MCS 045	FRENCH CINEMA	4 Units	
Change	FREN 045		FRENCH CINEMA	4 Units	
Change	GBST 104	POSC 118	GLOBAL ECONOMIC CRISIS	4 Units	
Change	GER 045		INTRODUCTION TO GERMAN CINEMA	4 Units	
Change	HISA 132		UNITED STATES WOMEN, GENDER, AND SEXUALITY: 1620-1850	4 Units	
Change	HISA 133		WOMEN, GENDER, AND SEXUALITY IN UNITED STATES HISTORY: 1850- PRESENT	4 Units	
Change	HISA 146		HISTORY OF NATIVE AMERICAN WOMEN	4 Units	
Change	HIST 181		EARLY MODERN CHINA	4 Units	
Change	KOR 047		INTRODUCTION TO KOREAN FILM	4 Units	
Change	MCS 001		INTRODUCTION TO MEDIA AND CULTURAL STUDIES	4 Units	
Change	MUS 024		GLOBAL HIP HOP: RAP CULTURES AROUND THE WORLD	4 Units	
Change	NEM 159	BIOL 159	BIOLOGY OF NEMATODES	3 Units	
Change	PBPL 001		INTRODUCTION TO PUBLIC POLICY ANALYSIS	4 Units	
Change	PHIL 117		ENVIRONMENTAL ETHICS	4 Units	
Change	PHIL 120 (E-Z)		ANCIENT PHILOSOPHY	4 Units	
Change	PHIL 121 (E-Z)		MAJOR PHILOSOPHERS	4 Units	

**Committee on Courses
Report to the Riverside Division
December 2, 2025**

To be received and placed on file:

The Committee on Courses has approved the following courses.

<u>Action:</u>	<u>Course:</u>	<u>Cross-listed Course(s):</u>	<u>Title:</u>	<u>Units:</u>	<u>Course Renumbered:</u>
Change	PHIL 122 (E-Z)		TOPICS IN HOSTORY OF PHILOSOPHY	4 Units	
Change	PHIL 130		THEORY OF KNOWLEDGE	4 Units	
Change	PHIL 131		TWENTIETH-CENTURY ANALYTIC PHILOSOPHY	4 Units	
Change	PHIL 133		METAPHYSICS	4 Units	
Change	PHIL 134		PHILOSOPHY OF MIND	4 Units	
Change	PHIL 135		PHILOSOPHY OF PSYCHOLOGY	4 Units	
Change	PHIL 137		PHILOSOPHY OF SCIENCE	4 Units	
Change	PHIL 138 (E-Z)		PHILOSOPHY OF AGENCY	4 Units	
Change	PHIL 161		ETHICS	4 Units	
Change	PHIL 162		HUMAN NATURE AND RADICAL EVIL	4 Units	
Change	PHIL 169 (E-Z)		TOPICS IN VALUE THEORY	4 Units	
Change	PLPA 120	BIOL 120; MCBL 120	INTRODUCTION TO PLANT PATHOLOGY	3 Units	
Change	PLPA 123	BIOL 123; MCBL 123	INTRODUCTION TO COMPARATIVE VIROLOGY	4 Units	
Change	POSC 005		POLITICAL IDEOLOGIES	5 Units	
Change	POSC 119		POLITICAL THINKERS IN DEPTH	4 Units	
Change	POSC 153		RUSSIAN FOREIGN POLICY	4 Units	
Change	POSC 155		GOVERNMENT AND POLITICS IN WESTERN EUROPE	4 Units	
Change	POSC 155S		GOVERNMENT AND POLITICS IN WESTERN EUROPE	5 Units	
Change	POSC 196B		MOOT COURT B: MOOT COURT COMPETITION	4 Units	
Change	PSYC 011		PSYCHOLOGICAL METHODS: STATISTICAL PROCEDURES	5 Units	
Change	PSYC 012		PSYCHOLOGICAL METHODS: RESEARCH PROCEDURES	6 Units	
Change	PSYC 165B		THE DEVELOPMENT OF IMMIGRANT AND ETHNIC MINORITY YOUTH	4 Units	
Change	RUSN 045		SOVIET CINEMA	4 Units	
Change	TFDP 024		A STUDY OF TECHNICAL PRODUCTION PRACTICES,EQUIPMENT AND ARCHITECTURE FOR THEATRE AND LIVE ACTION	4 Units	
Change	TFDP 101		INTRODUCTION TO DESIGN	4 Units	
Change	TFDP 143		SCENE PAINTING	4 Units	
Change	TFDP 145		COMPUTER AIDED DESIGN FOR THEATRE, FILM, AND TELEVISION	4 Units	
Change	TFDP 153A		INTRODUCTION TO CINEMATOGRAPHY	4 Units	
Change	TFDP 154		INTRODUCTION TO FILMMAKING	4 Units	
Change	UGRD 198G		GROUP INTERNSHIP	1 to 12 Unit	
Discontinue	BIOL 171L		HUMAN ANATOMY AND PHYSIOLOGY LABORATORY	1 Unit	
Discontinue	DNCE 069A		BEGINNING EIGHTEENTH-CENTURY DANCE	2 Units	
Discontinue	DNCE 069B		INTERMEDIATE EIGHTEENTH-CENTURY DANCE	2 Units	
Discontinue	DNCE 114A		DANCE COMPOSITION 1	4 Units	
Discontinue	DNCE 114B		DANCE COMPOSITION 2	4 Units	
Discontinue	DNCE 114C		DANCE COMPOSITION 3	4 Units	
Discontinue	GSST 132		UNITED STATES WOMEN, GENDER, AND SEXUALITY: 1620-1850	4 Units	
Discontinue	GSST 133		WOMEN, GENDER, AND SEXUALITY IN UNITED STATES HISTORY: 1850- PRESENT	4 Units	
Discontinue	GSST 146		HISTORY OF NATIVE AMERICAN WOMEN	4 Units	
Discontinue	MCS 021		INTRODUCTION TO FILM, LITERATURE, AND CULTURE	4 Units	
Discontinue	MCS 036		FOOD IN FILM	4 Units	CPLT 027
Discontinue	MCS 038		THE ANCIENT WORLD IN FILM AND TELEVISION	4 Units	
Discontinue	MCS 042		INTRODUCTION TO GERMAN CINEMA	4 Units	
Discontinue	MCS 043		SOVIET CINEMA	4 Units	
Discontinue	MCS 045		FRENCH CINEMA	4 Units	FREN 045
Discontinue	MCS 126		FROM NOVEL TO SCREEN: FILM ADAPTATIONS OF GERMAN LITERATURE	4 Units	
Discontinue	MCS 141		GERMAN FAIRY TALES: FROM BROTHERS GRIMM TO HOLLYWOOD	4 Units	GER 125
Discontinue	MCS 166		PUNK AND POST-PUNK CULTURES	4 Units	
Discontinue	MCS 176		THE HOLOCAUST IN LITERATURE, FILM AND CULTURE	4 Units	CPLT 176
Discontinue	MCS 181		EXISTENTIALISM IN LITERATURE, FILM, AND CULTURE	4 Units	
Discontinue	PSYC 181		LABORATORY IN COGNITIVE PSYCHOLOGY	4 Units	
Discontinue	PSYC 195		SENIOR THESIS	1 to 4 Units	
Discontinue	PSYC 195H		SENIOR HONORS THESIS	1 to 4 Units	
Discontinue	PSYC 195HL		SENIOR HONORS THESIS LABORATORY	1 to 4 Units	
Discontinue	PSYC 195L		SENIOR THESIS LABORATORY	1 to 4 Units	
New	AHS 019		PHOTOGRAPHY AND THE BODY	4 Units	
New	ANTH 138		PALEOPATHOLOGY	4 Units	
New	BCH 179		RNA ORGANIZATION IN HEALTH AND DISEASE	3 Units	
New	BLKS 002S		INTRODUCTION TO BLACK STUDY 2: IMAGINED AND EMBODIED FUTURES	5 Units	
New	BUS 094		FRESHMAN SUCCESS IN THE CLASSROOM	2 Units	
New	BUS 095		FRESHMAN SUCCESS BEYOND THE CLASSROOM	2 Units	
New	BUS 183		BUSINESS INTELLIGENCE FOR ANALYTICAL DECISIONS	4 Units	
New	BUS 186		SOCIAL NETWORK ANALYTICS	4 Units	
New	ECON 144		CLIMATE CHANGE ECONOMICS	4 Units	

Committee on Courses
Report to the Riverside Division
December 2, 2025

To be received and placed on file:
The Committee on Courses has approved the following courses.

<u>Action:</u>	<u>Course:</u>	<u>Cross-listed</u> <u>Course(s):</u>	<u>Title:</u>	<u>Units:</u>	<u>Course</u> <u>Renumbered:</u>
New	ENGL 025S		MODERN AND CONTEMPORARY LGBTQI ARTS AND MEDIA	5 Units	
New	ENGL 035S		INTRODUCTORY TOPICS IN VISUAL, SCREEN, AND PERFORMANCE STUDIES	5 Units	
New	ENGL 146S	MCS 146S	SPECIAL TOPICS IN TECHNOCULTURE AND COMPUTATIONAL MEDIA	4 Units	
New	ENGL 151SC		STUDIES IN MEDIEVAL LITERATURE	4 Units	
New	ME 001LA		GENERAL MAKERSPACE FUNDAMENTALS	1 Unit	
New	ME 001LB		MACHINING FUNDAMENTALS	1 Unit	
New	ME 148		INTERNAL COMBUSTION ENGINES	4 Units	
New	PBPL 163		PUBLIC HEALTH POLICY	4 Units	
New	POSC 153S		RUSSIAN FOREIGN POLICY	5 Units	
New	POSC 187		THEORIES OF AMERICAN POLITICAL INSTITUTIONS	4 Units	
New	POSC 187S		THEORIES OF AMERICAN POLITICAL INSTITUTIONS	5 Units	
New	STAT 150		SPATIAL STATISTICS	4 Units	
New	UGRC 198		R'COURSES : VARIABLE TOPICS	1 Unit	
Priority Enrollment	EDUC 104		MATHEMATICS EDUCATION	4 Units	
Priority Enrollment	EDUC 147		EDUCATION IN A DIVERSE SOCIETY	4 Units	
Graduate Courses:					
Change	BIEN 211		ADVANCED STATISTICS AND RESEARCH DESIGN FOR BIOENGINEERING	4 Units	
Change	BMSC 222 (E-Z)		SPECIAL TOPICS IN BIOMEDICAL SCIENCES	2 Units	
Change	BMSC 261		METHODS IN BIOMEDICAL RESEARCH	1 to 3 Units	
Change	CEE 207	ENSC 207	AIR QUALITY MODELING	4 Units	
Change	EDUC 202A		DEMOCRACY AND EDUCATION	4 Units	
Change	EDUC 202B		DEMOCRACY AND EDUCATION IN K12 CONTEXTS	4 Units	
Change	EDUC 215		EDUCATIONAL AND PSYCHOLOGICAL MEASUREMENT AND EVALUATION	4 Units	EDUC 242B
Change	EDUC 217		SINGLE-CASE EXPERIMENTAL DESIGN	4 Units	EDUC 217A
Change	EDUC 252		INTRODUCTION TO APPLIED BEHAVIOR ANALYSIS	4 Units	EDUC 231A
Change	EDUC 283		ANALYZING THE PRACTICE OF TEACHING	4 Units	
Change	EE 258	CS 256	DISTRIBUTED COMPUTING IN CYBER-PHYSICAL SYSTEMS	4 Units	
Change	ME 234		DATA DRIVEN MODELING AND CONTROL	4 Units	
Change	ME 248		INTERNAL COMBUSTION ENGINES	4 Units	
Change	MUS 263		SEMINAR IN SPECIAL TOPICS IN MUSICOLOGY	4 Units	
Change	PSYC 211		DATA ANALYTIC METHODS 1	4 Units	
Change	PSYC 212		DATA ANALYTIC METHODS 2	4 Units	
Change	PSYC 213		ADVANCED DATA ANALYTIC METHODS	4 Units	
Discontinue	EDUC 201A		RESEARCH IN READING AND WRITING	4 Units	
Discontinue	EDUC 201B		THEORIES AND ISSUES IN LITERACY	4 Units	
Discontinue	EDUC 217B		RESEARCH METHODS IN APPLIED BEHAVIOR ANALYSIS	2 Units	
Discontinue	EDUC 231B		BEHAVIORAL INTERVENTIONS IN THE SCHOOLS	4 Units	
Discontinue	EDUC 242A		EDUCATIONAL AND PSYCHOLOGICAL MEASUREMENT AND	4 Units	
Discontinue	EDUC 273		CRITICAL PEDAGOGY	4 Units	
Discontinue	MGT 208		BUSINESS, GOVERNMENT, AND SOCIETY	4 Units	
Discontinue	MGT 221		DECISION MAKING UNDER UNCERTAINTY	4 Units	
Discontinue	MGT 260		CONTEMPORARY ISSUES IN MANAGEMENT	4 Units	
Discontinue	MGT 261		CONTEMPORARY ISSUES IN ENTREPRENEURSHIP	4 Units	
Discontinue	MGT 262		ADVANCED TOPICS IN MANAGEMENT	4 Units	
Discontinue	MGT 263		ADVANCED TOPICS IN ENTREPRENEURSHIP	4 Units	
Discontinue	MGT 269		THE NEW VENTURE AND THE BUSINESS PLAN	4 Units	
New	BLKS 202		MANUSCRIPT LAB	4 Units	
New	BLKS 203		CRITICAL TOPICS IN ART AND ACTIVISM	4 Units	
New	BLKS 290		DIRECTED STUDIES	1 to 6 Units	
New	BLKS 292		CONCURRENT STUDIES	1 to 4 Units	
New	BLKS 297		DIRECTED RESEARCH IN BLACK STUDY	1 to 12 Unit	
New	BLKS 299		THESIS OR DISSERTATION RESEARCH	1 to 12 Unit	
New	BMSC 240		BIOSTATISTICS CONCEPTS AND TOOLS OF STATISTICS IN	4 Units	
New	BMSC 241		DATABASES IN BIOMEDICAL SCIENCES FOR RESEARCH AND CLINICAL	4 Units	
New	BMSC 242		DATA ANALYSIS AND SCIENTIFIC WRITING USING BIOSTATISTICS	4 Units	
New	EDUC 280R		FOUNDATIONS IN EDUCATION	4 Units	
New	EE 265A	CS 265A	FOUNDATIONS OF ROBOTICS: PLANNING AND CONTROL	4 Units	
New	EE 265B	CS 265B	FOUNDATIONS OF ROBOTICS: SENSING AND NAVIGATION	4 Units	
New	ENTM 263		SEMINAR IN THESIS AND DISSERTATION PROPOSAL WRITING	2 Units	
New	GEO 239		CURRENT TOPICS IN HAZARDS AND DISASTERS	1 Unit	
New	GEO 275		GEOPHYSICAL INVERSE THEORY	4 Units	
New	GEO 291		DIRECTED STUDIES IN HAZARDS AND DISASTERS	1 to 6 Units	
New	PBHL 241		COMMUNITY PUBLIC HEALTH METHODS FOR BEHAVIORAL HEALTH	4 Units	
New	POSC 211		COMPARATIVE HISTORICAL ANALYSIS	4 Units	

**Committee on Courses
Report to the Riverside Division
December 2, 2025**

To be received and placed on file:

The Committee on Courses has approved the following courses.

<u>Action:</u>	<u>Course:</u>	<u>Cross-listed Course(s):</u>	<u>Title:</u>	<u>Units:</u>	<u>Course Renumbered:</u>
New	PSYC 215		QUALITATIVE DATA ANALYTIC METHODS	4 Units	
Split	EDUC 271A		LANGUAGE, RACE, POWER, AND IDENTITY	4 Units	EDUC 201B
Split	EDUC 271B		LANGUAGE, RACE, POWER, AND IDENTITY IN K12 CONTEXTS	4 Units	EDUC 201B
Split	EDUC 273A		CRITICAL PEDAGOGY	4 Units	EDUC 273
Split	EDUC 273B		CRITICAL PEDAGOGY IN K12 CONTEXTS	4 Units	EDUC 273
Professional Courses:					
Change	PSYC 409A		PROFESSIONAL DEVELOPMENT AND RESEARCH ETHICS FOR EARLY CAREER GRADUATE STUDENTS	3 Units	PSYC 309A
Change	PSYC 409B		PROFESSIONAL DEVELOPMENT	3 Units	PSYC 309B
Discontinue	EDUC 335A		SUPERVISED TEACHING IN SPECIAL EDUCATION	4 Units	
Discontinue	EDUC 335B		SUPERVISED TEACHING IN SPECIAL EDUCATION	7 Units	
Discontinue	EDUC 335C		SEMINAR IN SPECIAL EDUCATION	2 Units	
Discontinue	EDUC 346A		SUPERVISED INTERN TEACHING IN A SPECIAL CLASS FOR INDIVIDUALS WITH MILD/MODERATE DISABILITIES	9 Units	
Discontinue	EDUC 346B		SUPERVISED INTERN TEACHING IN A SPECIAL CLASS FOR INDIVIDUALS WITH MILD/MODERATE DISABILITIES	9 Units	
Discontinue	EDUC 346C		SUPERVISED INTERN TEACHING IN A SPECIAL CLASS FOR INDIVIDUALS WITH MILD/MODERATE DISABILITIES	9 Units	
Discontinue	EDUC 347A		SUPERVISED INTERN TEACHING IN A SPECIAL CLASS FOR INDIVIDUALS WITH MODERATE/SEVERE DISABILITIES	9 Units	
Discontinue	EDUC 347B		SUPERVISED INTERN TEACHING IN A SPECIAL CLASS FOR INDIVIDUALS WITH MODERATE/SEVERE DISABILITIES	9 Units	
Discontinue	EDUC 347C		SUPERVISED INTERN TEACHING IN A SPECIAL CLASS FOR INDIVIDUALS WITH MODERATE/SEVERE DISABILITIES	9 Units	
New	PSYC 409C		GRANT WRITING FOR PSYCHOLOGICAL SCIENCES	4 Units	
Extension Courses:					
Instructor	PHYS XR037		The Origins, Sebastain Moran, M.S.		
Instructor	PHYS XR050		Introduction to Applied Data Science: A Multi-Disciplinary Approach, Sebastian Moran, M.S.		
Instructor	EDUC X81.3		Understanding the Foundations of Adult Learning for Early Education Coaches, Christopher Becerra, Ph.D.		
Instructor	EDUC X81.3		Understanding the Foundations of Adult Learning for Early Education Coaches, Denise Marciano, M.A.		
Instructor	EDUC X81.4		Practice-Based Coaching for Early Education Coaches, Christopher Becerra, Ph.D.		
Instructor	EDUC X81.4		Practice-Based Coaching for Early Education Coaches, Denise Marciano, M.A.		
Instructor	EDUC X85		Supervising Adults Within Early Childhood Educational Settings, Christopher Becerra, Ph.D.		
Instructor	EDUC X85		Supervising Adults Within Early Childhood Educational Settings, Denise Marciano, M.A.		
Instructor	EDUC X85.A		An Introduction to Early Childhood Studies: Child Growth and Development, Vivian Yacopi, M.Ed.		
Instructor	EDUC X85.A		An Introduction to Early Childhood Studies: Child Growth and Development, Carolina Basurto, M.A.		
Instructor	EDUC X85.A		An Introduction to Early Childhood Studies: Child Growth and Development, Bertha Barajas, M.A.		
Instructor	EDUC X85.A		An Introduction to Early Childhood Studies: Child Growth and Development, Denise Marciano, M.A.		
Instructor	EDUC X85.A		An Introduction to Early Childhood Studies: Child Growth and Development, Maria Velarde, M.A.		
Instructor	EDUC X85.B		The Role of Home, School and Community in Early Childhood Education, Vivian Yacopi, M.Ed.		
Instructor	EDUC X85.B		The Role of Home, School and Community in Early Childhood Education, Maria Velarde, M.A.		
Instructor	EDUC X85.B		The Role of Home, School and Community in Early Childhood Education, Carolina Basurto, M.A.		
Instructor	EDUC X85.C		Developmentally Appropriate Curriculum in Early Childhood Education, Vivian Yacopi, M.Ed.		
Instructor	EDUC X85.C		Developmentally Appropriate Curriculum in Early Childhood Education, Carolina Basurto, M.A.		
Instructor	EDUC X85.C		Developmentally Appropriate Curriculum in Early Childhood Education, Mariana Bosch, M.Ed.		
Instructor	EDUC X85.C		Developmentally Appropriate Curriculum in Early Childhood Education, Denise Marciano, M.A.		
Instructor	EDUC X85.C		Developmentally Appropriate Curriculum in Early Childhood Education, Maria Velarde, M.A.		
Instructor	EDUC X85.D		Health, Safety, and Nutrition in Early Childhood Education, Vivian Yacopi, M.Ed.		
Instructor	EDUC X85.D		Health, Safety, and Nutrition in Early Childhood Education, Carolina Basurto, M.A.		

Committee on Courses
Report to the Riverside Division
December 2, 2025

To be received and placed on file:
The Committee on Courses has approved the following courses.

<u>Action:</u>	<u>Course:</u>	<u>Cross-listed</u> <u>Course(s):</u>	<u>Title:</u>	<u>Units:</u>	<u>Course</u> <u>Renumbered:</u>
Instructor	EDUC X85.D		Health, Safety, and Nutrition in Early Childhood Education, Mariana Bosch, M.Ed.		
Instructor	EDUC X85.D		Health, Safety, and Nutrition in Early Childhood Education, Abigail Loya, M.A.		
Instructor	EDUC X85.D		Health, Safety, and Nutrition in Early Childhood Education, Maria Velarde, M.A.		
Instructor	EDUC X85.E		Principles and Practices of Teaching Young Children, Vivian Yacopi, M.Ed.		
Instructor	EDUC X85.E		Principles and Practices of Teaching Young Children, Carolina Basurto, M.A.		
Instructor	EDUC X85.E		Principles and Practices of Teaching Young Children, Abigail Loya, M.A.		
Instructor	EDUC X85.E		Principles and Practices of Teaching Young Children, Maria Velarde, M.A.		
Instructor	EDUC X85.F		Observation and Assessment of Children's Social and Learning, Vivian Yacopi, M.Ed.		
Instructor	EDUC X85.F		Observation and Assessment of Children's Social and Learning, Carolina Basurto, M.A.		
Instructor	EDUC X85.F		Observation and Assessment of Children's Social and Learning, Ramiro Rivera, M.A.		
Instructor	EDUC X85.F		Observation and Assessment of Children's Social and Learning, Denise Marciano, M.A.		
Instructor	EDUC X85.F		Observation and Assessment of Children's Social and Learning, Maria Velarde, M.A.		
Instructor	EDUC X85.F		Teaching Young Children in a Diverse Society, Vivian Yacopi, M.Ed.		
Instructor	EDUC X85.G		Teaching Young Children in a Diverse Society, Carolina Basurto, M.A.		
Instructor	EDUC X85.G		Teaching Young Children in a Diverse Society, Abigail Loya, M.A.		
Instructor	EDUC X85.G		Teaching Young Children in a Diverse Society, Maria Velarde, M.A.		
Instructor	EDUC X85.H		Supervised Field Experience for Early Childhood Education, Vivian Yacopi, M.Ed.		
Instructor	EDUC X85.H		Supervised Field Experience for Early Childhood Education, Carolina Basurto, M.A.		
Instructor	EDUC X85.H		Supervised Field Experience for Early Childhood Education, Abigail Loya, M.A.		
Instructor	EDUC X85.H		Supervised Field Experience for Early Childhood Education, Denise Marciano, M.A.		
Instructor	EDUC X85.H		Supervised Field Experience for Early Childhood Education, Maria Velarde, M.A.		
Instructor	EDUC X87.45		Infant and Toddler Development, Christopher Becerra, Ph.D.		
Instructor	EDUC X87.45		Infant and Toddler Development, Denise Marciano, M.A.		
Instructor	EDUC X87.46		Infant and Toddler Developmentally Appropriate Classroom Practices, Denise Marciano, M.A.		
Instructor	EDUC X87.50		Overview of Children with Special Needs for Early Care and Education Providers, Abigail Loya, M.A.		
Instructor	EDUC X87.55		Curriculum and Strategies for Children with Special Needs, Mariana Bosch, M.Ed.		
Instructor	EDUC X87.55		Curriculum and Strategies for Children with Special Needs, Abigail Loya, M.A.		
Instructor	EDUC X88.63		Education and Care of Infants and Toddlers, Denise Marciano, M.A.		
Instructor	EDUC X88.A		Seminar in Administration and Supervision of Early Childhood Centers, Part A, Christopher Becerra, Ph.D.		
Instructor	EDUC X88.A		Seminar in Administration and Supervision of Early Childhood Centers, Part A, Mariana Bosch, M.Ed.		
Instructor	EDUC X88.B		Seminar in Administration and Supervision of Early Childhood Education Centers, Part B, Christopher Becerra, Ph.D.		
Instructor	EDUC X88.B		Seminar in Administration and Supervision of Early Childhood Education Centers, Part B, Mariana Bosch, M.Ed.		
Instructor	EDUC X89.1		Developing Effective Programs for Dual Language Learners, Christopher Becerra, Ph.D.		
Instructor	EDUC X89.1		Developing Effective Programs for Dual Language Learners, Mariana Bosch, M.Ed.		
Instructor	EDUC X89.1		Developing Effective Programs for Dual Language Learners, Denise Marciano, M.A.		
Instructor	MGT X105.04		Creativity and Innovation, Giselle McKnight, M.Ed.		
Instructor	MGT X105.05		Human Resources Management, Vanessa Gonzalez, M.A.		
Instructor	MGT X105.12		Supervised Training Part 1, Vanessa Gonzalez, M.A.		
Instructor	MGT X105.13		Supervised Training Part 2, Vanessa Gonzalez, M.A.		

**COMMITTEE ON COURSES
REPORT TO THE RIVERSIDE DIVISION
DECEMBER 2, 2025**

To be received and placed on file:

The Committee on Courses has approved requests to allow the following instructors to teach upper division courses as indicated:

<u>INSTRUCTOR</u>	<u>DEPARTMENT/SCHOOL</u>	<u>LIMITS OF AUTHORIZATION</u>	
Brown, J.	Anthropology	ANTH 144G	SS'25 A
Tra, S.	Anthropology	ANTH 144	SS'25 B
Arnold, H.	Art History	AHS 136	SS'25 B
Carleton, E.	Art History	AHS 165	SS'25 B
Saden, A.	Art History	AHS 180	SS'25 A
Ali, M.	Comparative Literature and Languages	ARLC/CPLT/MEIS 155	SS'25 A
Shadkam, F.	Comparative Literature and Languages	CPLT/MCS 181	SS'25 B
Adjei-Fremphah, D.	Computer Science	CS 170	SS'25 B
Ayazi, M.	Computer Science	CS 111	SS'25 A
Pang, A.	Computer Science	CS 189	F'25
Bu, F.	Economics	ECON 181	SS'25 A
Chen, J.	Economics	ECON 101	SS'25 B
Fan, Y.	Economics	ECON 171	SS'25 B
Ford, D.	Economics	ECON 102	SS'25 B
Hodge, R.	Economics	ECON 162	SS'25 A
Jain, V.	Economics	ECON 143	SS'25 B
Liu, X.	Economics	ECON 124	SS'25 B
Montoya, M.	Economics	ECON 104B	SS'25 B
Qiu, Z.	Economics	ECON 146	SS'25 B
Son, Y.	Economics	ECON 105B	SS'25 B
Tu, T.	Economics	ECON 160	SS'25 B
Tunc, Z.	Economics	ECON 153	SS'25 A
Wang, D.	Economics	ECON 178	SS'25 A
Zhang, H.	Economics	ECON 105A	SS'25 A
Alkam, S.	Education	EDUC 118	F'25
Colchete, N.	Education	EDUC 118	SS'25 B
Colchete, N.	Education	EDUC 118	S'26
Dech, E.	Education	EDUC 257	SS'25 A
Dech, E.	Education	EDUC 275B	W'26
Dech, E.	Education	EDUC 273B	S'26
Dighero, J.	Education	EDUC 146/ETST 146	SS'25 A
Farrington, R.	Education	EDUC 283	S'26
Kang, Y.	Education	EDUC 161	S'26
O'Brien, K.	Education	EDUC 246E	SS'25 A
Padilla, V.	Education	EDUC 184	SS'25 B
Pena, F.	Education	EDUC 154	SS'25 A
Romero, A.	Education	EDUC 157	SS'25 A
Romero, A.	Education	EDUC 152	SS'25 B
Wilbur, R.	Education	EDUC 161	SS'25 B
Barbour, L.	English	ENGL 140	SS'25 B
Hernandez-Bachman, C.	English	ENGL 136T	SS'25 B
Isevski, J.	English	ENGL 179A	SS'25 A
Marquez, A.	English	ENGL 134	SS'25 A
Mocsi, A.	English	ENGL 153	F'25
Wemakor, L.	English	ENGL 128	SS'25 B

<u>INSTRUCTOR</u>	<u>DEPARTMENT/SCHOOL</u>	<u>LIMITS OF AUTHORIZATION</u>	
Wood, A.	English	ENGL 102W	SS'25 A
Yuipco, C.	English	ENGL 102W	F'25
Arquilla, A.	Evolution, Ecology, and Organismal Biology	BIOL 178	SS'25 A
Caudle, J.	Evolution, Ecology, and Organismal Biology	BIOL 160	SS'25 B
Firebaugh Ornelas, A.	Evolution, Ecology, and Organismal Biology	BIOL 110	SS'25 A
Herbert, A.	Evolution, Ecology, and Organismal Biology	BIOL 171B	SS'25 A
Herbert, A.	Evolution, Ecology, and Organismal Biology	BIOL 171C	SS'25 B
Louden, S.	Evolution, Ecology, and Organismal Biology	BIOL 116	SS'25 A
Wertz, B.	Evolution, Ecology, and Organismal Biology	BIOL 110	SS'25 B
Muñoz, M.	Hispanic Studies	SPN 130	F'25
Le, J.	Mathematics	MATH 168	SS'25 A
Fewer, R.	Media and Cultural Studies	MCS 146	SS'25 B
Wilson, J.	Media and Cultural Studies	MCS 129	SS'25 B
Garcia, G.	Philosophy	PHIL 151	SS'25 A
Gomes, S.	Philosophy	PHIL 109	SS'25 B
Higgins, S.	Philosophy	PHIL 111	SS'25 A
Martin, J.	Philosophy	LWSO 100	SS'25 A
McCuller, M.	Philosophy	PHIL 118	SS'25 B
Spano, C.	Philosophy	PHIL 117	SS'25 A
Stoner, A.	Philosophy	PHIL 164	SS'25 B
Allen, M.	Political Science	POSC 101	F'25
Biswas, R.	Political Science	POSC 186	F'25
Liedke, M.	Political Science	POSC 155S	SS'25 B
Onishi, W.	Political Science	POSC 186	F'25
Murillo, J.	Psychology	PSYC 140	F'25
Radosic, N.	Psychology	PSYC 142	F'25
Rodriguez, T.	Psychology	PSYC 182N	SS'25 B
Trego, M.	Psychology	PSYC 178	F'25
Hull, M.	Society, Environment, and Health Equity	SEHE 174	F'25
Kegler, T.	Society, Environment, and Health Equity	SEHE 175/LABR 175	W'26
Menchaca, H.	Society, Environment, and Health Equity	SEHE 162	S'26
Perez, G.	Society, Environment, and Health Equity	SEHE 173	W'26
Huft, J.	Sociology	SOC 110	S'26
Rodriguez, B.	Sociology	SOC 124	SS'25 A
Zheng, A.	Southeast Asian Studies	SEAS 123	SS'25 B
Lawson, J.	Statistics	STAT 170	SS'25 A
Ouyang, E.	Statistics	STAT 157	F'25
Mohammad, D.	Study of Religion	RLST 111	F'25

**COMMITTEE ON COURSES
REPORT TO THE RIVERSIDE DIVISION
DECEMBER 2, 2025**

To be received and placed on file:

The Committee on Courses has approved the following course proposals for deletion, which have been listed in the General Catalog, but for at least four years, have not been offered, been offered with zero enrollment, or have been offered but canceled for deletion with the concurrence of the departments involved.

The following lists courses that were deleted and identified in the 2024-2025 Academic Year as part of the courses not offered for four or more year's process.

DNCE 069A
DNCE 069B
DNCE 114A
DNCE 114B
DNCE 114C

Courses scheduled to be approved for deletion:

CRWT 186B	ETST 225	BIEN 251	CEE 247	CS 122B	DNCE 155E
	ETST 227	BIEN 267	CEE 251	CS 233	DNCE 155F
	ETST 243F	BIEN 268	CEE 254		DNCE 155(E-Z)
	ETST 246		CEE 257		DNCE 172K
			CEE 261		
			CHE 171		

Courses previously approved for deletion:

BUS 158	CS 267	CRWT 136	ETST 108E	ETST 151	MCBL 130
	CS 269	CRWT 174	ETST 108F	ETST 152	
			ETST 109E	ETST 156	
			ETST 111	ETST 166	
			ETST 120	ETST 169	
			ETST 129	ETST 171	
			ETST 141A	ETST 173	
			ETST 141B	ETST 183	
				ETST 191K	
				ETST 191S	

The following lists courses that were deleted and identified in the 2023-2024 Academic Year as part of the courses not offered for four or more year's process.

MCS 021
MCS 043

Courses scheduled to be approved for deletion:

AHS 117	MCS 114	SOC 131H	GEO 132
AHS 145	MCS 142		GEO 167
	MCS 169		GEO 205
			GEO 221
			GEO 224
			GEO 225A

Courses previously approved for deletion:

AHS 159	MCS 103	SOC 002F
AHS 168	MCS 113	SOC 003H

AHS 169	MCS 128	SOC 123
AHS 185	MCS 138	SOC 125
	MCS 165	SOC 132
		SOC 156
		SOC 186G
		SOC 186E
		SOC 186F

The following lists courses that were deleted and identified in the 2022-2023 Academic Year as part of the courses not offered for four or more year's process.

Courses scheduled to be approved for deletion:
MATH 211B

Courses previously approved for deletion:

ARLC 158	CPLT 144	FREN 109A	PHIL 231	MUS 011	MATH 002
CHN 025	CPLT 158	FREN 109C	PHIL 232	MUS 013	MATH 137
CHN 105	CPLT 178	FREN 109D	PHIL 233	MUS 172	MATH 141
CHN 108	CPLT 219	ITAL 125G	PHIL 235	MUS 178	MATH
CLA 165	CPLT 272	ITAL 125S	PHIL 237	MUS 251	216B
CPLT 015	CPLT 273	ITAL 125T	PHIL 238	MUS 264	MATH 202
CPLT 018	CPLT 275	JPN 010A	PHIL 251	POSC 135	MATH 217
CPLT	CPLT 276	JPN 010B	PHIL 252	POSC 152	MATH 222
117/JPN 117		VNM	PHIL 259	POSC 156	MATH 233
		189/SEAS	PHIL 261	POSC 172	
		189			

The following lists courses that were deleted and identified in the 2021-2022 Academic Year as part of the courses not offered for four or more year's process.

EDUC 335B
EDUC 335C

Courses scheduled to be approved for deletion:
URST 178
URST 182
URST 184

Courses previously approved for deletion:

CHEM 092	CHEM 202	EDUC 230A	EDUC 258R	URST 172
CHEM 13HA	CHEM 264	EDUC 230B	EDUC 274	
	CHEM 281	EDUC 242C	EDUC 289	
		EDUC 247	EDUC 295A	
		EDUC 249		

**EXECUTIVE COMMITTEE
BOURNS COLLEGE OF ENGINEERING
REPORT TO THE RIVERSIDE DIVISION**

To be adopted:

Proposed Changes to Electrical Engineering Major description,
Updates to Undergraduate EE Program Major requirements.

PRESENT:

Major

The Department of Electrical and Computer Engineering offers B.S., M.S., and Ph.D. degrees in Electrical Engineering and with the Department of Computer Science and Engineering jointly offers B.S. and M.S. degrees in Computer Engineering. For more information on the Computer Engineering degree programs, see Computer Engineering in this catalog.

Graduates of UCR's BS degree program in Electrical Engineering will meet high professional, ethical, and societal goals as demonstrated by accomplishing, at least one different item in each of two different categories:

success in post-graduation studies as evidenced by:

- satisfaction with the decision to further their education
- advanced courses completed or advanced degrees earned
- professional visibility (e.g. publications, presentations, patents, inventions, awards)
- professional responsibilities (e.g. professional mentoring, professional society membership and offices, reviewing and editorial work for professional journals)

success in a chosen profession or vocation as evidenced by:

- career satisfaction
- promotions/raises (e.g. management leadership positions or distinguished technical positions)
- professional visibility (e.g. publications, presentations, patents, inventions, awards)
- professional responsibilities (e.g. professional registration, professional mentoring, professional society membership and offices)
- entrepreneurial activities
- consulting activities

PROPOSED:

[no change]

[no change]

[no change]

[no change]

contributions to society and profession as evidenced by:

- leadership roles
- public service
- mentoring / outreach activities
- volunteer service
- establishment and maintenance of professional networks

[no change]

All undergraduates in the College of Engineering must see an advisor at least annually. Visit student.engr.ucr.edu for details.

[no change]

The Electrical Engineering B.S. degree program at UCR is accredited by the ~~Engineering Accreditation Commission of ABET, [abet.org](https://www.ece.ucr.edu/academics/abet/vopeo)~~. For more details see <https://www.ece.ucr.edu/academics/abet/vopeo>

The B.S. Electrical Engineering degree program is accredited by ABET's Engineering Accreditation Commission (EAC) under the commission's General Criteria and Program Criteria for Electrical, Computer, Communications, Telecommunication(s), and similarly named Engineering Programs. For more details, see <https://www.ece.ucr.edu/abet/vopeo>.

Major Requirements

1. Lower-division requirements (73 units)

- a) One course in the biological sciences chosen from an approved list
- b) CS 010A, CS 010B, CS 061
- c) EE 016
- d) EE 010, EE 020A, EE 020B, EE 030A, EE 030LA, EE 030B
- e) MATH 009A, MATH 009B, MATH 009C, MATH 010A, MATH 010B
- f) PHYS 040A, PHYS 040B, PHYS 040C

[no change]

2. Upper-division requirements (77 units) [no change]

a) EE 100A, EE 110A, EE110B, EE 114, EE 116, CS 120A/EE 120A, CS 120B/EE 120B, EE 132, EE 133, EE 142, EE 175A, EE 175B

b) ENGR 181W

d) Twenty-four (24) units of technical electives chosen from CS 161, CS 162, CS 168/EE 168; EE 105, EE 106, EE 100B, EE 115, EE 117, EE 118, EE 123, EE 128, EE 135, EE 136, EE 137, EE 138, EE 139, EE 141, EE 144, EE 145/ME 145, EE 146, EE 147, EE 148, EE 150, EE 151, EE 152, EE 153, EE 155, EE 162, EE 165, EE 168, ENGR 160

To ensure depth, the choice of technical electives must include at least one coherent sequence of at least four (4) courses (two required courses plus two additional) in one focus area of electrical engineering, and two (2) other technical elective courses, as defined below. [no change]

• **Communications, Signal Processing and Networking.** Required courses: EE 115, EE 141. Sequence Courses: EE 100B, EE 117, EE 118, EE 146, EE 150, EE 152, ENGR 160 [no change]

• **Control and Robotics.** Required Courses: EE 105, EE 144. Sequence Courses: EE 106, EE 141, EE 145/ME 145, EE 146, EE 151, EE 152, ENGR 160 [no change]

• **Embedded Systems and VLSI.** Required Courses: EE 128, EE 168. Sequence Courses: EE 100B, EE 117, EE 118, EE 135, EE 141, EE 147, EE 165, CS 161, CS 162 [no change]

• **Intelligent Systems.** Required Courses: EE 144, EE 146. Sequence Courses: EE 105, EE 106, EE 115, EE 128, EE 141, EE 145, EE 147, EE 150, EE 151, EE 152, ENGR 160 [no change]

• **Nanotechnology, Advanced Materials, and Devices.** Required Courses: EE 136, EE 137. Sequence Courses: EE 100B, EE 117, EE 118, EE 135, EE 138, EE 139, EE 162, EE 168 [no change]

• **Power Systems and Smart Grid.** Required Courses: EE 123, EE 155. Sequence Courses: EE 100B, EE 117, EE 128, EE 153, ENGR 160

Example course sequences are available through [no change]
the Student Affairs Office in the College of
Engineering or **student.engr.ucr.edu**

Justification:

1. Adding clarification to the EE Program's ABET accreditation statement.
A particular format of the EE program's ABET accreditation statement is a strict ABET requirement.
Bringing it in line with the ABET requirements.

Approvals:

Approved by the Department of Electrical & Computer Engineering:	October 30, 2024
Approved by the Executive Committee of the College of Engineering:	December 11, 2025
Approved by the Committee on Educational Policy:	May 23, 2025
Approved by Executive Council in Lieu of the Division:	June 10, 2025

On behalf of the University Writing Program, Division of Undergraduate Education

Wallace Cleaves, Associate Dean and Director of the University Writing Program

REPORT TO THE RIVERSIDE DIVISION
Fall 2025

To Be Adopted

Proposed Changes to UCR Senate Regulations
6.1, 6.1.1, 6.1.2.2

PRESENT:

6.1 English composition. Students must demonstrate adequate proficiency in English composition by completing a one-year sequence of college-level instruction in English composition, with no grade lower than C. Courses in the Writing across the Curriculum (WAC) program and other alternatives approved by the Academic Senate as alternatives to the sequence's third-quarter course, ~~English 1C~~, may be applied toward satisfaction of the third-quarter requirement if a student's college permits its majors to substitute such a course for 1C, and if students have first passed ~~English 1B~~ with a "C" or higher. The grade in the alternative course must be no lower than a "C." Individual colleges may set a higher GPA requirement in ~~English 1A and/or 1B~~ as a prerequisite to take Senate-approved alternatives to ~~English 1C~~. (Am 16 Nov 2004)(AM 30 Nov. 2010)(Am 23 Feb 16)

6.1.1 Transfer students who have taken one semester of English composition at another college or university are required to take ~~English 1B~~ and ~~English 1C~~, with the option of taking a course in the WAC program and other alternatives to English 1C approved by the Academic Senate if a student's

PROPOSED:

6.1 English composition. Students must demonstrate adequate proficiency in English composition by completing a one-year sequence of college-level instruction in English composition, with no grade lower than C. Courses in the Writing across the Curriculum (WAC) program and other alternatives approved by the Academic Senate as alternatives to the sequence's third-quarter course, WRIT 030 or WRIT 030S, may be applied toward satisfaction of the third-quarter requirement if a student's college permits its majors to substitute such a course for WRIT 030 or WRIT 030S, and if students have first passed WRIT 020 or WRIT 020S with a "C" or higher. The grade in the alternative course must be no lower than a "C." Individual colleges may set a higher GPA requirement in WRIT 010 or WRIT 010S and/or WRIT 020 or WRIT 020S as a prerequisite to take Senate-approved alternatives to WRIT 030 or WRIT 030S. (Am 16 Nov 2004)(AM 30 Nov. 2010)(Am 23 Feb 16)

6.1.1 Transfer students who have taken one semester of English composition at another college or university are required to take WRIT 020 or WRIT 020S and WRIT 030 or WRIT 030S, with the option of taking a course in the WAC program and other alternatives to WRIT 030 or WRIT

college permits its majors to substitute such a course for ~~4G~~.(Am 24 May 84)(Am 30 Nov. 2010)(Am 23 Feb 16)

030S approved by the Academic Senate if a student's college permits its majors to substitute such a course for WRIT 030 or WRIT 030S.(Am 24 May 84)(Am 30 Nov. 2010)(Am 23 Feb 16)

6.1.2 The requirement for the first two quarters of instruction (or equivalent proficiency) may be met as follows:.

6.1.2 No Change.

6.1.2.1 (1) By achieving a score of 4 or 5 on the College Board Advanced Placement Test in English;

6.1.2.1 No Change.

6.1.2.2 2) By achieving a score of 3 on the College Board Advanced Placement Test in English and taking ~~English 1A-4B~~ for credit or by taking only ~~English 4B~~ for credit;

6.1.2.2 By achieving a score of 3 on the College Board Advanced Placement Test in English and taking WRIT 010 or WRIT 010S- WRIT 020 or WRIT 020S for credit or by taking only WRIT 020 or WRIT 020S for credit;

Statement of Purpose and Effect: These changes are being requested to comply with the newly authorized change to course nomenclature of the first-year writing courses taught by the University Writing Program that fulfill the current "English Composition" requirement. The course names referred to in the bylaws have been updated to reflect the new course names and numbers.

Submitted by : Wallace Cleaves



(6/3/2025)

Section below is for Senate use only

The Committee on Rules and Jurisdiction finds the wording to be consistent with the code of the Academic Senate:

6/5/2025

Approved in lieu of the Division by Executive Council:

6/9/2025

**COMMITTEE ON PREPARATORY EDUCATION
REPORT TO THE RIVERSIDE DIVISION
December 2, 2025**

To be received and placed on file:

Report on the Entry-Level Writing Requirement: 2024-2025

In the fall of 2024, 61% of UCR's entering freshmen had satisfied the Entry-Level Writing Requirement before registering as full-time students. Many students passed the Analytical Writing Placement Exam or one of the approved Advanced Placement exams. A large number of freshmen (35% in Fall 2024) came to UCR with AP credits (AP English Language & Composition or AP English Literature & Composition) and that placed them in English 1B (Intermediate Composition) or English 1C (Applied Intermediate Composition). Another 12% of the entering freshmen satisfied the ELWR by passing the Analytical Writing Placement Exam. The remaining 14% of entering freshmen satisfied the ELWR by way of the Scholastic Aptitude Test (SAT) (2%), the American College Testing (ACT) (<1%), an International Baccalaureate English exam (1%), earning transferable credit for English 1A from another institution (10%), or passing English 4 during the Highlander Early Start Academy (<1%).

The remaining 39% placed in Entry-Level Writing courses. The great majority made good progress once they arrived at UCR.

2024 ELWR Students: Initial Entry-Level Placement

Colleges	English 1PA	English 4	Basic Writing 1 & 3 (ELL)	No Placement	Total ELWR Students
BCOE	30	153	59	5	247
CNAS	75	374	90	10	549
CHASS	126	787	254	37	1204
SOE	7	52	18	0	77
SPP	0	13	9	7	29
SoB	3	6	2	0	11
TOTAL	241	1385	432	59	2117

2024 ELWR Satisfied: Initial Eligibility for English Composition

Colleges	1A eligible	1B eligible	1C eligible	1ABC completed
BCOE	158	175	205	79
CNAS	334	368	327	147
CHASS	420	459	333	181
SOE	9	18	10	12
SPP	6	7	5	3
SoB	3	8	11	8
Total: 3283	930	1035	891	430
Percentage of F24 cohort: 61%	17%	19%	17%	8%

Of the 1385 students who placed into English Writing 4 in the fall, 1160 satisfied the ELWR by the end of the spring quarter. Of the remaining 225 students initially placed in English 4 who did not satisfy the ELWR by the spring 2025 quarter, 69 students withdrew voluntarily from the university, were academically dismissed, or left the university due to impending dismissal because of their overall academic records. 25 students satisfied the ELWR during the summer 2025 quarter. The associate deans in several colleges granted petitions for additional time to satisfy the ELWR. Ninety-four students have time remaining in the ELWR time-limit because of the time limit extension. **Thirty-seven students were required to leave UCR at the end of the year for failure to satisfy the requirement.** Only twenty-one of those students were in good standing upon their lapse from the university.

In addition to these students, there were 241 students initially placed into English Writing 4 who were invited (on the basis of their Analytical Writing Placement Exam) to participate in English 1PA (Beginning Composition: Intensive) instead. Of this group, 170 students chose to enroll in 01PA and passed, satisfying both the ELWR and the ENGL001A requirement in the fall quarter. The remaining students declined the invitation and enrolled in English 4. Sixty-two in that group satisfied the ELWR by passing English 4. Four students have time remaining in the time limit to satisfy the ELWR by passing English 4. **One** student was required to leave UCR at the end of the year for failure to satisfy the requirement. The remaining 4 students left the university (or were academically dismissed) before completing the ELWR.

A total of 432 entering freshmen initially placed in ELL classes. Since, by Senate rule, they were “off the clock” for up to their first three quarters of residence, no students among those placed in ELL classes in the fall of 2024 were required to leave UCR solely for failure to satisfy the ELWR. 167 ELL students satisfied the ELWR during their first year of residence. Of the remaining 265 ELL students, 5 satisfied the requirement during the summer of 2025. Forty-three students were academically dismissed or left the university. The remaining 217 students continue to make progress in satisfying the ELWR. (These students will have up to two years to satisfy the ELWR.)

Update on Fall 2023 Basic Writing 1 and 3 Students

We have a more complete picture of BW 1 and BW3 students' progress when we look at the two-year records of students who placed in an ELL course when they entered UCR in the fall of **2023**. Of the 493 entering freshmen who were placed in ELL classes that year, 230 students satisfied the ELWR during their first year of residence. 109 students satisfied the ELWR during their second year of residence. Thirteen students satisfied during the summer 2025 quarter. Of the remaining 141 ELL students, 31 students were academically dismissed or left the university due to impending dismissal on the basis of their overall records. 64 students withdrew from the university. **Twelve students in the ELL group that started in Fall 2023 were eventually required to leave UCR for failure to satisfy the ELWR.** Thirty-four students have time remaining in the ELWR time-limit because of the time limit extension.

In previous years, almost half of the ELWR-lapsed students were able to complete the requirement through UCRX and be re-admitted to UCR. We expect a similar result for any students who eventually are lapsed for failure to satisfy the ELWR within the allotted time limit.

2023 Basic Writing 1 & 3 (ELL) Admits Not Satisfying ELWR (listed according to initial placement)

Colleges	Total Basic Writing 1 & 3 (ELL) Students	Total BSWT 1 & 3 (ELL) Students; ELWR not satisfied	Academically Dismissed or Withdrew in poor standing	Withdrew (in good standing)	ELWR Lapse	ELWR Lapse - Readmitted	Time Remains
BCOE	73	21	8	8	1	0	3
CNAS	96	28	8	10	0	0	10
CHASS	310	89	36	22	11	0	20
SOE	10	3	1	1	0	0	1
SPP	2	0	0	0	0		0
BU	2	0	0	0	0	0	0
TOTAL	493	141	53	41	12	0	34

2024 Admits Not Satisfying ELWR by end of Spring 2025 (listed according to initial placement):

Colleges	Total 2024 ELWR Students	ELWR Students Not Satisfying ELWR by end of Spring 2025	English 1PA; ELWR not satisfied	English 4; ELWR not satisfied	BSWT 1 & 3 (ELL); ELWR not satisfied
BCOE	247	50	0	18	32
CNAS	549	131	4	61	66
CHASS	1203	288	4	133	151
SOE	77	20	1	9	10
SPP	29	7	0	3	4
SoB	11	4	1	1	0
TOTAL	2117	500	10	225	263

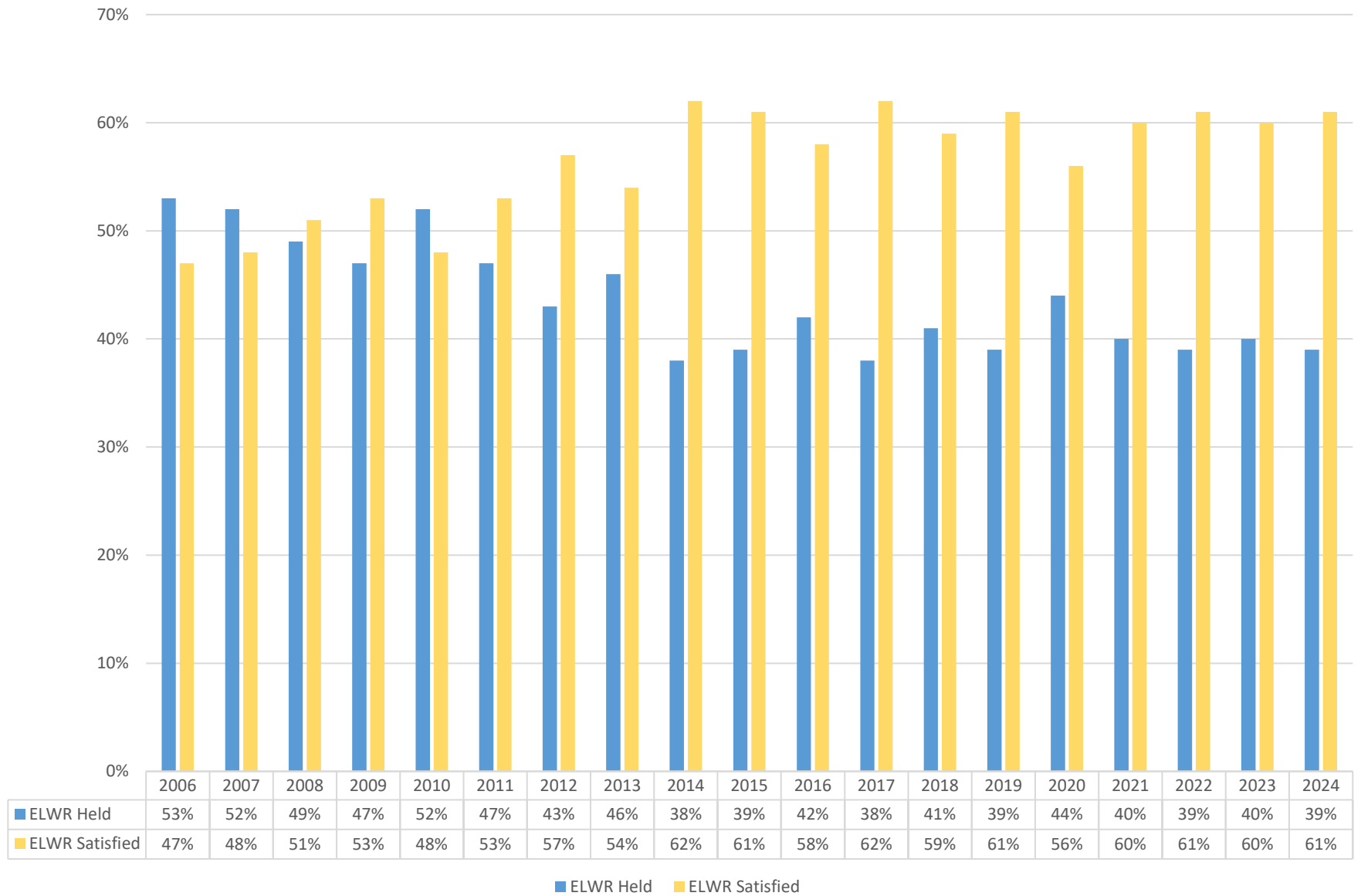
English 4/English 1PA:

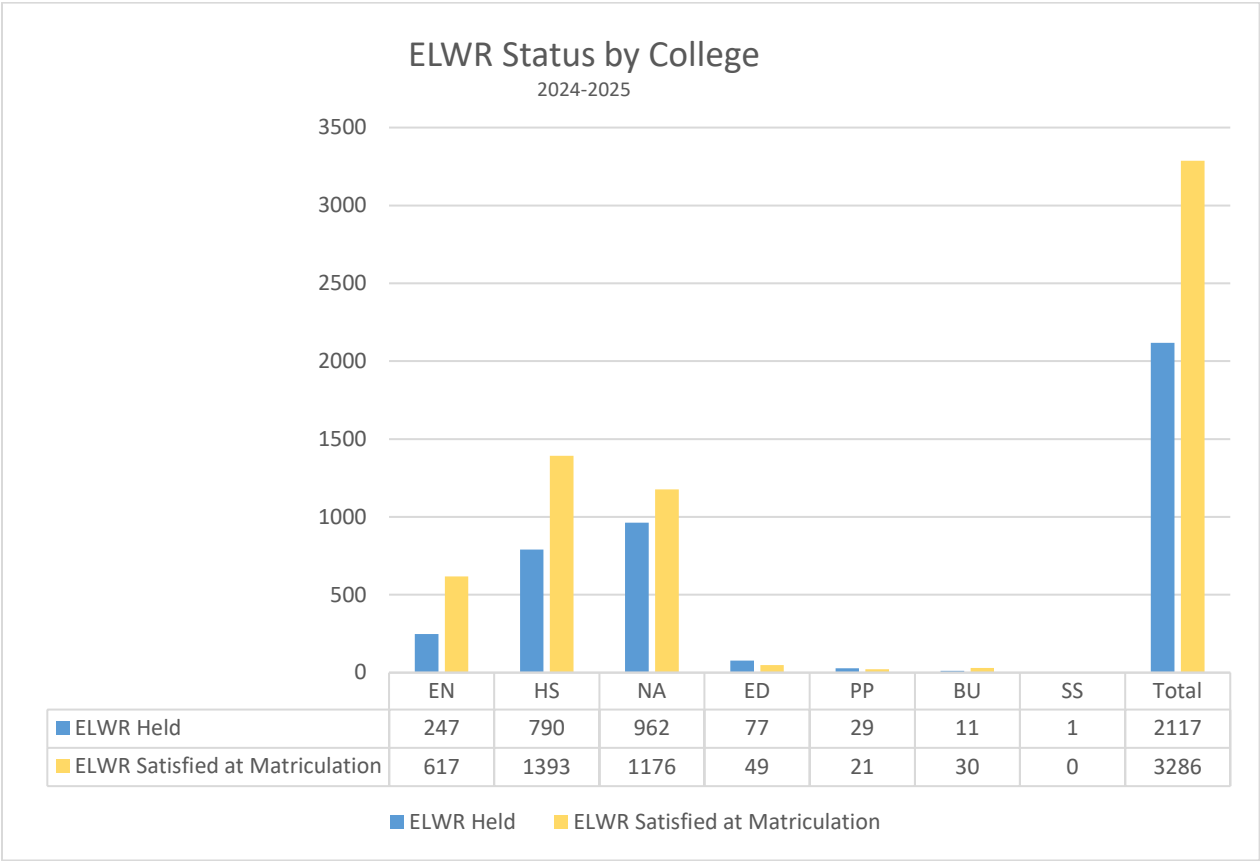
Colleges	Total 2024 English 4/1PA Students	2024 ENGL 4/1PA Students; ELWR not satisfied by 25S	Satisfied ELWR during 25U	Academically Dismissed or Withdrew	Withdrew (in good standing)	ELWR Lapse	Time Remains
BCOE	183	18	1	8	0	0	9
CNAS	449	65	8	14	7	38	36
CHASS	913	137	17	35	8	0	40
SOE	59	10	0	0	0	0	10
SPP	13	3	0	2	0	0	1
SS	0	0	0	0	0		0
SoB	9	1	0	0	0	0	2
TOTAL	1626	234	26	59	5	6	98

Basic Writing 1/Basic Writing 3:

Colleges	Total 2024 Basic Writing 1 & 3 (ELL) Students	2024 BSWT 1 & 3 (ELL) Students; ELWR not satisfied by 25S	Satisfied ELWR during 25U	Academically Dismissed or Withdrew	ELWR Lapse	Time Remains
BCOE	59	32	1	10	0	21
NAS	90	66	4	10	0	52
CHASS	254	151	0	20	0	131
SOE	18	10	0	1	0	9
SPP	9	4	0	2		2
SoB	2	2	0	0	0	2
TOTAL	432	265	5	43	0	217

UCR ELWR Status of New Freshmen





**COMMITTEE ON UNIVERSITY EXTENSION
REPORT TO THE RIVERSIDE DIVISION
DECEMBER 2, 2025**

DEPT	COURSE	TITLE	INSTRUCTOR FIRST NAME	INSTRUCTOR LAST NAME	INSTRUCTOR DEGREE	TYPE OF APPROVAL	APPROVED
		Specialized Study Program in AI in K12 Education				X	06/27/25
		Professional Certificate in Biosecurity				X	06/27/25
		Professional Certificate in Strategic Supervision and Leadership				X	06/27/25
		Specialized Study Program in Foundations of Effective Leadership				X	06/27/25
		Designated Subjects Credential Program Career Technical Education (CTE) and Special Subjects (Track A)				X	06/27/25
		Professional Certificate in Strategic Leadership and Supervision - REVISION					10/14/2025
BIOL	X461	Introduction to Biosecurity				C	06/27/25
BIOL	X462	Elements of Biosecurity				C	06/27/25
BIOL	X463	Agricultural Biosecurity and Food Defense				C	06/27/25
BIOL	X464	Evolving Technology and the Regulatory Landscape				C	06/27/25
CS	X423.2	QuickBooks: Accounting and Finance Application for Business	Henry	Phan	M.B.A.	I	10/14/2025
CS	X456	Artificial Intelligence Principles: Deep Learning and Large Language Models	Weixiang	Chen	Ph.D.	I*	10/14/2025
CS	X456.01	Data and Data Preparation for AI	Weixiang	Chen	Ph.D.	I*	10/14/2025
CS	X456.02	AI Practicum (Project-based)	Weixiang	Chen	Ph.D.	I*	10/14/2025
EDUC	X81.3	Understanding the Foundations of Adult Learning for Early Education Coaches	Christopher	Becerra	Ph.D.	I*	10/09/25
EDUC	X81.3	Understanding the Foundations of Adult Learning for Early Education Coaches	Denise	Marciano	M.A.	I*	10/09/25
EDUC	X81.4	Practice-Based Coaching for Early Education Coaches	Christopher	Becerra	Ph.D.	I*	10/09/25
EDUC	X81.4	Practice-Based Coaching for Early Education Coaches	Denise	Marciano	M.A.	I*	10/09/25
EDUC	X85.A	An Introduction to Early Childhood Studies: Child Growth and Development	Vivian	Yacopi	M.Ed	I	10/23/25
EDUC	X85.B	The Role of Home, School and Community in Early Childhood Education	Vivian	Yacopi	M.Ed	I	10/23/25
EDUC	X85.C	Developmentally Appropriate Curriculum in Early Childhood Education	Vivian	Yacopi	M.Ed	I	10/23/25
EDUC	X85.D	Health, Safety, and Nutrition in Early Childhood Education	Vivian	Yacopi	M.Ed	I	10/23/25
EDUC	X85.E	Principles and Practices of Teaching Young Children	Vivian	Yacopi	M.Ed	I	10/23/25
EDUC	X85.F	Observation and Assessment of Children's Social and Learning	Vivian	Yacopi	M.Ed	I	10/23/25
EDUC	X85.G	Teaching Young Children in a Diverse Society	Vivian	Yacopi	M.Ed	I	10/23/25
EDUC	X85.H	Supervised Field Experience for Early Childhood Education	Vivian	Yacopi	M.Ed	I	10/23/25
EDUC	X85	Supervising Adults Within Early Childhood Educational Settings	Christopher	Becerra	Ph.D.	I*	10/09/25
EDUC	X85	Supervising Adults Within Early Childhood Educational Settings	Mariana	Bosch	M.Ed.	I*	10/09/25
EDUC	X85.A	An Introduction to Early Childhood Studies: Child Growth and Development	Carolina	Basurto	M.A.	I*	05/08/25
EDUC	X85.A	Child Growth and Development	Bertha	Barajas	M.A.	I	05/08/25
EDUC	X85.A	An Introduction to Early Childhood Studies: Child Growth and Development	Denise	Marciano	M.A.	I*	10/09/25
EDUC	X85.A	An Introduction to Early Childhood Studies: Child Growth and Development	Maria	Velarde	M.A.	I	10/23/25
EDUC	X85.B	The Role of Home, School and Community in Early Childhood Education	Carolina	Basurto	M.A.	I*	05/08/25
EDUC	X85.B	The Role of Home, School and Community in Early Childhood Education	Maria	Velarde	M.A.	I	10/23/25
EDUC	X85.C	Developmentally Appropriate Curriculum in Early Childhood Education	Carolina	Basurto	M.A.	I*	05/08/25
EDUC	X85.C	Developmentally Appropriate Curriculum in Early Childhood Education	Mariana	Bosch	M.Ed.	I*	10/09/25
EDUC	X85.C	Developmentally Appropriate Curriculum in Early Childhood Education	Denise	Marciano	M.A.	I*	10/09/25
EDUC	X85.C	Developmentally Appropriate Curriculum in Early Childhood Education	Maria	Velarde	M.A.	I	10/23/25
EDUC	X85.D	Health, Safety, and Nutrition in Early Childhood Education	Carolina	Basurto	M.A.	I*	05/08/25
EDUC	X85.D	Health, Safety, and Nutrition in Early Childhood Education	Mariana	Bosch	M.Ed.	I*	10/09/25

**COMMITTEE ON UNIVERSITY EXTENSION
REPORT TO THE RIVERSIDE DIVISION
DECEMBER 2, 2025**

DEPT	COURSE	TITLE	INSTRUCTOR FIRST NAME	INSTRUCTOR LAST NAME	INSTRUCTOR DEGREE	TYPE OF APPROVAL	APPROVED
EDUC	X85.D	Health, Safety, and Nutrition in Early Childhood Education	Abigail	Loya	M.A.	I	10/09/25
EDUC	X85.D	Health, Safety, and Nutrition in Early Childhood Education	Maria	Velarde	M.A.	I	10/23/25
EDUC	X85.E	Principles and Practices of Teaching Young Children	Carolina	Basurto	M.A.	I*	05/08/25
EDUC	X85.E	Principles and Practices of Teaching Young Children	Abigail	Loya	M.A.	I	10/09/25
EDUC	X85.E	Principles and Practices of Teaching Young Children	Maria	Velarde	M.A.	I	10/23/25
EDUC	X85.F	Observation and Assessment of Children's Social and Learning Development	Carolina	Basurto	M.A.	I*	05/08/25
EDUC	X85.F	Observation and Assessment of Children's Social and Learning Development	Ramiro	Rivera	M.A.	I	05/08/25
EDUC	X85.F	Observation and Assessment of Children's Social and Learning Development	Denise	Marciano	M.A.	I*	10/09/25
EDUC	X85.F	Observation and Assessment of Children's Social and Learning Development	Maria	Velarde	M.A.	I	10/23/25
EDUC	X85.G	Teaching Young Children in a Diverse Society	Carolina	Basurto	M.A.	I*	05/08/25
EDUC	X85.G	Teaching Young Children in a Diverse Society	Abigail	Loya	M.A.	I	10/09/25
EDUC	X85.G	Teaching Young Children in a Diverse Society	Maria	Velarde	M.A.	I	10/23/25
EDUC	X85.H	Supervised Field Experience for Early Childhood Education	Carolina	Basurto	M.A.	I*	05/08/25
EDUC	X85.H	Supervised Field Experience for Early Childhood Education	Abigail	Loya	M.A.	I	10/09/25
EDUC	X85.H	Supervised Field Experience for Early Childhood Education	Denise	Marciano	M.A.	I*	10/09/25
EDUC	X85.H	Supervised Field Experience for Early Childhood Education	Maria	Velarde	M.A.	I	10/23/25
EDUC	X87.45	Infant and Toddler Development	Christopher	Becerra	Ph.D.	I*	10/09/25
EDUC	X87.45	Infant and Toddler Development	Denise	Marciano	M.A.	I*	10/09/25
EDUC	X87.46	Infant and Toddler Developmentally Appropriate Classroom Practices	Denise	Marciano	M.A.	I*	10/09/25
EDUC	X87.50	Overview of Children with Special Needs for Early Care and Education Providers	Abigail	Loya	M.A.	I	10/09/25
EDUC	X87.55	Curriculum and Strategies for Children with Special Needs	Mariana	Bosch	M.Ed.	I*	10/09/25
EDUC	X87.55	Curriculum and Strategies for Children with Special Needs	Abigail	Loya	M.A.	I	05/08/25
EDUC	X88.63	Education and Care of Infants and Toddlers	Denise	Marciano	M.A.	I*	10/09/25
EDUC	X88.A	Seminar in Administration and Supervision of Early Childhood Centers, Part A	Christopher	Becerra	Ph.D.	I*	10/09/25
EDUC	X88.A	Seminar in Administration and Supervision of Early Childhood Centers, Part A	Mariana	Bosch	M.Ed.	I*	10/09/25
EDUC	X88.B	Seminar in Administration and Supervision of Early Childhood Education Centers, Part B	Christopher	Becerra	Ph.D.	I*	10/09/25
EDUC	X88.B	Seminar in Administration and Supervision of Early Childhood Education Centers, Part B	Mariana	Bosch	M.Ed.	I*	10/09/25
EDUC	X89.1	Developing Effective Programs for Dual Language Learners	Christopher	Becerra	Ph.D.	I*	10/09/25
EDUC	X89.1	Developing Effective Programs for Dual Language Learners	Mariana	Bosch	M.Ed.	I*	10/09/25
EDUC	X89.1	Developing Effective Programs for Dual Language Learners	Denise	Marciano	M.A.	I*	10/09/25
EDUC	X309.08	DS Career Technical Education Core for Single/Multiple Subject Teachers	Melissa	Dix	M.ED	I	10/14/2025
EDUC	X309.20	CTE Curriculum and Instructional Practices				C	06/27/25
EDUC	X309.20	CTE Curriculum and Instructional Practices	Irene	Fujii	Ph.D.	I	06/27/25
EDUC	X309.21	CTE Student Assessment and Accountability				C	06/27/25
EDUC	X309.21	CTE Student Assessment and Accountability	Irene	Fujii	Ph.D.	I	06/27/25
EDUC	X430.6	STEAM Innovators	Ann	Jiron	M.E.D	I	06/27/25
EDUC	X430.7	STEAM by Design	-	-	-	C	10/14/2025
EDUC	X430.7	STEAM by Design	Amna	Ahmad	Ed.D	I	10/14/2025

**COMMITTEE ON UNIVERSITY EXTENSION
REPORT TO THE RIVERSIDE DIVISION
DECEMBER 2, 2025**

DEPT	COURSE	TITLE	INSTRUCTOR FIRST NAME	INSTRUCTOR LAST NAME	INSTRUCTOR DEGREE	TYPE OF APPROVAL	APPROVED
EDUC	X430.7	STEAM by Design	Eleanor	Holm	M.Ed.	I	10/14/2025
EDUC	X430.7	STEAM by Design	Jantina	Torres	M.A.	I	10/14/2025
EDUC	X434.A	Artificial Intelligence (AI) in K12 Education - Applications to Improve Teacher Planning Standards Based Instruction				C	06/27/25
EDUC	X434.A	Artificial Intelligence (AI) in K12 Education - Applications to Improve Teacher Planning Standards Based Instruction	Karen	Dodson	M.A.	I	06/27/25
EDUC	X434.B	Artificial Intelligence (AI) in K12 Education - Applications to Apply Across Content Areas to Enhance Student Engagement				C	06/27/25
EDUC	X434.B	Artificial Intelligence (AI) in K12 Education - Applications to Apply Across Content Areas to Enhance Student Engagement	Karen	Dodson	M.A.	I	06/27/25
EDUC	X445	Project-Based Professional Independent Study				C	06/27/25
EDUC	X445	Project-Based Professional Independent Study	Marie	Martin	Ph.D.	I*	06/27/25
EDUC	X445	Project-Based Professional Independent Study	Scott	Peters	Ed.D.	I*	06/27/25
EDUC	X445	Project-Based Professional Independent Study	David	Dayton	Ph.D.	I*	06/27/25
EDUC	X445	Project-Based Professional Independent Study	Kevin	Vaughn	Ph.D.	I*	06/27/25
EDUC	X445	Project-Based Professional Independent Study	Ann	Kwinn	Ph.D.	I	06/27/25
ENGR	X409	Fundamentals of Semiconductor Manufacturing	Jay	Lefebvre	Ph.D.	I*	10/14/2025
MGT	X105.04	Creativity and Innovation	Giselle	McKnight	M.Ed.	I*	10/23/25
MGT	X105.05	Human Resources Management	Vanessa	Gonzalez	M.A.	I*	10/23/25
MGT	X105.12	Supervised Training Part 1	Vanessa	Gonzalez	M.A.	I*	10/23/25
MGT	X105.13	Supervised Training Part 2	Vanessa	Gonzalez	M.A.	I*	10/23/25
MGT	X428.16	Cost Accounting	Alireza	Talebi	Ph.D.	I*	10/14/2025
MGT	X435.8	Financial Statement Analysis	Alireza	Talebi	Ph.D.	I*	10/14/2025
MGT	X465.10	Crucial Conversations and Accountability				C	06/27/25
MGT	X465.10	Crucial Conversations and Accountability	Jo	Russo-Pereyra	M.P.A	I	06/27/25
MGT	X465.10	Crucial Conversations and Accountability	Nidhi	Shah	Ph.D.	I	06/27/25
MGT	X465.11	Supervising with Confidence, Credibility and Influence				C	06/27/25
MGT	X465.11	Supervising with Confidence, Credibility and Influence	Jo	Russo-Pereyra	M.P.A	I	06/27/25
MGT	X465.11	Supervising with Confidence, Credibility and Influence	Nidhi	Shah	Ph.D.	I	06/27/25
MGT	X465.12	Capstone Project in Supervision and Leadership				C	06/27/25
MGT	X465.12	Capstone Project in Supervisory and Leadership	Nidhi	Shah	Ph.D.	I	06/27/25
MGT	X465.7	Leading with Innovation – The Future of AI in Project				C	06/27/25
MGT	X465.7	Leading with Innovation – The Future of AI in Project	Jo	Russo-Pereyra	M.P.A	I	06/27/25
MGT	X465.7	Leading with Innovation – The Future of AI in Project	Nidhi	Shah	Ph.D.	I	06/27/25
MGT	X465.7	Leading with Innovation – The Future of AI in Project Management - REVISION				C	10/14/2025
MGT	X465.7	Leading with Innovation – The Future of AI in Project Management	Ann Ora	Campea	M.S.	I	10/14/2025
MGT	X465.8	Managing and Developing Others in a Data-Informed Environment				C	06/27/25
MGT	X465.8	Managing and Developing Others in a Data-Informed Environment	Jo	Russo-Pereyra	M.P.A	I	06/27/25
MGT	X465.8	Managing and Developing Others in a Data-Informed Environment	Nidhi	Shah	Ph.D.	I	06/27/25
MGT	X465.9	Using Workplace Inclusion Strategies and Building Organizational Value	-	-	-	C	06/27/25

**COMMITTEE ON UNIVERSITY EXTENSION
REPORT TO THE RIVERSIDE DIVISION
DECEMBER 2, 2025**

DEPT	COURSE	TITLE	INSTRUCTOR FIRST NAME	INSTRUCTOR LAST NAME	INSTRUCTOR DEGREE	TYPE OF APPROVAL	APPROVED
MGT	X465.9	Using Workplace Inclusion Strategies and Building Organizational Value	Jo	Russo-Pereyra	M.P.A	I	06/27/25
MGT	X465.9	Using Workplace Inclusion Strategies and Building Organizational Value	Nidhi	Shah	Ph.D.	I	06/27/25
MGT	X468.5	Managerial Accounting	Alireza	Talebi	Ph.D.	I*	10/14/2025
MGT	X469.02	Communicating Effectively	Nidhi	Shah	Ph.D.	I	06/27/25
MGT	X470.47	Organizational Leadership	Vanessa	Gonzalez	M.A.	I*	10/14/2025
MGT	X470.47	Organizational Leadership	Giselle	McKnight	M.Ed.	I*	10/14/2025
MGT	X470.49	Teamwork and Communication in the Semiconductor Industry	Jo	Russo-Pereyra	M.P.A.	I	10/14/2025
MGT	X480.51	Customer Service Management	Vanessa	Gonzalez	M.A.	I*	10/14/2025
MGT	X480.51	Customer Service Management	Giselle	McKnight	M.Ed.	I*	10/14/2025
MGT	X421.2	Contemporary Leadership and Intercultural Competence	Jo	Russo Pereyra	M.P.A.	I	06/27/25
MGT	X465.1	Understanding Your Role as Supervisor	Alireza	Talebi	Ph.D.	I*	10/14/2025
MGT	X465.10	Crucial Conversations and Accountability	Gilma	Anderson	M.S.	I	06/27/25
MGT	X465.10	Crucial Conversations and Accountability	Jonetta	Thomas-Chambers	Ph.D.	I	06/27/25
MGT	X465.11	Supervising with Confidence, Credibility and Influence	Gilma	Anderson	M.S.	I	06/27/25
MGT	X465.11	Supervising with Confidence, Credibility and Influence	Jonetta	Thomas-Chambers	Ph.D.	I	06/27/25
MGT	X465.7	Leading with Innovation – The Future of AI in Project	Gilma	Anderson	M.S.	I	06/27/25
MGT	X465.7	Leading with Innovation – The Future of AI in Project	Jonetta	Thomas-Chambers	Ph.D.	I	06/27/25
MGT	X465.8	Managing and Developing Others in a Data-Informed Environment	Gilma	Anderson	M.S.	I	06/27/25
MGT	X465.8	Managing and Developing Others in a Data-Informed Environment	Jonetta	Thomas-Chambers	Ph.D.	I	06/27/25
MGT	X465.9	Using Workplace Inclusion Strategies and Building Organizational Value	Gilma	Anderson	M.S.	I	06/27/25
MGT	X465.9	Using Workplace Inclusion Strategies and Building Organizational Value	Jonetta	Thomas-Chambers	Ph.D.	I	06/27/25
MGT	X476.25	Social Media Marketing	Cesar	Segura	M.Ed	I*	10/14/2025
MGT	X478.51	Successful Business Writing	Julia	Bennett	M.P.P.	I	10/14/2025
MGT	X496.10	Essential of Business Management	Marilyn	Taylor	MBA	I	06/27/25
MGT	X497.09	International Finance	Nicolas	Fiore	M.B.A.	I	06/27/25
PHYS	XR037	The Origins	Sebastian	Moran	M.S.	I*	05/08/25
PHYS	XR050	Introduction to Applied Data Science: A multi-disciplinary approach	Sebastian	Moran	M.S.	I*	05/08/25

Type of Approval Key:

X - Certificate or Diploma Program

C - Course Proposal

I - Instructor Proposal for Previously Approved Instructor at UCR

I* - Instructor Proposal for First Time Instructor at UCR

ASSEMBLY OF THE ACADEMIC SENATE
Summary of the June 12, 2025, Assembly Meeting
Based on the Academic Assembly Minutes

ANNOUNCEMENTS BY SENATE LEADERSHIP

Chair Cheung announcements:

- Campus representation did not change compared to 2024-25.
- On May 2, 2025, the Regents appointed James B. Milliken as the 22nd UC president (came from the University of Texas system and previously led the City University of New York and the University of Nebraska). He began work on August 1.
- Chancellor Jack Hu began as UC Riverside Chancellor on July 15, and
- Monica Varsanyi started as the UC Vice-Provost for faculty affairs and academic programs on June 16.
- The Academic Council has approved for review a systemwide Senate proposal from the UCSD and UCSF divisions for a new systemwide Senate committee on climate change and sustainability.
- The governor proposed a small 3% increase (\$130 million) to UC and the restoration of \$125 million from a prior deferral. The 3% increase was reversed by the legislators making the UC budget for fiscal year 2025-26 nearly flat.
- The Regents approved a pause on a scheduled 0.5% employer contribution increase to the UC Retirement Plan (UCRP) and the suspension of an \$800 million transfer to UCRP from STIP, freeing up liquidity for the campuses.
- In May 2025, the Regents also discussed the report and recommendations of the Joint Senate-Administration Workgroup on Faculty Discipline. The report is now in its 90-day systemwide Senate review of the report and proposed changes to the APM.
- Critical in this report: 1) calibrating the guidelines for disciplinary actions involving expressive activities to align timelines with those for sexual violence/sexual harassment and abusive conduct policies; 2) a systemwide Privilege and Tenure network to assist local divisions that cannot assemble a hearing panel within the required 14-day period; 3) filing of disciplinary charges with a range of potential sanctions by chancellors; 4) enhanced case-tracking and reporting; and 5) required annual reports from Chancellors.
- Chair Cheung also introduced a resolution for discussion of Trellex (see below).

ANNOUNCEMENTS BY SENIOR UNIVERSITY MANAGERS

President Drake announcements

- This was President Drake last meeting with the Assembly. He spoke about the very serious challenges the UC faced during his tenure and emphasized the current federal challenges. However, despite ongoing legal and political challenges, he affirmed UC's commitment to truth, academic freedom, and its core mission.
- Introduced UC President J.B. Milliken and UCR Chancellor Jack Hu, noting their strong backgrounds in public higher education.
- He highlighted that 157 of 159 UC students whose visas were recently revoked had them reinstated, and credited faculty and legal teams for their support.

Nathan Brostrom, Executive Vice President and Chief Financial Officer

- UC's 2025-26 Compact budget increase of \$240 million would be deferred, with a partial payment of \$96 million in 2026-27 and the remaining \$144 million in 2028-29.

- He added that UC's tuition stability plan (cohort tuition model) has provided substantial benefits, including \$500 million in added campus funding and lower student self-help costs. The CFO plans to propose a renewal to the plan with adjustments that better account for inflation.

Katherine Newman, Provost and Executive Vice President, Academic Affairs

- Provost Newman described efforts to develop a California-based research funding model that blends public investment, philanthropy, and private sector support to help offset declining federal research funding.
- The Provost acknowledged the work of the Senate's UC Adaptation to Disruptions Task Force (UCAD) and suggested forming a broader policy group, including both faculty and administrators to address federal policy changes and potential funding retrenchments. So, 5 separate groups have been put together to continue this work. Expected to report in January 2026.
- The Provost reported that she is collaborating with humanities deans on a systemwide Global Language Network to pilot program that would expand access to less commonly taught languages by offering them online across UC campuses. This will have to have Senate input regarding credit, alignment with general education, and strong quality metrics for online instruction.
- She also described a new "Degree Plus" program being piloted at UCSB and UCSD. This initiative allows undergraduates to earn UC Extension certificates focused on labor market needs which can be associated with paid internships. The goal is to improve career readiness without significantly extending time to degree.

Discussion:

- Assembly members are concerned about federal government's 15% cap to F&A. President Drake expressed a degree of optimism because Congress recognizes the costs associated with research.
- CFO Brostrom described two potential models under consideration for indirect cost recovery: one that applies a simplified flat rate and another based on the Gates Foundation's structure, which would shift more costs into direct grant funding. He stressed the importance of monitoring Medicare and MediCal policy changes, as UC medical centers receive \$10 billion annually through these programs.
- Provost Newman assured the faculty that the UC is determined to support faculty through innovation and strategic partnerships

RESOLUTION ON USE OF TRELLIX AND SIMILAR MONITORING SOFTWARE

- This topic was previously discussed at a special Assembly meeting in February 2025 and now discussed concerns expressed by the Academic Council and the systemwide Senate Committee on Academic Computing and Communications (UCACC).
- Chair Cheung introduced a resolution calling for the immediate suspension of Trellix and similar endpoint detection and response (EDR) software on faculty and researcher computer systems citing concerns about academic freedom, faculty privacy, and the absence of meaningful faculty consultation in the decision to deploy the software.
- Professor Kevork Abazajian, the resolution's lead proposer, argued that Trellix EDR software, grants itself unrestricted access to faculty devices, enabling the monitoring, extraction, alteration, or deletion of files without faculty consent or notification. UCI, UCSB, and UCD had already adopted resolutions calling for a halt to Trellix. He also argued that Trellix's participation in the federal Joint Cyber Defense Collaborative raises the risk of warrantless surveillance and government overreach. Less invasive alternatives exist, such as remote browser isolation technologies, and could protect UC systems without compromising privacy.
- UC Vice President for Information Technology Van Williams said that the decision to deploy Trellix was a result of a significant increase in cyberattacks targeting UC since 2015 that resulted in the loss of personal data, protected health information, and unrecoverable faculty research. President Drake is aware of faculty concerns and campus resolutions, but the president believes the use of Trellix is necessary to protect the institution.

- Vice President Williams mentioned that Trellix was selected through a vetting process and is currently used across the UC system, but that a working group with faculty representatives is already evaluating next-generation alternatives.
- Professor Abazajian also mentioned that faculty had long operated securely without Trellix and that a brief transition period would not significantly increase risk.
- Several faculty members criticized UCOP for poor communication and a top-down approach. One warned of the risks of relying on a private vendor like Trellix that may be compelled to cooperate with federal agencies in ways that threaten academic freedom.
- Also, many UC faculty are not issued institutional laptops and may be forced to bear personal costs to comply.
- In addition, Vice President Williams mentioned that allowing faculty to opt-out would expose the broader system to risk and endanger shared networks.
- UCACC Chair Jenson Wong stated that the committee did not take a formal position on the resolution but understands the need for improved communication and partnership between the Senate and administration on cybersecurity matters.

The resolution to suspend Trellix passed with 27 votes in favor, 6 opposed, and 14 abstentions, amounting to 82% approval among 33 voting members.

Summary of the October 9, 2025, Assembly Meetings

ANNOUNCEMENTS BY SENATE LEADERSHIP

Chair Palazoglu announcements

- The first item the Chair of Council mentioned was the 2025 Noble Prize winners associated with the UC system. The prize in Physiology or Medicine, Physics and Chemistry. This, does indeed, give the UC incredible recognition in the scientific world.
- The UC continues to address issues related to federal funding. On October 3rd the Academic council issued a statement “calling on the Office of the President and the UC Board of Regents to unequivocally reject governmental demands that compromise institutional autonomy and academic freedom.” Moreover, the Academic Council “further called on the Office of the President and the UC Board of Regents to formally include the Senate in discussions concerning the terms and parameters of any proposed settlement agreement. In this moment of institutional risk, the principle and practice of shared governance must not only be recognized, but actively upheld.”
- Regarding the UCB incident related to information provided by the Office of the president to the Department of Education Office of Civil Rights having to do with title VI complaints, the information provided initially was in the form of redacted summaries, but the OCR came back for more documentation including requesting personal information. Chair Palazoglu assured us that council is working with the Office of the President to avoid such responses.
- Chair Palazoglu also mentioned that UCP&T continues to work on the proposed revisions to APM 15/16. The document is circulating through the various campus for review. This is something all faculty should be involved in given that what is being proposed will cause significant changes in the way discipline of the faculty is managed. On a positive note there is a group working on collecting and reporting the data on faculty disciplinary cases.
- Some faculty raised the issue that Chancellors for the most part do not follow P&T recommendations. This is highly significant because the Chancellor is not at the hearings and the UCR Counsel advising the Chancellor is also not at the hearings. This kind of approach is not conforming with shared governance

ANNOUNCEMENTS BY SENIOR UNIVERSITY MANAGERS

President Milliken announcements

- The president pointed out that he is just beginning his 3rd month as President of the UC and is still learning the system. During this time, he has been engaged in dealing with the federal actions especially at UCLA. He was happy to say that the Federal Funding for UCLA has been fully returned.
- President Milliken also discussed Trump's "Compact for Academic Excellence in Higher education" to American Universities. In this compact the Trump administration would confer favorable access to federal funds in exchange for agreeing to demands that focus on conservative ideas. This compact was sent by the department of education to 9 Universities none of which signed the compact. The President assured us that he would never abide by any demands that interfere with speech, teaching, curriculum contents and admission standards.
- The President also spoke of the importance of negotiating to prevent reductions in F&A and he is also concerned about challenges to the Bayh-Dole Act governing intellectual property.
- In response to a question regarding the release of incident reports to the OCR, he mentioned that was in response to an investigation into whether the University responded adequately to complaints of antisemitism and was not an investigation of individuals or specific cases.
- Another question related to the deployment of Trellix endpoint detection software. The president said that he was reviewing the issue having in mind both privacy concerns and the need to protect against cyberattacks.

Nathan Brostrom, Executive Vice President and Chief Financial Officer

- UCOP is considering modifications to the tuition Stability Plan established about 5 years ago. I hope you recall that this plan freezes tuition for each entering student cohort which provides families with more predictable costs reducing student debt. Although he provided possibilities no final decision has been made. So, we will report on that when the decision has been made.
- The UC has reached a record level in enrolment showing that the UC is at high student demand.
- The CFO mentioned instability with funds in particular reductions to NIH and NSF. UC receives \$17 billion in total federal funding which funds research, healthcare, and student aid (36% of UC students are Pell Grant recipients).
- In response to a question regarding health care costs the CFO said that the University increased the employer contribution by 9.5% this year, resulting in an average employee premium rise of only 0.3%.
- He reported that the State is doing better financially but it is still in the deficit 6B from 17B. They are watching for 3 bills: A general obligation bond, a housing bill that would potentially help our staff and faculty and a research bond measure (SB 607), that would establish a state-based, peer-reviewed research funding mechanism. UC hopes the measure can be placed on the November 2026 ballot.

Katherine Newman, Provost and Executive Vice President, Academic Affairs

- Provost Newman elaborated a bit more on the "degree plus" initiative. She mentioned that the initiative is funded by both the Lumina and Strada Foundations and UCOP, and that it integrates three components: the undergraduate degree, a UCOP-funded paid internship, and a three-course UC Extension certificate. During the pilot phase each campus will enroll 120 students each year to assess student demand and effectiveness of the program before expanding to more students.
- The Provost also mentioned that Senator Wiener of San Francisco has introduced SB 607 which will place on the ballot for 2026 a bond for 23B offset federal funding reductions affecting California's public universities, including UC.
- Provost Newman mentioned that the administration and the Senate are now establishing UCAD Plus, a series of committees composed of faculty and administrators that will constitute 5

subcommittees. The latter will be on research recovery and infrastructure, faculty evaluations, program restructuring and resizing, intercampus curriculum delivery, and graduate education. A systemwide review of the subcommittees' recommendations is expected to begin in February 2026.

- A new Early Career Faculty Award Program will support Junior faculty whose research has been disrupted. There will be 60 awards at 50K each year. UC is allocating 10 awards/campus with at least 2 guaranteed/campus. The applications will be reviewed at the campus level and then evaluated by an external national panel to minimize bias.

Proposed New Program: B.S. in Computer Science Applications– 2nd Round

Received 5/13/2025
Academic Senate

To Division
7/16/2025



Academic Senate

EXECUTIVE COUNCIL

Kenneth Barish, Chair

July 16, 2025

To: Riverside Division

From: Ken Barish, Chair, Executive Council

A handwritten signature in blue ink, reading "Kenneth Barish", written over a horizontal line.

Re: Proposed New Program: B.S. in Computer Science Applications– 2nd Round

Executive Council, with no additional comments, endorses the proposed new B.S. in Computer Science Applications (2nd Round) program proposal for inclusion on the Fall 2025 Division meeting agenda.



Academic Senate

COMMITTEE ON COURSES

June 6, 2025

To: Ken Barish, Chair
Riverside Division

From: Erin Rankin, Chair
Committee on Courses

Re: Revised Proposal for a B.S. in Computer Science Applications

The Committee on Courses reviewed the revised proposal for a B.S. in Computer Science Applications at their June 5, 2025 meeting and are appreciative of the revisions made to address the Committee's recommendations. The Committee has no additional concerns and is generally supportive of the proposal.



Academic Senate

COMMITTEE ON EDUCATIONAL POLICY

June 6, 2025

To: Ken Barish, Chair
Riverside Division

From: Stephen Kane, Vice Chair
Committee on Educational Policy

Re: Revised Proposal for B.S. in Computer Science Applications

The Committee on Educational Policy (CEP) reviewed the revised proposal for a B.S. in Computer Science Applications at their June 6, 2026 meeting and voted to support the proposal. The Committee does recommend that the program consider removing CHEM 008C from the Health Science Concentration as it has content overlap with BCH 100, which is also a requirement for concentration. Alternatively, the Committee recommends that the program consider adding CHEM 008C as an elective.



June 24, 2025

TO: Ken Barish, Chair
Riverside Division of the Academic Senate

FROM: Victor G. J. Rodgers, Chair 
BCOE Executive Committee

RE: Proposed New Program: B.S. in Computer Science Applications

On June 24, 2025, the BCOE Executive Committee reviewed the Second Round Proposed Changes for a B.S. in Computer Science Applications program (CSA). The committee voted unanimously in favor with a vote of 9 in favor, 0 opposed and 0 abstained.

Proposed Bachelor of Science (B.S.) in Computer Science Applications (CSA)

Record of changes to the proposal for the establishment of the Undergraduate Computer Science Applications program

We appreciate all the suggestions made by each of the relevant committees. The following is a summary of the proposed and the reflected action in this updated proposal.

Committee on Educational Policy (CEP)

The letter from the CEP recommended the following actions:

1. **The Health Science concentration reflects a higher number of required units.** Due to the overlap of major-requirements with BCOE breadth requirements, the final unit count is comparable to the other two concentrations. The attached **4 year plans** for the concentrations show that the total unit count for the Health Concentration is 188, whereas for the Psychology concentration is 189, and for the Business concentration 185.

All of our students must take one Physics series (most common for BCOE is the PHYS 40 series). Unlike the other two concentrations (Business and Psychology), the Health Science concentration specifies the Physics series that students need to take (PHYS 002A and 02LA, PHYS 002B and 02LB, PHYS 002C and 02LC). BIOL 005A and BIOL 05LA satisfy the Biological Science requirement. CHEM 001A and 001LA, CHEM 001B and 1LB, CHEM 001C and 001LC satisfy the Physical Science requirement. These courses are required for the Health Science concentration because they are part of pre-health requirements. By adding them to our program, students can also get credit for these courses. However, due to the overlap with many of our breadth requirements, the final unit count is comparable to the other two concentrations. Additionally, the Psychology and the Health Science concentrations include a larger number of 5 and 6 unit courses than the Business concentration. If we don't count the courses in the Health Science Concentration that count towards satisfying the Natural Science breadth requirement, **all three concentrations require 12 courses** in addition to the common course load.

Additionally, PHIL 124 can be used to satisfy one of the Humanities requirements. For the Psychology concentration, PSYCH 001 and 002 satisfy two Social Science requirements, and PSYCH 167 can be used to satisfy the Ethnicity Requirement. For the Business concentration, ECON 002 and 003, and SOC 150 can satisfy all three Social Science requirements. For the Health Science concentration, PSYCH 178 and SOC/PBPL 127 can satisfy two of the Social Sciences breadth requirements. All concentrations satisfy the upper division breadth requirement.

2. **Addition of a proposed 4 year plan.** The 4 year plans for each concentration are being included after this letter.
3. **Consider MATH 005B and MATH 005C as alternatives to MATH 009A, MATH 009B and MATH 009C.** As an Engineering Major, keeping the Math 009 series as the official calculus series is appropriate as it allows students to take other CS and Engineering courses. The CS department is monitoring the Math 5 series and if it decides to allow it for other majors, it would certainly be allowed for CSA. Students can talk to an advisor to have their Math requirements be satisfied by the MATH 005 series.

Committee on Courses

The letter from the Committee on Courses recommend the following actions:

1. **Update the curriculum to reflect that ENGL 001A and ENGL 001B have been renumbered to WRIT 010 and WRIT 020.** We replaced every mention of ENGL 001A and ENGL 001B for WRIT 010 and WRIT 020 respectively in the transfer requirements and updated the 4 year plans to reflect the change. Courses like PSYCH 012 still include ENGL 001B in their pre requirements so we opted for leaving the official course description as it is. We will continue to update the language in the catalog to reflect this change as it makes its way through the catalog and we update the other computing programs.
2. **Include the Honors courses for the MATH 009A-C series, ECON 002, ECON 003, PHYS 002A-C series, CHEM 001A-C series, CHEM 001LA-C series, CHEM 008A-C series, CHEM 008LA-C series, BCH 100, and BCH 110A-C series.** The Honors courses have been added to the requirement list and their descriptions have been included.
3. **Ensure that the full course number is included in the curriculum i.e. PSYC 1 should be listed as PSYC 001.** Mentionings of the wrong code for PSYC 001, PSYC 002, PSYC 011, and PSYC 012 have been fixed.
4. **Remove PSYC 152, PSYC 179, and PSYC 181 from the curriculum as they were discontinued.** These have been removed from the list of technical electives within the Psychology concentration.
5. **Include the cross-listed course for SOC 127, which is PBPL 127.** Added PBPL 127 to the Health Science concentration.

The Committee on Planning and Budget did not find issues that needed to be addressed in the proposal.

Proposed 4 year plan for the Health Science Concentration								
Fall Quarter			Winter Quarter			Spring Quarter		
Code	Name	Units	Code	Name	Units	Code	Name	Units
First year								
CS 009A	Data Science programming 1	4	CS 009 B	Data Science programming 2	4	CS 061	Machine org. and assembly language prog.	4
WRIT 010	Academic Writing	4	WRIT 020	Persuasive Writing	4	MATH 009C	First year calculus	4
MATH 009A	First year calculus	4	Math 009B	First year calculus	4	CS/MATH 011	Intro to discrete structures	4
ENGR 001M	Mentoring class	1	Breadth	Humanities or Social Science	4	CS 009C	C++ for programmers	2
Second year								
CS 010C	Intro to Data Structures and Algorithms	4	CS 100	Software Construction	5	MATH 031	Linear algebra	5
CS 105	Data Analysis Methods	4	Breadth	Humanities or Social Science	4	STAT 155	Probability and Statistics	4
CS 111	Discrete structures	4	BIOL 005A and LA	Intro to Cell and Molecular Biology	5	BIOL 005B	Organismal Biology	4
CHEM 001 A & LA	General Chemistry	5	CHEM 001B & LB	General Chemistry	5	CHEM 001C & LC	General Chemistry	5
Third year								
CS141	Intermediate data structures and algorithms	4	CS	Tech elective	4	CS153	Operating Systems	4
ENGR 180W	Technical communications	4	ENGR 101M	Mentoring for applied CS	1	Breadth	Humanities or Social Science	4
BIOL 005C	Introductory Evolution and Ecology	4	PHYS 2A & LA	General Physics	5	PHYS 2B & LB	General Physics	5
CHEM 008A & LA	Organic Chemistry	4	CHEM 008B & LB	Organic Chemistry	4	CHEM 008C & LC	Organic Chemistry	4
Fourth year								
CS178A	Senior Design	4	CS178B	Senior Design	4	CS	Tech elective	4
CS	Tech elective	4	CS	Tech elective	4	CS	Tech elective	4
PHYS 2C & LC	General Physics	5	Breadth	Humanities or Social Science	4	Health	Health Science Elective	4
BCH 100	Introductory Biochemistry	4	Health	Health Science Elective	4	Health	Health Science Elective	4
							Total units	188

Proposed 4 year plan for the Psychology Concentration								
Fall Quarter			Winter Quarter			Spring Quarter		
Code	Name	Units	Code	Name	Units	Code	Name	Units
First year								
CS 009A	Data Science programming 1	4	CS 009 B	Data Science programming 2	4	CS 061	Machine org. and assembly language prog.	4
WRIT 010	Academic Writing	4	WRIT 020	Persuasive Writing	4	MATH 009C	First year calculus	4
MATH 009A	First year calculus	4	MATH 009B	First year calculus	4	CS/MATH 011	Intro to discrete structures	4
ENGR 001M	Mentoring class	1	Science Breadth	Natural Science	4	CS 009C	C++ for programmers	2
Second year								
CS 010C	Intro to Data Structures and Algorithms	4	STAT 155	Probability and Statistics	4	MATH 031	Linear algebra	5
CS 105	Data Analysis Methods	4	CS 100	Software Construction	5	Breadth	Humanities or Social Science A	4
CS 111	Discrete structures	4	PSYC 002	Introductory Psychology	4	PSYC 011	Research Procedures	5
PSYC 001	Introductory Psychology	4	Breadth	Humanities or Social Science	4	Breadth	Humanities or Social Science	4
Third year								
CS141	Intermediate data structures and algorithms	4	ENGR 101M	Mentoring for applied CS	1	CS153	Operating Systems	4
PSYC 012	Research Procedures	6	PSYC	PSYC Breadth (see 3.1, j)	4	PSYC	Psychology Elective (see 3.1, k)	4
ENGR 180W	Technical communications	4	PSYC	PSYC Breadth (see 3.1, j)	4	PSYC	Psychology Elective (see 3.1, k)	4
Science Breadth	Natural Science	4	Science Breadth	Natural Science	4	Science Breadth	Natural Science	4
Fourth year								
CS178A	Senior Design	4	CS178B	Senior Design	4	CS	Tech elective	4
PSYC	Psychology Elective (see 3.1, k)	4	CS	Tech elective	4	CS	Tech elective	4
CS	Tech elective	4	PSYC	Psychology Elective (see 3.1, k)	4	PSYC	Psychology Elective (see 3.1, k)	4
Breadth	Humanities or Social Science	4	PSYC	Psychology Elective (see 3.1, k)	4	CS	Tech elective	4
							Total units	189

Proposed 4 year plan for the Business Concentration								
Fall Quarter			Winter Quarter			Spring Quarter		
Code	Name	Units	Code	Name	Units	Code	Name	Units
First year								
CS 009A	Data Science programming 1	4	CS 009 B	Data Science programming 2	4	CS 061	Machine org. and assembly language prog.	4
WRIT 010	Academic Writing	4	WRIT 020	Persuasive Writing	4	MATH 009C	First year calculus	4
MATH 009A	First year calculus	4	MATH 009B	First year calculus	4	CS/MATH 11	Intro to discrete structures	4
ENGR 001M	Mentoring class	1	Science Breadth	Natural Science	4	CS 009C	C++ for programmers	2
Second year								
CS 010C	Intro to Data Structures and Algorithms	4	CS 100	Software Construction	5	MATH 031	Linear algebra	5
CS 105	Data Analysis Methods	4	BUS 010	Introduction to Business	4	STAT 155	Probability and Statistics	4
ECON 003	Intro to Microeconomics	5	ECON 002	Intro to Macroeconomics	5	STAT 008	Statistics for Business	5
CS 111	Discrete structures	4	Breadth	Humanities	4	BUS 020	Financial Accounting and Reporting	4
Third year								
CS141	Intermediate data structures and algorithms	4	CS	Tech elective	4	CS153	Operating Systems	4
BUS	BUS Breadth (see 3.2,o)	4	ENGR 101M	Mentoring for applied CS	1	Breadth	Humanities	4
ENGR 180W	Technical communications	4	BUS	BUS Breadth (see 3.2,o)	4	BUS	Business elective (see 3.2,p)	4
Science Breadth	Natural Science	4	Science Breadth	Natural Science	4	Science Breadth	Natural Science	4
Fourth year								
CS178A	Senior Design	4	CS178B	Senior Design	4	CS	Tech elective	4
BUS	Business elective (see 3.2,p)	4	CS	Tech elective	4	CS	Tech elective	4
CS	Tech elective	4	BUS	Business elective (see 3.2,p)	4	BUS	Business elective (see 3.2,p)	4
Breadth	Humanities	4	BUS	Business elective (see 3.2,p)	4			
							Total units	185

Proposal for Establishment of a New Undergraduate Academic Program: B.S. in Computer Science Applications

1. Name of the academic program and the department or unit that will administer the program

The **Computer Science Applications (CSA)** Undergraduate Major will be administered by the Department of Computer Science and Engineering (CSE).

2. A thorough justification, including the motivation for the creation of the program in terms of student interest and professional or academic importance.

As technology permeates every aspect of life, the need for professionals who can bridge the gap between computing and other disciplines is skyrocketing. A recent analysis of the labor market shows a growing demand for professionals with experience in using computer science across other disciplines. According to the Occupational Outlook Handbook from the Bureau of Labor Statistics, the expected growth in demand in cross-disciplinary computing is 16% for Special Effect Artists and Animators (requiring training in computing and media), 41% for Information Research Scientists (requiring computing and psychology), and 21% for Bioinformatics (requiring computing and life sciences). Additionally, the medical community has highlighted for decades the need to have coding¹ and AI² literacy as part of pre-medical training, but very few computing programs include required courses for pre-medical training as part of their curriculum, programs that effectively blend these requirements are non-existent.

In a recent survey of 1000 high school and community college students from California and from key markets (Washington, Oregon, Arizona, among others), students showed great interest in pursuing interdisciplinary majors in computer science. The top 5 single-discipline programs that students are considering in applying are Business, Social Sciences, Life Sciences, Pre-Medical training, and Education. However, when asked if they would consider a combined degree, 56% said they would be interested (compared to only 14% who said they would pursue a CS-only degree). When offered professions that involve multidisciplinary training; Video Game designer, CGI engineering, Information Research, Biomedical Engineering, Prompt Engineering, Tech Media, and Bioinformatics research were among the top choices (40%). This shows that there is a clear demand for programs that provide the training that students identify as necessary for the professions they want to pursue. The results are also consistent with research that shows that

¹ Yardimci, A. (2009). Soft computing in medicine. *Applied soft computing*, 9(3), 1029-1043.

² Kolachalama, V. B. (2022). Machine learning and pre-medical education. *Artificial intelligence in medicine*, 129, 102313.

high school students want CS programs that are multidisciplinary. For female applicants, lack of cross-disciplinary options is the number one reason for not pursuing computer science³.

Several Top-20 institutions in Computer Science (according to csrankings.org) are creating majors that effectively blend Computer Science with other disciplines. The University of Illinois Urbana-Champaign, Northeastern University, and UT Austin are some examples of top institutions that have created interdisciplinary computing programs. At the UC level, UCSD, Berkeley, and UCSC offer one or two computing programs that are interdisciplinary (such as the **Interdisciplinary Computing and the Arts Major** from UCSD). But none have created a program like the one we envision, an umbrella program that enables multiple concentrations in different disciplines with a strong core in Computer Science. The challenge is both programmatic and administrative. Based on our research at the UC-level, ours could become a model for other UCs to emulate.

The **Computer Science with Business Applications (CSBA)** major at UCR exemplifies this potential structure and would become a sort of template for new ones. The CSBA major is accredited as a CS program, continues to grow along with the traditional CS program, and serves a more diverse student body (40% women). The program requires at least 71 units in Computer Science courses, and 50 units in Business. It is designed to provide depth in both fields while emphasizing the use of computing in business solutions.

This new major will be called the **Computer Science Applications** major, and would include CSBA as a concentration. We will add two additional concentrations to start: Psychology, and Health Science. These were chosen due to high demand for professionals in these areas, synergy among our faculty, and the potential to attract a gender-balanced student population.

3. Relationship of the new program to existing programs

The design of the major is strongly influenced by the current Computer Science with Business Applications Major (CSBA). We will be folding the CSBA major into this new program as a concentration in Business. By this restructuring, we may add additional programmatic pathways that lead to degrees in computing applied towards other disciplines, i.e., Computer Science Applications with a concentration in [X], where X would include Business, Psychology, and Health Science. The computing community refers to such programs as CS+X⁴. Additionally, the list of courses required for the Business concentration will be refreshed to streamline the student experience and include new courses from Business that are currently not considered in the CSBA program.

While being a computing program, CSA is distinct from the Computer Science undergraduate degree. Certain core requirements endemic to Computer Science are not necessary for CSA

³ Carter, L. (2006). Why students with an apparent aptitude for computer science don't choose to major in computer science. ACM SIGCSE Bulletin, 38(1), 27-31.

⁴ Carla E. Brodley, Benjamin J. Hescott, Jessica Biron, Ali Rensing, Melissa Peiken, Sarah Maravetz, and Alan Mislove. 2022. Broadening Participation in Computing via Ubiquitous Combined Majors (CS+X). In Proceedings of the 53rd ACM Technical Symposium on Computer Science Education - Volume 1 (SIGCSE 2022), Vol. 1. Association for Computing Machinery, New York, NY, USA, 544–550. <https://doi.org/10.1145/3478431.3499352>

majors. For example, extended series of Math and Physics, up to Math 010A, or specific theory or depth courses for advanced work in CS like CS150, CS152, CS120A. These would not be required for the CSA major. Likewise, CS105: Data Analysis Methods, will be required as it is a key course for engaging with other disciplines and gives students exposure to data analysis tools. The most prominent difference is that at least 50 units of the required courses are from courses offered from a different discipline.

The Data Science program is an interdisciplinary program that is administered by the Computer Science and Statistics departments. Courses are taught by faculty from both departments. While similar in nature to CSA (combining Computer Science with a different discipline), the Data Science program has a heavier emphasis on statistical methods. The courses required for both the computing core and for the concentrations within CSA are different from those required by the Data Science program.

4. The proposed curriculum. Great care should be given in this area, correct rubrics should be listed for courses, all cross listings should be listed, unit total considerations should be taken into account and totals should be verified by program staff, faculty, and appropriate Executive Committee personnel. A copy of the proposed program change should be provided for inclusion in the Catalog.

See “Appendix A: Program Description”

5. A list of faculty who will be involved in the program, including those teaching, advising, and administering.

All Senate faculty members of the CSE department (Assistant, Associate, and Full Professors) will be involved in administering the program. A Faculty Advisor for the program will be appointed and will interface with BCOE staff advisors. All faculty members in CSE, including instructors, will be teaching Computer Science courses in the program. Faculty involved in teaching the courses from other departments will only be involved in teaching those courses. Below is the current list of faculty members of the Computer Science and Engineering department:

Distinguished Professor

Rajiv Gupta, Ph.D.
Tao Jiang, Ph.D.
Eamonn Keogh, Ph.D.
Kadangode K. Ramakrishnan, Ph.D.

Professors

Nael Abu-Ghazaleh, Ph.D.
Philip Brisk, Ph.D.
Zizhong Chen, Ph.D.
Evangelos Christidis, Ph.D.
Marek Chrobak, Ph.D.
Emiliano De Cristofaro, Ph.D.
Michalis Faloutsos, Ph.D.
Trent Jaeger, Ph.D.

Srikanth Krishnamurthy, Ph.D.
Stefano Lonardi, Ph.D.
Walid Najjar, Ph.D.
Chinya Ravishankar, Ph.D.
Christian Shelton, Ph.D.

Manu Sridharan, Ph.D.
Vassilis Tsotras, Ph.D.
Frank N. Vahid, Ph.D.
Heng Yin, Ph.D.

Professors Emeriti

Laxmi N. Bhuyan, Ph.D.
Mart L. Molle, Ph.D.
Thomas H. Payne, Ph.D.

Michael Pazzani, Ph.D.
Teodor C. Przymusinski, Ph.D.
Neal Young, Ph.D.

Associate Professors

Ahmed Eldawy, Ph.D.
Ioannis Karamouzas, Ph.D.
Paea LePendou, Ph.D.
Mohsen Lesani, Ph.D.
Evangelos Papalexakis, Ph.D.
Zhiyun Qian, Ph.D.

Mariam Salloum, Ph.D.
Tamar Shinar, Ph.D.
Chengyu Song, Ph.D.
Greg Ver Steeg, Ph.D.
Zhijia Zhao, Ph.D.

Assistant Professors

Amey Bhangale, Ph.D.
Yue Dong, Ph.D.
Yan Gu, Ph.D.
Allan Knight, Ph.D.
Amr Magdy, Ph.D.
Neftali W. Medina, Ph.D.
Silas Richelson, Ph.D.

Elaheh Sadredini, Ph.D.
Craig Schroeder, Ph.D.
Yihan Sun, Ph.D.
Zhaowei Tan, Ph.D.
Mingxun Wang, Ph.D.
Qian Zhang, Ph.D.

6. For interdisciplinary programs, the degree of participation and the role of each department must be explicitly described. The chairs of all participating departments must provide written approval for the creation of the program and indicate their commitment to provide necessary resources including faculty release.

This is not an interdepartmental program in the sense that it does not span, administratively, more than one department. The program will be administered by the CSE department, which teaches the majority of the courses, and admission will be through the College of Engineering. Faculty from other departments are not part of this program's administration.

Letters from all relevant departments (Psychology, Business, Biology, Mathematics, Chemistry, Physics, Biochemistry, Statistics, Public Policy, and Sociology) stating that they agree for our students to take their courses are included.

7. Projected enrollment in the program.

The projected enrollment at the start of the program is 50 students; we expect a class of 80-100 students at steady state. This will include students across all concentrations. Currently CSBA, one of the concentrations, has graduated on average 48 students annually over the last five years.

8. Name of degree, if applicable, and the anticipated number of degrees to be granted when the program reaches steady state

B.S. In Computer Science Applications with Concentration in [X], 80-100 degrees awarded per year.

9. Potential impact of the new program on existing programs. If the proposed program includes required courses from a department other than the administering department, the proposal must include a statement from the department indicating that it has been consulted and that it will provide access to the required courses.

The new major uses five existing lower division courses offered by the Department of Mathematics (namely: MATH 009A, MATH 009B, MATH 009C, MATH 011/CS 011, MATH 031). All these courses are currently being used by CSBA, CSE, and Statistics for satisfying college/major requirements in the BS degrees offered currently by the CSE and Statistics departments. Given that these courses are also being used by many other departments to satisfy college requirements, we do not expect a major impact in their offerings by the new program.

All other lower and upper division courses required for the new major are currently being taught by the Psychology and Business departments. The Health Science concentration lists courses that are offered by various departments and are part of the list of pre required courses for Health Professions. Chairs of the involved departments have been consulted and have agreed to provide access to the required course sequences (please see included letters from relevant departments).

10. A full listing of resources required for start-up and for operations. In cases where no additional resources will be needed, this must be explicitly stated. This listing may include: personnel (faculty FTE or temporary positions, Teaching Assistants or Readers, administrative staff, technical support); support services including computer facilities and library resources; space requirements. A plan indicating how the resources will be obtained would also be helpful to the committee in reviewing the proposal. A letter of support from the College Dean and/or Executive Vice Chancellor-Provost indicating endorsement as well as a promise of support for the proposal also would be extremely helpful.

- Faculty FTE: the program will use existing faculty from the CSE department.
- Teaching assistants: We estimate that, at full capacity, the new program will need 2-3 TA positions per quarter (this is considering a full capacity of 80 students which translates to 30 students above what CSBA currently has). Such cost, however, will be easily covered by the tuition fees of the new students.
- Administrative Staff: the program will be administered by existing staff and faculty in the CSE Department and will be advised by BCOE's Office of Undergraduate Student Academic Affairs (OSAA). OSAA currently has ten full time advisors that will initially accommodate the CSA students. We don't foresee any need for additional advisors.
- Computer facilities and library resources: no new facilities required
- Space requirements: no new space requirements, growth will be part of the existing CSE department expansion plans

Please see the included letter from BCOE's Dean, Christopher S. Lynch.

11. Both internal and external letters of support should be provided with the proposal. Internal letters of support are often from UCR department chairs and faculty of related programs. The external letters should be from other UC campuses or other peer institutions. Letters from off-campus help to establish the quality of the program and its fit within the context of related programs at other universities. Upon consultation with the CEP the demand for external letters may be waived.

We have included the following letters of support:

- A letter from Christian Shelton (Chair of UCR's Department of Computer Science and Engineering), alongside the record of our department's vote, and the official feedback from our Advisory Board denoting strong support for the program.
- Tuppett M Yates (Department of Psychology's Chair), where she expresses both consent and support for the Psychology concentration.
- Margaret C. Campbell (Chair and Associate Dean of the School of Business) to show continuing support of the Business concentration.

- Charles P Scruggs (Director of the UCR Pre-Professional Advising Center) denoting strong support for the Health Science concentration
- Daryle Williams (Dean of the College of Humanities, Arts, and Social Sciences) supporting the Psychology concentration
- Tony Givargis (Chair of the Department of Computer Science at UC Irvine) as external letter of support for the whole program.
- Dr. Victor Joe (Vice President of UCI Health Medical Staff and Clinical Professor of Surgery at UC Irvine), as external letter of support for the Health Science concentration
- Carla Brodley (Professor, Khoury College of Computer Sciences and Dean of Inclusive Computing at Northeastern University) as external letter of support for the whole program.

12. Approvals from program faculty, College faculty (if the new proposal affects a college regulation), and the appropriate Executive Committee should be obtained before forwarding the new program to the attention of the Senate Analyst for CEP.

- The Computer Science and Engineering Department voted in favor of the proposal on January 22nd, 2025 (see included record of this vote).
- The program doesn't affect a college regulation
- The BCOE Executive Committee discussed and voted in favor of the proposal on February 26th, 2025

13. All proposals for new programs should be submitted to the Senate Chair no later than March 1 of the academic year prior to the fall quarter in which the proposed program is anticipated to go into effect. This schedule should provide sufficient time for Senate review of the proposal to meet the deadline for final consideration of approval at the May Division Meeting.

Appendix A: Program Description

The **Computer Science Applications program** covers the core of computer science and integrates a second discipline as a concentration area. It prepares students for careers that demand multidisciplinary backgrounds with an emphasis on computational methods, or for graduate studies in either discipline.

The objective of the B.S. degree program in **Computer Science Applications** is to prepare graduates for professional practice in both the private and public sectors and for lifelong learning, including the option to pursue graduate degrees, by providing them with:

- Background: The necessary technical competencies, including knowledge of scientific principles and skill at rigorous analysis and creative design.
- Breadth: A broad education that includes knowledge of current issues and trends in society and technology.
- Professionalism: Professional attitudes and ethics, as well as skills for clear communication and responsible teamwork.
- Learning environment: A learning environment that is rigorous, challenging, open, and supportive.

Change of Major Criteria

All students who request a change of major to Computer Science Applications must meet the following requirements:

- Be in good academic standing.
- Have no less than a C- in any Math, Science, or Engineering coursework.
- Be able to complete the major within maximum allowable units.
- Complete all the courses listed below, based on the total number of units earned, prior to submitting the major change request.
- UCR transfer students interested in changing to a BCOE major must have been admissible to the major at the point of entry or must satisfy transfer admission and change of major requirements before earning 120 units.
- If changing in the 90-119 units category, students must have the ability to complete the major within 5 years of entry as a freshmen or 3 years after entry as a transfer student.
- Students who have earned 120 or more units are not eligible for a change of major in BCOE. NOTE: AP/IB units are excluded from the maximum unit calculation.

Completed 0 to less than 45 units

Completion of WRIT 010 with a grade of C or better, a grade of C or better in CS 009A, and completion of the following with at least a 2.700 GPA:

- CS 009A
- CS 009B
- MATH 009A or MATH 09HA
- Any additional Math/Science/Engineering/CS courses (if taken)

Completed 45 to less than 90 units

Completion of WRIT 010 with a grade of C or better, a grade of C or better in both CS 009A and CS 009B, and completion of the following with at least a 2.700 GPA:

- CS 009A
- CS 009B
- MATH 011/CS 011
- MATH 009A or MATH 09HA
- MATH 009B or MATH 09HB
- MATH 009C or MATH 09HC
- And any additional Math/Science/Engineering/CS courses (if taken)

Completed 90 to less than 120 units

Completion of WRIT 010 and WRIT 020 with a grade of C or better, a grade of C or better in both CS 009A and CS 009B, and completion of the following with at least a 2.700 GPA:

- CS 009A
- CS 009B
- MATH 011/CS 011
- CS 061
- MATH 009A or MATH 09HA
- MATH 009B or MATH 09HB
- MATH 009C or MATH 09HC
- And any additional Math/Science/Engineering/CS courses (if taken)

University Requirements

See the Undergraduate Studies section.

College Requirements

See the Marlan and Rosemary Bourns College of Engineering, Colleges and Programs section.

The Computer Science Applications major uses the following major requirements to satisfy some of the college's Natural Sciences and Mathematics breadth requirements and one of the college's English Composition breadth requirements:

1. MATH 007A or MATH 009A or MATH 009AH
2. ENGR 180W

Major Requirements

The **Computer Science Applications** major has two sets of requirements: a core set and a concentration set. Courses required by a concentration may also be used to satisfy breadth requirements.

Core requirements

1. Lower-division requirements (38 units)
 - a. ENGR 001M
 - b. CS 009A and CS 009B and CS 009C

- c. CS 010C, CS 061
 - d. CS 011/MATH 011
 - e. MATH 009A or MATH 09HA; MATH 009B or MATH 09HB; MATH 009C or MATH 09HC; and either MATH 031 or EE 020B
2. Upper-division requirements (58 units)
- a. ENGR 101M
 - b. CS100, CS 111, CS141, CS153
 - c. ENGR 180W
 - d. STAT 155 or STAT 156A or STAT 160
 - e. CS 105
 - f. CS 178A, CS 178B
 - g. At least twenty (20) units of Computer Science technical electives to be chosen from an approved list of courses which currently includes CS 108, CS110, CS 120A, CS 120B, CS 122A, CS 122B, CS 130, CS131, CS 133, CS 135, CS 142, CS 144, CS 145, CS/EE 147, CS 150, CS 152, CS 160, CS 161, CS 162, CS 164, CS 165, CS 166, CS 167, CS/EE 168, CS 169, CS 170, CS 171, EE 142, CS 172, CS 173, CS 175, CS 177, CS 179 (E-Z) (4 units maximum), CS 180, CS 181, CS 182, CS 183, CS 193 (4 units maximum), MATH 120, MATH 126, MATH 135A, MATH 135B, PHIL 124.

The technical electives selected for 2.g) must be distinct from those used to satisfy the requirements specified in 2.a)–f) above with at least 16 units selected from Computer Science courses.

Concentration (at least 50 units)

Students in the **Computer Science Applications (CSA)** must declare a concentration upon admission to the program. A change in concentration, if justified, should be made at least three quarters prior to graduation.

- 3.1. Psychology (51 units)
- h. PSYC 001, PSYC 002
 - i. PSYC 011, PSYC 012
 - j. At least two courses from CBNS 106 or PSYC 110, PSYC 132 or 134, PSYC 140, PSYC 150, PSYC 160 or PSYC 161 or PSYC 162 or PSYC 163
 - k. At least twenty four (24) units of Psychology technical electives to be chosen from an approved list of courses which currently includes PSYC 109, PSYC 112, PSYC 113, PSYC 115, PSYC 117, PSYC 120, PSYC 121, PSYC 122, PSYC 126, PSYC 128, PSYC 129, PSYC 130, PSYC131, PSYC 132, PSYC 133, PSYC 134, PSYC 135, PSYC 140, PSYC 142, PSYC 148, PSYC 149, PSYC 153, PSYC 155, PSYC 160, PSYC 161, PSYC 162, PSYC 163, PSYC 164, PSYC 165A, PSYC 165B, PSYC 166A, PSYC 166B, PSYC 166C, PSYC 166D, PSYC 167, PSYC 168, PSYC 169, PSYC 171, PSYC 175, PSYC 178

The technical electives selected for 3.1.d) must be distinct from those used to

satisfy the requirements specified in 3.a)–c) above.

3.2. Business (50 units)

- l. BUS 010, BUS 020
- m. ECON 002 or ECON 002H; ECON 003 or ECON 003H
- n. One course of 4 or more units from STAT 008, STAT 010, ECON 101
- o. At least two courses from BUS 102, BUS 103, BUS 104, BUS 105, BUS 106, BUS 107, BUS 109
- p. At least twenty (20) units of Business technical electives to be chosen from an approved list of courses which currently includes BUS 102, BUS 103, BUS 104, BUS 105, BUS 106, BUS 107, BUS 108, BUS 109, BUS 110, BUS 115, BUS 119, BUS 123, BUS 124A, BUS 124B, BUS 125, BUS 128, BUS 129, BUS 130, BUS 163, BUS 166, BUS 171, BUS 172, BUS 173, BUS 174, BUS 175, BUS 179, SOC 150. Additionally, no credit will be given for BUS 101; and the following pairs of courses cannot both be taken for credit: BUS 125 and CS 177, BUS 163 and CS 175, BUS 171 and CS 180, BUS 173 and CS 166, BUS 175 and CS 164.

The technical electives selected for 3.2.e) must be distinct from those used to satisfy the requirements specified in 3.2.a)–d) above.

3.3 Health Science (71 units)

- q. PHYS 002A or PHYS 002HA; PHYS 02LA or PHYS 02HLA; PHYS 002B or PHYS 02HB; PHYS 02LB or PHYS 02HLB; PHYS 002C or PHYS 002HC; PHYS 02LC or PHYS 02HLC
- r. CHEM 001A or CHEM 01HA; CHEM 01LA or CHEM 1HLA; CHEM 001B or CHEM 01HB; CHEM 01LB or CHEM 1HLB; CHEM 001C or CHEM 01HC; CHEM 01LC or CHEM 1HLC
- s. CHEM 008A or CHEM 08HA; CHEM 08LA or CHEM 08HLA; CHEM 008B or CHEM 08HB; CHEM 08LB or CHEM 08HLB; CHEM 008C or CHEM 08HC; CHEM 08LC or CHEM 08HLC
- t. BIOL 005A and BIOL 005LA, BIOL 005B, BIOL 005C
- u. BCH 100 or BCH 100H or BCH 110 A or BCH110HA
- v. At least three courses from BIOL 102, BIOL 107A, BIOL 110, BIOL 121/L, BIOL 128, BIOL 161 A, BIOL 161B, BIOL 171A, BIOL 171B, SOC 127 or PBPL 127, SOC 167, PSYC 160, PSYC 178, BCH 110B or BCH110HB, BCH 110C or BCH 110HC, PBPL 160, PBPL 162.

Course Descriptions:

CS 009A Data Oriented Introduction to Computing I (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): MATH 004, may be taken concurrently or MATH 005A, may be taken concurrently or MATH 006A, may be taken concurrently or MATH 006B, may be taken concurrently or MATH 007A, may be taken concurrently or MATH 009A, may be taken concurrently or MATH 09HA, may be taken concurrently. Covers computational thinking, problem-solving, and data analysis using the Python language through application-based data manipulation tasks from science, engineering, business, and the humanities. Includes variables, expressions, branches, loops, functions, parameters, lists, strings, file I/O, and exception handling. Also covers software design, testing, and debugging. Credit is awarded for one of the following CS 009A or CS 010A.

CS 009B Data Oriented Introduction to Computing II (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 009A; or equivalent. Covers advanced programming concepts and algorithms through application-based data manipulation tasks from science, engineering, business, and the humanities. Emphasizes good programming principles in the design and development of substantial programs using the Python language. Topics include abstract data types, objects and classes, recursion, and basic software engineering principles. Credit is awarded for one of the following CS 009B or CS 010B.

CS 009C C++ For Programmers (2) Lecture, 1 hour; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 009B, may be taken concurrently; MATH 006B, may be taken concurrently or MATH 007A, may be taken concurrently or MATH 005A, may be taken concurrently or MATH 004, may be taken concurrently or MATH 009A, may be taken concurrently or MATH 09HA, may be taken concurrently. Introduces the constructs provided in the C++ programming language for procedural and object-oriented programming. For those with prior programming experience.

CS 010A Introduction to Computer Science For Science, Mathematics, and Engineering I (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): MATH 004, may be taken concurrently or MATH 005A, may be taken concurrently or MATH 006A, may be taken concurrently or MATH 006B, may be taken concurrently or MATH 007A, may be taken concurrently or MATH 009A, may be taken concurrently or MATH 09HA. Covers problem solving through structured programming of algorithms on computers using the C++ object-oriented language. Includes variables, expressions, input/output (I/O), branches, loops, functions, parameters, arrays, strings, file I/O, and classes. Also covers software design, testing, and debugging. Credit is awarded for one of the following CS 010A or CS 009A. Credit is not awarded for CS 005 or CS 008 if it has already been awarded for CS 010A.

CS 010B Introduction to Computer Science For Science, Mathematics, and Engineering II (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 010A with a grade of C- or better; familiarity with C or C++ language. Covers structured and object-oriented programming in C++. Emphasizes good programming principles and development of substantial programs. Topics include recursion, pointers, linked lists, abstract data types, and libraries. Also covers software engineering principles. Credit is awarded for one of the following CS 010B or CS 009B.

CS 010C Introduction to Data Structures and Algorithms (4) Lecture, 3 hours; laboratory, 3

hours. Prerequisite(s): CS 010B with a grade of C- or better or CS 009C with a grade of C- or better; proficiency in C++. Topics include basic data structures such as arrays, lists, stacks, and queues. Covers dictionaries (including binary search trees and hashing) and priority queues (heaps). Offers an introductory analysis of algorithms, sorting algorithms, and object-oriented programming including abstract data types, inheritance, and polymorphism. Explores solving complex problems through structured software development.

MATH/CS 011 Introduction to Discrete Structures (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 010A or MATH 005C or MATH 007B or MATH 009B or MATH 09HB. Introduction to basic concepts of discrete mathematics emphasizing applications to computer science. Topics include propositional and predicate calculi, elementary set theory, functions, relations, proof techniques, elements of number theory, enumeration, and discrete probability. Cross-listed with CS 011. Cross-listed with CS 011.

CS 061 Machine Organization and Assembly Language Programming (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 010A with a grade of C- or better. An introduction to computer organization. Topics include number representation, combinational and sequential logic, computer instructions, memory organization, addressing modes, interrupt, input/output (I/O), assembly language programming, assemblers, and linkers. Upper-Division Courses

CS 100 Software Construction (5) Lecture, 3 hours; laboratory, 2 hours; discussion, 1 hour; individual study, 1 hour. Prerequisite(s): CS 010C with a grade of C- or better. Emphasizes development of software systems. Topics include design and implementation strategies and selection and mastery of programming languages, environment tools, and development processes. Develops skill in programming, testing, debugging, performance evaluation, component integration, maintenance, and documentation. Covers professional and ethical responsibilities and the need to stay current with technology.

CS 105 Data Analysis Methods (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 009B with a grade of C- or better or CS 010B with a grade of C- or better; restricted to class level standing of sophomore, junior, senior, or masters. An introduction to fundamental concepts and methods in data analysis and visualization essential to a variety of data science tasks. Designed to provide preparation for the data science major and for advanced courses in data analysis and applications of data science.

CS 108 Data Science Ethics (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 105 or STAT 107 or CS 171; or consent of instructor. Covers ethics specifically related to data science. Topics include data privacy; data curation and storage; discrimination and bias arising in the machine learning process; statistical topics such as generalization, causality, curse of dimensionality, and sampling bias; data communication; and strategies for conceptualizing, measuring, and mitigating problems in data-driven decision-making. Cross-listed with STAT 108. Credit is awarded for one of the following CS 108, STAT 108, CS 212, or STAT 212.

CS 110 Principles of Web Development (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 100. Provides an introduction to distributed systems, with a focus on web development techniques and the considerations to application scalability, security, reliability, and redundancy. Provides an in-depth study of technologies used for both back-end and front-end development, and how to design robust applications in the webs constantly evolving landscape.

CS 111 Discrete Structures (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 010A; CS 011 or MATH 011; MATH 009C or MATH 09HC; MATH 031 or EE 020B. A study of discrete mathematical structures emphasizing applications to computer science. Topics include number theory and cryptography, asymptotic notation, recurrence equations, counting methods, elements of graph theory, and trees.

CS 119L Laboratory in Problem Solving and Programming (2) Laboratory, 3 hours; individual study, 3 hours. Prerequisite(s): CS 010C with a grade of C- or better; CS 111 recommended; or consent of instructor. Explores techniques and skills applicable in developing software solutions to real-life algorithmic problems. Emphasizes systematic and rigorous approaches to problem-solving. Covers the end-to-end solution process including formulating models, choosing appropriate algorithmic tools and data structures, designing algorithms, implementation, and testing. Course is repeatable to a maximum of 4 units.

CS 120A Logic Design (5) Lecture, 3 hours; laboratory, 3 hours; individual study, 3 hours. Prerequisite(s): CS 061 with a grade of C- or better. Covers design of digital systems. Includes Boolean algebra; combinational and sequential logic design; design and use of arithmetic logic units, carry-lookahead adders, multiplexors, decoders, comparators, multipliers, flip-flops, registers, and simple memories; state-machine design; and basic register-transfer level design. Uses hardware description languages, synthesis tools, programmable logic, and significant hardware prototyping. Cross-listed with EE 120A.

CS 120B Introduction to Embedded Systems (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 010B; CS 120A or EE 120A. Introduction to hardware and software design of digital computing systems embedded in electronic devices (e.g., digital cameras or portable video games). Includes embedded processor programming, custom processor design, standard peripherals, memories, interfacing, and hardware/software tradeoffs. Involves use of synthesis tools, programmable logic, microcontrollers, and developing working embedded systems. Cross-listed with EE 120B.

CS 122A Intermediate Embedded and Real-Time Systems (5) Lecture, 3 hours; laboratory, 6 hours. Prerequisite(s): CS 010B; CS 120B or EE 120B. Covers software and hardware design of embedded computing systems. Includes hardware and software codesign, advanced programming paradigms (including state machines and concurrent processes), real-time programming, operating systems, basic control systems, modern chip, and design technologies. Laboratories involve use of microcontrollers, embedded microprocessors, programmable logic, advanced simulation, and debug environments.

CS 122B Advanced Embedded and Real-Time Systems (5) Lecture, 3 hours; laboratory, 6 hours. Prerequisite(s): CS 122A. Explores state-of-the-art aspects of building embedded computer systems. Topics include real-time programming, synthesis of coprocessor cores, application-specific processors, hardware and software co simulation and codesign, low-power design, reconfigurable computing, core-based design, and platform-based methodology.

CS 130 Computer Graphics (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 100; MATH 031, may be taken concurrently or EE 020B, may be taken concurrently; or consent of instructor. A study of the fundamentals of computer graphics necessary to design and build graphics applications. Examines raster graphics algorithms including scan-converting graphics primitives, anti-aliasing, and clipping. Also covers geometric transformations, viewing, solid modeling techniques, hidden-surface removal algorithms, color models, illumination, and

shading.

CS 131 Edge Computing (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 100 or EE 120B or CS 120B. Covers industry standards for quality of service and security while leveraging performance constraints. Develops skill in deploying real-world applications using embedded artificial intelligence. Cross-listed with EE 131.

CS 133 Computational Geometry (4) Lecture, 3 hours; laboratory, 1 hour; individual study, 2 hours. Prerequisite(s): CS 100, CS 111, MATH 031; or equivalents. An introduction to the design of geometry algorithms. Covers the basic computational geometry concepts and techniques used in graphics, robotics, and engineering design. Topics include polygons and polytopes, convex hulls, and voronoi diagrams.

CS 135 Virtual Reality (4) Lecture, 3 hours; laboratory, 3 hours. Prerequisite(s): CS 100. Covers the development of virtual reality (VR) worlds, including motion and physics of VR worlds. Includes design practices for immersive experiences, human visual perception, environmental and social interactions. Also includes positional tracking with sensors, augmented and mixed reality, and storage and transmission of virtual reality worlds.

CS 141 Intermediate Data Structures and Algorithms (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 010C with a grade of C- or better; CS 111; MATH 009C or MATH 09HC; proficiency in C++. Explores basic algorithm analysis using asymptotic notations, summation and recurrence relations, and algorithms and data structures for discrete structures including trees, strings, and graphs. Also covers general algorithm design techniques including “divide-and-conquer,” the greedy method, and dynamic programming. Integrates knowledge of data structures, algorithms, and programming.

CS 142 Algorithm Engineering (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 100, CS 141; or equivalent. Covers the design and implementation of sequential, parallel, cache-efficient, external-memory, and write-efficient algorithms for fundamental computational problems including sorting, searching, as well as a selection of problems in algebra, geometry, combinatorial optimization, and string processing. Emphasizes practical aspects of algorithm design, efficient implementation, and experimental methodology for performance evaluation.

274 |

CS 144 Algorithms For Bioinformatics (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 141. Introduces fundamental algorithms and data structures for solving analytical problems in molecular biology and genomics. Includes exact and approximate string matching; sequence alignment; genome assembly; and gene and regulatory motifs recognition. Credit is awarded for one of the following CS 144, CS 234, or CS 238.

CS 145 Combinatorial Optimization Algorithms (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 141; MATH 031 or MATH 131. The study of efficient algorithm design techniques for combinatorial optimization problems. Topics include shortest paths, minimum spanning trees, network flows, maximum matchings, stable matchings, linear programming, duality, two-person games, algorithmic techniques for integer programming problems, NP-completeness, and approximation algorithms.

CS 147 Graphics Processing Unit Computing and Programming (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): EE 120B or CS 120B. Introduces principles and practices of programming graphics processing units (GPUs) using the parallel programming environment. Covers memory/threading models, common data-parallel programming patterns and libraries

needed to develop high-performance parallel computing applications. Examines computational thinking; a broader range of parallel execution models; and parallel programming principles. Cross-listed with EE 147.

CS 150 Automata and Formal Languages (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 010C with a grade of C- or better; CS 111; MATH 009C or MATH 09HC. A study of formal languages. Includes regular and context-free languages; computational models for generating these languages such as finite-state automata, pushdown automata, regular expressions, and context-free grammars; mathematical properties of the languages and models; and equivalence between the models. Also introduces Turing machines and decidability.

CS 152 Compiler Design (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 061; CS 100; CS 111; CS 150. Covers the fundamentals of compiler design. Includes lexical analysis, parsing, semantic analysis, compile-time memory organization, run-time memory organization, code generation, and compiler portability issues.

CS 153 Design of Operating Systems (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 061; CS 100; CS 111; C++ programming proficiency. Covers the principles and practice of operating system design. Includes concurrency, memory management, file systems, protection, security, command languages, scheduling, and system performance.

CS 160 Concurrent Programming and Parallel Systems (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 061; CS 100; CS 111. A study of concurrent and parallel systems. Topics include modular structure and design, interprocess communication, synchronization, failures, persistence, and concurrency control. Also covers atomic transactions, recovery, language support, distributed interprocess communication, and implementation mechanisms. Provides preparation for the study of operating systems, databases, and computer networking.

CS 161 Design and Architecture of Computer Systems (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): EE 120A or CS 120A. A study of the fundamentals of computer design. Topics include the performance evaluation of microprocessors; instruction set design and measurements of use; microprocessor implementation techniques including multicycle and pipelined implementations; computer arithmetic; memory hierarchy; and input/output (I/O) systems.

CS 161L Laboratory in Design and Architecture of Computer Systems (2) Lecture, 1 hour; laboratory, 3 hours. Prerequisite(s): CS 161 (may be taken concurrently). Covers the design and simulation of a complete computer system using hardware description language and simulator. Topics include instruction set architecture design; assemblers; datapath and control unit design; arithmetic and logic unit; memory and input/output (I/O) systems; and integration of all parts into a working computer system.

CS 162 Computer Architecture (4) Lecture, 3 hours; laboratory, 3 hours. Prerequisite(s): CS 161 with a grade of "C-" or better. The study of advanced processor design. Topics include CPU pipelining, data and control hazards, instruction-level parallelism, branch prediction, and dynamic scheduling of instructions. Also covers Very Long Instruction Word (VLIW) processing, multimedia support, design of network and embedded processors, basic multiprocessor design, shared memory and message passing, and network topologies.

CS 164 Computer Networks (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour.

Prerequisite(s): CS 100; CS 111; CS 153. Covers the fundamentals of computer networks. Topics include layered network architecture, communication protocols, local area networks, UNIX network programming, verification, network security, and performance studies.

CS 165 Computer Security (4) Lecture, 3 hours; laboratory, 3 hours. Prerequisite(s): CS 141, CS 153. Examines the ways in which information systems are vulnerable to security breaches. Topics include attacks; security labels, lattices, and policies; safeguards and countermeasures; intrusion detection; authorization and encryption techniques; networks; digital signatures, certificates, and passwords; privacy issues, firewalls, and spoofing; Trojan horses and computer viruses; CERT Coordination Center; and electronic commerce.

CS 166 Database Management Systems (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 100; CS 111. Covers basic concepts of databases and database management systems. Topics include entity-relationship modeling for design, relational data model, relational algebra, Structured Query Language (SQL), secondary storage, indexing and hashing, query evaluation and optimization, and overview of transactions.

CS 167 Introduction to Big-Data Management (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 100, CS 111; CS 167 online section: enrollment in the online Master-of-Science in Engineering program. Introduces the architecture of big-data systems and their applications in data management and processing. Describes the common functionality in big-data processing such as distributed storage, resource management, query processing, fault-tolerance, and programming APIs. Covers the popular big-data technologies such as distributed shared-nothing systems, NoSQL processing model, and semi-structured data management.

CS 168 Introduction to Very Large Scale Integration Design (4) Lecture, 3 hours; laboratory, 3 hours. Prerequisite(s): CS 120A or EE 120A; or consent of instructor. Studies integrated circuit fabrication, device characterization, and circuit simulation. Introduces basic device physics and physical design rules, MOS logic design, and timing and clock schemes. Covers layout generation, subsystem designs, and circuits for alternative logic styles. Also covers design and simulation using hardware description language and CAD tools. Cross-listed with EE 168. Credit is awarded for one of the following EE 168, CS 168, or EE 282A.

CS 169 Mobile Wireless Networks (4) Lecture, 3 hours; laboratory, 2 hours; extra reading, 1 hour. Prerequisite(s): CS 153 or consent of instructor. Introduces the fundamentals of wireless and mobile networks. Covers wireless channel models, MAC protocols, and wireless network architectures. Also covers cellular, WLAN and ad hoc networks, and routing in multi-hop wireless networks. Includes wireless security and the impact of wireless links on TCP and other transport layer solutions.

CS 170 Introduction to Artificial Intelligence (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 100 with a grade of "C-" or better, CS 111. An introduction to the field of artificial intelligence. Focuses on discrete-valued problems. Covers heuristic search, problem representation, and classical planning. Also covers constraint satisfaction and logical inference.

CS 171 Introduction to Machine Learning and Data Mining (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): MATH 010A; MATH 031 or EE 020B; STAT 155 or EE 114 or STAT 156A; CS 100 or EE 016. Introduces formalisms and methods in data mining and machine learning. Topics include data representation, supervised learning, and classification. Covers regression and clustering. Also covers rule learning, function approximation, and margin-based

methods. Cross-listed with EE 142.

CS 172 Introduction to Information Retrieval (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 100; CS 111; EE 114 or STAT 155. Introduces information retrieval (IR) principles and techniques for indexing and searching document collections. Topics include Web search, text processing, ranking algorithms, search in social networks, and search evaluation. Also studies scalability issues in search engines. Satisfactory (S) or No Credit (NC) grading is not available.

CS 173 Introduction to Natural Language Processing (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 100; CS 111; EE 114 or STAT 155. An overview of modern approaches for natural language processing. Focuses on major algorithms used in NLP for various applications such as part-of-speech tagging, parsing, named entity recognition, coreference resolution, sentiment analysis, and machine translation.

CS 175 Entrepreneurship in Computing (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 100; restricted to class level standing of junior, or senior. Introduces business and technological concepts to create companies based on computer technology. Covers technical aspects of real-world IT projects. Includes developing software and services; understanding user requirements; designating usable systems; and assessing technology. Addresses market analysis and strategy; legal and intellectual property; ethics and communication issues; and financial analysis.

CS 177 Modeling and Simulation (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 100; CS 111; C++ programming proficiency. Covers validation of random number sequences; concepts in modeling and systems analysis; and conceptual models and their mathematical and computer realizations. Examines simulation modeling techniques including object-oriented modeling and discrete-event modeling. Emphasizes the use of simulation libraries used with programming languages such as C++.

CS 178A Project Sequence in Computer Science and Engineering (4) Lecture, 1 hour; laboratory, 2 hours; individual study, 1 hour; practicum, 6 hours. Prerequisite(s): CS 141, ENGR 180W; restricted to class level standing of senior. Incorporates the proposal, design, building, testing, and documenting of software and hardware devices or systems under the direction of a faculty member. Emphasizes professional and ethical responsibilities and the need to stay current on technology and its global impact on economics, society, and the environment. Completed together, CS 178A and CS 178B may be applied as a substitute for the CS 179 (E-Z) CS major requirement. Graded In Progress (IP) until CS 178A and CS 178B are completed, at which time, a final letter grade is assigned.

CS 178B Project Sequence in Computer Science and Engineering (4) Lecture, 1 hour; laboratory, 2 hours; individual study, 1 hour; practicum, 6 hours. Prerequisite(s): CS 178A; restricted to class level standing of senior. Incorporates the proposal, design, building, testing, and documenting of software and hardware devices or systems under the direction of a faculty member. Emphasizes professional and ethical responsibilities and the need to stay current on technology and its global impact on economics, society, and the environment.

CS 179 (E-Z) Project in Computer Science (4) Prerequisite(s): CS 100 with a grade of C- or better; CS 152 with a grade of C- or better; ENGR 180W. For hours and prerequisites, see segment descriptions. Under the direction of a faculty member, student teams propose, design, build, test, and document software and/or hardware devices or systems. Emphasizes

professional and ethical responsibilities and the need to stay current on technology and its global impact on economics, society, and the environment.

CS 179E Project in Computer Science: Compilers (4) Discussion, 1 hour; laboratory, 3 hours; research, 3 hours; extra reading, 3 hours. Prerequisite(s): CS 100 and CS 152 with grades of “C-” or better; ENGR 180W; 8 additional upper-division units in Computer Science. Covers the planning, design, implementation, testing, and documentation of a compiler-related system. Incorporates techniques from previous related courses. Emphasizes professional and ethical responsibilities; the need to stay current on technology; and its global impact on economics, society, and the environment.

CS 179F Project in Computer Science: Operating Systems (4) Discussion, 1 hour; laboratory, 3 hours; research, 3 hours; extra reading, 3 hours. Prerequisite(s): CS 153 with a grade of “C-” or better; ENGR 180W; 8 additional upper-division units in Computer Science. CS 160 is recommended. Covers the planning, design, implementation, testing, and documentation of an operating systems-related system. Incorporates techniques from previous related courses. Emphasizes professional and ethical responsibilities; the need to stay current on technology; and its global impact on economics, society, and the environment.

CS 179G Project in Computer Science: Database Systems (4) Discussion, 1 hour; laboratory, 3 hours; research, 3 hours; extra reading, 3 hours. Prerequisite(s): CS 100 with a grade of C- or better; CS 166 with a grade of C- or better or CS 167 with a grade of C- or better; ENGR 180W; 8 additional upper-division units in Computer Science. Covers the planning, design, implementation, testing, and documentation of a database-related system. Incorporates techniques from previous related courses. Emphasizes professional and ethical responsibilities; the need to stay current on technology; and its global impact on economics, society, and the environment.

CS 179I Project in Computer Science: Networks (4) Discussion, 1 hour; laboratory, 3 hours; research, 3 hours; extra reading, 3 hours. Prerequisite(s): CS 100 and CS 164 with grades of “C-” or better; ENGR 180W; 8 additional upper-division units in Computer Science. Covers the planning, design, implementation, testing, and documentation of a network-related system. Incorporates techniques from previous related courses. Emphasizes professional and ethical responsibilities; the need to stay current on technology; and its global impact on economics, society, and the environment.

CS 179J Project in Computer Science: Computer Architecture and Embedded Systems (4) Discussion, 1 hour; laboratory, 3 hours; research, 3 hours; extra reading, 3 hours. Prerequisite(s): CS 100, CS 111, CS 120B/EE 120B, and CS 161 with grades of “C-” or better or consent of instructor; ENGR 180W; 3 additional upper-division units in Computer Science. Covers the planning, design, implementation, testing, and documentation of a computer architecture and embedded systems-related system. Incorporates using techniques presented in previous related courses. Emphasizes professional and ethical responsibilities; the need to stay current on technology; and its global impact on economics, society, and the environment.

CS 179K Project in Computer Science: Software Engineering (4) Discussion, 1 hour; laboratory, 3 hours; research, 3 hours; extra reading, 3 hours. Prerequisite(s): CS 180; ENGR 180W; 8 additional upper-division units in Computer Science. Covers the planning, design, implementation, testing, and documentation of a software engineering-related system. Incorporates techniques presented in previous related courses. Emphasizes professional and

ethical responsibilities; the need to stay current on technology; and its global impact on economics, society, and the environment.

CS 179M Project in Computer Science: Artificial Intelligence (4) Discussion, 1 hour; laboratory, 3 hours; research, 3 hours; extra reading, 3 hours. Prerequisite(s): CS 100, CS 111, and CS 170 with grades of “C-” or better; ENGR 180W; 8 additional upper-division units in Computer Science. Covers the planning, design, implementation, testing, and documentation of an artificial intelligence-related system. Incorporates techniques presented in previous related courses. Emphasizes professional and ethical responsibilities; the need to stay current on technology; and its global impact on economics, society, and the environment.

276 |

CS 179N Project in Computer Science: Graphics and Electronic Games (4) Discussion, 1 hour; laboratory, 3 hours; research, 3 hours; extra reading, 3 hours. Prerequisite(s): CS 130 with a grade of C- or better; ENGR 180W; 8 additional upper-division units in Computer Science. Covers the planning, design, implementation, testing, and documentation of a graphics or electronic game-related system. Incorporates using techniques presented in previous related courses. Emphasizes professional and ethical responsibilities; the need to stay current on technology; and its global impact on economics, society, and the environment.

CS 180 Introduction to Software Engineering (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 100. A study of software engineering techniques for the development, maintenance, and evolution of large software systems. Topics include requirements and specification; system design and implementation; debugging, testing, and quality assurance; reengineering; project management; software process; tools; and environments.

CS 181 Principles of Programming Languages (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 061; CS 100; CS 111; CS 150. Covers the principles of programming language design. Includes the study and comparison of several programming languages, their features, and their implementations.

CS 182 Software Testing and Verification (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 100. A study of modern techniques to assess the quality of software artifacts through functional, performance, and reliability testing. Introduces black box and white box testing techniques. Covers the application of modern testing tools to software units, components, subsystems, and entire systems. Also covers verification as a complementary technique to testing.

CS 183 Unix System Administration (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 100. Explores the technical aspects of system administration on a Unix system including advanced Unix. Includes managing system devices, operating system installation, communications, and networking.

CS 193 Design Project (1 to 4) Laboratory, 1 to 6 hours; scheduled research, 1 to 3 hours; individual study, 1 to 3 hours. Prerequisite(s): CS 141; consent of instructor. Individual hardware or software design project to include establishment of objectives and criteria, synthesis, analysis, implementation, testing, and documentation. Course is repeatable to a maximum of 8 units.

ENGR 001M Professional Development and Mentoring (1) Activity, 30 hours per quarter. Prerequisite(s): freshman standing in the Bourns College of Engineering. Provides freshmen

with involvement in professional development activities. Activities to be performed are program-specific, and may include projects, industry overviews and interactions, involvement with professional societies and clubs, team building, career guidance, and coverage of ethics and lifelong learning issues. E. Bioengineering; F. Chemical Engineering; G. Computer Engineering; I. Computer Science; J. Electrical Engineering; K. Environmental Engineering; M. Computer Science with Business Applications.

ENGR 101M Professional Development and Mentoring (1) Activity, 30 hours per quarter. Prerequisite(s): restricted to class level standing of junior; restricted to major(s) Bioengineering, Bioengineering BS + MS, Chemical Engineering, Chemical Engineering BS + MS, Computer Engineering, Computer Science, Computer Science BS + MS, Electrical Engineering, Electrical Engineering BS + MS, Environmental Engineering, Environmental Engr BS + MS, Materials Science and Engineer, Mechanical Engineering, Mechanical Engineering BS + MS. Provides opportunities with involvement in professional development activities. May include projects, industry overviews and interactions, involvement with professional societies and clubs, team building, career guidance, and coverage of ethics and lifelong learning issues. E. Bioengineering; F. Chemical Engineering; G. Computer Engineering; I. Computer Science; J. Electrical Engineering; K. Environmental Engineering; M. Computer Science With Business Applications.

ENGR 180W Technical Communications (4) Lecture, 3 hours; workshop, 3 hours. Prerequisite(s): ENGL 001B with a grade of C or better, ENGL 007, may be taken concurrently; for concurrent enrollment in ENGL 007, review the course titles or topics in the current online Schedule of Classes to find the corresponding ENGL 007 writing workshop; restricted to class level standing of junior, or senior. Develops oral, written, and graphical communication skills. Includes preparing and critiquing reports, proposals, instructions, and business correspondence. Emphasizes professional and ethical responsibilities and the need to stay current on technology and its global impact on economics, society, and the environment. Fulfills the third-quarter writing requirement for students who earn a grade of "C" or better for courses that the Academic Senate designates, and that the student's college permits, as alternatives to English 001C.

MATH 009A First-Year Calculus (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): MATH 005A with a grade of C- or better or MATH 006B. Introduction to the differential calculus of functions of one variable. Credit is awarded for one of the following MATH 009A, MATH 005B, MATH 007A, or MATH 09HA.

MATH 009B First-Year Calculus (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): MATH 005B with a grade of C- or better or MATH 009A or MATH 09HA. Introduction to the integral calculus of functions of one variable. Credit is awarded for one of the following MATH 009B, MATH 005C, MATH 007B, or MATH 09HB.

MATH 009C First-Year Calculus (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): MATH 009B with a grade of "C-" or better or MATH 09HB with a grade of "C-" or better. Further topics from integral calculus, improper integrals, infinite series, Taylor's series, and Taylor's theorem. Credit is awarded for only one of MATH 009C or MATH 09HC.

MATH 09HA First-Year Honors Calculus (4) Discussion, 1 hour; lecture, 3 hours. Prerequisite(s): admission to University Honors. Honors course corresponding to MATH 009A. Honors course corresponding to MATH 009A for students with strong mathematical backgrounds. Introduces the differential calculus of functions of one variable. Emphasis is on

theory and rigor Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following MATH 09HA, MATH 005B, MATH 007A, or MATH 009A.

MATH 09HB First-Year Honors Calculus (4) Discussion, 1 hour; lecture, 3 hours. Prerequisite(s): MATH 09HA with a grade of B or better; admission to University Honors. Honors course corresponding to MATH 009B. Honors course corresponding to MATH 009B for students with strong mathematical backgrounds. Introduces the integral calculus of functions of one variable. Emphasis is on theory and rigor. Credit is awarded for one of the following MATH 09HB, MATH 005C, MATH 007B, or MATH 009B.

MATH 09HC First-Year Honors Calculus (4) Discussion, 1 hour; lecture, 3 hours. Prerequisite(s): MATH 09HB with a grade of B or better or MATH 009B with a grade of B or better; admission to University Honors. Honors course corresponding to MATH 009C. Further topics from integral calculus, improper integrals, infinite series, Taylor's series, and Taylor's theorem. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following MATH 09HC, MATH 005C, or MATH 009C.

MATH 031 Applied Linear Algebra (5) Lecture, 3 hours; discussion, 2 hours. Prerequisite(s): CS 010A with a grade of C- or better or MATH 005C with a grade of C- or better or MATH 007B with a grade of C- or better or MATH 009B with a grade of C- or better or MATH 09HB with a grade of C- or better. A study of matrices and systems of linear equations, determinants, Gaussian elimination, vector spaces, linear independence and linear transformation, orthogonality, eigenvalues, and eigenvectors. Also examines selected topics and applications. Credit is awarded for one of the following MATH 031 or EE 020B.

STAT 155 Probability and Statistics for Science and Engineering (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): MATH 009C, may be taken concurrently or MATH 09HC, may be taken concurrently. Covers sample spaces and probability; random variables and probability distributions; elements of statistical inference; and testing and estimation. Also addresses selected topics in multivariate distributions and introduces stochastic processes. Credit is not awarded for STAT 155 if it has already been awarded for STAT 156A or STAT 160A.

STAT 156A Mathematical Statistics with Applications for Data Science I (4) -- *new course*-- Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): MATH 009C or consent of instructor. Introduction to frequentist probability concepts, random variables, and their distributions. Discussion of key theorems and inequalities in probability theory. Introduction to frequentist methods of point and interval estimation.

STAT 160A Elements of Probability and Statistical Theory (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): MATH 009C, may be taken concurrently or MATH 09HC, may be taken concurrently. Topics include statistical regularity, probability spaces, fundamental theorems in discrete probability, Bayes' theorem, random variables, densities and distribution functions, and continuous distributions. Credit is awarded for one of the following STAT 160A or STAT 156A.

PSYCHOLOGY CONCENTRATION

PSYC 001 Introductory Psychology 4 Lecture, 3 hours; discussion, 1 hour. An introduction to psychology as an experimental science. Emphasizes topics in cognitive (including learning, memory, sensation, perception), comparative, and physiological psychology.

PSYC 002 Introductory Psychology 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): none. Emphasizes topics in developmental psychology, tests and measurements, social psychology, personality, and abnormal behavior.

PSYC 011 Psychological Methods: Statistical Procedures 5 Lecture, 3 hours; discussion, 2 hours. Prerequisite(s): MATH 004 with a grade of C- or better or MATH 005A with a grade of C- or better or MATH 006A with a grade of C- or better or MATH 006B with a grade of C- or better or MATH 007A with a grade of C- or better or MATH 007B with a grade of C- or better or MATH 009A with a grade of C- or better or MATH 09HA with a grade of B or better or MATH 009B with a grade of C- or better or MATH 09HB with a grade of B or better or MATH 009C with a grade of C- or better or MATH 09HC with a grade of B or better or MATH 010A with a grade of C- or better or MATH 010B with a grade of C- or better or MATH 022 with a grade of C- or better; PSYC 001 with a grade of C- or better; PSYC 002 with a grade of C- or better; or a score on the Math Advisory Exam sufficient for placement into MATH 022 or higher. Covers descriptive and inferential statistics, measures of central tendency, variability, and correlation. Introduces sampling distributions, statistical inference, and hypothesis testing.

PSYC 012 Psychological Methods: Research Procedures 6 Lecture, 3 hours; laboratory, 3 hours; research, 3 hours; term paper, 1 hour; extra reading, 2 hours. Prerequisite(s): ENGL 001B with a grade of C or better; PSYC 001 with a grade of C- or better; PSYC 002 with a grade of C- or better; PSYC 011 with a grade of C- or better; MATH 004 with a grade of C- or better or MATH 005A with a grade of C- or better or MATH 006A with a grade of C- or better or MATH 006B with a grade of C- or better or MATH 007A with a grade of C- or better or MATH 007B with a grade of C- or better or MATH 009A with a grade of C- or better or MATH 09HA with a grade of B or better or MATH 009B with a grade of C- or better or MATH 09HB with a grade of B or better or MATH 009C with a grade of C- or better or MATH 09HC with a grade of B or better or MATH 010A with a grade of C- or better or MATH 010B with a grade of C- or better or MATH 022 with a grade of C- or better; or equivalent; a score on the Math Advisory Exam sufficient for placement into MATH 022 or higher; consent of instructor is required for students repeating the course. A systematic survey of research methodologies in psychology. Laboratory assignments include evaluating and testing psychological theories; assessing methodologies and research designs; designing and implementing research; collecting data and analyzing statistics; writing research reports; and discussing ethical issues in science.

CBNS 106 Introduction to Neuroscience 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BIOL 005A and BIOL 005B with grades of "C-" or better, CHEM 001A, CHEM 001B, CHEM 001C; or consent of instructor. An introduction to cellular, organismal, and behavioral neuroscience for science majors. Topics include structure and functions of the brain, neurons, and synapses; sensory systems and perception; control of movement; neurobiology of hormones and sexual behavior; biorhythms; learning; memory; and psychoses.

PSYC 109 Advanced Research Methods 4 Lecture, 3 hours; laboratory, 3 hours. Prerequisite(s): PSYC 001, PSYC 002, PSYC 011, PSYC 012, each with a grade of "B-" or better; or equivalents; or consent of instructor. Advanced theory and practice of planning, conducting, reporting, and evaluating research in the social and behavioral sciences. Students conduct original research that, if desired, can lead to (and become part of) a senior honors thesis or other senior-level research project. Satisfactory (S) or No Credit (NC) grading is not

available.

PSYC 110 The Brain and Behavior 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 001 with a grade of “C-” or better, or equivalents, or consent of instructor. Explores the principles of neuroanatomy and neurophysiology and their relationship to brain function. Topics include sensory and perceptual processes, biological aspects of learning and memory, motivation, emotion, language, and abnormal behavior.

PSYC 112 Neural Mechanisms of Animal Behavior 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CBNS 106 with a grade of “C-” or better or PSYC 110 with a grade of “C-” or better or consent of the instructor. Studies how the nervous systems of vertebrates and invertebrates contribute to and control their behavior. Focuses on aspects of sensory physiology with a brief orientation to the structure and function of nervous systems. Emphasizes a top-down approach to neurobiology, with specific behaviors providing guidelines for an examination of neural mechanisms.

PSYC 113 Pandemic Biopsychology: From Virus to Vaccine 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 001 with a grade of C- or better, PSYC 002 with a grade of C- or better, PSYC 011 with a grade of C- or better, PSYC 012 with a grade of C- or better; or consent of instructor. Explores pandemics through analyses of historical events, scientific research investigating viruses related to global outbreaks, human immune response to infection, and how different vaccines (adenovirus, mRNA) are created and function in human systems. Also examines how pandemics impact people’s sense of security, mental health, and personal well-being.

PSYC 115 Drugs and Behavior 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CBNS 106 with a grade of “C-” or better or PSYC 110 with a grade of “C-” or better or consent of instructor. Describes both legal and illegal drugs. Analyzes drug-nervous system interactions and how the use of various drugs (particularly drugs of abuse) affects behavior and psychological well-being.

PSYC 117 Cognitive Neuroscience of Memory and Consciousness 4 Seminar, 3 hours; extra reading, 3 hours. Prerequisite(s): CBNS 106 with a grade of “C-” or better or PSYC 110 with a grade of “C-” or better. Surveys the neural basis of mental processes, focusing on memory and consciousness and their behavioral manifestations. Emphasizes current research literature.

PSYC 120 Cellular Neuroscience: Membrane and Synaptic Phenomena 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CBNS 106 or consent of instructor. An examination of cellular and molecular mechanisms of nervous system function using concepts drawn from the study of vertebrates and invertebrates with emphasis on mammalian systems. Cross-listed with CBNS 120.

PSYC 121 Developmental Neuroscience 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CBNS 106 or consent of instructor. A study of the development of nervous systems. Examines the cellular and molecular mechanisms of neural development and the determinants of cell birth and death, axonal pathfinding, neuronal connections, and

development of neural systems underlying behavior. Cross-listed with CBNS 121.

PSYC 122 Human Neuroimaging 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 110 or CBNS 106 or consent of instructor. PSYC 122 can be taken without PSYC 122L. An introduction to magnetic resonance imaging in psychological research with an emphasis on the merits and limitations of structural and functional neuroimaging in humans.

PSYC 126 Neuroscience of Learning and Memory 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CBNS 106 or PSYC 110; or consent of instructor. Covers mechanisms of learning and memory across levels of analysis including genetic, neuronal, systems, and theory. Topics include the multiple memory systems, memory consolidation, working memory, emotional memory, recognition memory, spatial memory, and human amnesia. Cross-listed with CBNS 126.

PSYC 128 Language and the Brain 4 Lecture, 3 hours; research, 2 hours; extra reading, 2 hours. Prerequisite(s): LING 020 or PSYC 110 or PSYC 135 or CBNS 106; or consent of instructor. Interdisciplinary introduction to the study of language and the brain. Includes brain evolution for language, neural bases for language production and language comprehension, aphasiology and language disorders, and additional special topics. Cross-listed with LING 162.

PSYC 129 Human Neuropsychology 4 Lecture, 3 hours; discussion, 1.5 hours. Prerequisite(s): a grade of "C-" or better in one of the following courses or consent of instructor: CBNS 106, PSYC 110, PSYC 132, PSYC 134, PSYC 135. Surveys how high psychological functions (e.g., perception, memory, language) are organized in the human brain. Special emphasis is on behavioral and cognitive impairments due to brain injury and how they may inform our view of normal cognitive functions.

PSYC 130 Fundamentals of Learning and Conditioning 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 001, PSYC 002, PSYC 011, PSYC 012 with grades of "C-" or better; or equivalents; or consent of instructor. A survey course that includes both historical and current models of human learning, conditioning, and memory. Provides a good foundation for research or future study in learning and memory by covering fundamental theories established by Pavlov and Skinner while incorporating new theories of human behavioral control.580 |

PSYC 131 Computational and Mathematical Models in Cognitive Science 4 Lecture, 3 hours; extra reading, 1.5 hours; written work, 1.5 hours. Prerequisite(s): a grade of "C-" or better in PSYC 001, PSYC 002, PSYC 011, PSYC 012 or consent of instructor. Introduces students to the technical and theoretical issues involved in using models to understand behavior. Involves analysis of model predictions and simulation of behavioral data. Course is repeatable to a maximum of 12 units if taken with different instructors.

PSYC 132 Perception 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 001, PSYC 002, PSYC 011, PSYC 012 with grades of "C-" or better; or equivalents; or consent of instructor. An analysis of the role played by sensory mechanisms, experiences, expectations, and needs in

recognizing objects in the environment.

PSYC 133 Human Factors 4 Lecture, 3 hours; extra reading, 3 hours; term paper, 1 hour. Prerequisite(s): a grade of "C-" or better in one of the following courses or consent of instructor: PSYC 132 or PSYC 134. Provides an overview of the human capabilities and limitations considered in the design of person-machine systems. Evaluates factors critical to performance in person-machine systems, including attention, decision making, motor performance, and memory.

PSYC 134 Cognitive Processes 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 001 with a grade of C- or better; PSYC 002 with a grade of C- or better; PSYC 011 with a grade of C- or better; PSYC 012 with a grade of C- or better; or consent of instructor. Addresses empirical and theoretical research in several subareas within contemporary cognitive psychology. Subareas include attention, mental representation, information organization and retrieval from memory, psycholinguistics, problem solving, decision making, thinking, and artificial intelligence and computer simulation of cognitive processes.

PSYC 135 Psycholinguistics 4 Lecture, 3 hours; extra reading, 3 hours. Prerequisite(s): a grade of "C-" or better in the following courses or consent of instructor: PSYC 001, PSYC 002, PSYC 011, PSYC 012. Introduction to psycholinguistics emphasizing the psychological implications of linguistic theory, including the effect of syntactic structure on the comprehension, production, and retention of speech; the course of language acquisition; and models of the adult language user.

PSYC 140 Social Psychology 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 001, PSYC 002, PSYC 011, PSYC 012 with grades of "C-" or better; or equivalents; or consent of instructor. The relationship between the individual and the group, including such topics as conformity and deviance, attraction and prejudice, altruism and aggression, and the social nature of attitudes.

PSYC 142 Industrial/Organizational Psychology 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 002. Introduction to the field of industrial/organizational psychology covering fundamental theory and research in personnel and organizations. Topics include employee selection and training, performance appraisal, motivation, organizational dynamics, leadership, and job satisfaction.

PSYC 148 Topics in Social Psychology 4 Lecture, 3 hours; extra reading or term paper, 3 hours. Prerequisite(s): a grade of "C-" or better in the following courses or consent of instructor: PSYC 001, PSYC 002, PSYC 011, PSYC 012, PSYC 140. Intensive study of selected topics in social psychology such as race relations, attitude formation and change, biases of social science researchers, and the application of psychological principles in community organization. Emphasis is on the study of these areas in natural settings. Specific course content varies. Course is repeatable to a maximum of 16 units.

PSYC 149 The Science of Well-Being 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 001 and PSYC 002. Covers current theory and research in positive psychology and the scientific study of optimal human functioning. Topics include the causes and benefits of happiness; how happiness can be measured and increased; positive emotions; flow; and human strengths and virtues including optimism, love, altruism, forgiveness, and gratitude.

PSYC 153 Introduction to Clinical Psychology 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): a grade of "C-" or better in the following courses or consent of instructor: PSYC 001, PSYC 002, PSYC 011, PSYC 012, PSYC 152. Introduction to the field of clinical psychology. Emphasizes the application and evaluation of techniques of individual and group counseling and therapy. Also addresses the application and evaluation of psychological tests in the assessment of psychological problems.

PSYC 155 Personality Assessment 4 Lecture, 3 hours; extra reading, 3 hours. Prerequisite(s): a grade of "C-" or better in the following courses or consent of instructor: PSYC 001, PSYC 002, PSYC 011, PSYC 012, PSYC 150. Covers the assessment of personality through self-report tests, projective tests, and systematic observations. Also entails descriptions of the psychometrics of testing as it applies to the problems in studying personality.

PSYC 160 Life Span Development 5 Lecture, 3 hours; discussion, 1 hour; term paper, 3 hours. Prerequisite(s): PSYC 001 with a grade of C- or better; PSYC 002 with a grade of C- or better; PSYC 011 with a grade of C- or better; PSYC 012 with a grade of C- or better. Introduces the biological, social, and cognitive processes that influence development from the prenatal period through late adulthood. Topics include development in physical, motor, perceptual, cognitive, emotional, and social areas. Includes discussion of issues related to intellectual functioning, personality, social roles and relationships, coping and adjustment, and aging.

PSYC 161 Socioemotional and Personality Development 5 Lecture, 3 hours; discussion, 1 hour; term paper, 3 hours. Prerequisite(s): PSYC 001 with a grade of C- or better; PSYC 002 with a grade of C- or better; PSYC 011 with a grade of C- or better; PSYC 012 with a grade of C- or better; or consent of instructor. A study of the development of human personality from birth through late adolescence. Emphasizes the impact of interpersonal relationships on the acquisition of human traits, emotional reactions, and patterns of adjustment.

PSYC 162 Biological Issues in Development 5 Lecture, 3 hours; discussion, 1 hour; term paper, 3 hours. Prerequisite(s): PSYC 001, PSYC 002, PSYC 011, and PSYC 012 with grades of "C-" or better; or equivalents; or consent of instructor. Examines biological processes that influence behavior and development across the life span. Discusses contemporary theoretical approaches to the study of biological, genetic, and environmental influences on development. Topics include behavioral genetics, developmental neuroscience, and the impact of early environments and stress on adaptation and resilience.

PSYC 163 Cognitive Development 5 Lecture, 3 hours; discussion, 1 hour; term paper, 3 hours. Prerequisite(s): PSYC 001, PSYC 002, PSYC 011, and PSYC 012 with grades of "C-" or better; or equivalents; or consent of instructor. An analysis of intellectual development from birth

through maturity and into stages of aging. Discusses historical and contemporary theoretical and experimental approaches to studying the mechanisms of intellectual growth and development.

PSYC 164 Emotional and Behavioral Disorders of Childhood 4 Lecture, 3 hours; extra reading, 3 hours. Prerequisite(s): PSYC 001, PSYC 002, PSYC 011, PSYC 012, PSYC 152, and PSYC 160 with grades of C- or better; or equivalents; or consent of instructor. Provides an overview of behavioral and emotional disorders affecting children and adolescents within a developmental context. Examines disorders affecting youth in terms of prevalence, developmental course, and theories. Topics include theoretical models of child psychopathology; diagnostic, assessment, and treatment practices; and the descriptive psychopathology of major childhood disorders.

PSYC 165A The Cultural Bases of Human Development 4 Lecture, 3 hours; extra reading, 3 hours. Prerequisite(s): PSYC 001, PSYC 002, PSYC 011, and PSYC 012 with grades of "C-" or better; or equivalents; or consent of instructor. Examines the social, emotional, and intellectual aspects of human development from a cultural perspective. Covers theory, research, and methods of studying the cultural bases of psychological growth. Topics include socialization practices, parenting, social relations, language and cognition, schooling and academic achievement, acculturation, and ethnicity.

PSYC 165B The Development of Immigrant and Ethnic Minority Youth 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 001, PSYC 002, PSYC 011, PSYC 012, and PSYC 160 with grades of "C-" or better; or equivalents; or consent of instructor. Covers current theory and research on the development of immigrant and ethnic minority youth in the United States. Focuses on the social, cultural, and psychological processes influencing the biological, cognitive, and social development of youth from immigrant and ethnic minority families.

PSYC 166A Infancy 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 001, PSYC 002, PSYC 011, PSYC 012 all with grades of "C-" or better; or consent of instructor. Covers current theory and research on development during the period of infancy. Addresses the key biological, cognitive, emotional, and social developments during this period.

PSYC 166B Childhood 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 001, PSYC 002, PSYC 011, PSYC 012 all with grades of "C-" or better; or consent of instructor. Covers current theory and research on development during the period of childhood. Addresses the key biological, cognitive, emotional, and social developments during this period.

PSYC 166C Adolescence and Emerging Adulthood 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 001 with a grade of C- or better; PSYC 002 with a grade of C- or better; PSYC 011 with a grade of C- or better; PSYC 012 with a grade of C- or better. Covers current theory and research on development during the period of adolescence and the transition to adulthood. Addresses the key biological, cognitive, emotional, and social developments during this period.

PSYC 166D Adulthood and Aging 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 001, PSYC 002, PSYC 011, PSYC 012 all with grades of "C-" or better; or consent of instructor. Covers current theory and research on development during the period of adulthood and the process of aging. Addresses the key biological, cognitive, emotional, and social developments during this period.

PSYC 167 Psychological Development of Black Children 4 Lecture, 3 hours; extra reading, 3 hours. Prerequisite(s): PSYC 002. This course will analyze both the traditional theoretical approaches to the study of Black children and innovative approaches that are currently being developed by Black psychologists. The course will cover topics in the areas of cognitive, social, and personality development. Cross-listed with ETST 167.

PSYC 168 Psychological Aspects of the Black Experience 4 Lecture, 3 hours; extra reading, 3 hours. Prerequisite(s): PSYC 002. This course examines the interdependence between personal characteristics, Afro-American culture, and the social conditions which foster the Black experience. Group membership, life styles, role factors, and situational settings as social norms will be explored in order to understand the uniqueness of the Black experience. Cross-listed with ETST 168.

PSYC 169 Topics in Developmental Psychology 4 Lecture, 3 hours; extra reading, 3 hours. Prerequisite(s): PSYC 001 with a grade C- or better; PSYC 002 with a grade C- or better; PSYC 011 with a grade C- or better; PSYC 012 with a grade C- or better; PSYC 160 with a grade C- or better or PSYC 161 with a grade C- or better or PSYC 162 with a grade C- or better or PSYC 163 with a grade C- or better. Intensive study in developmental psychology. Stresses literature, methodology, and experimental design and analysis. Specific course content varies. Course is repeatable to a maximum of 16 units as topics change.

PSYC 171 Psychology of Gender 4 Seminar, 3 hours; term paper, 3 hours. Prerequisite(s): PSYC 012 with a grade of "C-" or better or consent of instructor. Examines psychological theory and research on gender, including ethnic and cultural variations in male and female experience. Topics include gender roles, gender development, gender differences and stereotypes, biological influences on gender, gender and health, gender and language, gender and achievement, and men and women in the workplace.

PSYC 175 Psychology and Law 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 001 with a grade of C- or better, PSYC 002 with a grade of C- or better or LWSO 100 with a grade of C- or better or LWSO 100H with a grade of B or better. A study of psychological theory and empirical research as it relates to the law. Topics include jury decision making, eyewitness memory, child custody, criminal responsibility and intent, competence, rehabilitation and punishment, ethics and legal responsibilities in therapy, and psychological research.

PSYC 178 Health Psychology 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 002 or SOC 001 or SOC 001H. An examination of the importance of interpersonal relationships to physical health and effective medical care. Applies social psychological perspectives to such topics as stress-related diseases, placebo effects, doctor-patient interactions, dying, and the

hospital environment.

BUSINESS CONCENTRATION

BUS 010 Introduction to Business 4 Lecture, 3 hours, discussion, 1 hour. Prerequisite(s): none. Provides an overview of the field of business administration. Explores business goals and strategies, functional areas of business and their integration in policy and decision making, social responsibility, computers in business, and business trends and challenges including the international dimension.

BUS 020 Financial Accounting and Reporting 4 Lecture, 3 hours, discussion, 1 hour. Prerequisite(s): none. A study of the concepts and techniques for measurement and communication of financial information. Includes interpretation of financial statements.

BUS 101 Information Technology Management 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 008; BUS 020; ECON 003; STAT 008; or equivalent; or consent of instructor. Topics include computer hardware and software, business data processing, databases, telecommunications, systems analysis and design, cost-benefit analysis, and systems applications in business. Includes database and spreadsheet projects.

BUS 102 – Ethics and Law in Business and Society 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BUS 020; ECON 003; STAT 008; or equivalent; or consent of instructor. Analyzes the legal, ethical, political, and social aspects of the business environment. Topics include ethics and social responsibility, government regulation, corporate governance, and global management issues.

BUS 103 Marketing and Distribution Management 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BUS 020; ECON 003 or ECON 003H, STAT 008; or consent of instructor. An introduction to the role of marketing in society emphasizing concepts, marketing methods, and institutions.

BUS 104 Decision Analysis and Management Science 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 008; STAT 008 or STAT 010; or equivalents; or consent of instructor. A survey of deterministic and probabilistic models for decision making. Topics include linear programming and extensions, networks, dynamic programming, decision trees, queuing models, and simulation. Explores the application of these models in decision making. Cross-listed with STAT 104.

BUS 105 Production and Operations Management 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): STAT 008 or STAT 010; or equivalent. Addresses the issues of design and control of production systems in manufacturing and service organizations. Covers product and process selection, capacity planning, location and layout design, project and job scheduling, inventory control, material planning, and quality control.

BUS 106 Introduction to Financial Management 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BUS 020; ECON 003 or ECON 003H; STAT 008 or ECON 101; or equivalent; or consent of instructor. An introduction to financial management and financial institutions. Includes time value of money, stock and bond valuation, risk and return, portfolio theory, capital budgeting, capital structure, dividend policy, and financial databases. Cross-listed with ECON 134. Credit is awarded for one of the following BUS 106, ECON 134, or BUS 133.

BUS 107 Organizational Behavior 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BUS 020; ECON 003; STAT 008; or equivalent; or consent of instructor. Studies organizations from the behavioral science perspective. Topics include motivation, leadership, communication, groups, organization structure and culture, and control in complex organizations.

BUS 108 Financial Evaluation and Managerial Analysis (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BUS 020; ECON 003; STAT 008; or equivalents; or consent of instructor. A study of accounting data used for managerial planning and controlling of business operations. Provides an introduction to manufacturing operations and cost accounting systems, cost-volume-profit analysis, relevant costing, standard costing and variance analysis, and budgeting.

BUS 109 Competitive and Strategic Analysis 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BUS 100W; BUS 103; BUS 108; BUS 106 or ECON 134 or BUS 133; restricted to major(s) Business Administration. Provides an understanding of strategic decision-making processes in organizations, the interrelationships among functional areas, and how decision making is affected by internal and external environments.

BUS 110 Introduction to Data Mining and Visual Analytics 2 Lecture, 2 hours; laboratory, 1 hour; extra reading, 2 hours; written work, 3 hours. Prerequisite(s): BUS 101. Covers the processes, methodologies and practices used to transform data into useful information to support business decision-making. Offers an opportunity to gain insights and hands-on-experience with basic functionality of industry standard data mining and visualization software tools such as Tableau, JMP and IBM's Watson Analytics.

BUS 115 Marketing Research 4 Lecture, 3 hours; research, 3 hours. Prerequisite(s): BUS 103. Covers types and sources of marketing information, the marketing research process, and techniques of data collection and analysis, including consumer and customer surveys and test marketing. Examines both quantitative and qualitative research with analysis of the values and limitations of data. Emphasis is placed on evaluation and interpretation of results.

BUS 119 Data-driven Marketing 4 Lecture, 3 hours; individual study, 2 hours; extra reading, 1 hour. Prerequisite(s): BUS 103; or consent of instructor. Examines marketing cases and develops data analytical skills for managerial decision making. Utilizes statistical software to manage, display, and analyze marketing information including consumer survey, relationship management, scanner, and socioeconomic data. Topics include attitude measurement, market segmentation and targeting, competition analysis, market performance analysis, and store location choice.

BUS 123 Spreadsheet Modeling for Decision-Making 4 Lecture, 3 hours; written work, 3 hours. Prerequisite(s): BUS 104 or STAT 104. Introduces the fundamental techniques of using data to make informed management decisions in the presence of uncertainty. Utilizes advanced Microsoft Excel functionality.

BUS 124A Business Analytics 4 Lecture, 3 hours; term paper, 1 hour; written work, 2 hours. Prerequisite(s): STAT 008. Provides fundamental concepts and tools needed to understand the emerging role of business analytics in organizations. Applies basic business analytics tools in a spreadsheet environment. Introduces market-leading techniques that help identify and manage key data from business processes. Provides the essential tools required for data mining and business process re-engineering.

BUS 124B Advanced Business Analytics 4 Lecture, 3 hours; written work, 3 hours. Prerequisite(s): BUS 124A with a grade of C- or better; STAT 008 or STAT 010; CS 008. Teaches statistical methods for descriptive, predictive, and prescriptive analysis. Provides opportunities to apply these acquired skills in various business applications in operations, finance, and marketing. Utilizes tools such as R Programming for data analysis and Tableau for data visualization.

BUS 125 Simulation for Business 4 Lecture, 3 hours; extra reading, 1.5 hours; outside projects, 1.5 hours. Prerequisite(s): BUS 104 or STAT 104; or equivalents. Introduces simulation as a tool for analyzing complex systems. Analyzes and discusses the theory and practice of modeling through simulation. Topics include modeling uncertainty and collecting input data, Monte Carlo simulation techniques, model verification and validation, and sensitivity analysis. Examines applications in finance, marketing, operations, and supply chain management.

BUS 128 Project Planning and Control (4) Lecture, 3 hours; assigned problems and field project, 3 hours. Prerequisite(s): BUS 104/STAT 104 or consent of instructor. Covers issues related to planning and control. Explores the differences between projects and production systems; breakdown structures of project organization and work; sequencing and budgeting; resource management; project evaluation and control; and use of current project management software. Includes application of methodology to a real-world project.

BUS 129 Supply Chain Management 4 Lecture, 3 hours; assigned problems, 3 hours. Prerequisite(s): BUS 105. Focuses on management of the distribution of goods and services from plants, ports, and vendors to customers. Key topics include transportation, inventories, warehousing, materials handling, order processing, packaging, pricing, customer service standards, and warehouse and retail location.

BUS 130 Supply Chain Modeling 4 Lecture, 3 hours; homework problems and preparation for presentations, 3 hours. Prerequisite(s): BUS 104/STAT 104 or BUS 105. Covers the modeling and analysis of decision problems in supply chain management. Includes logistics network design, integration of supply chain operations, and supply and sourcing decisions. Utilizes the electronic spreadsheet as the principal device for building models, as well as addresses the concepts of effective spreadsheet design and use.

BUS 171 Systems Analysis and Design 4 Lecture, 3 hours; extra reading, 2 hours; projects, 1 hour. Prerequisite(s): BUS 101 or equivalent. Involves detailed analysis, specification, design, and implementation of computer-based information systems. Includes economic analyses, evaluation of alternatives, analysis or design tools, and systems project management and planning. Case studies are used.

BUS 172 Information Economics 4 Lecture, 3 hours; assigned cases and project, 3 hours. Prerequisite(s): BUS 103; ECON 003 or ECON 003H. Discusses economic concepts and strategies related to the network economy. Topics include economic issues surrounding information goods, competition in electronic business, pricing strategies, and intellectual property protections. Examines business strategies for the information (software) and infrastructure (hardware) elements of electronic business.

BUS 173 Introduction to Databases For Management 4 Lecture, 3 hours; extra reading, 2 hours; projects, 1 hour. Prerequisite(s): BUS 101 or equivalent. Covers physical and conceptual aspects of database management systems, including familiarity with the variety of database systems based on different data models. Examines the role of database systems in management

information systems (MIS) and issues in database design for effective support of MIS. Requires the use of a database package.

BUS 174 Electronic Commerce (4) Lecture, 3 hours; extra reading, 2 hours; project, 1 hour. Prerequisite(s): BUS 101. Reviews the technological evolution of electronic commerce (EC). Investigates how EC can be used to interact with customers, other organizations, and those within the organization. Studies technical innovations, provides a critical evaluation of strategies, and examines current applications and their impact on the business environment.

BUS 175 Business Data Communications (4) Lecture, 3 hours; extra reading, 3 hours. Prerequisite(s): BUS 101. Surveys components of telecommunication systems; examines major design and analysis issues in the development and implementation of computer communication systems. Studies both voice and data communication systems including local area networks, wireless systems, satellite systems, and distributed computer and database systems. Emphasizes evaluation of these systems for business purposes.

BUS 179 Business Application of Geographic Information Systems (4) Lecture, 2 hours; laboratory, 1 hour; extra reading, 2 hours; written work, 3 hours. Prerequisite(s): BUS 101. Includes introduction to and use of geographic information system (GIS) for business applications. Provides basic understanding on how location information is used in business processes for decisions. Offers an opportunity to gain hands-on experience with basic functionality of industry standard business mapping software tools including ArcGIS and Business Analyst Online.

ECON 002 Introduction to Macroeconomics (5) Lecture, 3 hours; discussion, 1 hour; written work, 3 hours. Prerequisite(s): none. An introduction to the study of the economic system from a macro, or aggregate, perspective. Includes analysis of business cycles, economic growth, unemployment, inflation, and the impact of government policies on the level of economic activity. Credit is awarded for one of the following ECON 002 or ECON 002H.

ECON 003 Introduction to Microeconomics 5 Lecture, 3 hours; discussion, 1 hour; written work, 3 hours. Prerequisite(s): none. An introduction to the study of the economic system from the micro, or individual decision-maker's, perspective. Includes the study of opportunity cost, markets, consumption, production and competition. Credit is only awarded for one of ECON 003 or ECON 003H.

ECON 002H Honors Introduction to Macroeconomics (5) Lecture, 3 hours; discussion, 1 hour; term paper, 3 to 3.5 hours. Prerequisite(s): admission to University Honors. Honors course corresponding to ECON 002. An introduction to the study of the economic system from a macro, or aggregate, perspective. Includes analysis of business cycles, economic growth, unemployment, inflation, and the impact of government policies on the level of economic activity. Satisfactory (S) or No Credit (NC) grading is not available. Credit is awarded for only one of ECON 002 or ECON 002H.

ECON 003H Honors Introduction to Microeconomics (5) Lecture, 3 hours; discussion, 1 hour; term paper, 3 to 3.5 hours. Prerequisite(s): admission to University Honors or consent of instructor. An introduction to the study of the economic system from a micro, or individual decision-maker's, perspective. Includes the study of opportunity cost, markets, consumption, production and competition. Satisfactory (S) or No Credit (NC) grading is not available. Credit is only awarded for one of ECON 003 or ECON 003H.

ECON 101 Statistics For Economics 5 Lecture, 3 hours; discussion, 1 hour; laboratory, 1 hour;

individual study, 2 hours. Prerequisite(s): MATH 007A or MATH 009A or MATH 09HA or MATH 022; or equivalent. An introduction to the basic statistical methods for economics. Topics include economic data analysis, index numbers, univariate and bivariate probability distributions, correlation and regression, sampling distributions, properties of estimators, and hypothesis testing.

STAT 008 Statistics For Business 5 Lecture, 3 hours; discussion, 1 hour; laboratory, 3 hours. Prerequisite(s): CS 008 or CS 009A or CS 010A; MATH 004 or MATH 005A or MATH 006B or MATH 007A or MATH 009A or MATH 09HA or MATH 022; or equivalent. An introduction to statistics using business applications. Topics include descriptive statistics; probability; discrete and continuous distributions; Bayes' theorem; random variables; estimation and confidence intervals; hypothesis testing; and simple linear regression. Credit is awarded for one of the following STAT 008 or STAT 010.

STAT 010 Introduction to Statistics 5 Lecture, 3 hours; discussion, 1 hour; laboratory, 3 hours. Prerequisite(s): MATH 005A or MATH 006B or MATH 007A or MATH 009A or MATH 09HA. A general introduction to descriptive and inferential statistics. Topics include histograms; descriptive statistics; probability; normal and binomial distributions; sampling distributions; hypothesis testing; and confidence intervals. Credit is awarded for one of the following STAT 010 or STAT 008.

SOC 150 The Sociology of Economic Organizations (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): upper-division standing or consent of instructor. Examines how the scope and nature of formal and informal organizations are shaped by sociological processes external to them, such as the influence of governments, institutions, networks, and resources. Illustrates the processes with examples from contemporary United States and from other periods and cultures.

PRE-MEDICINE CONCENTRATION

BIOL 005A Introduction to Cell and Molecular Biology (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BIOL 05LA (may be taken concurrently) or BIOL 020 (may be taken concurrently) with grades of "C-" or better; CHEM 001A and CHEM 01LA with grades of "C-" or better or CHEM 01HA and CHEM 1HLA with grades of "C-" or better; consent of instructor is required for students repeating the course. An intensive course designed to prepare for upper-division courses in cell and molecular biology. Covers biochemical, structural, metabolic, and genetic aspects of cells. Required for Biology majors; recommended for science majors desiring an introduction to biology.

PHYS 002A General Physics (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): concurrent enrollment in PHYS 02LA; MATH 007A with a grade of C- or better or MATH 009A with a grade of C- or better or MATH 09HA with a grade of C- or better. Covers topics in classical mechanics including Newton's laws of motion in one and two dimensions; gravity; work, energy, and conservation of energy; momentum and collisions; rotational motion; and orbital motion. First part of the course covers the principles of physics underlying the biological and life sciences. Credit is awarded for one of the following PHYS 002A, PHYS 02HA, PHYS 040A, PHYS 040HA, or PHYS 041A.

PHYS 002B General Physics (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s):

concurrent enrollment in PHYS 02LB; MATH 007B, may be taken concurrently or MATH 009B, may be taken concurrently or MATH 09HB, may be taken concurrently; PHYS 002A with a grade of C- or better or PHYS 02HA with a grade of C- or better; PHYS 02LA with a grade of C- or better or PHYS 02HLA with a grade of C- or better. Second part of the introductory course that covers the principles of physics underlying the biological and life sciences. Topics include fluids and fluid flow; thermodynamics; mechanical oscillations; sound and light waves; geometrical optics; reflection; refraction; lens; microscopy; interference; and diffraction. Credit is awarded for one of the following PHYS 002B, PHYS 02HB, PHYS 040B, PHYS 040HB, or PHYS 041B.

PHYS 002C General Physics (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): concurrent enrollment in PHYS 02LC; PHYS 002B with a grade of C- or better or PHYS 02HB with a grade of C- or better; PHYS 02LB with a grade of C- or better or PHYS 02HLB with a grade of C- or better. Third part of an introductory course covering the principles of physics underlying the biological and life sciences. Topics include electromagnetism, quantum physics, and Coulomb's Law. Covers electric field, electrical potential, resistors, capacitors, simple circuits, magnetic forces and Faraday's Law. Also addresses basic quantum physics of light, atoms, and radioactivity. Credit is awarded for one of the following PHYS 002C, PHYS 02HC, PHYS 040C, PHYS 040HC, or PHYS 041C.

PHYS 02LA General Physics Laboratory 1 Laboratory, 3 hours. Prerequisite(s): concurrent enrollment in PHYS 002A; MATH 007A with a grade of C- or better or MATH 009A with a grade of C- or better, MATH 09HA with a grade of C- or better. Illustrates the experimental foundations of physics presented in PHYS 002A. Covers the basic principles of classical mechanics. Credit is awarded for one of the following PHYS 02LA or PHYS 02HLA.

PHYS 02LB General Physics Laboratory 1 Laboratory, 3 hours. Prerequisite(s): concurrent enrollment in PHYS 002B; MATH 007B, may be taken concurrently or MATH 009B, may be taken concurrently or MATH 09HB, may be taken concurrently; PHYS 002A with a grade of C- or better or PHYS 02HA with a grade of C- or better; PHYS 02LA with a grade of C- or better or PHYS 02HLA with a grade of C- or better. Illustrates the experimental foundations of physics presented in PHYS 002B. Topics include fluids and fluid flow; thermodynamics; mechanical oscillations; sound and light waves; geometrical optics; reflection; refraction; lens; microscopy; interference; and diffraction. Credit is awarded for one of the following PHYS 02LB or PHYS 02HLB.

PHYS 02LC General Physics Laboratory 1 Laboratory, 3 hours. Prerequisite(s): concurrent enrollment in PHYS 002C; PHYS 002B with a grade of C- or better or PHYS 02HB with a grade of C- or better; PHYS 02LB with a grade of C- or better or PHYS 02HLB with a grade of C- or better. Illustrates the experimental foundations of physics presented in PHYS 002C. Topics include electromagnetism, quantum physics, and Coulomb's Law. Covers electric field, electrical potential, resistors, capacitors, simple circuits, magnetic forces, Faraday's Law. Also addresses basic quantum physics of light, atoms, and radioactivity. Credit is awarded for one of the following PHYS 02LC or PHYS 02HLC.

PHYS 02HA Honors General Physics (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): concurrent enrollment in PHYS 02HLA; MATH 007A with a grade of B- or better or MATH 009A with a grade of B- or better or MATH 09HA with a grade of B- or better; admission to University Honors. Honors course corresponding to PHYS 002A. A limited enrollment course that covers the principles of physics underlying the biological and life sciences are covered in more depth than in PHYS 002A. Topics in classical mechanics; Newton's laws in one and two dimensions; gravity; work, energy, and conservation of energy; momentum and collisions; and rotational motion. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following PHYS 02HA, PHYS 002A, PHYS 040A, PHYS 040HA, or PHYS 041A.

PHYS 02HB Honors General Physics (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): concurrent enrollment in PHYS 02HLB; MATH 007B with a grade of B- or better, may be taken concurrently or MATH 009B with a grade of B- or better, may be taken concurrently or MATH 09HB with a grade of B- or better, may be taken concurrently; PHYS 02HA with a grade of B- or better or PHYS 002A with a grade of B- or better; PHYS 02HLA with a grade of B- or better or PHYS 02LA with a grade of B- or better; admission to University Honors. Honors course corresponding to PHYS 002B. Second part of a limited enrollment course in which the principles of physics underlying the biological and life sciences are covered in more depth than in PHYS 002B. Topics include fluids and fluid flow, thermodynamics, mechanical oscillations, sound and light waves, geometrical optics, reflection, refraction, lens, microscopy; interference and diffraction. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following PHYS 02HB, PHYS 002B, PHYS 040B, PHYS 040HB, or PHYS 041B.

PHYS 02HC Honors General Physics (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): concurrent enrollment in PHYS 02HLC; PHYS 002B with a grade of B- or better or PHYS 02HB with a grade of B- or better; PHYS 02LB with a grade of B- or better or PHYS 02HLB with a grade of B- or better; admission to University Honors. Honors course corresponding to PHYS 002C. A limited enrollment course covering the principles of physics underlying the biological sciences in more depth than PHYS 002B. Covers electromagnetism and quantum physics. Includes Coulomb's Law, electric field, electrical potential, resistors, capacitors, simple circuits, magnetic forces, and Faraday's Law. Also addresses basic quantum physics of light, atoms, and radioactivity. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following PHYS 02HC, PHYS 002C, PHYS 040C, PHYS 040HC, or PHYS 041C.

PHYS 02HLA Honors General Physics Laboratory (1) Laboratory, 3 hours. Prerequisite(s): concurrent enrollment in PHYS 02HA; MATH 007A with a grade of B- or better or MATH 009A with a grade of B- or better or MATH 09HA with a grade of B- or better; admission to University Honors. Honors course corresponding to PHYS 02LA. Illustrates the experimental foundations of physics presented in PHYS 02HA. Covers the basic principles of classical mechanics. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following PHYS 02HLA or PHYS 02LA.

PHYS 02HLB Honors General Physics Laboratory (1) Laboratory, 3 hours. Prerequisite(s): concurrent enrollment in PHYS 02HB; MATH 007B with a grade of B- or better, may be taken concurrently or MATH 009B with a grade of B- or better, may be taken concurrently or MATH

09HB with a grade of B- or better, may be taken concurrently; PHYS 02HA with a grade of B- or better or PHYS 002A with a grade of B- or better; PHYS 02HLA with a grade of B- or better or PHYS 02LA with a grade of B- or better; admission to University Honors. Honors course corresponding to PHYS 02LB. Illustrates the experimental foundations of physics presented in PHYS 02HB. Topics include fluids and fluid flow, thermodynamics, mechanical oscillations, sound and light waves, geometrical optics, reflection, refraction, lens, microscopy, interference, and diffraction. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following PHYS 02HLB or PHYS 02LB.

PHYS 02HLC Honors General Physics Laboratory (1) Laboratory, 3 hours. Prerequisite(s): concurrent enrollment in PHYS 02HC; PHYS 002B with a grade of B- or better or PHYS 02HB with a grade of B- or better; PHYS 02LB with a grade of B- or better or PHYS 02HLB with a grade of B- or better; admission to University Honors. Honors course corresponding to PHYS 02LC. Illustrates the experimental foundations of physics presented in PHYS 02HC. Covers electromagnetism and quantum physics. Includes Coulomb's Law, electric field, electrical potential, resistors, capacitors, simple circuits, magnetic forces, and Faraday's Law. Also addresses basic quantum physics of light, atoms, and radioactivity. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following PHYS 02HLC or PHYS 02LC.

CHEM 001A General Chemistry 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): concurrent enrollment in CHEM 01LA; MATH 005A with a grade of C- or better or MATH 006A with a grade of C- or better or CHEM 001W with a grade of S or better or CHEM 001 with a grade of S or better or MATH 007A with a grade of C- or better or MATH 007B with a grade of C- or better or MATH 009A with a grade of C- or better or MATH 009B with a grade of C- or better or MATH 006B with a grade of C- or better or MATH 009C with a grade of C- or better; or a score of 3, 4, or 5 on the College Board Advanced Placement Chemistry Examination or Advanced Placement Calculus Examination or a passing score on the California Chemistry Diagnostic Test or a score on the Mathematics Advisory Exam sufficient for placement in MATH 007A or MATH 009A. An introduction to the basic principles of chemistry. Instructional methods are either in-person lectures or virtual online lectures. Credit is awarded for one of the following CHEM 001A, CHEM 002A, or CHEM 01HA.

CHEM 001B General Chemistry 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): concurrent enrollment in CHEM 01LB; CHEM 001A with a grade of C- or better, CHEM 01LA with a grade of C- or better or CHEM 01HA with a grade of C- or better, CHEM 1HLA with a grade of C- or better or CHEM 002A with a grade of C- or better, CHEM 02LA with a grade of C- or better. An introduction to the basic principles of chemistry. Provides lectures either in person or in a virtual online environment, depending on section offerings. Credit is awarded for one of the following CHEM 001B, CHEM 002B, or CHEM 01HB.

CHEM 001C General Chemistry 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): concurrent enrollment in CHEM 01LC; CHEM 001B with a grade of C- or better or CHEM 01HB with a grade of C- or better; CHEM 01LB with a grade of C- or better or CHEM 1HLB with a grade of C- or better or CHEM 002B with a grade of C- or better, CHEM 02LB with a grade of C-

or better. An introduction to the basic principles of chemistry. Provides lectures either in person or in a virtual online environment, depending on section offerings. Credit is awarded for one of the following CHEM 001C, CHEM 002C, or CHEM 01HC.

CHEM 01HA Honors General Chemistry 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): concurrent enrollment in CHEM 1HLA; MATH 007A, may be taken concurrently or MATH 009A, may be taken concurrently or MATH 09HA, may be taken concurrently or MATH 007B or MATH 009B or MATH 09HB; or equivalent or a score of 4 or 5 on the College Board Advance Placement Chemistry Examination; a score of 600 or higher on the Mathematics portion of the SAT Reasoning Test or a score of 25 or higher on the ACT Mathematics Test; high school chemistry; or consent of instructor. Honors course corresponding to CHEM 001A. Covers the principles of chemistry in greater depth than in CHEM 001A. A limited enrollment course. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following CHEM 01HA, CHEM 001A, or CHEM 002A.

CHEM 01HB Honors General Chemistry 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): concurrent enrollment in CHEM 1HLB; CHEM 001A with a grade of B or better or CHEM 01HA with a grade of B or better or CHEM 01LA with a grade of B or better or CHEM 1HLA with a grade of B or better or CHEM 002A with a grade of B or better or CHEM 02LA with a grade of B or better; admission to University Honors. Honors course corresponding to CHEM 001B. Covers the principles of chemistry in more depth than in CHEM 001B. A limited enrollment course. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following CHEM 01HB, CHEM 001B, or CHEM 002B.

CHEM 01HC Honors General Chemistry 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): concurrent enrollment in CHEM 1HLC; CHEM 001B with a grade of B or better or CHEM 01HB with a grade of B or better or CHEM 002B with a grade of C- or better; CHEM 01LB or CHEM 1HLB or CHEM 02LB; admission to University Honors. Honors course corresponding to CHEM 001C. Covers the principles of chemistry in more depth than in CHEM 001C. A limited enrollment course. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following CHEM 01HC, CHEM 001C, or CHEM 002C.

CHEM 1HLA Honors General Chemistry Laboratory 1 Laboratory, 3 hours. Prerequisite(s): concurrent enrollment in CHEM 01HA; MATH 009A, may be taken concurrently or MATH 009B, may be taken concurrently or MATH 09HA, may be taken concurrently or MATH 007A, may be taken concurrently or MATH 007B, may be taken concurrently or MATH 009C, may be taken concurrently or CHEM 001 or CHEM 001W; admission to University Honors. Honors course corresponding to CHEM 01LA. An introduction to laboratory principles and techniques related to lecture topics in CHEM 01HA. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following CHEM 1HLA, CHEM 01LA, or CHEM 02LA.

CHEM 1HLB Honors General Chemistry Laboratory 1 Laboratory, 3 hours. Prerequisite(s): concurrent enrollment in CHEM 01HB; CHEM 001A with a grade of B or better, CHEM 01LA with a grade of B or better or CHEM 01HA with a grade of B or better, CHEM 1HLA with a grade of B or better or CHEM 002A with a grade of B or better, CHEM 02LA with a grade of B or

better; admission to University Honors. Honors course corresponding to CHEM 01LB. An introduction to laboratory principles and techniques related to lecture topics in CHEM 01HB. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following CHEM 1HLB, CHEM 01LB, or CHEM 02LB.

CHEM 1HLC Honors General Chemistry Laboratory 1 Laboratory, 3 hours. Prerequisite(s): concurrent enrollment in CHEM 01HC; CHEM 001B with a grade of B or better or CHEM 01HB with a grade of B or better or CHEM 002B; CHEM 01LB or CHEM 1HLB or CHEM 02LB; admission to University Honors. Honors course corresponding to CHEM 01LC. An introduction to laboratory principles and techniques related to lecture topics in CHEM 01HC. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following CHEM 1HLC, CHEM 01LC, or CHEM 02LC.

CHEM 01LA General Chemistry Laboratory 1 Laboratory, 3 hours. Prerequisite(s): concurrent enrollment in CHEM 001A; MATH 005A with a grade of C- or better or MATH 006A with a grade of C- or better or CHEM 001W with a grade of S or better or CHEM 001 with a grade of S or better or MATH 007A with a grade of C- or better or MATH 007B with a grade of C- or better or MATH 009A with a grade of C- or better or MATH 009B with a grade of C- or better or MATH 006B with a grade of C- or better or MATH 009C with a grade of C- or better; or a score of 3, 4, or 5 on the College Board Advanced Placement Chemistry Examination or Advanced Placement Calculus Examination or a passing score on the California Chemistry Diagnostic Test or a score on the Mathematics Advisory Exam sufficient for placement in MATH 007A or MATH 009A. An introduction to laboratory principles and techniques related to lecture topics in CHEM 001A. Credit is awarded for one of the following CHEM 01LA, CHEM 02LA, or CHEM 1HLA.]

221

CHEM 01LB General Chemistry Laboratory 1 Laboratory, 3 hours. Prerequisite(s): concurrent enrollment in CHEM 001B; CHEM 001A with a grade of C- or better or CHEM 01HA with a grade of C- or better or CHEM 01LA with a grade of C- or better or CHEM 1HLA with a grade of C- or better or CHEM 002A with a grade of C- or better or CHEM 02LA with a grade of C- or better. An introduction to laboratory principles and techniques related to lecture topics in CHEM 001B. Credit is awarded for one of the following CHEM 01LB, CHEM 02LB, or CHEM 1HLB.

CHEM 01LC General Chemistry Laboratory 1 Laboratory, 3 hours. Prerequisite(s): concurrent enrollment in CHEM 001C; CHEM 001B with a grade of C- or better or CHEM 01HB with a grade of C- or better or CHEM 002B; CHEM 01LB or CHEM 1HLB or CHEM 02LB. An introduction to laboratory principles and techniques related to lecture topics in CHEM 001C. Credit is awarded for one of the following CHEM 01LC, CHEM 02LC, or CHEM 1HLC.

CHEM 008A Organic Chemistry 3 Lecture, 3 hours. Prerequisite(s): concurrent enrollment in CHEM 08LA; CHEM 001C with a grade of C- or better, CHEM 01LC with a grade of C- or better or CHEM 01HC with a grade of C- or better, CHEM 1HLC with a grade of C- or better or CHEM 002C with a grade of C- or better, CHEM 02LC with a grade of C- or better. Covers modern organic chemistry including hydrocarbon structure and nomenclature, stereochemistry, and reaction mechanisms. Provides lectures either in person or in a virtual online environment,

depending on section offerings. Credit is awarded for one of the following CHEM 008A or CHEM 08HA.

CHEM 008B Organic Chemistry 3 Lecture, 3 hours. Prerequisite(s): concurrent enrollment in CHEM 08LB; CHEM 008A with a grade of C- or better, CHEM 08LA with a grade of C- or better or CHEM 08HA with a grade of C- or better, CHEM 08HLA with a grade of C- or better. Covers modern organic chemistry including structural determination via spectroscopic analysis, reactivity, reaction mechanisms, and multistep organic synthesis. Credit is awarded for one of the following CHEM 008B or CHEM 08HB.**222** |

CHEM 008C Organic Chemistry 3 Lecture, 3 hours. Prerequisite(s): concurrent enrollment in CHEM 08LC; CHEM 008B with a grade of C- or better, CHEM 08LB with a grade of C- or better or CHEM 08HB with a grade of C- or better, CHEM 08HLB with a grade of C- or better. Covers modern organic chemistry and chemical biology including reactivity and synthesis. Also includes reaction mechanisms and the chemistry of carbohydrates, lipids, nucleic acids, amino acids, and proteins. Credit is awarded for one of the following CHEM 008C or CHEM 08HC.

CHEM 08HA Honors Organic Chemistry 3 Lecture, 3 hours. Prerequisite(s): concurrent enrollment in CHEM 08HLA; CHEM 001C with a grade of B or better, CHEM 01LC with a grade of B or better or CHEM 01HC with a grade of B or better, CHEM 1HLC with a grade of B or better or CHEM 002C with a grade of B or better, CHEM 02LC with a grade of B or better; admission to University Honors; or consent of instructor. Honors course corresponding to CHEM 008A. Covers the principles of organic chemistry in greater depth than in CHEM 008A. Covers modern organic chemistry including hydrocarbon structure and nomenclature, stereochemistry, and reaction mechanisms. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following CHEM 08HA or CHEM 008A.

CHEM 08HB Honors Organic Chemistry 3 Lecture, 3 hours. Prerequisite(s): concurrent enrollment in CHEM 08HLB; CHEM 008A with a grade of B or better, CHEM 08LA with a grade of B or better or CHEM 08HA with a grade of B or better, CHEM 08HLA with a grade of B or better; admission to University Honors; or consent of instructor. Honors course corresponding to CHEM 008B. Honors course that covers the principles of organic chemistry in greater depth than in CHEM 008B. Covers modern organic chemistry including structural determination via spectroscopic analysis, reactivity, reaction mechanisms and multistep organic synthesis. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following CHEM 08HB or CHEM 008B.

CHEM 08HC Honors Organic Chemistry 3 Lecture, 3 hours. Prerequisite(s): concurrent enrollment in CHEM 08HLC; CHEM 008B with a grade of B or better, CHEM 08LB with a grade of B or better or CHEM 08HB with a grade of B or better, CHEM 08HLB with a grade of B or better; or consent of instructor. Honors course corresponding to CHEM 008C. Covers modern organic chemistry and chemical biology including reactivity, synthesis, and reaction mechanisms. Also includes the chemistry of carbohydrates, lipids, nucleic acids, amino acids, and proteins. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following CHEM 08HC or CHEM 008C.

CHEM 08HLA Honors Organic Chemistry Lab 1 Laboratory, 4 hours. Prerequisite(s): CHEM 001C with a grade of C- or better, CHEM 01LC with a grade of C- or better or CHEM 01HC with a grade of C- or better, CHEM 1HLC with a grade of C- or better or CHEM 002C with a grade of C- or better, CHEM 02LC with a grade of C- or better; admission to University Honors. Honors course corresponding to CHEM 08LA. An introduction to laboratory techniques of purification, isolation, synthesis, reactions, and spectroscopic analysis. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following CHEM 08HLA or CHEM 08LA.

CHEM 08HLB Honors Organic Chemistry Laboratory 1 Laboratory, 4 hours. Prerequisite(s): CHEM 008A and CHEM 08LA or CHEM 08HA and CHEM 08HLA with a grade of "B" or better or consent of instructor; concurrent enrollment in CHEM 08HB or a grade of "B" or better in CHEM 08HB. Honors course corresponding to CHEM 08LB in depth. An introduction to laboratory techniques of purification, isolation, synthesis, reactions, and spectroscopic analysis. Satisfactory (S) or No Credit (NC) grading is not available. Credit is awarded for only one of CHEM 08LB or CHEM 08HLB.

CHEM 08HLC Honors Organic Chemistry Laboratory 1 Laboratory, 4 hours. Prerequisite(s): CHEM 008B and CHEM 08LB or CHEM 08HB and CHEM 08HLB with a grade of "B" or better or consent of instructor; concurrent enrollment in CHEM 08HC or a grade of "B" or better in CHEM 08HC. Honors course corresponding to CHEM 08LC in depth. An introduction to laboratory techniques of purification, isolation, synthesis, reactions, and spectroscopic analysis. Satisfactory (S) or No Credit (NC) grading is not available. Credit is awarded for only one of CHEM 08LC or CHEM 08HLC.

CHEM 08LA Organic Chemistry Laboratory 1 Laboratory, 4 hours. Prerequisite(s): concurrent enrollment in CHEM 008A; CHEM 001C with a grade of C- or better, CHEM 01LC with a grade of C- or better or CHEM 01HC with a grade of C- or better, CHEM 1HLC with a grade of C- or better or CHEM 002C with a grade of C- or better, CHEM 02LC with a grade of C- or better. An introduction to laboratory techniques of purification, isolation, synthesis, reactions, and spectroscopic analysis. Credit is awarded for one of the following CHEM 08LA or CHEM 08HLA.

CHEM 08LB Organic Chemistry Laboratory 1 Laboratory, 4 hours. Prerequisite(s): CHEM 008A and CHEM 08LA or CHEM 08HA and CHEM 08HLA with grades of "C-" or better; concurrent enrollment in CHEM 008B or a grade of "C-" or better in CHEM 008B. An introduction to laboratory techniques of purification, isolation, synthesis, reactions, and spectroscopic analysis. Credit is awarded for only one of CHEM 08LB or CHEM 08HLB.

CHEM 08LC Organic Chemistry Laboratory 1 Laboratory, 4 hours. Prerequisite(s): CHEM 008B and CHEM 08LB or CHEM 08HB and CHEM 08HLB with grades of "C-" or better; concurrent enrollment in CHEM 008C or a grade of "C-" or better in CHEM 008C. An introduction to laboratory techniques of purification, isolation, synthesis, reactions, and spectroscopic analysis. Credit is awarded for only one of CHEM 08LC or CHEM 08HLC.

BIOL 005B Introduction to Organismal Biology 4 Lecture, 3 hours; laboratory, 3 hours. Prerequisite(s): BIOL 005A with a grade of C- or better; BIOL 05LA with a grade of C- or better

or BIOL 020 with a grade of C- or better; CHEM 001A, CHEM 01LA or CHEM 01HA, CHEM 1HLA or CHEM 002A, CHEM 02LA; CHEM 001B, may be taken concurrently, CHEM 01LB, may be taken concurrently or CHEM 01HB, may be taken concurrently, CHEM 1HLB, may be taken concurrently or CHEM 002B, may be taken concurrently, CHEM 02LB, may be taken concurrently. An intensive course designed to prepare for upper-division courses in organismal biology. Covers developmental biology, physiology, and regulation at the level of the organism. Required for Biology majors; recommended for science majors desiring an introduction to biology.

BIOL 005C Introductory Evolution and Ecology 4 Lecture, 3 hours; laboratory, 3 hours. Prerequisite(s): BIOL 005A with a grade of C- or better; BIOL 05LA with a grade of C- or better or BIOL 020 with a grade of C- or better; BIOL 005B with a grade of C- or better; MATH 009A with a grade of C- or better or MATH 09HA with a grade of C- or better or MATH 007A with a grade of C- or better; CHEM 001C, may be taken concurrently, CHEM 01LC, may be taken concurrently or CHEM 01HC, may be taken concurrently, CHEM 1HLC, may be taken concurrently or CHEM 002C, may be taken concurrently, CHEM 02LC, may be taken concurrently. An intensive introduction to the subjects of evolution and ecology. Covers population dynamics, community ecology, population genetics, and evolutionary theory. Recommended for science majors desiring an introduction to biology. Students who take equivalent first-year biology at another institution may enter directly into BIOL 005C without critical handicap.

BIOL 05LA Introduction to Cell and Molecular Biology Laboratory 1 Laboratory, 3 hours. Prerequisite(s): BIOL 005A (may be taken concurrently); consent of instructor is required for students repeating the course. An introduction to laboratory exercises on fundamental principles of and techniques in cell and molecular biology. Illustrates the experimental foundations of the topics covered in BIOL 005A. Credit is awarded for only one of BIOL 020 or BIOL 05LA.

BIOL 102 Introductory Genetics 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BIOL 005A, BIOL 020 or BIOL 05LA, and BIOL 005B with grades of "C-" or better. An introductory course that includes classical Mendelian genetics, linkage and recombination, sex-linked traits, cytogenetics, developmental genetics, and molecular genetics. Also includes some probability theory and statistics.

BIOL 107A Molecular Biology 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BIOL 005A, BIOL 005B, BIOL 005C; CHEM 001C or CHEM 01HC; CHEM 008C and CHEM 08LC, or CHEM 08HC and CHEM 8HLC; MATH 007B or MATH 009B or MATH 09HB; PHYS 002C or PHYS 02HC; PHYS 02LC or PHYS 02HLC; BCH 100 or BCH 110A or BHC 110HA. The study of the structure and function of the genetic material, including DNA structure, DNA replication and recombination, regulation of gene expression, and protein synthesis. Examines both prokaryotic and eukaryotic systems including contemporary recombinant DNA technology and applications of molecular cloning procedures. Credit is not awarded for BIOL 107A if it has already been awarded for BCH 110C.

BIOL 110 Biology of Human Problems 4 Seminar, 4 hours. Prerequisite(s): BIOL 005A, BIOL

005B, BIOL 005C; CHEM 001C or CHEM 01HC; CHEM 008C and CHEM 08LC, or CHEM 08HC and CHEM 08HLC; MATH 007B or MATH 009B or MATH 09HB; PHYS 002C or PHYS 02HC, PHYS 02LC or PHYS 02HLC; BCH 100 or BCH 110A or BCH 110HA; one course in statistics. Devoted to selected human problems that have a large biological component and relate to medicine, ethics, and human existence. Topics covered vary and include issues of major bioethical importance such as euthanasia, national health care, effects of industrial pollution on individuals and communities, population problems, abortion, and genetic engineering.

BIOL 121 Introductory Microbiology 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BIOL 005A; BIOL 05LA or BIOL 020; BIOL 005B; BIOL 005C; CHEM 001C or CHEM 01HC; MATH 007B or MATH 009B or MATH 09HB; PHYS 002A, may be taken concurrently or PHYS 02HA, may be taken concurrently; PHYS 02LA, may be taken concurrently or PHYS 02HLA, may be taken concurrently; BCH 100, may be taken concurrently or BCH 110A, may be taken concurrently or BCH 110HA, may be taken concurrently; STAT 010; or consent of instructor. An intensive introduction to the fundamental physiology and molecular biology of bacteria and viruses. Covers bacterial and viral molecular genetics, an introduction to microbial pathogenesis, and applications of microbiology in modern societies. Cross-listed with MCBL 121. Credit is awarded for one of the following MCBL 121, BIOL 121, or MCBL 131.

BIOL 121L Microbiology Laboratory 3 Lecture, 1 hour; laboratory, 6 hours. Prerequisite(s): BIOL 121 with a grade of C- or better or MCBL 121 with a grade of C- or better. Laboratory exercises in diagnostic bacteriology, basic virology, and epidemiology. Includes fundamental quantitative and diagnostic microbiological procedures, basic mechanisms of microbial genetic exchange, and a project examining bacterial epidemiology. Cross-listed with MCBL 121L. Credit is awarded for one of the following MCBL 121L, BIOL 121L, or MCBL 131L.

BIOL 128 Immunology 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BIOL 005C; PHYS 002C or PHYS 02HC; PHYS 02LC or PHYS 02HLC; BCH 100 or BCH 110A or BCH 110HA. A study of humoral and cellular immunology. Topics include lymphoid systems, cells, antigens, antibodies, antibody formation, cellular immunity, and tumor and transplantation immunology. Discusses in detail diseases and altered immune states associated with each topic. Cross-listed with CBNS 128.

BIOL 161A Functional Anatomy of the Vertebrates 5 Lecture, 3 hours; laboratory, 3 hours; discussion, 1 hour. Prerequisite(s): BIOL 005A with a grade of C- or better; BIOL 005B with a grade of C- or better; BIOL 005C with a grade of C- or better; CHEM 001C with a grade of C- or better or CHEM 01HC with a grade of C- or better; CHEM 008A with a grade of C- or better or CHEM 08HA with a grade of C- or better, CHEM 08LA with a grade of C- or better or CHEM 08HLA with a grade of C- or better; MATH 007B with a grade of C- or better or MATH 009B with a grade of C- or better or MATH 09HB with a grade of C- or better; PHYS 002A with a grade of C- or better or PHYS 02HA with a grade of C- or better. Functional anatomy of vertebrates including humans. Examines organ systems from developmental and evolutionary perspectives. Topics include phylogeny, the skeleton, and muscles. A combination of BIOL 161A, BIOL 161B, BIOL 171A, BIOL 171B, and BIOL 171L provide a one-year sequence in anatomy and

physiology.

BIOL 161B Functional Anatomy of the Vertebrates 5 Lecture, 3 hours; laboratory, 3 hours; discussion, 1 hour. Prerequisite(s): BIOL 161A with a grade of C- or better; CHEM 008B with a grade of C- or better or CHEM 08HB with a grade of C- or better, CHEM 08LB with a grade of C- or better or CHEM 08HLB with a grade of C- or better; PHYS 002B with a grade of C- or better or PHYS 02HB with a grade of C- or better. Functional anatomy of vertebrates including humans. Examines organ systems from developmental and evolutionary perspectives. Topics include nervous system, integument, and circulatory, sensory, respiratory, digestive, and urogenital systems. A combination of BIOL 161A, BIOL 161B, BIOL 171A, BIOL 171B, and BIOL 171L provides a one-year sequence in anatomy and physiology.

BIOL 171A Human Anatomy 4 Lecture, 3 hours; laboratory, 3 hours. Prerequisite(s): BIOL 005C; CHEM 001C or CHEM 01HC; CHEM 01LC or CHEM 1HLC; CHEM 008B or CHEM 08HB; CHEM 08LB or CHEM 08HLB; MATH 007B or MATH 009B or MATH 09HB; PHYS 002B or PHYS 02HB; PHYS 02LB or PHYS 02HLB. Introduction to the structure of the human body using the an organ-systems approach. Emphasizes an overview of the major elements of human anatomy, a brief introduction to function (i.e., physiology), and the relationships among organs and organ systems. Labs provide hands-on identification of human anatomy.

BIOL 171B Human Physiology 1 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BIOL 005A; BIOL 05LA or BIOL 020; BIOL 005B; BIOL 005C; CHEM 001C or CHEM 01HC; CHEM 01LC or CHEM 01HLC; CHEM 008C or CHEM 08HC; CHEM 08LC or CHEM 08HLC; MATH 007B or MATH 009B or MATH 09HB; PHYS 002B or PHYS 02HB; PHYS 02LB or PHYS 02HLB; BCH 100 or BCH 110A or BCH 110HA. Provides first-principles analysis of cell, tissue, and organ structure and function. Emphasizes an integrative, problem-solving approach using applications such as disease and exercise. Topics include the musculoskeletal, nervous, endocrine, and reproductive systems.

BCH 100 Introductory Biochemistry 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BIOL 005A with a grade of C- or better; CHEM 08HB with a grade of C- or better or CHEM 008B with a grade of C- or better; CHEM 08LB with a grade of C- or better or CHEM 08HLB with a grade of C- or better. Introduction to the biochemistry of living organisms based on a study of the structure, function, and metabolism of small molecules and macromolecules of biological significance. Examines selected animals, plants, and microorganisms to develop a general understanding of structure-function relationships, enzyme action, regulation, bioenergetics, and intermediary metabolism. Credit is awarded for one of the following BCH 100 or BCH 100H. Credit is not awarded for BCH 100 if a grade of "C-" or higher has been awarded previously in BCH 110A or BCH 110HA or BCH 110B or BCH 110HB or BCH 110C or BCH 110HC.

BCH 110A General Biochemistry 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BIOL 005A with a grade of "C-" or better; CHEM 008C and CHEM 08LC or CHEM 08HC and CHEM 08HLC with grades of "C-" or better. Considers the structure and function of biological molecules including proteins, carbohydrates, lipids, and nucleic acids. Credit is awarded for only one of BCH 110A or BCH 110HA.

BCH 110B General Biochemistry 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BCH 110A or BCH 110HA with a grade of "C-" or better or consent of instructor. Consideration of metabolic pathways including mechanisms and regulation of catabolism, anabolism, and bioenergetics in living organisms. Credit is awarded for only one of BCH 110B or BCH 110HB.

BCH 110C General Biochemistry 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BCH 110A or BCH 110HA with a grade of "C-" or better, BIOL 102 or consent of instructor. BCH 110B or BCH 110HB is highly recommended. Considers regulation of gene expression, protein synthesis, chromatin structure, genome replication, recombination, and repair. Examines both prokaryotic and eukaryotic systems, including recombinant DNA technology, protein engineering, and applications to molecular medicine. Credit is not awarded for BCH 110C if it has already been awarded for BCH 110HC or BIOL 107A.

BCH 100H Honors Introductory Biochemistry (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BIOL 005A with a grade of C- or better; CHEM 008B with a grade of C- or better or CHEM 08HB with a grade of C- or better; CHEM 08LB with a grade of C- or better or CHEM 08HLB with a grade of C- or better; admission to University Honors. Honors course corresponding to BCH 100. Introduction to the biochemistry of living organisms based on a study of the structure, function, and metabolism of small molecules and macromolecules of biological significance. Examines selected animals, plants, and microorganisms to develop a general understanding of structure-function relationships, enzyme action, regulation, bioenergetics, and intermediary metabolism. Credit is awarded for one of the following BCH 100H or BCH 100. Credit is not awarded for BCH 100H if a grade of C- or higher has been awarded previously in BCH 110A or BCH 110HA, BCH 110B or BCH 110HB, or BCH 110C or BCH 110HC.

BCH 110HA Honors General Biochemistry (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BIOL 005A with a grade of C- or better; CHEM 008C with a grade of C- or better, CHEM 08LC with a grade of C- or better or CHEM 08HC with a grade of C- or better, CHEM 08HLC with a grade of C- or better; admission to University Honors. Honors course corresponding to BCH 110A. Considers the structure and function of biological molecules including proteins, carbohydrates, lipids, and nucleic acids. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following BCH 110HA or BCH 110A.

BCH 110HB Honors General Biochemistry (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BCH 110A with a grade of C- or better or BCH 110HA with a grade of C- or better; admission to the University Honors Program. Honors course corresponding to BCH 110B. Consideration of metabolic pathways including mechanisms and regulation of catabolism, anabolism, and bioenergetics in living organisms. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following BCH 110HB or BCH 110B.

BCH 110HC Honors General Biochemistry (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BCH 110A or BCH 110HA with a grade of "C-" or better. BCH 110B or BCH 110HB is highly recommended. Honors course corresponding to BCH 110C. Considers regulation of gene expression, protein synthesis, chromatin structure, genome replication,

recombination, and repair. Examines both prokaryotic and eukaryotic systems, including recombinant DNA technology, protein engineering, and applications to molecular medicine. Credit is not awarded for BCH 110HC if it has already been awarded for BCH 110C or BIOL 107A.

PBPL 160 Immigrant Health and Wellbeing 4 Lecture, 3 hours; individual study, 2 hours; term paper, 1 hour. Prerequisite(s): restricted to class level standing of junior, or senior. Introduction to community-engaged methods in health disparities research. Examines health disparities and social determinants of health and conducts in-depth examination of community engaged research methods. Provides theoretical principles, methods, and skills needed to plan and implement community-engaged research.

PBPL 162 Health in All Policies 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PBPL 001 with a grade of C- or better or SOC 001 with a grade of C- or better or SOC 001H with a grade of B or better; restricted to class level standing of junior, or senior. Explores social influences on health and the role that public policies play in shaping the social determinants of health. Examines the link between social circumstances (socioeconomics, race, ethnicity, environment) and health outcomes. Identifies connections and considers whether and to what extent public policy mitigates harmful influences or stimulates positive outcomes.

SOC 127 Sociological Determinants of Health 4 Lecture, 3 hours; discussion, 1 hour; extra reading, 5 hours; research, 3 hours. Prerequisite(s): SOC 001 with a grade of C- or better or SOC 001H with a grade of C- or better; or consent of instructor. Introduces the role that social factors play in shaping the occurrence and distribution of disease and death in populations with an emphasis on socioeconomic status, racism, social relationships and social stress. A particular emphasis is placed on sociological origins of health inequalities. Cross-listed with PBPL 127.

SOC 167 Medical Sociology 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): restricted to class level standing of junior, or senior; or consent of instructor. Introduces key concepts and theories in medical sociology and their application to a variety of health issues. Exemplar topics include social construction of health and illness, medicalization, stigma and labeling, patient-provider interaction, sociology of medical professionals, social determinants of health, and political economy of health. Cross-listed with PBPL 167.

February 26, 2025

TO: Ken Barish, Chair
Riverside Division of the Academic Senate

FROM: Victor G. J. Rodgers, Chair 
BCOE Executive Committee

RE: Proposed New Program: B.S. in Computer Science Applications

On February 26, 2025, the BCOE Executive Committee reviewed the Proposed New Undergraduate Academic Program: B.S. in Computer Science Applications (CSA). The committee voted unanimously in favor with a vote of 5 in favor, 0 opposed and 0 abstained.

February 25, 2025

To Whom It May Concern,

I enthusiastically support the proposed Computer Science Applications undergraduate major. Current and future students view computers and their constituent technologies as a core parts of society and their lives, intertwined with their other interests. Many students wish to study this intersection. Many employers which to employ students who have a foundational understanding of not only Computer Science but also an application area. Our external advisory board of industry leaders discussed this proposal in June 2024 and enthusiastically supported its curriculum and goals.

This major broadens the existing Computer Science with Business Applications major to invite more undergraduates to explore the combination of Computer Science and other discipline. It will start with concentrations in Business, Psychology, and Health Sciences. We have active and excited partners in each of these areas. We believe it can grow in the future to other areas. This major complements our existing Computer Science and Computer Engineering majors by providing a more applications-oriented, but still technical, study of Computer Science.

The faculty in the Computer Science and Engineering Department (where the program will be housed) voted unanimously (22-0-0) in favor of adding this major. We are committed to providing the necessary courses.

Sincerely,

A handwritten signature in blue ink, appearing to read "Christian Shelton".

Christian Shelton
Professor & Department Chair
Computer Science & Engineering

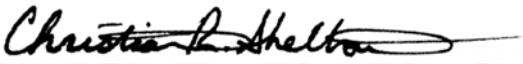


**Department of Computer Science
and Engineering**

900 University Avenue
351 Winston Chung Hall
Riverside, CA 92521

DATE: February 7, 2025

TO: Academic Senate
Committee on Educational Policy

FROM: 
Christian Shelton
Chair, Department of Computer Science

RE: Department approval for new Computer Science Applications major

The Department of Computer Science and Engineering faculty met on Wednesday January 22, 2025 to discuss and vote on this new major proposal. The faculty voted unanimously in favor (22 present, 22 yes) of this new major proposal and to move it forward for approval.

Thank you for your time and consideration.

To Whom It May Concern:

I endorse the proposed Computer Science Applications (CSA) undergraduate major. It is well positioned to attract a broad set of students interested in computers and how computational technology is connected to other disciplines. The program creates ties between BCOE and other colleges.

BCOE is committed to supporting this new major by offering the courses, advising, and other resources necessary for its students' success.

Sincerely,



Christopher Lynch
Dean, Bourns College of Engineering
University of California Riverside

TO: Dean Daryle Williams, CHASS

FROM: Tuppett M. Yates, Psychology Department Chair

DATE: February 5, 2025

RE: Support for a Psychology Track within the new Computer Science Applications Major

Dear Dean Williams:

As Chair of the Department of Psychology, I am writing to express our strong support for the proposed undergraduate academic program, the B.S. in Computer Science Applications, to be administered by the Computer Science Department. Our department has voted to unanimously approve the inclusion of Psychology courses to fulfill the Psychology concentration requirements (34 eligible, 29 yes, 0 no, 0 abstain, 5 not available). We believe this major will provide a valuable pedagogical bridge between Computer Science and the Social Sciences.

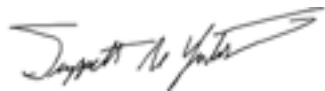
The Psychology concentration curriculum was carefully designed and approved by faculty in both departments. It offers students a pathway to learn foundational concepts and research methods within psychology, while providing flexibility for students to pursue depth of study in advanced psychological concepts.

Furthermore, the program's emphasis on data analysis training and the flexible senior design project options align with the research interests of many of our faculty who employ sophisticated computational and data science tools in their research programs. Thus, this program will encourage active engagement between undergraduate students and our researchers.

We acknowledge that students in the Computer Science Applications program will increase demand for our already popular Psychology courses, particularly PSYC 11 (Psychological Methods: Statistical Procedures) and PSYC 12 (Psychological Methods: Research Procedures). These are foundational courses within our program with capped enrollment due to their hands-on and intensive nature. Our faculty have agreed to hold seats in these courses for students in the proposed major to accommodate the annual enrollment of up to 30 undergraduate students in this proposed track. Please note that this commitment is contingent upon the ongoing approval of the Committee on Courses to reserve seats in these courses. Each quarter, any unused seats will be released at the same time as the seats for Psychology Majors. Thirty slots are confirmed for the first 5 years with active students in this major after which an assessment will be conducted to see if the number of reserved seats should be increased or decreased.

Looking forward, we are committed to working collaboratively with the Chair of Computer Science and the Dean of the College of Humanities, Arts, and Social Sciences to secure the necessary resources to meet the demands of this proposed major.

Thank you for considering this request.

A handwritten signature in black ink, appearing to read "Tuppett M. Yates", with a stylized flourish at the end.

Tuppett M. Yates, PhD



School of Business
Anderson Hall
900 University Avenue
Riverside, CA 92521

VIA EMAIL

February 7, 2025

Dear Colleagues of the Academic Senate,

As Department Chair of the School of Business, I support the proposed new major in Computer Science Applications (CSA) offered by the Department of Computer Science and Engineering of the Marlan and Rosemary Bourns College of Engineering. This new major will be based on the current Computer Science with Business Applications major, the content of which will remain available as a concentration within the new CSA major. This change will continue to make the combination of the computing and business disciplines attractive to a relatively small group of students interested in breadth across both areas.

In addition, I approve the continued inclusion of all BUS courses in the new major, as well as the addition of BUS 10. These courses are offered regularly throughout the academic year. Given the relatively small size of the new major, space in these courses will not be an issue.

Please let me know if you need any additional information.

Sincerely,

A handwritten signature in black ink that reads 'Margaret C. Campbell'.

Margaret C. Campbell, Chair and Associate Dean
School of Business



Pre-Professional Advising Center
Division of Undergraduate Education

900 University Avenue
Riversa Library B03
Riverside, CA 92521

14 February 2025

Re: Letter of Support for Computer Sciences Applications (CSA) Program

951.827.6233
hpac@ucr.edu | ppac.ucr.edu

Dear Colleagues:

I write this letter of support for the Bachelor of Science in Computer Sciences Application (CSA) Program to be located in the Marlan and Rosemary Bourns College of Engineering at the University of California, Riverside.

The creation of this academic program will allow students who wish to explore a career in computer sciences and health professions to gain the necessary pre-requisite health sciences/life sciences coursework as required by medical schools and other health professions programs such as dentistry, optometry, pharmacy, veterinary medicine and so forth. To date, ~75% of our applicants to health professions programs come from the College of Natural and Agricultural Sciences with viable growth opportunities in all of UCR colleges/schools. For prospective students who are looking to integrate computer sciences and biological sciences and health informatics into clinical practice, this pathway will likely be a popular pathway.

In addition to the health sciences concentration that would provide a direct course flow, students would also have the support of pre-health advisors at the Pre-Professional Advising Center, an advising unit within the Division of Undergraduate Education that provides information, advising, and support for students who aspire to graduate/professional programs in the health professions and law to map out academic and curricular experiences to support a competitive application to medical school or other health professions programs.

Should you have questions regarding this letter of support or if I may advocate further on behalf of this new academic program, please don't hesitate to contact me at Charles.Scruggs@ucr.edu or at 951-827-5416.

Sincerely,

A handwritten signature in black ink that reads "Charles P. Scruggs".

Charles P. Scruggs, M.A.
Director, UCR Pre-Professional Advising Center

President, Western Association of Advisors for the Health Professions
Board of Directors, National Association of Advisors for the Health Professions

Dear Neftali,

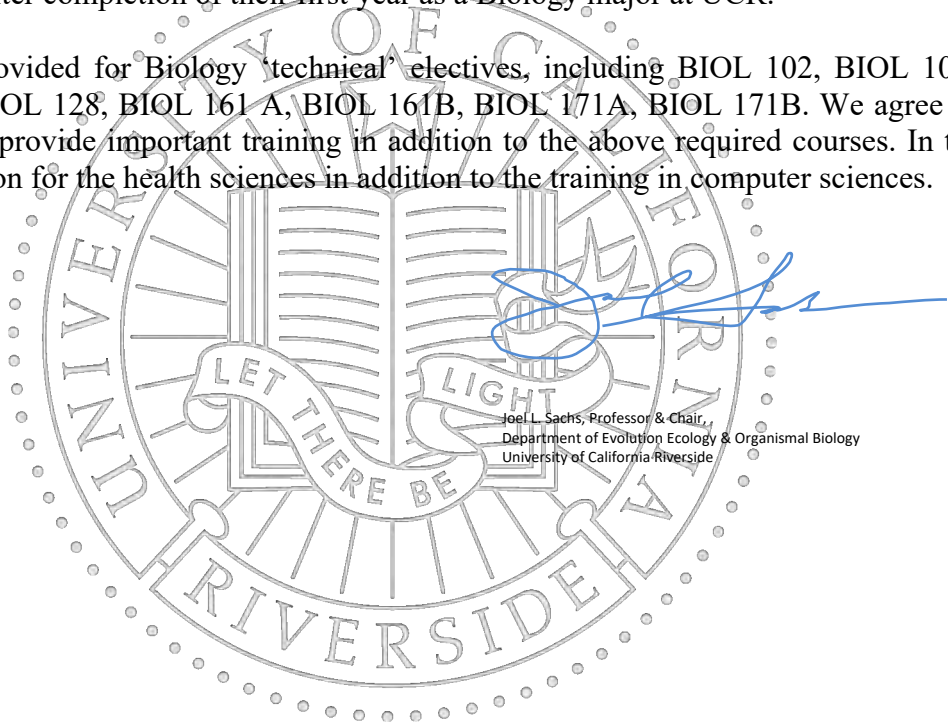
24, February, 2025

I am writing to express my support for the establishment of a new Computer Science Applications Major (CSA), in particular the CSA major with the concentration in Health Science.

The EEOB faculty discussed the utility of this program and agree with your proposal that this could fulfil a key training need. We agree that the CSA major would be particularly useful for students with career aspirations at the nexus of the computer and health sciences.

We have reviewed the required courses for the CSA major with the concentration in Health Science, including BIOL 005A, BIOL 005LA, BIOL 005B, and BIOL 005C. These courses provide core knowledge in basic biology. Completion of these classes would provide the same training that a typical sophomore would receive after completion of their first year as a Biology major at UCR.

We noted that you also provided for Biology 'technical' electives, including BIOL 102, BIOL 107A, BIOL 110, BIOL 121/L, BIOL 128, BIOL 161 A, BIOL 161B, BIOL 171A, BIOL 171B. We agree that any of these classes would provide important training in addition to the above required courses. In total this could provide preparation for the health sciences in addition to the training in computer sciences.

Joel L. Sachs, Professor & Chair,
Department of Evolution Ecology & Organismal Biology
University of California - Riverside



MEMORANDUM

To: Christopher Lynch, Dean, Bourns College of Engineering

From: Daryle Williams, Dean, College of Humanities, Arts, and Social Sciences

Date: February 26, 2025

RE: Support for the Psychology Concentration in the BS degree program in Computer Science Applications

(DocuSigned by)
Daryle Williams
DF581DF553974F3...

As Dean of CHASS, I support the proposed B.S. degree program in Computer Science Applications (CSA) to be administered by the BCOE Computer Science and Engineering Department. This program has three concentrations, two of which are Psychology and Business that rely on the offering of a substantial number of courses offered by the Department of Psychology and a couple courses offered by the Department of Economics. I applaud the initiative of creating interdisciplinary and intercollege majors that will improve the learning experience of our students and respond to a growing demand for professionals with computer science knowledge across many disciplines.

The Psychology department has enthusiastically approved this concentration and I support their endorsement. I concur with their positive assessment on the design of the Psychology concentration curriculum and it is my hope that it will create synergies between undergraduate engineering students and Psychology faculty whose research interests rely on computational and data science tools.

Four courses (PSYC 1, PSYC 2, PSYC 11, and PSYC 12) in the Psychology concentration are considered impacted courses. The proposed CSA major will increase the demand for these courses. CHASS Psychology majors will have priority in enrolling in these courses. The Psychology department is willing to reserve up to 30 seats annually in PSYC 11 and PSYC 12, which have capped enrollments, for the first five years. We should closely monitor enrollments to understand the impact of the new demand and revise the allotment of seats if needed.

I look forward to working with the BCOE Computer Science and Engineering department to assure the success of the proposed major.

Certificate Of Completion

Envelope Id: FDE3259D-50CB-4B1A-B63C-3ADEE6945F24

Status: Completed

Subject: Complete with Docusign: CSAMajor-PSYC-Concentration-2025-02-26.docx

Source Envelope:

Document Pages: 1

Signatures: 1

Envelope Originator:

Certificate Pages: 1

Initials: 0

Summer Espinoza

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100 Phoenix Dr.Suite 111

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Lansing, MI 48108

Time Zone: (UTC-08:00) Pacific Time (US & Canada)

summer.espinoza@ucr.edu

IP Address: 138.23.220.221

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Status: Original

Holder: Summer Espinoza

Location: DocuSign

2/25/2025 4:51:11 PM

summer.espinoza@ucr.edu

Signer Events

Signature

Timestamp

Daryle Williams

Sent: 2/25/2025 4:52:17 PM

daryle.williams@ucr.edu

Viewed: 2/25/2025 4:53:18 PM

Dean, CHASS

Signed: 2/25/2025 4:53:22 PM

University of California, Riverside

Signature Adoption: Pre-selected Style

Security Level: Email, Account Authentication
(None)

Using IP Address: 169.235.64.141

Electronic Record and Signature Disclosure:

Not Offered via Docusign

In Person Signer Events

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Agent Delivery Events

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Carbon Copy Events

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Witness Events

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Notary Events

Signature

Timestamp

Envelope Summary Events

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Timestamps

Envelope Sent

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2/25/2025 4:52:17 PM

Certified Delivered

Security Checked

2/25/2025 4:53:18 PM

Signing Complete

Security Checked

2/25/2025 4:53:22 PM

Completed

Security Checked

2/25/2025 4:53:22 PM

Payment Events

Status

Timestamps

Mathchair <mathchair@ucr.edu>
To: Neftali Watkinson Medina <neftaliw@ucr.edu>
Cc: Christian Shelton <cshelton@cs.ucr.edu>

Fri, Feb 14, 2025 at 12:38 PM

Hi Neftali,

After reviewing the proposal, we find nothing to object to. You can say that. But is the Math Department somehow in the chain of approval for the proposal? That would seem to imply something more. I have never been through this kind of thing before.

Regards,
- Jim
[Quoted text hidden]

Neftali Watkinson Medina <neftaliw@ucr.edu>
To: Mathchair <mathchair@ucr.edu>
Cc: Christian Shelton <cshelton@cs.ucr.edu>

Fri, Feb 14, 2025 at 12:49 PM

Hi James,

Sorry for not being clear in my prior email. This statement you are providing is enough, it is to satisfy the following requirement by the Committee on Educational Policy:

9. Potential impact of the new program on existing programs. If the proposed program includes required courses from a department other than the administering department, the proposal must include a statement from the department indicating that it has been consulted and that it will provide access to the required courses.

Since your prior email had some suggested changes, I wanted to make sure that you agreed to the fixes I highlighted (primarily removing Math 8). Other than that, your email suffices as the required statement.

Neftali W.
[Quoted text hidden]

Mathchair <mathchair@ucr.edu>
To: Neftali Watkinson Medina <neftaliw@ucr.edu>
Cc: Christian Shelton <cshelton@cs.ucr.edu>

Fri, Feb 14, 2025 at 12:55 PM

Hi Neftali,

That is good then. The only other comment I would make is that there is a Math 135C now as well, if you wanted to include it.

Regards,
- Jim
[Quoted text hidden]

UNIVERSITY OF CALIFORNIA, RIVERSIDE

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SANTA BARBARA • SANTA CRUZ

Leonard Mueller

Professor of Chemistry and Chair
Department of Chemistry
University of California, Riverside

(951) 827-3565
leonard.mueller@ucr.edu

20 February 2025

BCOE Executive Committee
UC Riverside

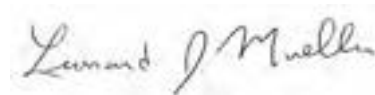
Dear Executive Committee,

As the Chair of the Department of Chemistry, I have reviewed the proposal for an undergraduate major in Computer Science Applications and approve of the addition of the following courses as a requirement for the Health Science concentration:

CHEM 001A and 001LA, CHEM 001B and 1LB, CHEM 001C and 001LC, CHEM 008A and 008LA, CHEM 008B and 8LB, CHEM 008C and 008LC

These courses train students in general and organic chemistry. They serve as the baseline for several programs that require a broad understanding of modern Chemistry. They also serve to satisfy the pre-health requirements for a year of general chemistry with lab, and a year of organic chemistry with lab. It makes sense that a concentration that focuses on Health Science should include these. Both series are taught throughout the year and can accommodate students from the Computer Science applications program.

Sincerely,



Leonard Mueller
Professor of Chemistry and Chair

To: Christian Shelton, Chair and Professor, Computer Science & Engineering Dept.
Neftali D. Watkinson, Assistant Professor of Teaching, Computer Science & Engineering Dept.

From: Shan-Wen Tsai, Chair and Professor, Department of Physics & Astronomy

Date: 02/21/2025

Re: **Letter of Support**

Thank you for sharing with me your proposal for the establishment of a new undergraduate academic program in Computer Science Applications, with Business, Psychology, and Health Science concentrations.

I am happy to provide this letter of support for this new program regarding the inclusion of the following courses in the curriculum: **PHYS 2A and 2LA, PHYS 2B and 2LB, PHYS 2C and 2LC**, to be required for the Health Science concentration as a path towards satisfying the Physics requirement for medical school. The PHYS 2A, B, C and corresponding laboratory portions, PHYS 2LA, B, C are a calculus-based General Physics sequence for Life and Ag Sciences majors, pre-med students, and students who plan to pursue a career in health sciences. The syllabus covers General Physics with life and health sciences applications and integrated labs.

Sincerely,



Shan-Wen Tsai, Chair and Professor
Department of Physics and Astronomy



Neftali Watkinson Medina <neftaliw@ucr.edu>

Fwd: Request for letter of support from the Department of Biochemistry

Xuan Liu <xuan@ucr.edu>

Fri, Feb 14, 2025 at 10:34 AM

To: Christian Shelton <cshelton@cs.ucr.edu>, Neftali Watkinson Medina <neftaliw@ucr.edu>

Hello.

Sorry for not getting back to you sooner. I was traveling.

We have no issues with non-BCH students taking BCH 100. For BCH 110A, I consulted with our Education Policy Committee as well as BCH 110A instructors. We are all supportive.

Thanks,

Xuan

Xuan Liu
Professor and Chair
Department of Biochemistry
University of California
Riverside, CA 92521
951-827-4350

Feb 5, 2025

To: Christian Shelton
Professor and Chair
Computer Science & Engineering Department
Bourns College of Engineering
University of California, Riverside

Dear Prof. Shelton,

I am writing to endorse the proposed new Computer Science Applications (CSA) major, which will replace the existing Computer Science with Business Applications (CSBA) major. The proposed new major includes three distinct concentrations: Business, Psychology, and Health Science. Thus, it offers enhanced flexibility and adaptability for UCR students. The new major will equip students with a strong foundation in computer science principles alongside specialized knowledge in high-demand fields. I understand the proposed new major includes the following statistics courses in the curriculum: STAT 008, STAT010, and STAT 155, and the Department of Statistics pledges to provide seats to these courses for all CSA majors.

Sincerely,

A handwritten signature in cursive script that reads "Yehua Li".

Yehua Li
Professor & Chair of Statistics,
University of California, Riverside
yehuali@ucr.edu
<https://profiles.ucr.edu/app/home/profile/yehuali>



Neftali Watkinson Medina <neftaliw@ucr.edu>

Request for letter of support from the School of Public Policy

Bruce Babcock <babcockb@ucr.edu>

Wed, Feb 5, 2025 at 10:07 AM

To: Neftali Watkinson Medina <neftaliw@ucr.edu>

Neftali:

You requested a letter of support confirming that students in the new major Computer Science Applications will have access to PBPL 160 (Immigrant Health and Well Being) and PBPL 162 (Health in All Policies). SPP does not restrict enrollment in these two courses other than placing an overall cap on class size so students in the major will have the same access as any other students.

Bruce Babcock
Professor and Associate Dean
School of Public Policy
4123 INTS
University of California, Riverside
babcockb@ucr.edu

[Quoted text hidden]



Neftali Watkinson Medina <neftaliw@ucr.edu>

Request for letter of support from the Department of Sociology

Robert Clark <roclark@ucr.edu>

Tue, Jan 28, 2025 at 6:40 PM

To: Neftali Watkinson Medina <neftaliw@ucr.edu>

Cc: Christian Shelton <cshelton@cs.ucr.edu>

Hi, Neftali.

This all sounds fine to me. I can't promise when (or how frequently) we'll offer SOC 127 or 167, as we are understaffed regarding instructors. And I don't remember seeing SOC 150 being offered since I arrived here a few years ago (nor can I think of any close alternatives). But I have no objections to your including any of these courses in your curriculum. Best of luck to you!

Rob Clark
Professor and Acting Chair
Department of Sociology
University of California-Riverside
Riverside, CA 92521
roclark@ucr.edu

[Quoted text hidden]



DEPARTMENT OF ECONOMICS

Joseph Cummins
Associate Professor of Economics
3106 Sproul Hall
University of California, Riverside
900 University Avenue
Riverside, CA 92521

Tel: (951) 827-1582
Fax: (951) 827-5685
email: joseph.cummins@ucr.edu

March 17, 2024

To Whom it May Concern,

This letter is intended to communicate the support of the Economics Dept. for the new Computer Science Applications (CSA) major. The major has the support of the Chair and Undergraduate Advisory Committee (UAC) that I Chair. The Economics Dept. believes the new CSA major will be beneficial to the University and potentially synergistic with the Economics Department going forward.

The CSA major will have as pre-requisites a number of foundational Economics courses (2, 3 and 101). Since the CSA major will replace the existing Computer Science with Business Applications major, it is not likely to directly and immediately alter enrollment in the specific core Economics courses listed as pre-requisites in the short term.

However, we also believe that the new arrangement with computer science is likely to increase cross-disciplinary interest in several current and new Economics courses for CS majors. In particular, the Economics Dept. is currently developing several advanced quantitative courses as part of our proposed Quantitative Economics major, and we believe these courses are likely to see increased demand from CS students who have been exposed to Economics via the CSA major. These courses, including at least one newly approved course in Machine Learning for Economics and Business (Econ 111), will require as a pre-requisite Econ 107 (which has Econ 101 as a pre-requisite). The department anticipates long-term increased demand for such applied econometrics courses (107, 111, and other new courses) stemming from a combination of: a) increased interest in advanced quantitative analysis courses from CSA majors in the short-medium term, and b) increased interest in the CSA major (relative to the current major) in the medium-long term.

The Economics Department, as represented by the Chair and the UAC, fully support the creation of the CSA major, and look forward to continuing to train CS majors in core economic and econometrics principles, and in advanced quantitative methods beyond the core major requirements.

Sincerely,

A handwritten signature in black ink, appearing to read "Joseph Cummins". The signature is fluid and cursive, with a large, stylized "J" and "C".

Joseph Cummins
Associate Professor of Economics



Tony Givargis
Professor and Chair
Department of Computer Science

3201 Donald Bren Hall
Irvine, CA 92697-3435
givargis@uci.edu

February 5, 2025

To Whom It May Concern:

I am writing to express my enthusiastic support for the proposed Bachelor of Science in Computer Science Applications (CSA) at UC Riverside. As Chair of the Computer Science Department at UC Irvine and a UC Riverside alumnus, I believe this program represents a significant advancement in computer science education and complements the existing offerings within the UC system.

The increasing pervasiveness of technology in modern life has fueled an unabated demand for graduates with expertise in computer science, robotics, and software engineering. Simultaneously, we've seen a surge in demand for multidisciplinary computing programs that equip students to apply computational thinking and skills to other fields. At UC Irvine, they've responded to this need by expanding access to computing pathways through programs like the Bioinformatics minor, Health Informatics minor, the BS in Business Information Management, and the BS in Game Design and Interactive Media.

UCR has also demonstrated leadership in accessible computing education, exemplified by the Data Science program and the current Computer Science with Business Applications program. The proposed evolution of the latter into the CSA major is a timely and strategic move. This agile and flexible framework will allow UCR to adapt to industry needs, positioning students for success in the future.

The chosen concentrations within the CSA program are particularly well-suited to current and projected market demands. The incorporation of business courses builds upon a proven model for success, while the Health concentration will train future healthcare professionals to effectively integrate technology into patient care. Furthermore, the Psychology concentration is exceptionally prescient. With the rise of AI and the growing importance of user interface and experience design, professionals who understand the human element within technological frameworks are essential. This concentration addresses a critical need at the intersection of these two disciplines.

I commend UCR for developing a sustainable model for this new program and am excited to witness its growth. I am confident that the CSA program will create valuable opportunities for UCR students.

Sincerely,

A handwritten signature in blue ink, appearing to read "Givargis Tony".

Tony Givargis
Professor and Chair
Department of Computer Science



Victor C. Joe, MD, MBA, FACS
Clinical Professor of Surgery

Department of Surgery
3800 W Chapman Ave
Suite 6200
Orange, CA 92868
Office: 714-456-5890
Facsimile: 714-456-6048

February 18, 2025

Neftali Watkinson Medina, PhD
Assistant Professor of Teaching
Computer Science & Engineering, UC Riverside

Re: Proposal for a major Computer Science Applications

Dear Dr. Watkinson Medina:

I am writing to express my strong support for the proposed Bachelor of Science in Computer Science Applications at UC Riverside, particularly the Health Science concentration. As a surgeon specializing in Trauma, Burns, Critical Care, and Acute Care Surgery, I have seen firsthand the immense potential of advanced computing—particularly artificial intelligence (AI), machine learning, and data science—in transforming healthcare research, improving patient outcomes, and optimizing healthcare delivery.

Healthcare today is increasingly driven by data, yet there remains a significant gap between frontline healthcare providers and the advanced computational tools that can enhance efficiency, precision, and patient-centered care. The integration of computer science principles into health sciences education will prepare future healthcare professionals to bridge this divide, equipping them with the skills necessary to lead innovations in clinical decision support, predictive analytics, workflow optimization, and electronic health record (EHR) enhancements.

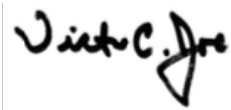
A program like the B.S. in Computer Science Applications with a Health Science concentration is not only timely but essential. By providing students with strong foundations in computational methods alongside rigorous health sciences training, UC Riverside will be cultivating the next generation of clinician-scientists, informaticians, and healthcare leaders who can effectively leverage technology to drive meaningful improvements in patient care, provider well-being, and healthcare system performance.

Personally, I have a deep interest in the application of AI and data science in healthcare but often find that I lack the formal training to independently lead such initiatives. I firmly believe that programs like this will empower future healthcare professionals to take on leadership roles in advancing medical research, quality improvement, and healthcare innovation.

I commend UC Riverside for its forward-thinking approach in designing this interdisciplinary major and strongly encourage its approval and implementation. This program aligns with the evolving needs of healthcare and will position UC Riverside as a leader in training professionals at the intersection of medicine and technology.

Thank you for considering this vital initiative. I would be happy to provide any further insights or assistance as needed.

Sincerely,

A handwritten signature in black ink, reading "Victor C. Joe". The signature is written in a cursive, flowing style.

Victor C. Joe, MD, MBA, FACS

Clinical Professor & Vice Chair for Quality, UC Irvine Department of Surgery

Vice President, UCI Health Medical Staff

February 2, 2025

Dear UCR Curriculum Committee:

I am writing a letter in support of for the new undergraduate major “Computer Science Applications” (CSA), which will be administered by the Department of Computer Science and Engineering (CSE).

Before providing more detail, I will first give you the background with which to interpret this letter. I am currently a professor, and the founding executive director of the Center for Inclusive Computing at Northeastern University. From 2014-2021 I served as the dean of the Khoury College of Computer Sciences at Northeastern University (with over 6500 students Khoury is one of the largest colleges of computing in the country). In my role as dean, I oversaw the addition of 30 new undergraduate interdisciplinary computing majors at Northeastern. I am a fellow of the ACM, AAAI and AAAS.

In this letter I will first discuss the quality of the proposed new major and how it fits in with other majors on campus, and then provide context on the potential graduate school and job outcomes for students who major in CSA.

UCR has a history with CSA degrees having operated the current CS with Business Applications major for many years. The new CSA degree will be inclusive of the CSBA major and is similar in its design. The difference between the within-discipline CS major and the CSA majors are the addition of concentrations in other fields and the removal of some higher-level math and physics courses in addition to the CS Theory courses (which are only needed for students choosing to go on to graduate schools in CS in the area of Theory – indeed most CS departments no longer require these courses even for within-discipline majors).

Administering the CSA within one department/college makes sense as these majors get started. Indeed when Northeastern’s CS College (now called Khoury) started interdisciplinary computing degrees in 2001 all degrees were housed in the College. Looking at the CS requirements, UCR follows the typical first courses required for CS majors everywhere (introduction to programming 1, instruction to programming 2, and data structures. In addition, students are required to take CS 061 (Computer Architecture), CS 100 (Software Engineering), CS 111 (Discrete Structures), CS 105 (Data Analysis), CS 141 (Algorithms), CS 153 (Operating Systems) and to complete a two-semester project. These courses will allow students to learn the core of CS and to pass technical interviews with tech firms. In addition, students must take 20 technical electives. This will allow them to customize what they learn in CS to match the other discipline. This structure is very similar to that used at Northeastern and UIUC (the other university to implement interdisciplinary computing majors at scale – UIUC has 15 such majors as of 2024). I cannot comment on the concentration area requirements as I am not an expert in any of these fields. But the number of units seems very reasonable to allow students to learn enough of the concentration discipline to understand the complexities and breadth of that field.

In terms of fit with other majors. The CSA allows students to take a different view of CS than the within-discipline major and will appeal to students who are interested in how CS can be applied to other fields. It is not in competition with any other majors to the best of my ability to assess this at another university.

In terms of student outcomes in the proposed CSA major, I turn to my experience as dean of Khoury College of Computer Sciences at Northeastern University. Currently more than half of Khoury's 3500 undergraduate students are pursuing combined computing majors—"combined majors" is Northeastern's name for interdisciplinary degrees. Although our degrees differ a bit in structure from the proposed degrees, the purpose and motivation is similar – in 2025 computer science is critically important for most other fields. We have tracked Northeastern's co-op placement for a decade (our students spend one to three six-month periods on internships as part of their undergraduate degree). We have 89% placement for within-discipline CS majors and 90% placement for combined computing majors. In terms of outcomes post graduation, in December of 2021 we tracked all 2021 graduates for Khoury College and found that placement was in the mid-90's and that there was no difference in placement rates between combined and within-discipline majors. There was a difference in where they were working, with both groups working in tech firms, but combined majors sometimes choosing to work at the juncture of the two disciplines (e.g., a Bio-CS major might work at a pharmaceutical firm). We also have tracked placement in graduate school and find that the only difference is that combined majors sometimes choose the other field to do advanced work (e.g., a Business-CS major choosing an MBA).

In conclusion, CSA's are an exciting step forward in a world in which the problems that need solving are increasingly interdisciplinary.

Sincerely,

A handwritten signature in black ink, appearing to read "CE Brodley". The signature is fluid and cursive, with the first letters of each word being capitalized and prominent.

Professor, Khoury College of Computer Sciences
Dean of Inclusive Computing,
Founding Executive Director, Center for Inclusive Computing,
Northeastern University



Academic Senate

*Professor Kenneth Barish
Division Chair*

May 9, 2025

To: Victor Rodgers, Chair, BCOE Faculty Executive Committee
From: Ken Barish, Chair, Academic Senate
RE: **Proposed Bachelor of Science (B.S.) in Computer Science Applications (CSA)**

Dear Victor,

The [proposed Bachelor of Science in Computer Science](#) was reviewed by the Committee on Courses, Committee on Educational Policy, and the Committee on Planning and Budget. The proposal received support but is being returned so that the recommendations and issues highlighted by the Committee on Courses and the Committee on Educational Policy are addressed in a future revised proposal.

As always, the revised degree program proposal is to be submitted to me as Academic Senate Division Chair (barish@ucr.edu) with a courtesy copy to Director Cherysa Cortez (cherysac@ucr.edu).

Best Regards,

A handwritten signature in blue ink that reads "Kenneth Barish".

Ken Barish, Chair
Academic Senate

Cc: Professor Watkinson
Student Affairs Manager Smith
Senate Analyst Beatty
Senate Director Cortez

Attachment



Academic Senate

COMMITTEE ON EDUCATIONAL POLICY

April 22, 2025

To: Ken Barish, Chair
Riverside Division

From: Stephen Kane, Vice Chair
Committee on Educational Policy

Re: Proposed B.S. in Computer Science Applications

The Committee on Educational Policy (CEP) reviewed the proposal for a B.S. in Computer Science Applications at their April 4, 2025 meeting. The Committee voted to return the proposal and request that the program reevaluate the unit requirement for the for the Health Science concentration as the number of required units is much higher than the other proposed concentrations. Additionally, the Committee recommends that a four-year plan for students to progress through the major be presented. The Committee recommends that consideration be made to include MATH 005B and MATH 005C as alternative to MATH 009A, MATH 009B, and MATH 009C.

COMMITTEE ON COURSES

April 29, 2025

To: Ken Barish, Chair
Riverside Division

From: Erin Rankin, Chair
Committee on Courses

Re: Proposed B.S. in Computer Science Applications

The Committee on Courses reviewed the proposal for a B.S. in Computer Science Applications at their April 24, 2025 meeting and were generally supportive of the proposal.

The Committee did review the proposed changes to the curriculum and recommends the following updates be made to the proposed courses:

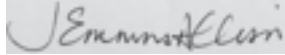
- Update the curriculum to reflect that ENGL 001A and ENGL 001B have been renumbered to WRIT 010 and WRIT 020;
- Include the Honors courses for the MATH 009A-C series, ECON 002, ECON 003, PHYS 002A-C series, CHEM 001A-C series, CHEM 001LA-C series, CHEM 008A-C series, CHEM 008LA-C series, BCH 100, and BCH 110A-C series;
- Ensure that the full course number is included in the curriculum i.e. PSYC 1 should be listed as PSYC 001;
- Remove PSYC 152, PSYC 179, and PSYC 181 from the curriculum as they were discontinued;
- Include the cross-listed course for SOC 127, which is PBPL 127.

PLANNING AND BUDGET

April 29, 2025

To: Kenneth Barish, Chair
Riverside Division

From: Juliann Allison, Chair
Committee on Planning and Budget

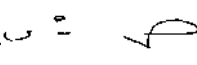
A handwritten signature in black ink, appearing to read "Juliann Allison", is placed over the text of the "From:" line.

RE: [Campus Review] Proposal: -Updated- Bachelor of Science (B.S.) in Computer Science Applications (CSA)

At our meeting on April 29, 2025, the Committee on Planning and Budget (CPB) reviewed the updated proposal for a new Undergraduate Academic Program: Bachelor of Science (B.S.) in Computer Science Applications. CPB found no cause for financial concern and is generally supportive of the proposal.

February 26, 2025

TO: Ken Barish, Chair
Riverside Division of the Academic Senate

FROM: Victor G. J. Rodgers, Chair 
BCOE Executive Committee

RE: Proposed New Program: B.S. in Computer Science Applications

On February 26, 2025, the BCOE Executive Committee reviewed the Proposed New Undergraduate Academic Program: B.S. in Computer Science Applications (CSA). The committee voted unanimously in favor with a vote of 5 in favor, 0 opposed and 0 abstained.

Proposal for Establishment of a New Undergraduate Academic Program: B.S. in Computer Science Applications

1. Name of the academic program and the department or unit that will administer the program

The **Computer Science Applications (CSA)** Undergraduate Major will be administered by the Department of Computer Science and Engineering (CSE).

2. A thorough justification, including the motivation for the creation of the program in terms of student interest and professional or academic importance.

As technology permeates every aspect of life, the need for professionals who can bridge the gap between computing and other disciplines is skyrocketing. A recent analysis of the labor market shows a growing demand for professionals with experience in using computer science across other disciplines. According to the Occupational Outlook Handbook from the Bureau of Labor Statistics, the expected growth in demand in cross-disciplinary computing is 16% for Special Effect Artists and Animators (requiring training in computing and media), 41% for Information Research Scientists (requiring computing and psychology), and 21% for Bioinformatics (requiring computing and life sciences). Additionally, the medical community has highlighted for decades the need to have coding¹ and AI² literacy as part of pre-medical training, but very few computing programs include required courses for pre-medical training as part of their curriculum, programs that effectively blend these requirements are non-existent.

In a recent survey of 1000 high school and community college students from California and from key markets (Washington, Oregon, Arizona, among others), students showed great interest in pursuing interdisciplinary majors in computer science. The top 5 single-discipline programs that students are considering in applying are Business, Social Sciences, Life Sciences, Pre-Medical training, and Education. However, when asked if they would consider a combined degree, 56% said they would be interested (compared to only 14% who said they would pursue a CS-only degree). When offered professions that involve multidisciplinary training; Video Game designer, CGI engineering, Information Research, Biomedical Engineering, Prompt Engineering, Tech Media, and Bioinformatics research were among the top choices (40%). This shows that there is a clear demand for programs that provide the training that students identify as necessary for the professions they want to pursue. The results are also consistent with research that shows that

¹ Yardimci, A. (2009). Soft computing in medicine. Applied soft computing, 9(3), 1029-1043.

² Kolachalama, V. B. (2022). Machine learning and pre-medical education. Artificial intelligence in medicine, 129, 102313.

high school students want CS programs that are multidisciplinary. For female applicants, lack of cross-disciplinary options is the number one reason for not pursuing computer science³.

Several Top-20 institutions in Computer Science (according to csrankings.org) are creating majors that effectively blend Computer Science with other disciplines. The University of Illinois Urbana-Champaign, Northeastern University, and UT Austin are some examples of top institutions that have created interdisciplinary computing programs. At the UC level, UCSD, Berkeley, and UCSC offer one or two computing programs that are interdisciplinary (such as the **Interdisciplinary Computing and the Arts Major** from UCSD). But none have created a program like the one we envision, an umbrella program that enables multiple concentrations in different disciplines with a strong core in Computer Science. The challenge is both programmatic and administrative. Based on our research at the UC-level, ours could become a model for other UCs to emulate.

The **Computer Science with Business Applications (CSBA)** major at UCR exemplifies this potential structure and would become a sort of template for new ones. The CSBA major is accredited as a CS program, continues to grow along with the traditional CS program, and serves a more diverse student body (40% women). The program requires at least 71 units in Computer Science courses, and 50 units in Business. It is designed to provide depth in both fields while emphasizing the use of computing in business solutions.

This new major will be called the **Computer Science Applications** major, and would include CSBA as a concentration. We will add two additional concentrations to start: Psychology, and Health Science. These were chosen due to high demand for professionals in these areas, synergy among our faculty, and the potential to attract a gender-balanced student population.

3. Relationship of the new program to existing programs

The design of the major is strongly influenced by the current Computer Science with Business Applications Major (CSBA). We will be folding the CSBA major into this new program as a concentration in Business. By this restructuring, we may add additional programmatic pathways that lead to degrees in computing applied towards other disciplines, i.e., Computer Science Applications with a concentration in [X], where X would include Business, Psychology, and Health Science. The computing community refers to such programs as CS+X⁴. Additionally, the list of courses required for the Business concentration will be refreshed to streamline the student experience and include new courses from Business that are currently not considered in the CSBA program.

While being a computing program, CSA is distinct from the Computer Science undergraduate degree. Certain core requirements endemic to Computer Science are not necessary for CSA

³ Carter, L. (2006). Why students with an apparent aptitude for computer science don't choose to major in computer science. *ACM SIGCSE Bulletin*, 38(1), 27-31.

⁴ Carla E. Brodley, Benjamin J. Hescott, Jessica Biron, Ali Rensing, Melissa Peiken, Sarah Maravetz, and Alan Mislove. 2022. Broadening Participation in Computing via Ubiquitous Combined Majors (CS+X). In *Proceedings of the 53rd ACM Technical Symposium on Computer Science Education - Volume 1 (SIGCSE 2022)*, Vol. 1. Association for Computing Machinery, New York, NY, USA, 544–550. <https://doi.org/10.1145/3478431.3499352>

majors. For example, extended series of Math and Physics, up to Math 10A, or specific theory or depth courses for advanced work in CS like CS150, CS152, CS120A. These would not be required for the CSA major. Likewise, CS105: Data Analysis Methods, will be required as it is a key course for engaging with other disciplines and gives students exposure to data analysis tools. The most prominent difference is that at least 50 units of the required courses are from courses offered from a different discipline.

The Data Science program is an interdisciplinary program that is administered by the Computer Science and Statistics departments. Courses are taught by faculty from both departments. While similar in nature to CSA (combining Computer Science with a different discipline), the Data Science program has a heavier emphasis on statistical methods. The courses required for both the computing core and for the concentrations within CSA are different from those required by the Data Science program.

4. The proposed curriculum. Great care should be given in this area, correct rubrics should be listed for courses, all cross listings should be listed, unit total considerations should be taken into account and totals should be verified by program staff, faculty, and appropriate Executive Committee personnel. A copy of the proposed program change should be provided for inclusion in the Catalog.

See “Appendix A: Program Description”

5. A list of faculty who will be involved in the program, including those teaching, advising, and administering.

All Senate faculty members of the CSE department (Assistant, Associate, and Full Professors) will be involved in administering the program. A Faculty Advisor for the program will be appointed and will interface with BCOE staff advisors. All faculty members in CSE, including instructors, will be teaching Computer Science courses in the program. Faculty involved in teaching the courses from other departments will only be involved in teaching those courses. Below is the current list of faculty members of the Computer Science and Engineering department:

Distinguished Professor

Rajiv Gupta, Ph.D.
Tao Jiang, Ph.D.
Eamonn Keogh, Ph.D.
Kadangode K. Ramakrishnan, Ph.D.

Professors

Nael Abu-Ghazaleh, Ph.D.
Philip Brisk, Ph.D.
Zizhong Chen, Ph.D.
Evangelos Christidis, Ph.D.
Marek Chrobak, Ph.D.
Emiliano De Cristofaro, Ph.D.
Michalis Faloutsos, Ph.D.
Trent Jaeger, Ph.D.

Srikanth Krishnamurthy, Ph.D.
Stefano Lonardi, Ph.D.
Walid Najjar, Ph.D.
Chinya Ravishankar, Ph.D.

Christian Shelton, Ph.D.
Manu Sridharan, Ph.D.
Vassilis Tsotras, Ph.D.
Frank N. Vahid, Ph.D.
Heng Yin, Ph.D.

Professors Emeriti

Laxmi N. Bhuyan, Ph.D.
Mart L. Molle, Ph.D.
Thomas H. Payne, Ph.D.

Michael Pazzani, Ph.D.
Teodor C. Przymusiński, Ph.D.
Neal Young, Ph.D.

Associate Professors

Ahmed Eldawy, Ph.D.
Ioannis Karamouzas, Ph.D.
Paea LePendou, Ph.D.
Mohsen Lesani, Ph.D.
Evangelos Papalexakis, Ph.D.

Zhiyun Qian, Ph.D.
Mariam Salloum, Ph.D.
Tamar Shinar, Ph.D.
Chengyu Song, Ph.D.
Greg Ver Steeg, Ph.D.
Zhijia Zhao, Ph.D.

Assistant Professors

Amey Bhangale, Ph.D.
Yue Dong, Ph.D.
Yan Gu, Ph.D.
Allan Knight, Ph.D.
Amr Magdy, Ph.D.
Neftali W. Medina, Ph.D.

Silas Richelson, Ph.D.
Elaheh Sadredini, Ph.D.
Craig Schroeder, Ph.D.
Yihan Sun, Ph.D.
Zhaowei Tan, Ph.D.
Mingxun Wang, Ph.D.
Qian Zhang, Ph.D.

6. For interdisciplinary programs, the degree of participation and the role of each department must be explicitly described. The chairs of all participating departments must provide written approval for the creation of the program and indicate their commitment to provide necessary resources including faculty release.

This is not an interdepartmental program in the sense that it does not span, administratively, more than one department. The program will be administered by the CSE department, which teaches the majority of the courses, and admission will be through the College of Engineering. Faculty from other departments are not part of this program's administration.

Letters from all relevant departments (Psychology, Business, Biology, Mathematics, Chemistry, Physics, Biochemistry, Statistics, Public Policy, and Sociology) stating that they agree for our students to take their courses are included.

7. Projected enrollment in the program.

The projected enrollment at the start of the program is 50 students; we expect a class of 80-100 students at steady state. This will include students across all concentrations. Currently CSBA, one of the concentrations, has graduated on average 48 students annually over the last five years.

8. Name of degree, if applicable, and the anticipated number of degrees to be granted when the program reaches steady state

B.S. In Computer Science Applications with Concentration in [X], 80-100 degrees awarded per year.

9. Potential impact of the new program on existing programs. If the proposed program includes required courses from a department other than the administering department, the proposal must include a statement from the department indicating that it has been consulted and that it will provide access to the required courses.

The new major uses five existing lower division courses offered by the Department of Mathematics (namely: MATH 009A, MATH 009B, MATH 009C, MATH 011/CS 011, MATH 031). All these courses are currently being used by CSBA, CSE, and Statistics for satisfying college/major requirements in the BS degrees offered currently by the CSE and Statistics departments. Given that these courses are also being used by many other departments to satisfy college requirements, we do not expect a major impact in their offerings by the new program.

All other lower and upper division courses required for the new major are currently being taught by the Psychology and Business departments. The Health Science concentration lists courses that are offered by various departments and are part of the list of pre required courses for Health Professions. Chairs of the involved departments have been consulted and have agreed to provide access to the required course sequences (please see included letters from relevant departments).

10. A full listing of resources required for start-up and for operations. In cases where no additional resources will be needed, this must be explicitly stated. This listing may include: personnel (faculty FTE or temporary positions, Teaching Assistants or Readers, administrative staff, technical support); support services including computer facilities and library resources; space requirements. A plan indicating how the resources will be obtained would also be helpful to the committee in reviewing the proposal. A letter of support from the College Dean and/or Executive Vice Chancellor-Provost indicating endorsement as well as a promise of support for the proposal also would be extremely helpful.

- Faculty FTE: the program will use existing faculty from the CSE department.
- Teaching assistants: We estimate that, at full capacity, the new program will need 2-3 TA positions per quarter (this is considering a full capacity of 80 students which translates to 30 students above what CSBA currently has). Such cost, however, will be easily covered by the tuition fees of the new students.
- Administrative Staff: the program will be administered by existing staff and faculty in the CSE Department and will be advised by BCOE's Office of Undergraduate Student Academic Affairs (OSAA). OSAA currently has ten full time advisors that will initially accommodate the CSA students. We don't foresee any need for additional advisors.
- Computer facilities and library resources: no new facilities required
- Space requirements: no new space requirements, growth will be part of the existing CSE department expansion plans

Please see the included letter from BCOE's Dean, Christopher S. Lynch.

11. Both internal and external letters of support should be provided with the proposal. Internal letters of support are often from UCR department chairs and faculty of related programs. The external letters should be from other UC campuses or other peer institutions. Letters from off-campus help to establish the quality of the program and its fit within the context of related programs at other universities. Upon consultation with the CEP the demand for external letters may be waived.

We have included the following letters of support:

- A letter from Christian Shelton (Chair of UCR's Department of Computer Science and Engineering), alongside the record of our department's vote, and the official feedback from our Advisory Board denoting strong support for the program.
- Tuppett M Yates (Department of Psychology's Chair), where she expresses both consent and support for the Psychology concentration.
- Margaret C. Campbell (Chair and Associate Dean of the School of Business) to show continuing support of the Business concentration.

- Charles P Scruggs (Director of the UCR Pre-Professional Advising Center) denoting strong support for the Health Science concentration
- Daryle Williams (Dean of the College of Humanities, Arts, and Social Sciences) supporting the Psychology concentration
- Tony Givargis (Chair of the Department of Computer Science at UC Irvine) as external letter of support for the whole program.
- Dr. Victor Joe (Vice President of UCI Health Medical Staff and Clinical Professor of Surgery at UC Irvine), as external letter of support for the Health Science concentration
- Carla Brodley (Professor, Khoury College of Computer Sciences and Dean of Inclusive Computing at Northeastern University) as external letter of support for the whole program.

12. Approvals from program faculty, College faculty (if the new proposal affects a college regulation), and the appropriate Executive Committee should be obtained before forwarding the new program to the attention of the Senate Analyst for CEP.

- The Computer Science and Engineering Department voted in favor of the proposal on January 22nd, 2025 (see included record of this vote).
- The program doesn't affect a college regulation
- The BCOE Executive Committee discussed and voted in favor of the proposal on February 26th, 2025

13. All proposals for new programs should be submitted to the Senate Chair no later than March 1 of the academic year prior to the fall quarter in which the proposed program is anticipated to go into effect. This schedule should provide sufficient time for Senate review of the proposal to meet the deadline for final consideration of approval at the May Division Meeting.

Appendix A: Program Description

The **Computer Science Applications program** covers the core of computer science and integrates a second discipline as a concentration area. It prepares students for careers that demand multidisciplinary backgrounds with an emphasis on computational methods, or for graduate studies in either discipline.

The objective of the B.S. degree program in **Computer Science Applications** is to prepare graduates for professional practice in both the private and public sectors and for lifelong learning, including the option to pursue graduate degrees, by providing them with:

- Background: The necessary technical competencies, including knowledge of scientific principles and skill at rigorous analysis and creative design.
- Breadth: A broad education that includes knowledge of current issues and trends in society and technology.
- Professionalism: Professional attitudes and ethics, as well as skills for clear communication and responsible teamwork.
- Learning environment: A learning environment that is rigorous, challenging, open, and supportive.

Change of Major Criteria

All students who request a change of major to Computer Science Applications must meet the following requirements:

- Be in good academic standing.
- Have no less than a C- in any Math, Science, or Engineering coursework.
- Be able to complete the major within maximum allowable units.
- Complete all the courses listed below, based on the total number of units earned, prior to submitting the major change request.
- UCR transfer students interested in changing to a BCOE major must have been admissible to the major at the point of entry or must satisfy transfer admission and change of major requirements before earning 120 units.
- If changing in the 90-119 units category, students must have the ability to complete the major within 5 years of entry as a freshmen or 3 years after entry as a transfer student.
- Students who have earned 120 or more units are not eligible for a change of major in BCOE. NOTE: AP/IB units are excluded from the maximum unit calculation.

Completed 0 to less than 45 units

Completion of ENGL 001A with a grade of C or better, a grade of C or better in CS 009A, and completion of the following with at least a 2.700 GPA:

- CS 009A
- CS 009B
- MATH 009A or MATH 09HA
- Any additional Math/Science/Engineering/CS courses (if taken)

Completed 45 to less than 90 units

Completion of ENGL 001A with a grade of C or better, a grade of C or better in both CS 009A and CS 009B, and completion of the following with at least a 2.700 GPA:

- CS 009A
- CS 009B
- MATH 011/CS 011
- MATH 009A or MATH 09HA
- MATH 009B or MATH 09HB
- MATH 009C or MATH 09HC
- And any additional Math/Science/Engineering/CS courses (if taken)

Completed 90 to less than 120 units

Completion of ENGL 001A and ENGL 001B with a grade of C or better, a grade of C or better in both CS 009A and CS 009B, and completion of the following with at least a 2.700 GPA:

- CS 009A
- CS 009B
- MATH 011/CS 011
- CS 061
- MATH 009A or MATH 09HA
- MATH 009B or MATH 09HB
- MATH 009C or MATH 09HC
- And any additional Math/Science/Engineering/CS courses (if taken)

University Requirements

See the Undergraduate Studies section.

College Requirements

See the Marlan and Rosemary Bourns College of Engineering, Colleges and Programs section.

The Computer Science Applications major uses the following major requirements to satisfy some of the college's Natural Sciences and Mathematics breadth requirements and one of the college's English Composition breadth requirements:

1. MATH 007A or MATH 009A
2. ENGR 180W

Major Requirements

The **Computer Science Applications** major has two sets of requirements: a core set and a concentration set. Courses required by a concentration may also be used to satisfy breadth requirements.

Core requirements

1. Lower-division requirements (38 units)
 - a. ENGR 001M
 - b. CS 009A and CS 009B and CS 009C

- c. CS 010C, CS 061
 - d. CS 011/MATH 011
 - e. MATH 009A, MATH 009B, MATH 009C, and either MATH 031 or EE 020B
2. Upper-division requirements (58 units)
- a. ENGR 101M
 - b. CS100, CS 111, CS141, CS153
 - c. ENGR 180W
 - d. STAT 155 or STAT 156A or STAT 160
 - e. CS 105
 - f. CS 178A, CS 178B
 - g. At least twenty (20) units of Computer Science technical electives to be chosen from an approved list of courses which currently includes CS 108, CS110, CS 120A, CS 120B, CS 122A, CS 122B, CS 130, CS131, CS 133, CS 135, CS 142, CS 144, CS 145, CS/EE 147, CS 150, CS 152, CS 160, CS 161, CS 162, CS 164, CS 165, CS 166, CS 167, CS/EE 168, CS 169, CS 170, CS 171, EE 142, CS 172, CS 173, CS 175, CS 177, CS 179 (E-Z) (4 units maximum), CS 180, CS 181, CS 182, CS 183, CS 193 (4 units maximum), MATH 120, MATH 126, MATH 135A, MATH 135B, PHIL 124.

The technical electives selected for 2.g) must be distinct from those used to satisfy the requirements specified in 2.a)–f) above with at least 16 units selected from Computer Science courses.

Concentration (at least 50 units)

Students in the **Computer Science Applications (CSA)** must declare a concentration upon admission to the program. A change in concentration, if justified, should be made at least three quarters prior to graduation.

- 3.1. Psychology (51 units)
- h. PSYC 1, PSYC 2
 - i. PSYC 11, PSYC 12
 - j. At least two courses from CBNS 106 or PSYC 110, PSYC 132 or 134, PSYC 140, PSYC 150, PSYC 160 or PSYC 161 or PSYC 162 or PSYC 163
 - k. At least twenty four (24) units of Psychology technical electives to be chosen from an approved list of courses which currently includes PSYC 109, PSYC 112, PSYC 113, PSYC 115, PSYC 117, PSYC 120, PSYC 121, PSYC 122, PSYC 126, PSYC 128, PSYC 129, PSYC 130, PSYC131, PSYC 132, PSYC 133, PSYC 134, PSYC 135, PSYC 140, PSYC 142, PSYC 148,, PSYC 149, PSYC 152, PSYC 153, PSYC 155, PSYC 160, PSYC 161, PSYC 162, PSYC 163, PSYC 164, PSYC 165A, PSYC 165B, PSYC 166A, PSYC 166B, PSYC 166C, PSYC 166D, PSYC 167, PSYC 168, PSYC 169, PSYC 171, PSYC 175, PSYC 178, PSYC 179, PSYC 181

The technical electives selected for 3.1.d) must be distinct from those used to

satisfy the requirements specified in 3.a)–c) above.

3.2. Business (50 units)

- l. BUS 010, BUS 020
- m. ECON 002, ECON 003
- n. One course of 4 or more units from STAT 008, STAT 010, ECON 101
- o. At least two courses from BUS 102, BUS 103, BUS 104, BUS 105, BUS 106, BUS 107, BUS 109
- p. At least twenty (20) units of Business technical electives to be chosen from an approved list of courses which currently includes BUS 102, BUS 103, BUS 104, BUS 105, BUS 106, BUS 107, BUS 108, BUS 109, BUS 110, BUS 115, BUS 119, BUS 123, BUS 124A, BUS 124B, BUS 125, BUS 128, BUS 129, BUS 130, BUS 163, BUS 166, BUS 171, BUS 172, BUS 173, BUS 174, BUS 175, BUS 179, SOC 150. Additionally, no credit will be given for BUS 101; and the following pairs of courses cannot both be taken for credit: BUS 125 and CS 177, BUS 163 and CS 175, BUS 171 and CS 180, BUS 173 and CS 166, BUS 175 and CS 164.

The technical electives selected for 3.2.e) must be distinct from those used to satisfy the requirements specified in 3.2.a)–d) above.

3.3 Health Science (71 units)

- q. PHYS 2A and 2LA, PHYS 2B and 2LB, PHYS 2C and 2LC
- r. CHEM 001A and 001LA, CHEM 001B and 1LB, CHEM 001C and 001LC
- s. CHEM 008A and 008LA, CHEM 008B and 8LB, CHEM 008C and 008LC
- t. BIOL 005A and BIOL 005LA, BIOL 005B, BIOL 005C
- u. BCH 100 or BCH 110 A
- v. At least three courses from BIOL 102, BIOL 107A, BIOL 110, BIOL 121/L, BIOL 128, BIOL 161 A, BIOL 161B, BIOL 171A, BIOL 171B, SOC 127, SOC 167, PSYC 160, PSYC 178, BCH 110B, BCH 110C, PBPL 160, PBPL 162.

Course Descriptions:

CS 009A Data Oriented Introduction to Computing I (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): MATH 004, may be taken concurrently or MATH 005A, may be taken concurrently or MATH 006A, may be taken concurrently or MATH 007A, may be taken concurrently or MATH 009A, may be taken concurrently or MATH 09HA, may be taken concurrently. Covers computational thinking, problem-solving, and data analysis using the Python language through application-based data manipulation tasks from science, engineering, business, and the humanities. Includes variables, expressions, branches, loops, functions, parameters, lists, strings, file I/O, and exception handling. Also covers software design, testing, and debugging. Credit is awarded for one of the following CS 009A or CS 010A.

CS 009B Data Oriented Introduction to Computing II (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 009A; or equivalent. Covers advanced programming concepts and algorithms through application-based data manipulation tasks from science, engineering, business, and the humanities. Emphasizes good programming principles in the design and development of substantial programs using the Python language. Topics include abstract data types, objects and classes, recursion, and basic software engineering principles. Credit is awarded for one of the following CS 009B or CS 010B.

CS 009C C++ For Programmers (2) Lecture, 1 hour; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 009B, may be taken concurrently; MATH 006B, may be taken concurrently or MATH 007A, may be taken concurrently or MATH 005A, may be taken concurrently or MATH 004, may be taken concurrently or MATH 009A, may be taken concurrently or MATH 09HA, may be taken concurrently. Introduces the constructs provided in the C++ programming language for procedural and object-oriented programming. For those with prior programming experience.

CS 010A Introduction to Computer Science For Science, Mathematics, and Engineering I (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): MATH 004, may be taken concurrently or MATH 005A, may be taken concurrently or MATH 006A, may be taken concurrently or MATH 006B, may be taken concurrently or MATH 007A, may be taken concurrently or MATH 009A, may be taken concurrently or MATH 09HA. Covers problem solving through structured programming of algorithms on computers using the C++ object-oriented language. Includes variables, expressions, input/output (I/O), branches, loops, functions, parameters, arrays, strings, file I/O, and classes. Also covers software design, testing, and debugging. Credit is awarded for one of the following CS 010A or CS 009A. Credit is not awarded for CS 005 or CS 008 if it has already been awarded for CS 010A.

CS 010B Introduction to Computer Science For Science, Mathematics, and Engineering II (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 010A with a grade of C- or better; familiarity with C or C++ language. Covers structured and object-oriented programming in C++. Emphasizes good programming principles and development of substantial programs. Topics include recursion, pointers, linked lists, abstract data types, and libraries. Also covers software engineering principles. Credit is awarded for one of the following CS 010B or CS 009B.

CS 010C Introduction to Data Structures and Algorithms (4) Lecture, 3 hours; laboratory, 3

hours. Prerequisite(s): CS 010B with a grade of C- or better or CS 009C with a grade of C- or better; proficiency in C++. Topics include basic data structures such as arrays, lists, stacks, and queues. Covers dictionaries (including binary search trees and hashing) and priority queues (heaps). Offers an introductory analysis of algorithms, sorting algorithms, and object-oriented programming including abstract data types, inheritance, and polymorphism. Explores solving complex problems through structured software development.

MATH/CS 011 Introduction to Discrete Structures (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 010A or MATH 005C or MATH 007B or MATH 009B or MATH 09HB. Introduction to basic concepts of discrete mathematics emphasizing applications to computer science. Topics include propositional and predicate calculi, elementary set theory, functions, relations, proof techniques, elements of number theory, enumeration, and discrete probability. Cross-listed with CS 011. Cross-listed with CS 011.

CS 061 Machine Organization and Assembly Language Programming (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 010A with a grade of C- or better. An introduction to computer organization. Topics include number representation, combinational and sequential logic, computer instructions, memory organization, addressing modes, interrupt, input/output (I/O), assembly language programming, assemblers, and linkers. Upper-Division Courses

CS 100 Software Construction (5) Lecture, 3 hours; laboratory, 2 hours; discussion, 1 hour; individual study, 1 hour. Prerequisite(s): CS 010C with a grade of C- or better. Emphasizes development of software systems. Topics include design and implementation strategies and selection and mastery of programming languages, environment tools, and development processes. Develops skill in programming, testing, debugging, performance evaluation, component integration, maintenance, and documentation. Covers professional and ethical responsibilities and the need to stay current with technology.

CS 105 Data Analysis Methods (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 009B with a grade of C- or better or CS 010B with a grade of C- or better; restricted to class level standing of sophomore, junior, senior, or masters. An introduction to fundamental concepts and methods in data analysis and visualization essential to a variety of data science tasks. Designed to provide preparation for the data science major and for advanced courses in data analysis and applications of data science.

CS 108 Data Science Ethics (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 105 or STAT 107 or CS 171; or consent of instructor. Covers ethics specifically related to data science. Topics include data privacy; data curation and storage; discrimination and bias arising in the machine learning process; statistical topics such as generalization, causality, curse of dimensionality, and sampling bias; data communication; and strategies for conceptualizing, measuring, and mitigating problems in data-driven decision-making. Cross-listed with STAT 108. Credit is awarded for one of the following CS 108, STAT 108, CS 212, or STAT 212.

CS 110 Principles of Web Development (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 100. Provides an introduction to distributed systems, with a focus on web development techniques and the considerations to application scalability, security, reliability, and redundancy. Provides an in-depth study of technologies used for both back-end and front-end development, and how to design robust applications in the webs constantly evolving landscape.

CS 111 Discrete Structures (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 010A; CS 011 or MATH 011; MATH 009C or MATH 09HC; MATH 031 or EE 020B. A study of discrete mathematical structures emphasizing applications to computer science. Topics include number theory and cryptography, asymptotic notation, recurrence equations, counting methods, elements of graph theory, and trees.

CS 119L Laboratory in Problem Solving and Programming (2) Laboratory, 3 hours; individual study, 3 hours. Prerequisite(s): CS 010C with a grade of C- or better; CS 111 recommended; or consent of instructor. Explores techniques and skills applicable in developing software solutions to real-life algorithmic problems. Emphasizes systematic and rigorous approaches to problem-solving. Covers the end-to-end solution process including formulating models, choosing appropriate algorithmic tools and data structures, designing algorithms, implementation, and testing. Course is repeatable to a maximum of 4 units.

CS 120A Logic Design (5) Lecture, 3 hours; laboratory, 3 hours; individual study, 3 hours. Prerequisite(s): CS 061 with a grade of C- or better. Covers design of digital systems. Includes Boolean algebra; combinational and sequential logic design; design and use of arithmetic logic units, carry-lookahead adders, multiplexors, decoders, comparators, multipliers, flip-flops, registers, and simple memories; state-machine design; and basic register-transfer level design. Uses hardware description languages, synthesis tools, programmable logic, and significant hardware prototyping. Cross-listed with EE 120A.

CS 120B Introduction to Embedded Systems (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 010B; CS 120A or EE 120A. Introduction to hardware and software design of digital computing systems embedded in electronic devices (e.g., digital cameras or portable video games). Includes embedded processor programming, custom processor design, standard peripherals, memories, interfacing, and hardware/software tradeoffs. Involves use of synthesis tools, programmable logic, microcontrollers, and developing working embedded systems. Cross-listed with EE 120B.

CS 122A Intermediate Embedded and Real-Time Systems (5) Lecture, 3 hours; laboratory, 6 hours. Prerequisite(s): CS 010B; CS 120B or EE 120B. Covers software and hardware design of embedded computing systems. Includes hardware and software codesign, advanced programming paradigms (including state machines and concurrent processes), real-time programming, operating systems, basic control systems, modern chip, and design technologies. Laboratories involve use of microcontrollers, embedded microprocessors, programmable logic, advanced simulation, and debug environments.

CS 122B Advanced Embedded and Real-Time Systems (5) Lecture, 3 hours; laboratory, 6 hours. Prerequisite(s): CS 122A. Explores state-of-the-art aspects of building embedded computer systems. Topics include real-time programming, synthesis of coprocessor cores, application-specific processors, hardware and software co simulation and codesign, low-power design, reconfigurable computing, core-based design, and platform-based methodology.

CS 130 Computer Graphics (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 100; MATH 031, may be taken concurrently or EE 020B, may be taken concurrently; or consent of instructor. A study of the fundamentals of computer graphics necessary to design and build graphics applications. Examines raster graphics algorithms including scan-converting graphics primitives, anti-aliasing, and clipping. Also covers geometric transformations, viewing, solid modeling techniques, hidden-surface removal algorithms, color models, illumination, and

shading.

CS 131 Edge Computing (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 100 or EE 120B or CS 120B. Covers industry standards for quality of service and security while leveraging performance constraints. Develops skill in deploying real-world applications using embedded artificial intelligence. Cross-listed with EE 131.

CS 133 Computational Geometry (4) Lecture, 3 hours; laboratory, 1 hour; individual study, 2 hours. Prerequisite(s): CS 100, CS 111, MATH 031; or equivalents. An introduction to the design of geometry algorithms. Covers the basic computational geometry concepts and techniques used in graphics, robotics, and engineering design. Topics include polygons and polytopes, convex hulls, and voronoi diagrams.

CS 135 Virtual Reality (4) Lecture, 3 hours; laboratory, 3 hours. Prerequisite(s): CS 100. Covers the development of virtual reality (VR) worlds, including motion and physics of VR worlds. Includes design practices for immersive experiences, human visual perception, environmental and social interactions. Also includes positional tracking with sensors, augmented and mixed reality, and storage and transmission of virtual reality worlds.

CS 141 Intermediate Data Structures and Algorithms (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 010C with a grade of C- or better; CS 111; MATH 009C or MATH 09HC; proficiency in C++. Explores basic algorithm analysis using asymptotic notations, summation and recurrence relations, and algorithms and data structures for discrete structures including trees, strings, and graphs. Also covers general algorithm design techniques including “divide-and-conquer,” the greedy method, and dynamic programming. Integrates knowledge of data structures, algorithms, and programming.

CS 142 Algorithm Engineering (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 100, CS 141; or equivalent. Covers the design and implementation of sequential, parallel, cache-efficient, external-memory, and write-efficient algorithms for fundamental computational problems including sorting, searching, as well as a selection of problems in algebra, geometry, combinatorial optimization, and string processing. Emphasizes practical aspects of algorithm design, efficient implementation, and experimental methodology for performance evaluation.

274 |

CS 144 Algorithms For Bioinformatics (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 141. Introduces fundamental algorithms and data structures for solving analytical problems in molecular biology and genomics. Includes exact and approximate string matching; sequence alignment; genome assembly; and gene and regulatory motifs recognition. Credit is awarded for one of the following CS 144, CS 234, or CS 238.

CS 145 Combinatorial Optimization Algorithms (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 141; MATH 031 or MATH 131. The study of efficient algorithm design techniques for combinatorial optimization problems. Topics include shortest paths, minimum spanning trees, network flows, maximum matchings, stable matchings, linear programming, duality, two-person games, algorithmic techniques for integer programming problems, NP-completeness, and approximation algorithms.

CS 147 Graphics Processing Unit Computing and Programming (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): EE 120B or CS 120B. Introduces principles and practices of programming graphics processing units (GPUs) using the parallel programming environment. Covers memory/threading models, common data-parallel programming patterns and libraries

needed to develop high-performance parallel computing applications. Examines computational thinking; a broader range of parallel execution models; and parallel programming principles. Cross-listed with EE 147.

CS 150 Automata and Formal Languages (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 010C with a grade of C- or better; CS 111; MATH 009C or MATH 09HC. A study of formal languages. Includes regular and context-free languages; computational models for generating these languages such as finite-state automata, pushdown automata, regular expressions, and context-free grammars; mathematical properties of the languages and models; and equivalence between the models. Also introduces Turing machines and decidability.

CS 152 Compiler Design (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 061; CS 100; CS 111; CS 150. Covers the fundamentals of compiler design. Includes lexical analysis, parsing, semantic analysis, compile-time memory organization, run-time memory organization, code generation, and compiler portability issues.

CS 153 Design of Operating Systems (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 061; CS 100; CS 111; C++ programming proficiency. Covers the principles and practice of operating system design. Includes concurrency, memory management, file systems, protection, security, command languages, scheduling, and system performance.

CS 160 Concurrent Programming and Parallel Systems (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 061; CS 100; CS 111. A study of concurrent and parallel systems. Topics include modular structure and design, interprocess communication, synchronization, failures, persistence, and concurrency control. Also covers atomic transactions, recovery, language support, distributed interprocess communication, and implementation mechanisms. Provides preparation for the study of operating systems, databases, and computer networking.

CS 161 Design and Architecture of Computer Systems (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): EE 120A or CS 120A. A study of the fundamentals of computer design. Topics include the performance evaluation of microprocessors; instruction set design and measurements of use; microprocessor implementation techniques including multicycle and pipelined implementations; computer arithmetic; memory hierarchy; and input/output (I/O) systems.

CS 161L Laboratory in Design and Architecture of Computer Systems (2) Lecture, 1 hour; laboratory, 3 hours. Prerequisite(s): CS 161 (may be taken concurrently). Covers the design and simulation of a complete computer system using hardware description language and simulator. Topics include instruction set architecture design; assemblers; datapath and control unit design; arithmetic and logic unit; memory and input/output (I/O) systems; and integration of all parts into a working computer system.

CS 162 Computer Architecture (4) Lecture, 3 hours; laboratory, 3 hours. Prerequisite(s): CS 161 with a grade of "C-" or better. The study of advanced processor design. Topics include CPU pipelining, data and control hazards, instruction-level parallelism, branch prediction, and dynamic scheduling of instructions. Also covers Very Long Instruction Word (VLIW) processing, multimedia support, design of network and embedded processors, basic multiprocessor design, shared memory and message passing, and network topologies.

CS 164 Computer Networks (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour.

Prerequisite(s): CS 100; CS 111; CS 153. Covers the fundamentals of computer networks. Topics include layered network architecture, communication protocols, local area networks, UNIX network programming, verification, network security, and performance studies.

CS 165 Computer Security (4) Lecture, 3 hours; laboratory, 3 hours. Prerequisite(s): CS 141, CS 153. Examines the ways in which information systems are vulnerable to security breaches. Topics include attacks; security labels, lattices, and policies; safeguards and countermeasures; intrusion detection; authorization and encryption techniques; networks; digital signatures, certificates, and passwords; privacy issues, firewalls, and spoofing; Trojan horses and computer viruses; CERT Coordination Center; and electronic commerce.

CS 166 Database Management Systems (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 100; CS 111. Covers basic concepts of databases and database management systems. Topics include entity-relationship modeling for design, relational data model, relational algebra, Structured Query Language (SQL), secondary storage, indexing and hashing, query evaluation and optimization, and overview of transactions.

CS 167 Introduction to Big-Data Management (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 100, CS 111; CS 167 online section: enrollment in the online Master-of-Science in Engineering program. Introduces the architecture of big-data systems and their applications in data management and processing. Describes the common functionality in big-data processing such as distributed storage, resource management, query processing, fault-tolerance, and programming APIs. Covers the popular big-data technologies such as distributed shared-nothing systems, NoSQL processing model, and semi-structured data management.

CS 168 Introduction to Very Large Scale Integration Design (4) Lecture, 3 hours; laboratory, 3 hours. Prerequisite(s): CS 120A or EE 120A; or consent of instructor. Studies integrated circuit fabrication, device characterization, and circuit simulation. Introduces basic device physics and physical design rules, MOS logic design, and timing and clock schemes. Covers layout generation, subsystem designs, and circuits for alternative logic styles. Also covers design and simulation using hardware description language and CAD tools. Cross-listed with EE 168. Credit is awarded for one of the following EE 168, CS 168, or EE 282A.

CS 169 Mobile Wireless Networks (4) Lecture, 3 hours; laboratory, 2 hours; extra reading, 1 hour. Prerequisite(s): CS 153 or consent of instructor. Introduces the fundamentals of wireless and mobile networks. Covers wireless channel models, MAC protocols, and wireless network architectures. Also covers cellular, WLAN and ad hoc networks, and routing in multi-hop wireless networks. Includes wireless security and the impact of wireless links on TCP and other transport layer solutions.

CS 170 Introduction to Artificial Intelligence (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 100 with a grade of "C-" or better, CS 111. An introduction to the field of artificial intelligence. Focuses on discrete-valued problems. Covers heuristic search, problem representation, and classical planning. Also covers constraint satisfaction and logical inference.

CS 171 Introduction to Machine Learning and Data Mining (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): MATH 010A; MATH 031 or EE 020B; STAT 155 or EE 114 or STAT 156A; CS 100 or EE 016. Introduces formalisms and methods in data mining and machine learning. Topics include data representation, supervised learning, and classification. Covers regression and clustering. Also covers rule learning, function approximation, and margin-based

methods. Cross-listed with EE 142.

CS 172 Introduction to Information Retrieval (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 100; CS 111; EE 114 or STAT 155. Introduces information retrieval (IR) principles and techniques for indexing and searching document collections. Topics include Web search, text processing, ranking algorithms, search in social networks, and search evaluation. Also studies scalability issues in search engines. Satisfactory (S) or No Credit (NC) grading is not available.

CS 173 Introduction to Natural Language Processing (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 100; CS 111; EE 114 or STAT 155. An overview of modern approaches for natural language processing. Focuses on major algorithms used in NLP for various applications such as part-of-speech tagging, parsing, named entity recognition, coreference resolution, sentiment analysis, and machine translation.

CS 175 Entrepreneurship in Computing (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 100; restricted to class level standing of junior, or senior. Introduces business and technological concepts to create companies based on computer technology. Covers technical aspects of real-world IT projects. Includes developing software and services; understanding user requirements; designating usable systems; and assessing technology. Addresses market analysis and strategy; legal and intellectual property; ethics and communication issues; and financial analysis.

CS 177 Modeling and Simulation (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 100; CS 111; C++ programming proficiency. Covers validation of random number sequences; concepts in modeling and systems analysis; and conceptual models and their mathematical and computer realizations. Examines simulation modeling techniques including object-oriented modeling and discrete-event modeling. Emphasizes the use of simulation libraries used with programming languages such as C++.

CS 178A Project Sequence in Computer Science and Engineering (4) Lecture, 1 hour; laboratory, 2 hours; individual study, 1 hour; practicum, 6 hours. Prerequisite(s): CS 141, ENGR 180W; restricted to class level standing of senior. Incorporates the proposal, design, building, testing, and documenting of software and hardware devices or systems under the direction of a faculty member. Emphasizes professional and ethical responsibilities and the need to stay current on technology and its global impact on economics, society, and the environment. Completed together, CS 178A and CS 178B may be applied as a substitute for the CS 179 (E-Z) CS major requirement. Graded In Progress (IP) until CS 178A and CS 178B are completed, at which time, a final letter grade is assigned.

CS 178B Project Sequence in Computer Science and Engineering (4) Lecture, 1 hour; laboratory, 2 hours; individual study, 1 hour; practicum, 6 hours. Prerequisite(s): CS 178A; restricted to class level standing of senior. Incorporates the proposal, design, building, testing, and documenting of software and hardware devices or systems under the direction of a faculty member. Emphasizes professional and ethical responsibilities and the need to stay current on technology and its global impact on economics, society, and the environment.

CS 179 (E-Z) Project in Computer Science (4) Prerequisite(s): CS 100 with a grade of C- or better; CS 152 with a grade of C- or better; ENGR 180W. For hours and prerequisites, see segment descriptions. Under the direction of a faculty member, student teams propose, design, build, test, and document software and/or hardware devices or systems. Emphasizes

professional and ethical responsibilities and the need to stay current on technology and its global impact on economics, society, and the environment.

CS 179E Project in Computer Science: Compilers (4) Discussion, 1 hour; laboratory, 3 hours; research, 3 hours; extra reading, 3 hours. Prerequisite(s): CS 100 and CS 152 with grades of “C-” or better; ENGR 180W; 8 additional upper-division units in Computer Science. Covers the planning, design, implementation, testing, and documentation of a compiler-related system. Incorporates techniques from previous related courses. Emphasizes professional and ethical responsibilities; the need to stay current on technology; and its global impact on economics, society, and the environment.

CS 179F Project in Computer Science: Operating Systems (4) Discussion, 1 hour; laboratory, 3 hours; research, 3 hours; extra reading, 3 hours. Prerequisite(s): CS 153 with a grade of “C-” or better; ENGR 180W; 8 additional upper-division units in Computer Science. CS 160 is recommended. Covers the planning, design, implementation, testing, and documentation of an operating systems-related system. Incorporates techniques from previous related courses. Emphasizes professional and ethical responsibilities; the need to stay current on technology; and its global impact on economics, society, and the environment.

CS 179G Project in Computer Science: Database Systems (4) Discussion, 1 hour; laboratory, 3 hours; research, 3 hours; extra reading, 3 hours. Prerequisite(s): CS 100 with a grade of C- or better; CS 166 with a grade of C- or better or CS 167 with a grade of C- or better; ENGR 180W; 8 additional upper-division units in Computer Science. Covers the planning, design, implementation, testing, and documentation of a database-related system. Incorporates techniques from previous related courses. Emphasizes professional and ethical responsibilities; the need to stay current on technology; and its global impact on economics, society, and the environment.

CS 179I Project in Computer Science: Networks (4) Discussion, 1 hour; laboratory, 3 hours; research, 3 hours; extra reading, 3 hours. Prerequisite(s): CS 100 and CS 164 with grades of “C-” or better; ENGR 180W; 8 additional upper-division units in Computer Science. Covers the planning, design, implementation, testing, and documentation of a network-related system. Incorporates techniques from previous related courses. Emphasizes professional and ethical responsibilities; the need to stay current on technology; and its global impact on economics, society, and the environment.

CS 179J Project in Computer Science: Computer Architecture and Embedded Systems (4) Discussion, 1 hour; laboratory, 3 hours; research, 3 hours; extra reading, 3 hours. Prerequisite(s): CS 100, CS 111, CS 120B/EE 120B, and CS 161 with grades of “C-” or better or consent of instructor; ENGR 180W; 3 additional upper-division units in Computer Science. Covers the planning, design, implementation, testing, and documentation of a computer architecture and embedded systems-related system. Incorporates using techniques presented in previous related courses. Emphasizes professional and ethical responsibilities; the need to stay current on technology; and its global impact on economics, society, and the environment.

CS 179K Project in Computer Science: Software Engineering (4) Discussion, 1 hour; laboratory, 3 hours; research, 3 hours; extra reading, 3 hours. Prerequisite(s): CS 180; ENGR 180W; 8 additional upper-division units in Computer Science. Covers the planning, design, implementation, testing, and documentation of a software engineering-related system. Incorporates techniques presented in previous related courses. Emphasizes professional and

ethical responsibilities; the need to stay current on technology; and its global impact on economics, society, and the environment.

CS 179M Project in Computer Science: Artificial Intelligence (4) Discussion, 1 hour; laboratory, 3 hours; research, 3 hours; extra reading, 3 hours. Prerequisite(s): CS 100, CS 111, and CS 170 with grades of “C-” or better; ENGR 180W; 8 additional upper-division units in Computer Science. Covers the planning, design, implementation, testing, and documentation of an artificial intelligence-related system. Incorporates techniques presented in previous related courses. Emphasizes professional and ethical responsibilities; the need to stay current on technology; and its global impact on economics, society, and the environment.

276 |

CS 179N Project in Computer Science: Graphics and Electronic Games (4) Discussion, 1 hour; laboratory, 3 hours; research, 3 hours; extra reading, 3 hours. Prerequisite(s): CS 130 with a grade of C- or better; ENGR 180W; 8 additional upper-division units in Computer Science. Covers the planning, design, implementation, testing, and documentation of a graphics or electronic game-related system. Incorporates using techniques presented in previous related courses. Emphasizes professional and ethical responsibilities; the need to stay current on technology; and its global impact on economics, society, and the environment.

CS 180 Introduction to Software Engineering (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 100. A study of software engineering techniques for the development, maintenance, and evolution of large software systems. Topics include requirements and specification; system design and implementation; debugging, testing, and quality assurance; reengineering; project management; software process; tools; and environments.

CS 181 Principles of Programming Languages (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 061; CS 100; CS 111; CS 150. Covers the principles of programming language design. Includes the study and comparison of several programming languages, their features, and their implementations.

CS 182 Software Testing and Verification (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 100. A study of modern techniques to assess the quality of software artifacts through functional, performance, and reliability testing. Introduces black box and white box testing techniques. Covers the application of modern testing tools to software units, components, subsystems, and entire systems. Also covers verification as a complementary technique to testing.

CS 183 Unix System Administration (4) Lecture, 3 hours; laboratory, 2 hours; individual study, 1 hour. Prerequisite(s): CS 100. Explores the technical aspects of system administration on a Unix system including advanced Unix. Includes managing system devices, operating system installation, communications, and networking.

CS 193 Design Project (1 to 4) Laboratory, 1 to 6 hours; scheduled research, 1 to 3 hours; individual study, 1 to 3 hours. Prerequisite(s): CS 141; consent of instructor. Individual hardware or software design project to include establishment of objectives and criteria, synthesis, analysis, implementation, testing, and documentation. Course is repeatable to a maximum of 8 units.

ENGR 001M Professional Development and Mentoring (1) Activity, 30 hours per quarter. Prerequisite(s): freshman standing in the Bourns College of Engineering. Provides freshmen

with involvement in professional development activities. Activities to be performed are program-specific, and may include projects, industry overviews and interactions, involvement with professional societies and clubs, team building, career guidance, and coverage of ethics and lifelong learning issues. E. Bioengineering; F. Chemical Engineering; G. Computer Engineering; I. Computer Science; J. Electrical Engineering; K. Environmental Engineering; M. Computer Science with Business Applications.

ENGR 101M Professional Development and Mentoring (1) Activity, 30 hours per quarter. Prerequisite(s): restricted to class level standing of junior; restricted to major(s) Bioengineering, Bioengineering BS + MS, Chemical Engineering, Chemical Engineering BS + MS, Computer Engineering, Computer Science, Computer Science BS + MS, Electrical Engineering, Electrical Engineering BS + MS, Environmental Engineering, Environmental Engr BS + MS, Materials Science and Engineer, Mechanical Engineering, Mechanical Engineering BS + MS. Provides opportunities with involvement in professional development activities. May include projects, industry overviews and interactions, involvement with professional societies and clubs, team building, career guidance, and coverage of ethics and lifelong learning issues. E. Bioengineering; F. Chemical Engineering; G. Computer Engineering; I. Computer Science; J. Electrical Engineering; K. Environmental Engineering; M. Computer Science With Business Applications.

ENGR 180W Technical Communications (4) Lecture, 3 hours; workshop, 3 hours. Prerequisite(s): ENGL 001B with a grade of C or better, ENGL 007, may be taken concurrently; for concurrent enrollment in ENGL 007, review the course titles or topics in the current online Schedule of Classes to find the corresponding ENGL 007 writing workshop; restricted to class level standing of junior, or senior. Develops oral, written, and graphical communication skills. Includes preparing and critiquing reports, proposals, instructions, and business correspondence. Emphasizes professional and ethical responsibilities and the need to stay current on technology and its global impact on economics, society, and the environment. Fulfills the third-quarter writing requirement for students who earn a grade of "C" or better for courses that the Academic Senate designates, and that the student's college permits, as alternatives to English 001C.

MATH 009A First-Year Calculus (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): MATH 005A with a grade of C- or better or MATH 006B. Introduction to the differential calculus of functions of one variable. Credit is awarded for one of the following MATH 009A, MATH 005B, MATH 007A, or MATH 09HA.

MATH 009B First-Year Calculus (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): MATH 005B with a grade of C- or better or MATH 009A or MATH 09HA. Introduction to the integral calculus of functions of one variable. Credit is awarded for one of the following MATH 009B, MATH 005C, MATH 007B, or MATH 09HB.

MATH 009C First-Year Calculus (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): MATH 009B with a grade of "C-" or better or MATH 09HB with a grade of "C-" or better. Further topics from integral calculus, improper integrals, infinite series, Taylor's series, and Taylor's theorem. Credit is awarded for only one of MATH 009C or MATH 09HC.

MATH 031 Applied Linear Algebra (5) Lecture, 3 hours; discussion, 2 hours. Prerequisite(s): CS 010A with a grade of C- or better or MATH 005C with a grade of C- or better or MATH 007B with a grade of C- or better or MATH 009B with a grade of C- or better or MATH 09HB with a grade of C- or better. A study of matrices and systems of linear equations, determinants,

Gaussian elimination, vector spaces, linear independence and linear transformation, orthogonality, eigenvalues, and eigenvectors. Also examines selected topics and applications. Credit is awarded for one of the following MATH 031 or EE 020B.

STAT 155 Probability and Statistics for Science and Engineering (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): MATH 009C, may be taken concurrently or MATH 09HC, may be taken concurrently. Covers sample spaces and probability; random variables and probability distributions; elements of statistical inference; and testing and estimation. Also addresses selected topics in multivariate distributions and introduces stochastic processes. Credit is not awarded for STAT 155 if it has already been awarded for STAT 156A or STAT 160A.

STAT 156A Mathematical Statistics with Applications for Data Science I (4) -- *new course*-- Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): MATH 009C or consent of instructor. Introduction to frequentist probability concepts, random variables, and their distributions. Discussion of key theorems and inequalities in probability theory. Introduction to frequentist methods of point and interval estimation.

STAT 160A Elements of Probability and Statistical Theory (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): MATH 009C, may be taken concurrently or MATH 09HC, may be taken concurrently. Topics include statistical regularity, probability spaces, fundamental theorems in discrete probability, Bayes' theorem, random variables, densities and distribution functions, and continuous distributions. Credit is awarded for one of the following STAT 160A or STAT 156A.

PSYCHOLOGY CONCENTRATION

PSYC 001 Introductory Psychology 4 Lecture, 3 hours; discussion, 1 hour. An introduction to psychology as an experimental science. Emphasizes topics in cognitive (including learning, memory, sensation, perception), comparative, and physiological psychology.

PSYC 002 Introductory Psychology 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): none. Emphasizes topics in developmental psychology, tests and measurements, social psychology, personality, and abnormal behavior.

PSYC 011 Psychological Methods: Statistical Procedures 5 Lecture, 3 hours; discussion, 2 hours. Prerequisite(s): MATH 004 with a grade of C- or better or MATH 005A with a grade of C- or better or MATH 006A with a grade of C- or better or MATH 006B with a grade of C- or better or MATH 007A with a grade of C- or better or MATH 007B with a grade of C- or better or MATH 009A with a grade of C- or better or MATH 09HA with a grade of B or better or MATH 009B with a grade of C- or better or MATH 09HB with a grade of B or better or MATH 009C with a grade of C- or better or MATH 09HC with a grade of B or better or MATH 010A with a grade of C- or better or MATH 010B with a grade of C- or better or MATH 022 with a grade of C- or better; PSYC 001 with a grade of C- or better; PSYC 002 with a grade of C- or better; or a score on the Math Advisory Exam sufficient for placement into MATH 022 or higher. Covers descriptive and inferential statistics, measures of central tendency, variability, and correlation. Introduces sampling distributions, statistical inference, and hypothesis testing.

PSYC 012 Psychological Methods: Research Procedures 6 Lecture, 3 hours; laboratory, 3 hours; research, 3 hours; term paper, 1 hour; extra reading, 2 hours. Prerequisite(s): ENGL

001B with a grade of C or better; PSYC 001 with a grade of C- or better; PSYC 002 with a grade of C- or better; PSYC 011 with a grade of C- or better; MATH 004 with a grade of C- or better or MATH 005A with a grade of C- or better or MATH 006A with a grade of C- or better or MATH 006B with a grade of C- or better or MATH 007A with a grade of C- or better or MATH 007B with a grade of C- or better or MATH 009A with a grade of C- or better or MATH 09HA with a grade of B or better or MATH 009B with a grade of C- or better or MATH 09HB with a grade of B or better or MATH 009C with a grade of C- or better or MATH 09HC with a grade of B or better or MATH 010A with a grade of C- or better or MATH 010B with a grade of C- or better or MATH 022 with a grade of C- or better; or equivalent; a score on the Math Advisory Exam sufficient for placement into MATH 022 or higher; consent of instructor is required for students repeating the course. A systematic survey of research methodologies in psychology. Laboratory assignments include evaluating and testing psychological theories; assessing methodologies and research designs; designing and implementing research; collecting data and analyzing statistics; writing research reports; and discussing ethical issues in science.

CBNS 106 Introduction to Neuroscience 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BIOL 005A and BIOL 005B with grades of "C-" or better, CHEM 001A, CHEM 001B, CHEM 001C; or consent of instructor. An introduction to cellular, organismal, and behavioral neuroscience for science majors. Topics include structure and functions of the brain, neurons, and synapses; sensory systems and perception; control of movement; neurobiology of hormones and sexual behavior; biorhythms; learning; memory; and psychoses.

PSYC 109 Advanced Research Methods 4 Lecture, 3 hours; laboratory, 3 hours. Prerequisite(s): PSYC 001, PSYC 002, PSYC 011, PSYC 012, each with a grade of "B-" or better; or equivalents; or consent of instructor. Advanced theory and practice of planning, conducting, reporting, and evaluating research in the social and behavioral sciences. Students conduct original research that, if desired, can lead to (and become part of) a senior honors thesis or other senior-level research project. Satisfactory (S) or No Credit (NC) grading is not available.

PSYC 110 The Brain and Behavior 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 001 with a grade of "C-" or better, or equivalents, or consent of instructor. Explores the principles of neuroanatomy and neurophysiology and their relationship to brain function. Topics include sensory and perceptual processes, biological aspects of learning and memory, motivation, emotion, language, and abnormal behavior.

PSYC 112 Neural Mechanisms of Animal Behavior 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CBNS 106 with a grade of "C-" or better or PSYC 110 with a grade of "C-" or better or consent of the instructor. Studies how the nervous systems of vertebrates and invertebrates contribute to and control their behavior. Focuses on aspects of sensory physiology with a brief orientation to the structure and function of nervous systems. Emphasizes a top-down approach to neurobiology, with specific behaviors providing guidelines for an examination of neural mechanisms.

PSYC 113 Pandemic Biopsychology: From Virus to Vaccine 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 001 with a grade of C- or better, PSYC 002 with a grade of C- or better, PSYC 011 with a grade of C- or better, PSYC 012 with a grade of C- or better; or consent

of instructor. Explores pandemics through analyses of historical events, scientific research investigating viruses related to global outbreaks, human immune response to infection, and how different vaccines (adenovirus, mRNA) are created and function in human systems. Also examines how pandemics impact people's sense of security, mental health, and personal well-being.

PSYC 115 Drugs and Behavior 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CBNS 106 with a grade of "C-" or better or PSYC 110 with a grade of "C-" or better or consent of instructor. Describes both legal and illegal drugs. Analyzes drug-nervous system interactions and how the use of various drugs (particularly drugs of abuse) affects behavior and psychological well-being.

PSYC 117 Cognitive Neuroscience of Memory and Consciousness 4 Seminar, 3 hours; extra reading, 3 hours. Prerequisite(s): CBNS 106 with a grade of "C-" or better or PSYC 110 with a grade of "C-" or better. Surveys the neural basis of mental processes, focusing on memory and consciousness and their behavioral manifestations. Emphasizes current research literature.

PSYC 120 Cellular Neuroscience: Membrane and Synaptic Phenomena 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CBNS 106 or consent of instructor. An examination of cellular and molecular mechanisms of nervous system function using concepts drawn from the study of vertebrates and invertebrates with emphasis on mammalian systems. Cross-listed with CBNS 120.

PSYC 121 Developmental Neuroscience 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CBNS 106 or consent of instructor. A study of the development of nervous systems. Examines the cellular and molecular mechanisms of neural development and the determinants of cell birth and death, axonal pathfinding, neuronal connections, and development of neural systems underlying behavior. Cross-listed with CBNS 121.

PSYC 122 Human Neuroimaging 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 110 or CBNS 106 or consent of instructor. PSYC 122 can be taken without PSYC 122L. An introduction to magnetic resonance imaging in psychological research with an emphasis on the merits and limitations of structural and functional neuroimaging in humans.

PSYC 126 Neuroscience of Learning and Memory 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CBNS 106 or PSYC 110; or consent of instructor. Covers mechanisms of learning and memory across levels of analysis including genetic, neuronal, systems, and theory. Topics include the multiple memory systems, memory consolidation, working memory, emotional memory, recognition memory, spatial memory, and human amnesia. Cross-listed with CBNS 126.

PSYC 128 Language and the Brain 4 Lecture, 3 hours; research, 2 hours; extra reading, 2 hours. Prerequisite(s): LING 020 or PSYC 110 or PSYC 135 or CBNS 106; or consent of

instructor. Interdisciplinary introduction to the study of language and the brain. Includes brain evolution for language, neural bases for language production and language comprehension, aphasiology and language disorders, and additional special topics. Cross-listed with LING 162.

PSYC 129 Human Neuropsychology 4 Lecture, 3 hours; discussion, 1.5 hours. Prerequisite(s): a grade of "C-" or better in one of the following courses or consent of instructor: CBNS 106, PSYC 110, PSYC 132, PSYC 134, PSYC 135. Surveys how high psychological functions (e.g., perception, memory, language) are organized in the human brain. Special emphasis is on behavioral and cognitive impairments due to brain injury and how they may inform our view of normal cognitive functions.

PSYC 130 Fundamentals of Learning and Conditioning 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 001, PSYC 002, PSYC 011, PSYC 012 with grades of "C-" or better; or equivalents; or consent of instructor. A survey course that includes both historical and current models of human learning, conditioning, and memory. Provides a good foundation for research or future study in learning and memory by covering fundamental theories established by Pavlov and Skinner while incorporating new theories of human behavioral control.580 |

PSYC 131 Computational and Mathematical Models in Cognitive Science 4 Lecture, 3 hours; extra reading, 1.5 hours; written work, 1.5 hours. Prerequisite(s): a grade of "C-" or better in PSYC 001, PSYC 002, PSYC 011, PSYC 012 or consent of instructor. Introduces students to the technical and theoretical issues involved in using models to understand behavior. Involves analysis of model predictions and simulation of behavioral data. Course is repeatable to a maximum of 12 units if taken with different instructors.

PSYC 132 Perception 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 001, PSYC 002, PSYC 011, PSYC 012 with grades of "C-" or better; or equivalents; or consent of instructor. An analysis of the role played by sensory mechanisms, experiences, expectations, and needs in recognizing objects in the environment.

PSYC 133 Human Factors 4 Lecture, 3 hours; extra reading, 3 hours; term paper, 1 hour. Prerequisite(s): a grade of "C-" or better in one of the following courses or consent of instructor: PSYC 132 or PSYC 134. Provides an overview of the human capabilities and limitations considered in the design of person-machine systems. Evaluates factors critical to performance in person-machine systems, including attention, decision making, motor performance, and memory.

PSYC 134 Cognitive Processes 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 001 with a grade of C- or better; PSYC 002 with a grade of C- or better; PSYC 011 with a grade of C- or better; PSYC 012 with a grade of C- or better; or consent of instructor. Addresses empirical and theoretical research in several subareas within contemporary cognitive psychology. Subareas include attention, mental representation, information organization and retrieval from memory, psycholinguistics, problem solving, decision making, thinking, and artificial intelligence and computer simulation of cognitive processes.

PSYC 135 Psycholinguistics 4 Lecture, 3 hours; extra reading, 3 hours. Prerequisite(s): a grade of "C-" or better in the following courses or consent of instructor: PSYC 001, PSYC 002, PSYC 011, PSYC 012. Introduction to psycholinguistics emphasizing the psychological implications of linguistic theory, including the effect of syntactic structure on the comprehension, production, and retention of speech; the course of language acquisition; and models of the adult language user.

PSYC 140 Social Psychology 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 001, PSYC 002, PSYC 011, PSYC 012 with grades of "C-" or better; or equivalents; or consent of instructor. The relationship between the individual and the group, including such topics as conformity and deviance, attraction and prejudice, altruism and aggression, and the social nature of attitudes.

PSYC 142 Industrial/Organizational Psychology 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 002. Introduction to the field of industrial/organizational psychology covering fundamental theory and research in personnel and organizations. Topics include employee selection and training, performance appraisal, motivation, organizational dynamics, leadership, and job satisfaction.

PSYC 148 Topics in Social Psychology 4 Lecture, 3 hours; extra reading or term paper, 3 hours. Prerequisite(s): a grade of "C-" or better in the following courses or consent of instructor: PSYC 001, PSYC 002, PSYC 011, PSYC 012, PSYC 140. Intensive study of selected topics in social psychology such as race relations, attitude formation and change, biases of social science researchers, and the application of psychological principles in community organization. Emphasis is on the study of these areas in natural settings. Specific course content varies. Course is repeatable to a maximum of 16 units.

PSYC 149 The Science of Well-Being 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 001 and PSYC 002. Covers current theory and research in positive psychology and the scientific study of optimal human functioning. Topics include the causes and benefits of happiness; how happiness can be measured and increased; positive emotions; flow; and human strengths and virtues including optimism, love, altruism, forgiveness, and gratitude.

PSYC 152 Abnormal Psychology 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 001, PSYC 002, PSYC 011, PSYC 012 with grades of "C-" or better; or equivalents; or consent of instructor. An introduction to the research and theories regarding the major types of abnormal behavior, including the neuroses, schizophrenia, psychosomatic disorders, sexual disorders, drug and stress induced states, and organic disorders.

PSYC 153 Introduction to Clinical Psychology 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): a grade of "C-" or better in the following courses or consent of instructor: PSYC 001, PSYC 002, PSYC 011, PSYC 012, PSYC 152. Introduction to the field of clinical psychology. Emphasizes the application and evaluation of techniques of individual and group counseling and therapy. Also addresses the application and evaluation of psychological tests in the assessment of psychological problems.

PSYC 155 Personality Assessment 4 Lecture, 3 hours; extra reading, 3 hours. Prerequisite(s): a grade of "C-" or better in the following courses or consent of instructor: PSYC 001, PSYC 002, PSYC 011, PSYC 012, PSYC 150. Covers the assessment of personality through self-report tests, projective tests, and systematic observations. Also entails descriptions of the psychometrics of testing as it applies to the problems in studying personality.

PSYC 160 Life Span Development 5 Lecture, 3 hours; discussion, 1 hour; term paper, 3 hours. Prerequisite(s): PSYC 001 with a grade of C- or better; PSYC 002 with a grade of C- or better; PSYC 011 with a grade of C- or better; PSYC 012 with a grade of C- or better. Introduces the biological, social, and cognitive processes that influence development from the prenatal period through late adulthood. Topics include development in physical, motor, perceptual, cognitive, emotional, and social areas. Includes discussion of issues related to intellectual functioning, personality, social roles and relationships, coping and adjustment, and aging.

PSYC 161 Socioemotional and Personality Development 5 Lecture, 3 hours; discussion, 1 hour; term paper, 3 hours. Prerequisite(s): PSYC 001 with a grade of C- or better; PSYC 002 with a grade of C- or better; PSYC 011 with a grade of C- or better; PSYC 012 with a grade of C- or better; or consent of instructor. A study of the development of human personality from birth through late adolescence. Emphasizes the impact of interpersonal relationships on the acquisition of human traits, emotional reactions, and patterns of adjustment.

PSYC 162 Biological Issues in Development 5 Lecture, 3 hours; discussion, 1 hour; term paper, 3 hours. Prerequisite(s): PSYC 001, PSYC 002, PSYC 011, and PSYC 012 with grades of "C-" or better; or equivalents; or consent of instructor. Examines biological processes that influence behavior and development across the life span. Discusses contemporary theoretical approaches to the study of biological, genetic, and environmental influences on development. Topics include behavioral genetics, developmental neuroscience, and the impact of early environments and stress on adaptation and resilience.

PSYC 163 Cognitive Development 5 Lecture, 3 hours; discussion, 1 hour; term paper, 3 hours. Prerequisite(s): PSYC 001, PSYC 002, PSYC 011, and PSYC 012 with grades of "C-" or better; or equivalents; or consent of instructor. An analysis of intellectual development from birth through maturity and into stages of aging. Discusses historical and contemporary theoretical and experimental approaches to studying the mechanisms of intellectual growth and development.

PSYC 164 Emotional and Behavioral Disorders of Childhood 4 Lecture, 3 hours; extra reading, 3 hours. Prerequisite(s): PSYC 001, PSYC 002, PSYC 011, PSYC 012, PSYC 152, and PSYC 160 with grades of C- or better; or equivalents; or consent of instructor. Provides an overview of behavioral and emotional disorders affecting children and adolescents within a developmental context. Examines disorders affecting youth in terms of prevalence, developmental course, and theories. Topics include theoretical models of child psychopathology; diagnostic, assessment, and treatment practices; and the descriptive psychopathology of major childhood disorders.

PSYC 165A The Cultural Bases of Human Development 4 Lecture, 3 hours; extra reading, 3 hours. Prerequisite(s): PSYC 001, PSYC 002, PSYC 011, and PSYC 012 with grades of “C-” or better; or equivalents; or consent of instructor. Examines the social, emotional, and intellectual aspects of human development from a cultural perspective. Covers theory, research, and methods of studying the cultural bases of psychological growth. Topics include socialization practices, parenting, social relations, language and cognition, schooling and academic achievement, acculturation, and ethnicity.

PSYC 165B The Development of Immigrant and Ethnic Minority Youth 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 001, PSYC 002, PSYC 011, PSYC 012, and PSYC 160 with grades of “C-” or better; or equivalents; or consent of instructor. Covers current theory and research on the development of immigrant and ethnic minority youth in the United States. Focuses on the social, cultural, and psychological processes influencing the biological, cognitive, and social development of youth from immigrant and ethnic minority families.

PSYC 166A Infancy 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 001, PSYC 002, PSYC 011, PSYC 012 all with grades of “C-” or better; or consent of instructor. Covers current theory and research on development during the period of infancy. Addresses the key biological, cognitive, emotional, and social developments during this period.

PSYC 166B Childhood 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 001, PSYC 002, PSYC 011, PSYC 012 all with grades of “C-” or better; or consent of instructor. Covers current theory and research on development during the period of childhood. Addresses the key biological, cognitive, emotional, and social developments during this period.

PSYC 166C Adolescence and Emerging Adulthood 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 001 with a grade of C- or better; PSYC 002 with a grade of C- or better; PSYC 011 with a grade of C- or better; PSYC 012 with a grade of C- or better. Covers current theory and research on development during the period of adolescence and the transition to adulthood. Addresses the key biological, cognitive, emotional, and social developments during this period.

PSYC 166D Adulthood and Aging 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 001, PSYC 002, PSYC 011, PSYC 012 all with grades of “C-” or better; or consent of instructor. Covers current theory and research on development during the period of adulthood and the process of aging. Addresses the key biological, cognitive, emotional, and social developments during this period.

PSYC 167 Psychological Development of Black Children 4 Lecture, 3 hours; extra reading, 3 hours. Prerequisite(s): PSYC 002. This course will analyze both the traditional theoretical approaches to the study of Black children and innovative approaches that are currently being developed by Black psychologists. The course will cover topics in the areas of cognitive, social, and personality development. Cross-listed with ETST 167.

PSYC 168 Psychological Aspects of the Black Experience 4 Lecture, 3 hours; extra reading,

3 hours. Prerequisite(s): PSYC 002. This course examines the interdependence between personal characteristics, Afro-American culture, and the social conditions which foster the Black experience. Group membership, life styles, role factors, and situational settings as social norms will be explored in order to understand the uniqueness of the Black experience. Cross-listed with ETST 168.

PSYC 169 Topics in Developmental Psychology 4 Lecture, 3 hours; extra reading, 3 hours. Prerequisite(s): PSYC 001 with a grade C- or better; PSYC 002 with a grade C- or better; PSYC 011 with a grade C- or better; PSYC 012 with a grade C- or better; PSYC 160 with a grade C- or better or PSYC 161 with a grade C- or better or PSYC 162 with a grade C- or better or PSYC 163 with a grade C- or better. Intensive study in developmental psychology. Stresses literature, methodology, and experimental design and analysis. Specific course content varies. Course is repeatable to a maximum of 16 units as topics change.

PSYC 171 Psychology of Gender 4 Seminar, 3 hours; term paper, 3 hours. Prerequisite(s): PSYC 012 with a grade of "C-" or better or consent of instructor. Examines psychological theory and research on gender, including ethnic and cultural variations in male and female experience. Topics include gender roles, gender development, gender differences and stereotypes, biological influences on gender, gender and health, gender and language, gender and achievement, and men and women in the workplace.

PSYC 175 Psychology and Law 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 001 with a grade of C- or better, PSYC 002 with a grade of C- or better or LWSO 100 with a grade of C- or better or LWSO 100H with a grade of B or better. A study of psychological theory and empirical research as it relates to the law. Topics include jury decision making, eyewitness memory, child custody, criminal responsibility and intent, competence, rehabilitation and punishment, ethics and legal responsibilities in therapy, and psychological research.

PSYC 178 Health Psychology 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PSYC 002 or SOC 001 or SOC 001H. An examination of the importance of interpersonal relationships to physical health and effective medical care. Applies social psychological perspectives to such topics as stress-related diseases, placebo effects, doctor-patient interactions, dying, and the hospital environment.

PSYC 179 Health and Behavior Change 4 Lecture, 3 hours; discussion, 1 hour; term paper, 1 hour. Prerequisite(s): PSYC 002 with a grade of C- or better or PSYC 178 with a grade of C- or better. Examines psychological constructs in health behavior change. Covers theories and research on preventive health behavior; adherence to treatment; health lifestyles; substance use and abuse; and anxiety and depression in medical illness. Also examines cognitive and behavioral techniques; helping skills; placebo effect; social support; therapeutic communication; medical care; and ethical issues.

PSYC 181 Laboratory in Cognitive Psychology 4 Lecture, 3 hours; research, 1.5 hours; extra reading, 1.5 hours. Prerequisite(s): PSYC 001, PSYC 002, PSYC 011, PSYC 012, and PSYC 134 with grades of "C-" or better. Integrates the conceptual and theoretical foundations of

cognitive psychology with the mechanics of conducting research. Students develop and design research studies and collect, analyze, and interpret data.

BUSINESS CONCENTRATION

BUS 010 Introduction to Business 4 Lecture, 3 hours, discussion, 1 hour. Prerequisite(s): none. Provides an overview of the field of business administration. Explores business goals and strategies, functional areas of business and their integration in policy and decision making, social responsibility, computers in business, and business trends and challenges including the international dimension.

BUS 020 Financial Accounting and Reporting 4 Lecture, 3 hours, discussion, 1 hour. Prerequisite(s): none. A study of the concepts and techniques for measurement and communication of financial information. Includes interpretation of financial statements.

BUS 101 Information Technology Management 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 008; BUS 020; ECON 003; STAT 008; or equivalent; or consent of instructor. Topics include computer hardware and software, business data processing, databases, telecommunications, systems analysis and design, cost-benefit analysis, and systems applications in business. Includes database and spreadsheet projects.

BUS 102 – Ethics and Law in Business and Society 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BUS 020; ECON 003; STAT 008; or equivalent; or consent of instructor. Analyzes the legal, ethical, political, and social aspects of the business environment. Topics include ethics and social responsibility, government regulation, corporate governance, and global management issues.

BUS 103 Marketing and Distribution Management 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BUS 020; ECON 003 or ECON 003H, STAT 008; or consent of instructor. An introduction to the role of marketing in society emphasizing concepts, marketing methods, and institutions.

BUS 104 Decision Analysis and Management Science 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CS 008; STAT 008 or STAT 010; or equivalents; or consent of instructor. A survey of deterministic and probabilistic models for decision making. Topics include linear programming and extensions, networks, dynamic programming, decision trees, queuing models, and simulation. Explores the application of these models in decision making. Cross-listed with STAT 104.

BUS 105 Production and Operations Management 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): STAT 008 or STAT 010; or equivalent. Addresses the issues of design and control of production systems in manufacturing and service organizations. Covers product and process selection, capacity planning, location and layout design, project and job scheduling, inventory control, material planning, and quality control.

BUS 106 Introduction to Financial Management 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BUS 020; ECON 003 or ECON 003H; STAT 008 or ECON 101; or equivalent; or consent of instructor. An introduction to financial management and financial institutions. Includes

time value of money, stock and bond valuation, risk and return, portfolio theory, capital budgeting, capital structure, dividend policy, and financial databases. Cross-listed with ECON 134. Credit is awarded for one of the following BUS 106, ECON 134, or BUS 133.

BUS 107 Organizational Behavior 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BUS 020; ECON 003; STAT 008; or equivalent; or consent of instructor. Studies organizations from the behavioral science perspective. Topics include motivation, leadership, communication, groups, organization structure and culture, and control in complex organizations.

BUS 108 Financial Evaluation and Managerial Analysis (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BUS 020; ECON 003; STAT 008; or equivalents; or consent of instructor. A study of accounting data used for managerial planning and controlling of business operations. Provides an introduction to manufacturing operations and cost accounting systems, cost-volume-profit analysis, relevant costing, standard costing and variance analysis, and budgeting.

BUS 109 Competitive and Strategic Analysis 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BUS 100W; BUS 103; BUS 108; BUS 106 or ECON 134 or BUS 133; restricted to major(s) Business Administration. Provides an understanding of strategic decision-making processes in organizations, the interrelationships among functional areas, and how decision making is affected by internal and external environments.

BUS 110 Introduction to Data Mining and Visual Analytics 2 Lecture, 2 hours; laboratory, 1 hour; extra reading, 2 hours; written work, 3 hours. Prerequisite(s): BUS 101. Covers the processes, methodologies and practices used to transform data into useful information to support business decision-making. Offers an opportunity to gain insights and hands-on-experience with basic functionality of industry standard data mining and visualization software tools such as Tableau, JMP and IBM's Watson Analytics.

BUS 115 Marketing Research 4 Lecture, 3 hours; research, 3 hours. Prerequisite(s): BUS 103. Covers types and sources of marketing information, the marketing research process, and techniques of data collection and analysis, including consumer and customer surveys and test marketing. Examines both quantitative and qualitative research with analysis of the values and limitations of data. Emphasis is placed on evaluation and interpretation of results.

BUS 119 Data-driven Marketing 4 Lecture, 3 hours; individual study, 2 hours; extra reading, 1 hour. Prerequisite(s): BUS 103; or consent of instructor. Examines marketing cases and develops data analytical skills for managerial decision making. Utilizes statistical software to manage, display, and analyze marketing information including consumer survey, relationship management, scanner, and socioeconomic data. Topics include attitude measurement, market segmentation and targeting, competition analysis, market performance analysis, and store location choice.

BUS 123 Spreadsheet Modeling for Decision-Making 4 Lecture, 3 hours; written work, 3 hours. Prerequisite(s): BUS 104 or STAT 104. Introduces the fundamental techniques of using data to make informed management decisions in the presence of uncertainty. Utilizes advanced Microsoft Excel functionality.

BUS 124A Business Analytics 4 Lecture, 3 hours; term paper, 1 hour; written work, 2 hours. Prerequisite(s): STAT 008. Provides fundamental concepts and tools needed to understand the emerging role of business analytics in organizations. Applies basic business analytics tools in a

spreadsheet environment. Introduces market-leading techniques that help identify and manage key data from business processes. Provides the essential tools required for data mining and business process re-engineering.

BUS 124B Advanced Business Analytics 4 Lecture, 3 hours; written work, 3 hours. Prerequisite(s): BUS 124A with a grade of C- or better; STAT 008 or STAT 010; CS 008. Teaches statistical methods for descriptive, predictive, and prescriptive analysis. Provides opportunities to apply these acquired skills in various business applications in operations, finance, and marketing. Utilizes tools such as R Programming for data analysis and Tableau for data visualization.

BUS 125 Simulation for Business 4 Lecture, 3 hours; extra reading, 1.5 hours; outside projects, 1.5 hours. Prerequisite(s): BUS 104 or STAT 104; or equivalents. Introduces simulation as a tool for analyzing complex systems. Analyzes and discusses the theory and practice of modeling through simulation. Topics include modeling uncertainty and collecting input data, Monte Carlo simulation techniques, model verification and validation, and sensitivity analysis. Examines applications in finance, marketing, operations, and supply chain management.

BUS 128 Project Planning and Control (4) Lecture, 3 hours; assigned problems and field project, 3 hours. Prerequisite(s): BUS 104/STAT 104 or consent of instructor. Covers issues related to planning and control. Explores the differences between projects and production systems; breakdown structures of project organization and work; sequencing and budgeting; resource management; project evaluation and control; and use of current project management software. Includes application of methodology to a real-world project.

BUS 129 Supply Chain Management 4 Lecture, 3 hours; assigned problems, 3 hours. Prerequisite(s): BUS 105. Focuses on management of the distribution of goods and services from plants, ports, and vendors to customers. Key topics include transportation, inventories, warehousing, materials handling, order processing, packaging, pricing, customer service standards, and warehouse and retail location.

BUS 130 Supply Chain Modeling 4 Lecture, 3 hours; homework problems and preparation for presentations, 3 hours. Prerequisite(s): BUS 104/STAT 104 or BUS 105. Covers the modeling and analysis of decision problems in supply chain management. Includes logistics network design, integration of supply chain operations, and supply and sourcing decisions. Utilizes the electronic spreadsheet as the principal device for building models, as well as addresses the concepts of effective spreadsheet design and use.

BUS 171 Systems Analysis and Design 4 Lecture, 3 hours; extra reading, 2 hours; projects, 1 hour. Prerequisite(s): BUS 101 or equivalent. Involves detailed analysis, specification, design, and implementation of computer-based information systems. Includes economic analyses, evaluation of alternatives, analysis or design tools, and systems project management and planning. Case studies are used.

BUS 172 Information Economics 4 Lecture, 3 hours; assigned cases and project, 3 hours. Prerequisite(s): BUS 103; ECON 003 or ECON 003H. Discusses economic concepts and strategies related to the network economy. Topics include economic issues surrounding information goods, competition in electronic business, pricing strategies, and intellectual property protections. Examines business strategies for the information (software) and infrastructure (hardware) elements of electronic business.

BUS 173 Introduction to Databases For Management 4 Lecture, 3 hours; extra reading, 2 hours; projects, 1 hour. Prerequisite(s): BUS 101 or equivalent. Covers physical and conceptual aspects of database management systems, including familiarity with the variety of database systems based on different data models. Examines the role of database systems in management information systems (MIS) and issues in database design for effective support of MIS. Requires the use of a database package.

BUS 174 Electronic Commerce (4) Lecture, 3 hours; extra reading, 2 hours; project, 1 hour. Prerequisite(s): BUS 101. Reviews the technological evolution of electronic commerce (EC). Investigates how EC can be used to interact with customers, other organizations, and those within the organization. Studies technical innovations, provides a critical evaluation of strategies, and examines current applications and their impact on the business environment.

BUS 175 Business Data Communications (4) Lecture, 3 hours; extra reading, 3 hours. Prerequisite(s): BUS 101. Surveys components of telecommunication systems; examines major design and analysis issues in the development and implementation of computer communication systems. Studies both voice and data communication systems including local area networks, wireless systems, satellite systems, and distributed computer and database systems. Emphasizes evaluation of these systems for business purposes.

BUS 179 Business Application of Geographic Information Systems (4) Lecture, 2 hours; laboratory, 1 hour; extra reading, 2 hours; written work, 3 hours. Prerequisite(s): BUS 101. Includes introduction to and use of geographic information system (GIS) for business applications. Provides basic understanding on how location information is used in business processes for decisions. Offers an opportunity to gain hands-on experience with basic functionality of industry standard business mapping software tools including ArcGIS and Business Analyst Online.

ECON 002 Introduction to Macroeconomics (5) Lecture, 3 hours; discussion, 1 hour; written work, 3 hours. Prerequisite(s): none. An introduction to the study of the economic system from a macro, or aggregate, perspective. Includes analysis of business cycles, economic growth, unemployment, inflation, and the impact of government policies on the level of economic activity. Credit is awarded for one of the following ECON 002 or ECON 002H.

ECON 003 Introduction to Microeconomics 5 Lecture, 3 hours; discussion, 1 hour; written work, 3 hours. Prerequisite(s): none. An introduction to the study of the economic system from the micro, or individual decision-maker's, perspective. Includes the study of opportunity cost, markets, consumption, production and competition. Credit is only awarded for one of ECON 003 or ECON 003H.

ECON 101 Statistics For Economics 5 Lecture, 3 hours; discussion, 1 hour; laboratory, 1 hour; individual study, 2 hours. Prerequisite(s): MATH 007A or MATH 009A or MATH 09HA or MATH 022; or equivalent. An introduction to the basic statistical methods for economics. Topics include economic data analysis, index numbers, univariate and bivariate probability distributions, correlation and regression, sampling distributions, properties of estimators, and hypothesis testing.

STAT 008 Statistics For Business 5 Lecture, 3 hours; discussion, 1 hour; laboratory, 3 hours. Prerequisite(s): CS 008 or CS 009A or CS 010A; MATH 004 or MATH 005A or MATH 006B or MATH 007A or MATH 009A or MATH 09HA or MATH 022; or equivalent. An introduction to statistics using business applications. Topics include descriptive statistics; probability; discrete and continuous distributions; Bayes' theorem; random variables; estimation and confidence intervals; hypothesis testing; and simple linear regression. Credit is awarded for one of the following STAT 008 or STAT 010.

STAT 010 Introduction to Statistics 5 Lecture, 3 hours; discussion, 1 hour; laboratory, 3 hours. Prerequisite(s): MATH 005A or MATH 006B or MATH 007A or MATH 009A or MATH 09HA. A general introduction to descriptive and inferential statistics. Topics include histograms; descriptive statistics; probability; normal and binomial distributions; sampling distributions; hypothesis testing; and confidence intervals. Credit is awarded for one of the following STAT 010 or STAT 008.

SOC 150 The Sociology of Economic Organizations (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): upper-division standing or consent of instructor. Examines how the scope and nature of formal and informal organizations are shaped by sociological processes external to them, such as the influence of governments, institutions, networks, and resources. Illustrates the processes with examples from contemporary United States and from other periods and cultures.

PRE-MEDICINE CONCENTRATION

BIOL 005A Introduction to Cell and Molecular Biology (4) Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BIOL 05LA (may be taken concurrently) or BIOL 020 (may be taken concurrently) with grades of "C-" or better; CHEM 001A and CHEM 01LA with grades of "C-" or better or CHEM 01HA and CHEM 1HLA with grades of "C-" or better; consent of instructor is required for students repeating the course. An intensive course designed to prepare for upper-division courses in cell and molecular biology. Covers biochemical, structural, metabolic, and genetic aspects of cells. Required for Biology majors; recommended for science majors desiring an introduction to biology.

PHYS 02HLA Honors General Physics Laboratory 1 Laboratory, 3 hours. Prerequisite(s): concurrent enrollment in PHYS 02HA; MATH 007A with a grade of B- or better or MATH 009A with a grade of B- or better or MATH 09HA with a grade of B- or better; admission to University Honors. Honors course corresponding to PHYS 02LA. Illustrates the experimental foundations of physics presented in PHYS 02HA. Covers the basic principles of classical mechanics. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following PHYS 02HLA or PHYS 02LA.

PHYS 02HLB Honors General Physics Laboratory 1 Laboratory, 3 hours. Prerequisite(s): concurrent enrollment in PHYS 02HB; MATH 007B with a grade of B- or better, may be taken concurrently or MATH 009B with a grade of B- or better, may be taken concurrently or MATH 09HB with a grade of B- or better, may be taken concurrently; PHYS 02HA with a grade of B- or better or PHYS 002A with a grade of B- or better; PHYS 02HLA with a grade of B- or better or PHYS 02LA with a grade of B- or better; admission to University Honors. Honors course corresponding to PHYS 02LB. Illustrates the experimental foundations of physics presented in PHYS 02HB. Topics include fluids and fluid flow, thermodynamics, mechanical oscillations, sound and light waves, geometrical optics, reflection, refraction, lens, microscopy, interference, and diffraction. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following PHYS 02HLB or PHYS 02LB.

PHYS 02HLC Honors General Physics Laboratory 1 Laboratory, 3 hours. Prerequisite(s): concurrent enrollment in PHYS 02HC; PHYS 002B with a grade of B- or better or PHYS 02HB with a grade of B- or better; PHYS 02LB with a grade of B- or better or PHYS 02HLB with a

grade of B- or better; admission to University Honors. Honors course corresponding to PHYS 02LC. Illustrates the experimental foundations of physics presented in PHYS 02HC. Covers electromagnetism and quantum physics. Includes Coulomb's Law, electric field, electrical potential, resistors, capacitors, simple circuits, magnetic forces, and Faraday's Law. Also addresses basic quantum physics of light, atoms, and radioactivity. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following PHYS 02HLC or PHYS 02LC.

PHYS 02LA General Physics Laboratory 1 Laboratory, 3 hours. Prerequisite(s): concurrent enrollment in PHYS 002A; MATH 007A with a grade of C- or better or MATH 009A with a grade of C- or better, MATH 09HA with a grade of C- or better. Illustrates the experimental foundations of physics presented in PHYS 002A. Covers the basic principles of classical mechanics. Credit is awarded for one of the following PHYS 02LA or PHYS 02HLA.

PHYS 02LB General Physics Laboratory 1 Laboratory, 3 hours. Prerequisite(s): concurrent enrollment in PHYS 002B; MATH 007B, may be taken concurrently or MATH 009B, may be taken concurrently or MATH 09HB, may be taken concurrently; PHYS 002A with a grade of C- or better or PHYS 02HA with a grade of C- or better; PHYS 02LA with a grade of C- or better or PHYS 02HLA with a grade of C- or better. Illustrates the experimental foundations of physics presented in PHYS 002B. Topics include fluids and fluid flow; thermodynamics; mechanical oscillations; sound and light waves; geometrical optics; reflection; refraction; lens; microscopy; interference; and diffraction. Credit is awarded for one of the following PHYS 02LB or PHYS 02HLB.

PHYS 02LC General Physics Laboratory 1 Laboratory, 3 hours. Prerequisite(s): concurrent enrollment in PHYS 002C; PHYS 002B with a grade of C- or better or PHYS 02HB with a grade of C- or better; PHYS 02LB with a grade of C- or better or PHYS 02HLB with a grade of C- or better. Illustrates the experimental foundations of physics presented in PHYS 002C. Topics include electromagnetism, quantum physics, and Coulomb's Law. Covers electric field, electrical potential, resistors, capacitors, simple circuits, magnetic forces, Faraday's Law. Also addresses basic quantum physics of light, atoms, and radioactivity. Credit is awarded for one of the following PHYS 02LC or PHYS 02HLC.

CHEM 001A General Chemistry 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): concurrent enrollment in CHEM 01LA; MATH 005A with a grade of C- or better or MATH 006A with a grade of C- or better or CHEM 001W with a grade of S or better or CHEM 001 with a grade of S or better or MATH 007A with a grade of C- or better or MATH 007B with a grade of C- or better or MATH 009A with a grade of C- or better or MATH 009B with a grade of C- or better or MATH 006B with a grade of C- or better or MATH 009C with a grade of C- or better; or a score of 3, 4, or 5 on the College Board Advanced Placement Chemistry Examination or Advanced Placement Calculus Examination or a passing score on the California Chemistry Diagnostic Test or a score on the Mathematics Advisory Exam sufficient for placement in MATH 007A or MATH 009A. An introduction to the basic principles of chemistry. Instructional methods are either in-person lectures or virtual online lectures. Credit is awarded for one of the following CHEM 001A, CHEM 002A, or CHEM 01HA.

CHEM 001B General Chemistry 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): concurrent enrollment in CHEM 01LB; CHEM 001A with a grade of C- or better, CHEM 01LA with a grade of C- or better or CHEM 01HA with a grade of C- or better, CHEM 1HLA with a grade of C- or better or CHEM 002A with a grade of C- or better, CHEM 02LA with a grade of C- or better. An introduction to the basic principles of chemistry. Provides lectures either in person or in a virtual online environment, depending on section offerings. Credit is awarded for one of the following CHEM 001B, CHEM 002B, or CHEM 01HB.

CHEM 001C General Chemistry 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): concurrent enrollment in CHEM 01LC; CHEM 001B with a grade of C- or better or CHEM 01HB with a grade of C- or better; CHEM 01LB with a grade of C- or better or CHEM 1HLB with a grade of C- or better or CHEM 002B with a grade of C- or better, CHEM 02LB with a grade of C- or better. An introduction to the basic principles of chemistry. Provides lectures either in person or in a virtual online environment, depending on section offerings. Credit is awarded for one of the following CHEM 001C, CHEM 002C, or CHEM 01HC.

CHEM 01HA Honors General Chemistry 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): concurrent enrollment in CHEM 1HLA; MATH 007A, may be taken concurrently or MATH 009A, may be taken concurrently or MATH 09HA, may be taken concurrently or MATH 007B or MATH 009B or MATH 09HB; or equivalent or a score of 4 or 5 on the College Board Advance Placement Chemistry Examination; a score of 600 or higher on the Mathematics portion of the SAT Reasoning Test or a score of 25 or higher on the ACT Mathematics Test; high school chemistry; or consent of instructor. Honors course corresponding to CHEM 001A. Covers the principles of chemistry in greater depth than in CHEM 001A. A limited enrollment course. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following CHEM 01HA, CHEM 001A, or CHEM 002A.

CHEM 01HB Honors General Chemistry 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): concurrent enrollment in CHEM 1HLB; CHEM 001A with a grade of B or better or CHEM 01HA with a grade of B or better or CHEM 01LA with a grade of B or better or CHEM 1HLA with a grade of B or better or CHEM 002A with a grade of B or better or CHEM 02LA with a grade of B or better; admission to University Honors. Honors course corresponding to CHEM 001B. Covers the principles of chemistry in more depth than in CHEM 001B. A limited enrollment course. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following CHEM 01HB, CHEM 001B, or CHEM 002B.

CHEM 01HC Honors General Chemistry 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): concurrent enrollment in CHEM 1HLC; CHEM 001B with a grade of B or better or CHEM 01HB with a grade of B or better or CHEM 002B with a grade of C- or better; CHEM 01LB or CHEM 1HLB or CHEM 02LB; admission to University Honors. Honors course corresponding to CHEM 001C. Covers the principles of chemistry in more depth than in CHEM 001C. A limited enrollment course. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following CHEM 01HC, CHEM 001C, or CHEM 002C.

CHEM 1HLA Honors General Chemistry Laboratory 1 Laboratory, 3 hours. Prerequisite(s):

concurrent enrollment in CHEM 01HA; MATH 009A, may be taken concurrently or MATH 009B, may be taken concurrently or MATH 09HA, may be taken concurrently or MATH 007A, may be taken concurrently or MATH 007B, may be taken concurrently or MATH 009C, may be taken concurrently or CHEM 001 or CHEM 001W; admission to University Honors. Honors course corresponding to CHEM 01LA. An introduction to laboratory principles and techniques related to lecture topics in CHEM 01HA. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following CHEM 1HLA, CHEM 01LA, or CHEM 02LA.

CHEM 1HLB Honors General Chemistry Laboratory 1 Laboratory, 3 hours. Prerequisite(s): concurrent enrollment in CHEM 01HB; CHEM 001A with a grade of B or better, CHEM 01LA with a grade of B or better or CHEM 01HA with a grade of B or better, CHEM 1HLA with a grade of B or better or CHEM 002A with a grade of B or better, CHEM 02LA with a grade of B or better; admission to University Honors. Honors course corresponding to CHEM 01LB. An introduction to laboratory principles and techniques related to lecture topics in CHEM 01HB. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following CHEM 1HLB, CHEM 01LB, or CHEM 02LB.

CHEM 1HLC Honors General Chemistry Laboratory 1 Laboratory, 3 hours. Prerequisite(s): concurrent enrollment in CHEM 01HC; CHEM 001B with a grade of B or better or CHEM 01HB with a grade of B or better or CHEM 002B; CHEM 01LB or CHEM 1HLB or CHEM 02LB; admission to University Honors. Honors course corresponding to CHEM 01LC. An introduction to laboratory principles and techniques related to lecture topics in CHEM 01HC. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following CHEM 1HLC, CHEM 01LC, or CHEM 02LC.

CHEM 01LA General Chemistry Laboratory 1 Laboratory, 3 hours. Prerequisite(s): concurrent enrollment in CHEM 001A; MATH 005A with a grade of C- or better or MATH 006A with a grade of C- or better or CHEM 001W with a grade of S or better or CHEM 001 with a grade of S or better or MATH 007A with a grade of C- or better or MATH 007B with a grade of C- or better or MATH 009A with a grade of C- or better or MATH 009B with a grade of C- or better or MATH 006B with a grade of C- or better or MATH 009C with a grade of C- or better; or a score of 3, 4, or 5 on the College Board Advanced Placement Chemistry Examination or Advanced Placement Calculus Examination or a passing score on the California Chemistry Diagnostic Test or a score on the Mathematics Advisory Exam sufficient for placement in MATH 007A or MATH 009A. An introduction to laboratory principles and techniques related to lecture topics in CHEM 001A. Credit is awarded for one of the following CHEM 01LA, CHEM 02LA, or CHEM 1HLA.]

221

CHEM 01LB General Chemistry Laboratory 1 Laboratory, 3 hours. Prerequisite(s): concurrent enrollment in CHEM 001B; CHEM 001A with a grade of C- or better or CHEM 01HA with a grade of C- or better or CHEM 01LA with a grade of C- or better or CHEM 1HLA with a grade of C- or better or CHEM 002A with a grade of C- or better or CHEM 02LA with a grade of C- or better. An introduction to laboratory principles and techniques related to lecture topics in CHEM 001B. Credit is awarded for one of the following CHEM 01LB, CHEM 02LB, or CHEM 1HLB.

CHEM 01LC General Chemistry Laboratory 1 Laboratory, 3 hours. Prerequisite(s): concurrent enrollment in CHEM 001C; CHEM 001B with a grade of C- or better or CHEM 01HB with a grade of C- or better or CHEM 002B; CHEM 01LB or CHEM 1HLB or CHEM 02LB. An introduction to laboratory principles and techniques related to lecture topics in CHEM 001C. Credit is awarded for one of the following CHEM 01LC, CHEM 02LC, or CHEM 1HLC.

CHEM 008A Organic Chemistry 3 Lecture, 3 hours. Prerequisite(s): concurrent enrollment in CHEM 08LA; CHEM 001C with a grade of C- or better, CHEM 01LC with a grade of C- or better or CHEM 01HC with a grade of C- or better, CHEM 1HLC with a grade of C- or better or CHEM 002C with a grade of C- or better, CHEM 02LC with a grade of C- or better. Covers modern organic chemistry including hydrocarbon structure and nomenclature, stereochemistry, and reaction mechanisms. Provides lectures either in person or in a virtual online environment, depending on section offerings. Credit is awarded for one of the following CHEM 008A or CHEM 08HA.

CHEM 008B Organic Chemistry 3 Lecture, 3 hours. Prerequisite(s): concurrent enrollment in CHEM 08LB; CHEM 008A with a grade of C- or better, CHEM 08LA with a grade of C- or better or CHEM 08HA with a grade of C- or better, CHEM 08HLA with a grade of C- or better. Covers modern organic chemistry including structural determination via spectroscopic analysis, reactivity, reaction mechanisms, and multistep organic synthesis. Credit is awarded for one of the following CHEM 008B or CHEM 08HB.**222** |

CHEM 008C Organic Chemistry 3 Lecture, 3 hours. Prerequisite(s): concurrent enrollment in CHEM 08LC; CHEM 008B with a grade of C- or better, CHEM 08LB with a grade of C- or better or CHEM 08HB with a grade of C- or better, CHEM 08HLB with a grade of C- or better. Covers modern organic chemistry and chemical biology including reactivity and synthesis. Also includes reaction mechanisms and the chemistry of carbohydrates, lipids, nucleic acids, amino acids, and proteins. Credit is awarded for one of the following CHEM 008C or CHEM 08HC.

CHEM 08HA Honors Organic Chemistry 3 Lecture, 3 hours. Prerequisite(s): concurrent enrollment in CHEM 08HLA; CHEM 001C with a grade of B or better, CHEM 01LC with a grade of B or better or CHEM 01HC with a grade of B or better, CHEM 1HLC with a grade of B or better or CHEM 002C with a grade of B or better, CHEM 02LC with a grade of B or better; admission to University Honors; or consent of instructor. Honors course corresponding to CHEM 008A. Covers the principles of organic chemistry in greater depth than in CHEM 008A. Covers modern organic chemistry including hydrocarbon structure and nomenclature, stereochemistry, and reaction mechanisms. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following CHEM 08HA or CHEM 008A.

CHEM 08HB Honors Organic Chemistry 3 Lecture, 3 hours. Prerequisite(s): concurrent enrollment in CHEM 08HLB; CHEM 008A with a grade of B or better, CHEM 08LA with a grade of B or better or CHEM 08HA with a grade of B or better, CHEM 08HLA with a grade of B or better; admission to University Honors; or consent of instructor. Honors course corresponding to CHEM 008B. Honors course that covers the principles of organic chemistry in greater depth than in CHEM 008B. Covers modern organic chemistry including structural determination via

spectroscopic analysis, reactivity, reaction mechanisms and multistep organic synthesis. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following CHEM 08HB or CHEM 008B.

CHEM 08HC Honors Organic Chemistry 3 Lecture, 3 hours. Prerequisite(s): concurrent enrollment in CHEM 08HLC; CHEM 008B with a grade of B or better, CHEM 08LB with a grade of B or better or CHEM 08HB with a grade of B or better, CHEM 08HLB with a grade of B or better; or consent of instructor. Honors course corresponding to CHEM 008C. Covers modern organic chemistry and chemical biology including reactivity, synthesis, and reaction mechanisms. Also includes the chemistry of carbohydrates, lipids, nucleic acids, amino acids, and proteins. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following CHEM 08HC or CHEM 008C.

CHEM 08HLA Honors Organic Chemistry Lab 1 Laboratory, 4 hours. Prerequisite(s): CHEM 001C with a grade of C- or better, CHEM 01LC with a grade of C- or better or CHEM 01HC with a grade of C- or better, CHEM 1HLC with a grade of C- or better or CHEM 002C with a grade of C- or better, CHEM 02LC with a grade of C- or better; admission to University Honors. Honors course corresponding to CHEM 08LA. An introduction to laboratory techniques of purification, isolation, synthesis, reactions, and spectroscopic analysis. Satisfactory(S) or No Credit(N/C) is not available. Credit is awarded for one of the following CHEM 08HLA or CHEM 08LA.

CHEM 08HLB Honors Organic Chemistry Laboratory 1 Laboratory, 4 hours. Prerequisite(s): CHEM 008A and CHEM 08LA or CHEM 08HA and CHEM 08HLA with a grade of "B" or better or consent of instructor; concurrent enrollment in CHEM 08HB or a grade of "B" or better in CHEM 08HB. Honors course corresponding to CHEM 08LB in depth. An introduction to laboratory techniques of purification, isolation, synthesis, reactions, and spectroscopic analysis. Satisfactory (S) or No Credit (NC) grading is not available. Credit is awarded for only one of CHEM 08LB or CHEM 08HLB.

CHEM 08HLC Honors Organic Chemistry Laboratory 1 Laboratory, 4 hours. Prerequisite(s): CHEM 008B and CHEM 08LB or CHEM 08HB and CHEM 08HLB with a grade of "B" or better or consent of instructor; concurrent enrollment in CHEM 08HC or a grade of "B" or better in CHEM 08HC. Honors course corresponding to CHEM 08LC in depth. An introduction to laboratory techniques of purification, isolation, synthesis, reactions, and spectroscopic analysis. Satisfactory (S) or No Credit (NC) grading is not available. Credit is awarded for only one of CHEM 08LC or CHEM 08HLC.

CHEM 08LA Organic Chemistry Laboratory 1 Laboratory, 4 hours. Prerequisite(s): concurrent enrollment in CHEM 008A; CHEM 001C with a grade of C- or better, CHEM 01LC with a grade of C- or better or CHEM 01HC with a grade of C- or better, CHEM 1HLC with a grade of C- or better or CHEM 002C with a grade of C- or better, CHEM 02LC with a grade of C- or better. An introduction to laboratory techniques of purification, isolation, synthesis, reactions, and spectroscopic analysis. Credit is awarded for one of the following CHEM 08LA or CHEM 08HLA.

CHEM 08LB Organic Chemistry Laboratory 1 Laboratory, 4 hours. Prerequisite(s): CHEM

008A and CHEM 08LA or CHEM 08HA and CHEM 08HLA with grades of "C-" or better; concurrent enrollment in CHEM 008B or a grade of "C-" or better in CHEM 008B. An introduction to laboratory techniques of purification, isolation, synthesis, reactions, and spectroscopic analysis. Credit is awarded for only one of CHEM 08LB or CHEM 08HLB.

CHEM 08LC Organic Chemistry Laboratory 1 Laboratory, 4 hours. Prerequisite(s): CHEM 008B and CHEM 08LB or CHEM 08HB and CHEM 08HLB with grades of "C-" or better; concurrent enrollment in CHEM 008C or a grade of "C-" or better in CHEM 008C. An introduction to laboratory techniques of purification, isolation, synthesis, reactions, and spectroscopic analysis. Credit is awarded for only one of CHEM 08LC or CHEM 08HLC.

BIOL 005B Introduction to Organismal Biology 4 Lecture, 3 hours; laboratory, 3 hours. Prerequisite(s): BIOL 005A with a grade of C- or better; BIOL 05LA with a grade of C- or better or BIOL 020 with a grade of C- or better; CHEM 001A, CHEM 01LA or CHEM 01HA, CHEM 1HLA or CHEM 002A, CHEM 02LA; CHEM 001B, may be taken concurrently, CHEM 01LB, may be taken concurrently or CHEM 01HB, may be taken concurrently, CHEM 1HLB, may be taken concurrently or CHEM 002B, may be taken concurrently, CHEM 02LB, may be taken concurrently. An intensive course designed to prepare for upper-division courses in organismal biology. Covers developmental biology, physiology, and regulation at the level of the organism. Required for Biology majors; recommended for science majors desiring an introduction to biology.

BIOL 005C Introductory Evolution and Ecology 4 Lecture, 3 hours; laboratory, 3 hours. Prerequisite(s): BIOL 005A with a grade of C- or better; BIOL 05LA with a grade of C- or better or BIOL 020 with a grade of C- or better; BIOL 005B with a grade of C- or better; MATH 009A with a grade of C- or better or MATH 09HA with a grade of C- or better or MATH 007A with a grade of C- or better; CHEM 001C, may be taken concurrently, CHEM 01LC, may be taken concurrently or CHEM 01HC, may be taken concurrently, CHEM 1HLC, may be taken concurrently or CHEM 002C, may be taken concurrently, CHEM 02LC, may be taken concurrently. An intensive introduction to the subjects of evolution and ecology. Covers population dynamics, community ecology, population genetics, and evolutionary theory. Recommended for science majors desiring an introduction to biology. Students who take equivalent first-year biology at another institution may enter directly into BIOL 005C without critical handicap.

BIOL 05LA Introduction to Cell and Molecular Biology Laboratory 1 Laboratory, 3 hours. Prerequisite(s): BIOL 005A (may be taken concurrently); consent of instructor is required for students repeating the course. An introduction to laboratory exercises on fundamental principles of and techniques in cell and molecular biology. Illustrates the experimental foundations of the topics covered in BIOL 005A. Credit is awarded for only one of BIOL 020 or BIOL 05LA.

BIOL 102 Introductory Genetics 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BIOL 005A, BIOL 020 or BIOL 05LA, and BIOL 005B with grades of "C-" or better. An introductory course that includes classical Mendelian genetics, linkage and recombination, sex-linked traits, cytogenetics, developmental genetics, and molecular genetics. Also includes some probability

theory and statistics.

BIOL 107A Molecular Biology 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BIOL 005A, BIOL 005B, BIOL 005C; CHEM 001C or CHEM 01HC; CHEM 008C and CHEM 08LC, or CHEM 08HC and CHEM 8HLC; MATH 007B or MATH 009B or MATH 09HB; PHYS 002C or PHYS 02HC; PHYS 02LC or PHYS 02HLC; BCH 100 or BCH 110A or BCH 110HA. The study of the structure and function of the genetic material, including DNA structure, DNA replication and recombination, regulation of gene expression, and protein synthesis. Examines both prokaryotic and eukaryotic systems including contemporary recombinant DNA technology and applications of molecular cloning procedures. Credit is not awarded for BIOL 107A if it has already been awarded for BCH 110C.

BIOL 110 Biology of Human Problems 4 Seminar, 4 hours. Prerequisite(s): BIOL 005A, BIOL 005B, BIOL 005C; CHEM 001C or CHEM 01HC; CHEM 008C and CHEM 08LC, or CHEM 08HC and CHEM 08HLC; MATH 007B or MATH 009B or MATH 09HB; PHYS 002C or PHYS 02HC, PHYS 02LC or PHYS 02HLC; BCH 100 or BCH 110A or BCH 110HA; one course in statistics. Devoted to selected human problems that have a large biological component and relate to medicine, ethics, and human existence. Topics covered vary and include issues of major bioethical importance such as euthanasia, national health care, effects of industrial pollution on individuals and communities, population problems, abortion, and genetic engineering.

BIOL 121 Introductory Microbiology 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BIOL 005A; BIOL 05LA or BIOL 020; BIOL 005B; BIOL 005C; CHEM 001C or CHEM 01HC; MATH 007B or MATH 009B or MATH 09HB; PHYS 002A, may be taken concurrently or PHYS 02HA, may be taken concurrently; PHYS 02LA, may be taken concurrently or PHYS 02HLA, may be taken concurrently; BCH 100, may be taken concurrently or BCH 110A, may be taken concurrently or BCH 110HA, may be taken concurrently; STAT 010; or consent of instructor. An intensive introduction to the fundamental physiology and molecular biology of bacteria and viruses. Covers bacterial and viral molecular genetics, an introduction to microbial pathogenesis, and applications of microbiology in modern societies. Cross-listed with MCBL 121. Credit is awarded for one of the following MCBL 121, BIOL 121, or MCBL 131.

BIOL 121L Microbiology Laboratory 3 Lecture, 1 hour; laboratory, 6 hours. Prerequisite(s): BIOL 121 with a grade of C- or better or MCBL 121 with a grade of C- or better. Laboratory exercises in diagnostic bacteriology, basic virology, and epidemiology. Includes fundamental quantitative and diagnostic microbiological procedures, basic mechanisms of microbial genetic exchange, and a project examining bacterial epidemiology. Cross-listed with MCBL 121L. Credit is awarded for one of the following MCBL 121L, BIOL 121L, or MCBL 131L.

BIOL 128 Immunology 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BIOL 005C; PHYS 002C or PHYS 02HC; PHYS 02LC or PHYS 02HLC; BCH 100 or BCH 110A or BCH 110HA. A study of humoral and cellular immunology. Topics include lymphoid systems, cells, antigens, antibodies, antibody formation, cellular immunity, and tumor and transplantation immunology. Discusses in detail diseases and altered immune states associated with each

topic. Cross-listed with CBNS 128.

BIOL 161A Functional Anatomy of the Vertebrates 5 Lecture, 3 hours; laboratory, 3 hours; discussion, 1 hour. Prerequisite(s): BIOL 005A with a grade of C- or better; BIOL 005B with a grade of C- or better; BIOL 005C with a grade of C- or better; CHEM 001C with a grade of C- or better or CHEM 01HC with a grade of C- or better; CHEM 008A with a grade of C- or better or CHEM 08HA with a grade of C- or better, CHEM 08LA with a grade of C- or better or CHEM 08HLA with a grade of C- or better; MATH 007B with a grade of C- or better or MATH 009B with a grade of C- or better or MATH 09HB with a grade of C- or better; PHYS 002A with a grade of C- or better or PHYS 02HA with a grade of C- or better. Functional anatomy of vertebrates including humans. Examines organ systems from developmental and evolutionary perspectives. Topics include phylogeny, the skeleton, and muscles. A combination of BIOL 161A, BIOL 161B, BIOL 171A, BIOL 171B, and BIOL 171L provide a one-year sequence in anatomy and physiology.

BIOL 161B Functional Anatomy of the Vertebrates 5 Lecture, 3 hours; laboratory, 3 hours; discussion, 1 hour. Prerequisite(s): BIOL 161A with a grade of C- or better; CHEM 008B with a grade of C- or better or CHEM 08HB with a grade of C- or better, CHEM 08LB with a grade of C- or better or CHEM 08HLB with a grade of C- or better; PHYS 002B with a grade of C- or better or PHYS 02HB with a grade of C- or better. Functional anatomy of vertebrates including humans. Examines organ systems from developmental and evolutionary perspectives. Topics include nervous system, integument, and circulatory, sensory, respiratory, digestive, and urogenital systems. A combination of BIOL 161A, BIOL 161B, BIOL 171A, BIOL 171B, and BIOL 171L provides a one-year sequence in anatomy and physiology.

BIOL 171A Human Anatomy 4 Lecture, 3 hours; laboratory, 3 hours. Prerequisite(s): BIOL 005C; CHEM 001C or CHEM 01HC; CHEM 01LC or CHEM 1HLC; CHEM 008B or CHEM 08HB; CHEM 08LB or CHEM 08HLB; MATH 007B or MATH 009B or MATH 09HB; PHYS 002B or PHYS 02HB; PHYS 02LB or PHYS 02HLB. Introduction to the structure of the human body using the an organ-systems approach. Emphasizes an overview of the major elements of human anatomy, a brief introduction to function (i.e., physiology), and the relationships among organs and organ systems. Labs provide hands-on identification of human anatomy.

BIOL 171B Human Physiology 1 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BIOL 005A; BIOL 05LA or BIOL 020; BIOL 005B; BIOL 005C; CHEM 001C or CHEM 01HC; CHEM 01LC or CHEM 01HLC; CHEM 008C or CHEM 08HC; CHEM 08LC or CHEM 08HLC; MATH 007B or MATH 009B or MATH 09HB; PHYS 002B or PHYS 02HB; PHYS 02LB or PHYS 02HLB; BCH 100 or BCH 110A or BCH 110HA. Provides first-principles analysis of cell, tissue, and organ structure and function. Emphasizes an integrative, problem-solving approach using applications such as disease and exercise. Topics include the musculoskeletal, nervous, endocrine, and reproductive systems.

BCH 100 Introductory Biochemistry 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BIOL 005A with a grade of C- or better; CHEM 08HB with a grade of C- or better or CHEM 008B with a grade of C- or better; CHEM 08LB with a grade of C- or better or CHEM 08HLB with a

grade of C- or better. Introduction to the biochemistry of living organisms based on a study of the structure, function, and metabolism of small molecules and macromolecules of biological significance. Examines selected animals, plants, and microorganisms to develop a general understanding of structure-function relationships, enzyme action, regulation, bioenergetics, and intermediary metabolism. Credit is awarded for one of the following BCH 100 or BCH 100H. Credit is not awarded for BCH 100 if a grade of "C-" or higher has been awarded previously in BCH 110A or BCH 110HA or BCH 110B or BCH 110HB or BCH 110C or BCH 110HC.

BCH 110A General Biochemistry 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BIOL 005A with a grade of "C-" or better; CHEM 008C and CHEM 08LC or CHEM 08HC and CHEM 08HLC with grades of "C-" or better. Considers the structure and function of biological molecules including proteins, carbohydrates, lipids, and nucleic acids. Credit is awarded for only one of BCH 110A or BCH 110HA.

BCH 110B General Biochemistry 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BCH 110A or BCH 110HA with a grade of "C-" or better or consent of instructor. Consideration of metabolic pathways including mechanisms and regulation of catabolism, anabolism, and bioenergetics in living organisms. Credit is awarded for only one of BCH 110B or BCH 110HB.

BCH 110C General Biochemistry 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): BCH 110A or BCH 110HA with a grade of "C-" or better, BIOL 102 or consent of instructor. BCH 110B or BCH 110HB is highly recommended. Considers regulation of gene expression, protein synthesis, chromatin structure, genome replication, recombination, and repair. Examines both prokaryotic and eukaryotic systems, including recombinant DNA technology, protein engineering, and applications to molecular medicine. Credit is not awarded for BCH 110C if it has already been awarded for BCH 110HC or BIOL 107A.

PBPL 160 Immigrant Health and Wellbeing 4 Lecture, 3 hours; individual study, 2 hours; term paper, 1 hour. Prerequisite(s): restricted to class level standing of junior, or senior. Introduction to community-engaged methods in health disparities research. Examines health disparities and social determinants of health and conducts in-depth examination of community engaged research methods. Provides theoretical principles, methods, and skills needed to plan and implement community-engaged research.

PBPL 162 Health in All Policies 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): PBPL 001 with a grade of C- or better or SOC 001 with a grade of C- or better or SOC 001H with a grade of B or better; restricted to class level standing of junior, or senior. Explores social influences on health and the role that public policies play in shaping the social determinants of health. Examines the link between social circumstances (socioeconomics, race, ethnicity, environment) and health outcomes. Identifies connections and considers whether and to what extent public policy mitigates harmful influences or stimulates positive outcomes.

SOC 127 Sociological Determinants of Health 4 Lecture, 3 hours; discussion, 1 hour; extra reading, 5 hours; research, 3 hours. Prerequisite(s): SOC 001 with a grade of C- or better or SOC 001H with a grade of C- or better; or consent of instructor. Introduces the role that social

factors play in shaping the occurrence and distribution of disease and death in populations with an emphasis on socioeconomic status, racism, social relationships and social stress. A particular emphasis is placed on sociological origins of health inequalities. Cross-listed with PBPL 127.

SOC 167 Medical Sociology 4 Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): restricted to class level standing of junior, or senior; or consent of instructor. Introduces key concepts and theories in medical sociology and their application to a variety of health issues. Exemplar topics include social construction of health and illness, medicalization, stigma and labeling, patient-provider interaction, sociology of medical professionals, social determinants of health, and political economy of health. Cross-listed with PBPL 167.

February 25, 2025

To Whom It May Concern,

I enthusiastically support the proposed Computer Science Applications undergraduate major. Current and future students view computers and their constituent technologies as a core parts of society and their lives, intertwined with their other interests. Many students wish to study this intersection. Many employers which to employ students who have a foundational understanding of not only Computer Science but also an application area. Our external advisory board of industry leaders discussed this proposal in June 2024 and enthusiastically supported its curriculum and goals.

This major broadens the existing Computer Science with Business Applications major to invite more undergraduates to explore the combination of Computer Science and other discipline. It will start with concentrations in Business, Psychology, and Health Sciences. We have active and excited partners in each of these areas. We believe it can grow in the future to other areas. This major complements our existing Computer Science and Computer Engineering majors by providing a more applications-oriented, but still technical, study of Computer Science.

The faculty in the Computer Science and Engineering Department (where the program will be housed) voted unanimously (22-0-0) in favor of adding this major. We are committed to providing the necessary courses.

Sincerely,

A handwritten signature in blue ink, appearing to read "Christian Shelton".

Christian Shelton
Professor & Department Chair
Computer Science & Engineering

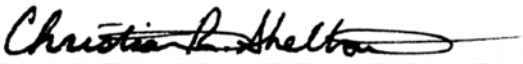


**Department of Computer Science
and Engineering**

900 University Avenue
351 Winston Chung Hall
Riverside, CA 92521

DATE: February 7, 2025

TO: Academic Senate
Committee on Educational Policy

FROM: 
Christian Shelton
Chair, Department of Computer Science

RE: Department approval for new Computer Science Applications major

The Department of Computer Science and Engineering faculty met on Wednesday January 22, 2025 to discuss and vote on this new major proposal. The faculty voted unanimously in favor (22 present, 22 yes) of this new major proposal and to move it forward for approval.

Thank you for your time and consideration.

To Whom It May Concern:

I endorse the proposed Computer Science Applications (CSA) undergraduate major. It is well positioned to attract a broad set of students interested in computers and how computational technology is connected to other disciplines. The program creates ties between BCOE and other colleges.

BCOE is committed to supporting this new major by offering the courses, advising, and other resources necessary for its students' success.

Sincerely,



Christopher Lynch
Dean, Bourns College of Engineering
University of California Riverside

TO: Dean Daryle Williams, CHASS

FROM: Tuppett M. Yates, Psychology Department Chair

DATE: February 5, 2025

RE: Support for a Psychology Track within the new Computer Science Applications Major

Dear Dean Williams:

As Chair of the Department of Psychology, I am writing to express our strong support for the proposed undergraduate academic program, the B.S. in Computer Science Applications, to be administered by the Computer Science Department. Our department has voted to unanimously approve the inclusion of Psychology courses to fulfill the Psychology concentration requirements (34 eligible, 29 yes, 0 no, 0 abstain, 5 not available). We believe this major will provide a valuable pedagogical bridge between Computer Science and the Social Sciences.

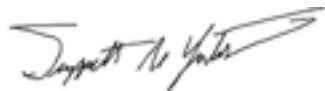
The Psychology concentration curriculum was carefully designed and approved by faculty in both departments. It offers students a pathway to learn foundational concepts and research methods within psychology, while providing flexibility for students to pursue depth of study in advanced psychological concepts.

Furthermore, the program's emphasis on data analysis training and the flexible senior design project options align with the research interests of many of our faculty who employ sophisticated computational and data science tools in their research programs. Thus, this program will encourage active engagement between undergraduate students and our researchers.

We acknowledge that students in the Computer Science Applications program will increase demand for our already popular Psychology courses, particularly PSYC 11 (Psychological Methods: Statistical Procedures) and PSYC 12 (Psychological Methods: Research Procedures). These are foundational courses within our program with capped enrollment due to their hands-on and intensive nature. Our faculty have agreed to hold seats in these courses for students in the proposed major to accommodate the annual enrollment of up to 30 undergraduate students in this proposed track. Please note that this commitment is contingent upon the ongoing approval of the Committee on Courses to reserve seats in these courses. Each quarter, any unused seats will be released at the same time as the seats for Psychology Majors. Thirty slots are confirmed for the first 5 years with active students in this major after which an assessment will be conducted to see if the number of reserved seats should be increased or decreased.

Looking forward, we are committed to working collaboratively with the Chair of Computer Science and the Dean of the College of Humanities, Arts, and Social Sciences to secure the necessary resources to meet the demands of this proposed major.

Thank you for considering this request.

A handwritten signature in black ink, appearing to read "Tuppett M. Yates", with a stylized flourish at the end.

Tuppett M. Yates, PhD



School of Business
Anderson Hall
900 University Avenue
Riverside, CA 92521

VIA EMAIL

February 7, 2025

Dear Colleagues of the Academic Senate,

As Department Chair of the School of Business, I support the proposed new major in Computer Science Applications (CSA) offered by the Department of Computer Science and Engineering of the Marlan and Rosemary Bourns College of Engineering. This new major will be based on the current Computer Science with Business Applications major, the content of which will remain available as a concentration within the new CSA major. This change will continue to make the combination of the computing and business disciplines attractive to a relatively small group of students interested in breadth across both areas.

In addition, I approve the continued inclusion of all BUS courses in the new major, as well as the addition of BUS 10. These courses are offered regularly throughout the academic year. Given the relatively small size of the new major, space in these courses will not be an issue.

Please let me know if you need any additional information.

Sincerely,

A handwritten signature in black ink that reads 'Margaret C. Campbell'.

Margaret C. Campbell, Chair and Associate Dean
School of Business



Pre-Professional Advising Center
Division of Undergraduate Education

900 University Avenue
Riversa Library B03
Riverside, CA 92521

14 February 2025

951.827.6233

hpac@ucr.edu | ppac.ucr.edu

Re: Letter of Support for Computer Sciences Applications (CSA) Program

Dear Colleagues:

I write this letter of support for the Bachelor of Science in Computer Sciences Application (CSA) Program to be located in the Marlan and Rosemary Bourns College of Engineering at the University of California, Riverside.

The creation of this academic program will allow students who wish to explore a career in computer sciences and health professions to gain the necessary pre-requisite health sciences/life sciences coursework as required by medical schools and other health professions programs such as dentistry, optometry, pharmacy, veterinary medicine and so forth. To date, ~75% of our applicants to health professions programs come from the College of Natural and Agricultural Sciences with viable growth opportunities in all of UCR colleges/schools. For prospective students who are looking to integrate computer sciences and biological sciences and health informatics into clinical practice, this pathway will likely be a popular pathway.

In addition to the health sciences concentration that would provide a direct course flow, students would also have the support of pre-health advisors at the Pre-Professional Advising Center, an advising unit within the Division of Undergraduate Education that provides information, advising, and support for students who aspire to graduate/professional programs in the health professions and law to map out academic and curricular experiences to support a competitive application to medical school or other health professions programs.

Should you have questions regarding this letter of support or if I may advocate further on behalf of this new academic program, please don't hesitate to contact me at Charles.Scruggs@ucr.edu or at 951-827-5416.

Sincerely,

A handwritten signature in black ink that reads "Charles P. Scruggs".

Charles P. Scruggs, M.A.
Director, UCR Pre-Professional Advising Center

President, Western Association of Advisors for the Health Professions
Board of Directors, National Association of Advisors for the Health Professions

Dear Neftali,

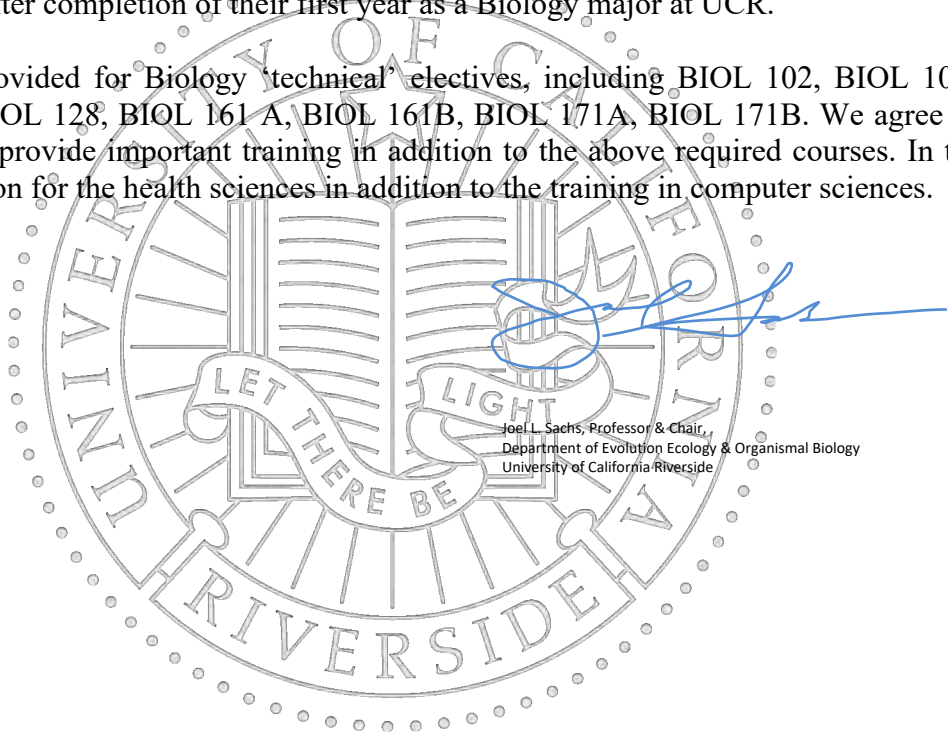
24, February, 2025

I am writing to express my support for the establishment of a new Computer Science Applications Major (CSA), in particular the CSA major with the concentration in Health Science.

The EEOB faculty discussed the utility of this program and agree with your proposal that this could fulfil a key training need. We agree that the CSA major would be particularly useful for students with career aspirations at the nexus of the computer and health sciences.

We have reviewed the required courses for the CSA major with the concentration in Health Science, including BIOL 005A, BIOL 005LA, BIOL 005B, and BIOL 005C. These courses provide core knowledge in basic biology. Completion of these classes would provide the same training that a typical sophomore would receive after completion of their first year as a Biology major at UCR.

We noted that you also provided for Biology 'technical' electives, including BIOL 102, BIOL 107A, BIOL 110, BIOL 121/L, BIOL 128, BIOL 161 A, BIOL 161B, BIOL 171A, BIOL 171B. We agree that any of these classes would provide important training in addition to the above required courses. In total this could provide preparation for the health sciences in addition to the training in computer sciences.

Joel L. Sachs, Professor & Chair,
Department of Evolution Ecology & Organismal Biology
University of California Riverside



MEMORANDUM

To: Christopher Lynch, Dean, Bourns College of Engineering

From: Daryle Williams, Dean, College of Humanities, Arts, and Social Sciences

Date: February 26, 2025

RE: Support for the Psychology Concentration in the BS degree program in Computer Science Applications

DocuSigned by:
Daryle Williams
DF581DF553974F3...

As Dean of CHASS, I support the proposed B.S. degree program in Computer Science Applications (CSA) to be administered by the BCOE Computer Science and Engineering Department. This program has three concentrations, two of which are Psychology and Business that rely on the offering of a substantial number of courses offered by the Department of Psychology and a couple courses offered by the Department of Economics. I applaud the initiative of creating interdisciplinary and intercollege majors that will improve the learning experience of our students and respond to a growing demand for professionals with computer science knowledge across many disciplines.

The Psychology department has enthusiastically approved this concentration and I support their endorsement. I concur with their positive assessment on the design of the Psychology concentration curriculum and it is my hope that it will create synergies between undergraduate engineering students and Psychology faculty whose research interests rely on computational and data science tools.

Four courses (PSYC 1, PSYC 2, PSYC 11, and PSYC 12) in the Psychology concentration are considered impacted courses. The proposed CSA major will increase the demand for these courses. CHASS Psychology majors will have priority in enrolling in these courses. The Psychology department is willing to reserve up to 30 seats annually in PSYC 11 and PSYC 12, which have capped enrollments, for the first five years. We should closely monitor enrollments to understand the impact of the new demand and revise the allotment of seats if needed.

I look forward to working with the BCOE Computer Science and Engineering department to assure the success of the proposed major.

Certificate Of Completion

Envelope Id: FDE3259D-50CB-4B1A-B63C-3ADEE6945F24

Status: Completed

Subject: Complete with Docusign: CSAMajor-PSYC-Concentration-2025-02-26.docx

Source Envelope:

Document Pages: 1

Signatures: 1

Envelope Originator:

Certificate Pages: 1

Initials: 0

Summer Espinoza

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100 Phoenix Dr.Suite 111

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Lansing, MI 48108

Time Zone: (UTC-08:00) Pacific Time (US & Canada)

summer.espinoza@ucr.edu

IP Address: 138.23.220.221

Record Tracking

Status: Original

Holder: Summer Espinoza

Location: DocuSign

2/25/2025 4:51:11 PM

summer.espinoza@ucr.edu

Signer Events

Daryle Williams

daryle.williams@ucr.edu

Dean, CHASS

University of California, Riverside

Security Level: Email, Account Authentication
(None)

Signature

Signature Adoption: Pre-selected Style
Using IP Address: 169.235.64.141

Timestamp

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Viewed: 2/25/2025 4:53:18 PM

Signed: 2/25/2025 4:53:22 PM

Electronic Record and Signature Disclosure:

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In Person Signer Events

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Editor Delivery Events

Status

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Agent Delivery Events

Status

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Intermediary Delivery Events

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Certified Delivery Events

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Carbon Copy Events

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Timestamp

Witness Events

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Certified Delivered

Security Checked

2/25/2025 4:53:18 PM

Signing Complete

Security Checked

2/25/2025 4:53:22 PM

Completed

Security Checked

2/25/2025 4:53:22 PM

Payment Events

Status

Timestamps

Mathchair <mathchair@ucr.edu>
To: Neftali Watkinson Medina <neftaliw@ucr.edu>
Cc: Christian Shelton <cshelton@cs.ucr.edu>

Fri, Feb 14, 2025 at 12:38 PM

Hi Neftali,

After reviewing the proposal, we find nothing to object to. You can say that. But is the Math Department somehow in the chain of approval for the proposal? That would seem to imply something more. I have never been through this kind of thing before.

Regards,
- Jim
[Quoted text hidden]

Neftali Watkinson Medina <neftaliw@ucr.edu>
To: Mathchair <mathchair@ucr.edu>
Cc: Christian Shelton <cshelton@cs.ucr.edu>

Fri, Feb 14, 2025 at 12:49 PM

Hi James,

Sorry for not being clear in my prior email. This statement you are providing is enough, it is to satisfy the following requirement by the Committee on Educational Policy:

9. Potential impact of the new program on existing programs. If the proposed program includes required courses from a department other than the administering department, the proposal must include a statement from the department indicating that it has been consulted and that it will provide access to the required courses.

Since your prior email had some suggested changes, I wanted to make sure that you agreed to the fixes I highlighted (primarily removing Math 8). Other than that, your email suffices as the required statement.

Neftali W.
[Quoted text hidden]

Mathchair <mathchair@ucr.edu>
To: Neftali Watkinson Medina <neftaliw@ucr.edu>
Cc: Christian Shelton <cshelton@cs.ucr.edu>

Fri, Feb 14, 2025 at 12:55 PM

Hi Neftali,

That is good then. The only other comment I would make is that there is a Math 135C now as well, if you wanted to include it.

Regards,
- Jim
[Quoted text hidden]

UNIVERSITY OF CALIFORNIA, RIVERSIDE

BERKELEY • DAVIS • IRVINE • LOS ANGELES • MERCED • RIVERSIDE • SAN DIEGO • SAN FRANCISCO

SANTA BARBARA • SANTA CRUZ

Leonard Mueller

Professor of Chemistry and Chair
Department of Chemistry
University of California, Riverside

(951) 827-3565
leonard.mueller@ucr.edu

20 February 2025

BCOE Executive Committee
UC Riverside

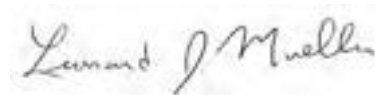
Dear Executive Committee,

As the Chair of the Department of Chemistry, I have reviewed the proposal for an undergraduate major in Computer Science Applications and approve of the addition of the following courses as a requirement for the Health Science concentration:

CHEM 001A and 001LA, CHEM 001B and 1LB, CHEM 001C and 001LC, CHEM 008A and 008LA, CHEM 008B and 8LB, CHEM 008C and 008LC

These courses train students in general and organic chemistry. They serve as the baseline for several programs that require a broad understanding of modern Chemistry. They also serve to satisfy the pre-health requirements for a year of general chemistry with lab, and a year of organic chemistry with lab. It makes sense that a concentration that focuses on Health Science should include these. Both series are taught throughout the year and can accommodate students from the Computer Science applications program.

Sincerely,



Leonard Mueller
Professor of Chemistry and Chair

To: Christian Shelton, Chair and Professor, Computer Science & Engineering Dept.
Neftali D. Watkinson, Assistant Professor of Teaching, Computer Science & Engineering Dept.

From: Shan-Wen Tsai, Chair and Professor, Department of Physics & Astronomy

Date: 02/21/2025

Re: **Letter of Support**

Thank you for sharing with me your proposal for the establishment of a new undergraduate academic program in Computer Science Applications, with Business, Psychology, and Health Science concentrations.

I am happy to provide this letter of support for this new program regarding the inclusion of the following courses in the curriculum: **PHYS 2A and 2LA, PHYS 2B and 2LB, PHYS 2C and 2LC**, to be required for the Health Science concentration as a path towards satisfying the Physics requirement for medical school. The PHYS 2A, B, C and corresponding laboratory portions, PHYS 2LA, B, C are a calculus-based General Physics sequence for Life and Ag Sciences majors, pre-med students, and students who plan to pursue a career in health sciences. The syllabus covers General Physics with life and health sciences applications and integrated labs.

Sincerely,



Shan-Wen Tsai, Chair and Professor
Department of Physics and Astronomy



Neftali Watkinson Medina <neftaliw@ucr.edu>

Fwd: Request for letter of support from the Department of Biochemistry

Xuan Liu <xuan@ucr.edu>

Fri, Feb 14, 2025 at 10:34 AM

To: Christian Shelton <cshelton@cs.ucr.edu>, Neftali Watkinson Medina <neftaliw@ucr.edu>

Hello.

Sorry for not getting back to you sooner. I was traveling.

We have no issues with non-BCH students taking BCH 100. For BCH 110A, I consulted with our Education Policy Committee as well as BCH 110A instructors. We are all supportive.

Thanks,

Xuan

Xuan Liu
Professor and Chair
Department of Biochemistry
University of California
Riverside, CA 92521
951-827-4350

Feb 5, 2025

To: Christian Shelton
Professor and Chair
Computer Science & Engineering Department
Bourns College of Engineering
University of California, Riverside

Dear Prof. Shelton,

I am writing to endorse the proposed new Computer Science Applications (CSA) major, which will replace the existing Computer Science with Business Applications (CSBA) major. The proposed new major includes three distinct concentrations: Business, Psychology, and Health Science. Thus, it offers enhanced flexibility and adaptability for UCR students. The new major will equip students with a strong foundation in computer science principles alongside specialized knowledge in high-demand fields. I understand the proposed new major includes the following statistics courses in the curriculum: STAT 008, STAT010, and STAT 155, and the Department of Statistics pledges to provide seats to these courses for all CSA majors.

Sincerely,

A handwritten signature in cursive script that reads "Yehua Li".

Yehua Li
Professor & Chair of Statistics,
University of California, Riverside
yehuali@ucr.edu
<https://profiles.ucr.edu/app/home/profile/yehuali>



Neftali Watkinson Medina <neftaliw@ucr.edu>

Request for letter of support from the School of Public Policy

Bruce Babcock <babcockb@ucr.edu>

Wed, Feb 5, 2025 at 10:07 AM

To: Neftali Watkinson Medina <neftaliw@ucr.edu>

Neftali:

You requested a letter of support confirming that students in the new major Computer Science Applications will have access to PBPL 160 (Immigrant Health and Well Being) and PBPL 162 (Health in All Policies). SPP does not restrict enrollment in these two courses other than placing an overall cap on class size so students in the major will have the same access as any other students.

Bruce Babcock
Professor and Associate Dean
School of Public Policy
4123 INTS
University of California, Riverside
babcockb@ucr.edu

[Quoted text hidden]



Neftali Watkinson Medina <neftaliw@ucr.edu>

Request for letter of support from the Department of Sociology

Robert Clark <roclark@ucr.edu>

Tue, Jan 28, 2025 at 6:40 PM

To: Neftali Watkinson Medina <neftaliw@ucr.edu>

Cc: Christian Shelton <cshelton@cs.ucr.edu>

Hi, Neftali.

This all sounds fine to me. I can't promise when (or how frequently) we'll offer SOC 127 or 167, as we are understaffed regarding instructors. And I don't remember seeing SOC 150 being offered since I arrived here a few years ago (nor can I think of any close alternatives). But I have no objections to your including any of these courses in your curriculum. Best of luck to you!

Rob Clark
Professor and Acting Chair
Department of Sociology
University of California-Riverside
Riverside, CA 92521
roclark@ucr.edu

[Quoted text hidden]



Tony Givargis
Professor and Chair
Department of Computer Science

3201 Donald Bren Hall
Irvine, CA 92697-3435
givargis@uci.edu

February 5, 2025

To Whom It May Concern:

I am writing to express my enthusiastic support for the proposed Bachelor of Science in Computer Science Applications (CSA) at UC Riverside. As Chair of the Computer Science Department at UC Irvine and a UC Riverside alumnus, I believe this program represents a significant advancement in computer science education and complements the existing offerings within the UC system.

The increasing pervasiveness of technology in modern life has fueled an unabated demand for graduates with expertise in computer science, robotics, and software engineering. Simultaneously, we've seen a surge in demand for multidisciplinary computing programs that equip students to apply computational thinking and skills to other fields. At UC Irvine, they've responded to this need by expanding access to computing pathways through programs like the Bioinformatics minor, Health Informatics minor, the BS in Business Information Management, and the BS in Game Design and Interactive Media.

UCR has also demonstrated leadership in accessible computing education, exemplified by the Data Science program and the current Computer Science with Business Applications program. The proposed evolution of the latter into the CSA major is a timely and strategic move. This agile and flexible framework will allow UCR to adapt to industry needs, positioning students for success in the future.

The chosen concentrations within the CSA program are particularly well-suited to current and projected market demands. The incorporation of business courses builds upon a proven model for success, while the Health concentration will train future healthcare professionals to effectively integrate technology into patient care. Furthermore, the Psychology concentration is exceptionally prescient. With the rise of AI and the growing importance of user interface and experience design, professionals who understand the human element within technological frameworks are essential. This concentration addresses a critical need at the intersection of these two disciplines.

I commend UCR for developing a sustainable model for this new program and am excited to witness its growth. I am confident that the CSA program will create valuable opportunities for UCR students.

Sincerely,

A handwritten signature in blue ink, appearing to read "Tony Givargis".

Tony Givargis
Professor and Chair
Department of Computer Science



Victor C. Joe, MD, MBA, FACS
Clinical Professor of Surgery

Department of Surgery
3800 W Chapman Ave
Suite 6200
Orange, CA 92868
Office: 714-456-5890
Facsimile: 714-456-6048

February 18, 2025

Neftali Watkinson Medina, PhD
Assistant Professor of Teaching
Computer Science & Engineering, UC Riverside

Re: Proposal for a major Computer Science Applications

Dear Dr. Watkinson Medina:

I am writing to express my strong support for the proposed Bachelor of Science in Computer Science Applications at UC Riverside, particularly the Health Science concentration. As a surgeon specializing in Trauma, Burns, Critical Care, and Acute Care Surgery, I have seen firsthand the immense potential of advanced computing—particularly artificial intelligence (AI), machine learning, and data science—in transforming healthcare research, improving patient outcomes, and optimizing healthcare delivery.

Healthcare today is increasingly driven by data, yet there remains a significant gap between frontline healthcare providers and the advanced computational tools that can enhance efficiency, precision, and patient-centered care. The integration of computer science principles into health sciences education will prepare future healthcare professionals to bridge this divide, equipping them with the skills necessary to lead innovations in clinical decision support, predictive analytics, workflow optimization, and electronic health record (EHR) enhancements.

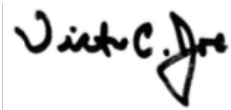
A program like the B.S. in Computer Science Applications with a Health Science concentration is not only timely but essential. By providing students with strong foundations in computational methods alongside rigorous health sciences training, UC Riverside will be cultivating the next generation of clinician-scientists, informaticians, and healthcare leaders who can effectively leverage technology to drive meaningful improvements in patient care, provider well-being, and healthcare system performance.

Personally, I have a deep interest in the application of AI and data science in healthcare but often find that I lack the formal training to independently lead such initiatives. I firmly believe that programs like this will empower future healthcare professionals to take on leadership roles in advancing medical research, quality improvement, and healthcare innovation.

I commend UC Riverside for its forward-thinking approach in designing this interdisciplinary major and strongly encourage its approval and implementation. This program aligns with the evolving needs of healthcare and will position UC Riverside as a leader in training professionals at the intersection of medicine and technology.

Thank you for considering this vital initiative. I would be happy to provide any further insights or assistance as needed.

Sincerely,

A handwritten signature in black ink, appearing to read "Victor C. Joe". The signature is written in a cursive, fluid style with a vertical line to its left.

Victor C. Joe, MD, MBA, FACS

Clinical Professor & Vice Chair for Quality, UC Irvine Department of Surgery

Vice President, UCI Health Medical Staff

February 2, 2025

Dear UCR Curriculum Committee:

I am writing a letter in support of for the new undergraduate major “Computer Science Applications” (CSA), which will be administered by the Department of Computer Science and Engineering (CSE).

Before providing more detail, I will first give you the background with which to interpret this letter. I am currently a professor, and the founding executive director of the Center for Inclusive Computing at Northeastern University. From 2014-2021 I served as the dean of the Khoury College of Computer Sciences at Northeastern University (with over 6500 students Khoury is one of the largest colleges of computing in the country). In my role as dean, I oversaw the addition of 30 new undergraduate interdisciplinary computing majors at Northeastern. I am a fellow of the ACM, AAAI and AAAS.

In this letter I will first discuss the quality of the proposed new major and how it fits in with other majors on campus, and then provide context on the potential graduate school and job outcomes for students who major in CSA.

UCR has a history with CSA degrees having operated the current CS with Business Applications major for many years. The new CSA degree will be inclusive of the CSBA major and is similar in its design. The difference between the within-discipline CS major and the CSA majors are the addition of concentrations in other fields and the removal of some higher-level math and physics courses in addition to the CS Theory courses (which are only needed for students choosing to go on to graduate schools in CS in the area of Theory – indeed most CS departments no longer require these courses even for within-discipline majors).

Administering the CSA within one department/college makes sense as these majors get started. Indeed when Northeastern’s CS College (now called Khoury) started interdisciplinary computing degrees in 2001 all degrees were housed in the College. Looking at the CS requirements, UCR follows the typical first courses required for CS majors everywhere (introduction to programming 1, instruction to programming 2, and data structures. In addition, students are required to take CS 061 (Computer Architecture), CS 100 (Software Engineering), CS 111 (Discrete Structures), CS 105 (Data Analysis), CS 141 (Algorithms), CS 153 (Operating Systems) and to complete a two-semester project. These courses will allow students to learn the core of CS and to pass technical interviews with tech firms. In addition, students must take 20 technical electives. This will allow them to customize what they learn in CS to match the other discipline. This structure is very similar to that used at Northeastern and UIUC (the other university to implement interdisciplinary computing majors at scale – UIUC has 15 such majors as of 2024). I cannot comment on the concentration area requirements as I am not an expert in any of these fields. But the number of units seems very reasonable to allow students to learn enough of the concentration discipline to understand the complexities and breadth of that field.

In terms of fit with other majors. The CSA allows students to take a different view of CS than the within-discipline major and will appeal to students who are interested in how CS can be applied to other fields. It is not in competition with any other majors to the best of my ability to assess this at another university.

In terms of student outcomes in the proposed CSA major, I turn to my experience as dean of Khoury College of Computer Sciences at Northeastern University. Currently more than half of Khoury's 3500 undergraduate students are pursuing combined computing majors—"combined majors" is Northeastern's name for interdisciplinary degrees. Although our degrees differ a bit in structure from the proposed degrees, the purpose and motivation is similar – in 2025 computer science is critically important for most other fields. We have tracked Northeastern's co-op placement for a decade (our students spend one to three six-month periods on internships as part of their undergraduate degree). We have 89% placement for within-discipline CS majors and 90% placement for combined computing majors. In terms of outcomes post graduation, in December of 2021 we tracked all 2021 graduates for Khoury College and found that placement was in the mid-90's and that there was no difference in placement rates between combined and within-discipline majors. There was a difference in where they were working, with both groups working in tech firms, but combined majors sometimes choosing to work at the juncture of the two disciplines (e.g., a Bio-CS major might work at a pharmaceutical firm). We also have tracked placement in graduate school and find that the only difference is that combined majors sometimes choose the other field to do advanced work (e.g., a Business-CS major choosing an MBA).

In conclusion, CSA's are an exciting step forward in a world in which the problems that need solving are increasingly interdisciplinary.

Sincerely,

A handwritten signature in black ink, appearing to read "CE Brodley". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Professor, Khoury College of Computer Sciences
Dean of Inclusive Computing,
Founding Executive Director, Center for Inclusive Computing,
Northeastern University



DEPARTMENT OF ECONOMICS

Joseph Cummins
Associate Professor of Economics
3106 Sproul Hall
University of California, Riverside
900 University Avenue
Riverside, CA 92521

Tel: (951) 827-1582
Fax: (951) 827-5685
email: joseph.cummins@ucr.edu

March 17, 2024

To Whom it May Concern,

This letter is intended to communicate the support of the Economics Dept. for the new Computer Science Applications (CSA) major. The major has the support of the Chair and Undergraduate Advisory Committee (UAC) that I Chair. The Economics Dept. believes the new CSA major will be beneficial to the University and potentially synergistic with the Economics Department going forward.

The CSA major will have as pre-requisites a number of foundational Economics courses (2, 3 and 101). Since the CSA major will replace the existing Computer Science with Business Applications major, it is not likely to directly and immediately alter enrollment in the specific core Economics courses listed as pre-requisites in the short term.

However, we also believe that the new arrangement with computer science is likely to increase cross-disciplinary interest in several current and new Economics courses for CS majors. In particular, the Economics Dept. is currently developing several advanced quantitative courses as part of our proposed Quantitative Economics major, and we believe these courses are likely to see increased demand from CS students who have been exposed to Economics via the CSA major. These courses, including at least one newly approved course in Machine Learning for Economics and Business (Econ 111), will require as a pre-requisite Econ 107 (which has Econ 101 as a pre-requisite). The department anticipates long-term increased demand for such applied econometrics courses (107, 111, and other new courses) stemming from a combination of: a) increased interest in advanced quantitative analysis courses from CSA majors in the short-medium term, and b) increased interest in the CSA major (relative to the current major) in the medium-long term.

The Economics Department, as represented by the Chair and the UAC, fully support the creation of the CSA major, and look forward to continuing to train CS majors in core economic and econometrics principles, and in advanced quantitative methods beyond the core major requirements.

Sincerely,

A handwritten signature in black ink, appearing to read "Joseph Cummins".

Joseph Cummins
Associate Professor of Economics

CHANGES TO REGULATIONS
THE SCHOOL OF EDUCATION
REPORT TO THE RIVERSIDE DIVISION
December 2, 2025

To be adopted:

Proposed Changes to SOE Regulations 01 to 04.01.01

01 REQUIREMENTS FOR ADMISSION TO THE SCHOOL

~~01.01 Requirements for admission to the school are (a) admission to graduate standing and (b) selection of an approved program in the school.~~

~~01.02 Students may continue to matriculate in credential programs at the junior level.~~

02 STUDY LIST

~~02.01 Procedures for approval of study lists and the assignment of advisers are determined by the Executive Committee of the school.~~

~~02.02 The presentation of a study list by a student and its acceptance by the school evidences an obligation on the part of the student faithfully to perform the designated work. Withdrawal from, or neglect of, any course entered on the study list, or a change in program without the formal permission of the Dean of the school, renders the student liable to enforced withdrawal from the University or other disciplinary action.~~

PROPOSED:

01 STATUS OF STUDENTS

01.01 CATEGORIES OF STUDENTS

01.01.01 The categories of students are (1) regular students, (2) special students, (3) limited students as defined in the Manual of the Academic Senate, Regulations 310, 312, 314, 650.

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02.01 ACADEMIC ADVISOR

2.01.01 The School of Education, hereafter referred to as School, will assign an academic advisor to each student majoring in one of the School's programs.

02.02 STUDENT RESPONSIBILITY

02.02.01 Students should plan their program of studies carefully in consultation with their academic advisor. They should go to the Associate Dean of Undergraduate Education for the School with any irregularities in the program that may require special approval. It is the student's responsibility to ensure that all requirements for graduation are satisfied.

02.02.02 Withdrawal from any course or a change in enrollment after the deadlines published in the Schedule of Classes requires the approval of the Associate Dean of Undergraduate Education for the School.

02.03 REGISTRATION/ENROLLMENT

02.03.01 Each term, students are required to register and enroll by the date set by the campus. If required by the student's program, the selection of courses must be approved by an academic advisor. Students who do not attend the first-class meeting may be dropped from the course.

02.03.02 An undergraduate student must make expected progress toward the degree as described in the Regulations of the Riverside Division of the Academic Senate of the University of California, Section 07.01. These regulation sections are hereafter referred to with the prefix "R" (e.g., R 07.01). If an undergraduate student does not make expected progress toward the degree as defined in R 07.02, then the student is considered ineligible for continued registration and will not be able to register for courses unless granted approval by the Associate Dean of Undergraduate Education for the School, hereafter referred to as the Associate Dean of Undergraduate Education. Undergraduate students who enroll in fewer than 12 units or more than 20 units in any quarter must obtain the approval of the Associate Dean of Undergraduate Education.

02.03.03 An undergraduate student on academic probation may not enroll in more than 17 units without the consent of the Associate Dean of Undergraduate Education for the School. An undergraduate who is subject to dismissal may not enroll in more than 15 units without the consent of the Associate Dean of Undergraduate Education for the School.

02.03.04 An undergraduate student may add a course up to the end of the second full week of instruction. Courses may be added until the end of the third week of instruction with the consent of the instructor and academic advisor. No course may be added after the third week without approval of the Associate Dean of Undergraduate Education for the School.

02.03.05 A course dropped after the end of the second full week of instruction will remain as a permanent transcript entry showing course number and title, with a transcript symbol of W, signifying withdrawal, entered in the grade column.

02.03.06 With approval of the Associate Dean of Undergraduate Education for the School, students may withdraw from the University on or before the last day of instruction.

02.03.07 Any changes in a student's schedule of classes not covered by the above regulations must have the approval of the Associate Dean of Undergraduate Education for the School.

02.03.08 Attendance requirements for students in specific classes may be established by (a) the Executive Committee of the School, (b) the course syllabus, or (c) the Schedule of Classes. Students who do not meet these requirements may forfeit their seats. Instructors in the School are authorized to enforce these requirements by removing students' names from the roster after the first full week of classes and up to the end of the second full week of classes. A student who is removed from a course roster for not meeting attendance requirements will not be allowed to continue in that course and will receive an "F" or an "NC" unless the student formally drops the class.

02.04 MAJOR REQUIREMENTS

02.04.01 A major shall consist of no fewer than 28 and no more than 72 upper-division units.

02.04.02 Candidates for the Bachelor of Arts degree may not receive more than 80 units of credit toward the degree for work taken in the major discipline (i.e., students must take at least 100 units outside the major discipline).

02.04.03 A student may elect a second or third major offered by another college/school

at UCR. In such cases, the student must complete all course requirements for each of the majors. If the multiple majors lead to the same degree (Bachelor of Arts), students will be expected to satisfy the college/school breadth requirements of their chosen college/school. If the multiple majors lead to different degrees (Bachelor of Arts and Bachelor of Science), the college/school breadth requirements for each degree designation must be satisfied. When the multiple majors lead to different degrees, this will be noted on the transcript. A declaration of two or three majors requires the approval of the Associate Dean of Undergraduate Education for the colleges/schools concerned and must be filed by the student with their chosen college/school.

02.04.04 All courses in the major must be completed during Fall quarter, Winter quarter, Spring quarter, or Summer session at UCR. Exceptions to this policy must have the approval of the Associate Dean of Undergraduate Education for the School.

02.04.05 A student may transfer from one major to another by filing a change of major request, which requires approval of the Associate Dean of Undergraduate Education of the School for the program that the student is transferring into. Admission into a given major is subject to that major's eligibility requirements.

02.04.06 Transfer students must complete a minimum of 16 upper-division units in their major at the UCR campus for the Bachelor of Arts degree.

02.04.07 A grade point average of at least 2.00 in upper-division courses taken in the field of the major is required for graduation.

02.05 CREDIT BY EXAMINATION

02.05.01 A student who wishes to have the privilege of examination for degree credit must be in residence and in good academic standing at UCR. In residence is defined as meeting Senate Regulation 610.

02.05.02 A student may take examinations for degree credit in courses offered in the School, without formally enrolling in them, with the exception of English composition courses.

02.05.03 Arrangements for examinations for degree credit must be made in advance with the Associate Dean of Undergraduate Education for the School and with the student's academic advisor. The approval of the Associate Dean of Undergraduate Education for the School, the instructor who is appointed to give the examination, and the academic advisor are necessary before the examination may be given.

02.05.04 The results of all examinations for degree credit, either with grades or with a Satisfactory/No Credit report, are entered into the student's record in the same manner as they are entered for regular courses of instruction.

02.05.05 English composition requirements may not be met with credit by examination.

02.06 UNDERGRADUATE CREDIT FOR GRADUATE COURSES

02.06.01 A student who has a grade point average of at least 3.00 in all courses taken at the University of California or who has shown exceptional ability in a special field may take a graduate course for undergraduate credit, with the permission of the instructor concerned, within the limitations specified by Senate Regulation 740. The determination of exceptional ability is decided by the instructor concerned.

02.07 ENROLLMENT ON A SATISFACTORY/NO CREDIT BASIS

02.07.01 An undergraduate student in good academic standing may receive credit for courses undertaken and graded "S" at the UCR campus to a limit of one third of the total units undertaken and passed at the UCR campus at the time the degree is awarded.

This same limitation applies to courses that are only graded Satisfactory/No Credit. Units completed on another campus of the University of California by a UCR undergraduate enrolled as an intercampus visitor are considered UCR work for the purposes of this regulation.

02.07.02 Courses which are required in, or prerequisite to, the undergraduate student's major subject may not be taken on a Satisfactory/No Credit basis unless approved by the Associate Dean of Undergraduate Education for the School.

02.07.03 Limited status or special status students may take courses on a Satisfactory/No Credit basis only with the approval of the Associate Dean of Undergraduate Education for the School.

02.07.04 Units earned on a Satisfactory/No Credit basis will be counted in satisfaction of degree requirements, but such courses will be disregarded in determining the student's grade point average.

02.07.05 Students may change from letter grading in a course to Satisfactory/No Credit (as permitted), or vice versa, until the end of the eighth week of instruction within the limitations specified by 02.07.02.

02.08 MINORS

02.08.01 A disciplinary minor is a set of courses selected from a non-interdisciplinary major. It is proposed by the sponsoring department or program and approved by the Executive Committee of the School, the UCR Committee on Educational Policy, and the UCR Academic Senate. Among these courses must be a sufficient number (totaling at least 16 units) selected from courses accepted for the major.

02.08.02 An interdisciplinary minor is a set of courses focused on an interdisciplinary thematic area, proposed by the Executive Committee of the School, and approved by the Executive Committee of the School, the

UCR Committee on Educational Policy, and the UCR Academic Senate. Each minor is to be supervised by a representative committee of at least three Faculty members.

02.08.03 A minor shall consist of no fewer than 16 and no more than 28 units of organized upper-division course work. No overlap may occur among courses used to satisfy upper-division course requirements for a major and a minor. A minor may use up to one upper-division course in the major discipline for minors requiring 16 units and up to two upper-division courses in the major discipline for minors requiring 20 units or more, provided that the courses are not also applied to the major.

02.08.04 A grade point average of at least 2.00 in upper-division courses taken in the field of the minor is required for graduation with the minor.

02.08.05 Courses in the minor may be applied toward college/School breadth requirements.

02.08.06 Students must file a declaration of a minor at least two quarters before graduation and must be in good academic standing at the time of filing. The declaration of a minor requires the signature of the Academic Advisor that handles the minor and the signature(s) of the Associate Dean(s) of the college(s) of both the major and the minor. The minor coursework (including all prerequisites for upper-division courses in the minor) must be completed within the overall 216 unit maximum for the Bachelor of Arts degree. A minimum GPA of 2.0 is required for all courses in the minor. If the student declares a minor and for any reason fails to complete the minor, the designation of the minor must be removed from the transcript before the student can graduate.

03 DEGREE REQUIREMENTS

03.01 GENERAL REQUIREMENTS

03.01.01 A minimum of 180 units of academic work is required for graduation. No more than six units of Physical Education activity courses or their equivalent may be counted toward the 180 unit requirement for the Bachelor of Arts degree. No 400 series or equivalent courses and no more than three courses in the 300 series or equivalent courses may be counted toward the 180 unit requirement. A maximum of 216 units is allowed toward the Bachelor of Arts degree. See definition of these course categories in Senate Regulation 740.

03.01.02 A grade point average of at least 2.00 in all courses undertaken at any University of California campus is required for graduation.

03.01.03 Concurrent enrollment in any course offered by University of California Extension (including correspondence courses) or by other institutions is not permitted except by prior approval of the Associate Dean of Undergraduate Education.

03.01.04 Each undergraduate student must satisfy a campus experience requirement by completing at least 35 units in residence at the UCR campus. This work must be spread over a minimum of three quarters with no more than one of these quarters being in the summer. These quarters need not be consecutive. The 35 units must be in courses designed to deliver at least 50% of instructional hours in person on the UCR campus, with instructors and students in the same physical location. Exceptions to this regulation for students enrolled in the Education Abroad, UC Sacramento, or the UC Washington, D.C. Programs are permissible. Courses completed in the University of California Extension are not considered work in residence.

03.01.05 Students must declare their candidacy for the Bachelor of Arts degree with the Dean's office at the beginning of their final quarter in accordance with the dates published in the Schedule of Classes.

03.01.06 Honors with the Bachelor of Arts degree are awarded to students who complete their work at any University of California campus with distinction and meet the policies laid down by the UCR Committee on Scholarships and Honors. Honors are granted by the Faculty of the School at graduation as follows: honors, high honors, highest honors.

03.02 BREADTH AND SUBJECT REQUIREMENTS FOR THE BACHELOR OF ARTS

03.02.01 English Composition: Students must demonstrate adequate proficiency in English composition by completing a one-year sequence of college-level instruction in English composition, with no grade lower than C as described in R06.01 and its subsections.

03.02.02 Natural Sciences and Mathematics: 20 units in Natural Sciences and Mathematics as described in R06.02.

03.02.03 Humanities: 20 units in Humanities as described in R06.03 and its subsections. Internships and independent study courses may not be used to satisfy this requirement.

03.02.04 Social Sciences: 16 units in Social Sciences as described in R06.04 and its subsections. Internships and independent study courses may not be used to satisfy this requirement.

03.02.05 Ethnicity: 4 units as described in R06.05.

03.02.06 Foreign Language: The Foreign Language Requirement (except for Foreign Language majors who satisfy the spirit of the language requirement by majoring in one or more languages) may be satisfied in two ways:

03.02.06.01 By completing the fourth-quarter level or its equivalent in one foreign language at UCR or at any other accredited college or university with a minimum grade of C.

American Sign Language may also be used to satisfy this requirement.

03.02.06.02 By demonstrating proficiency at the fourth-quarter level on a foreign language placement exam offered by one of the foreign language departments at UCR. This test does not yield unit credit; it only determines whether the Foreign Language Requirement has been met, or in which course in the language sequence a student should enroll.

03.02.06.03 For majors shared between the School and other schools or colleges at UCR, the number of quarters required to fulfill the Foreign Language requirement for the Bachelor of Arts degree will be determined by the Undergraduate Education Committee in the School and the other school or college concerned. In no instance will this requirement be less than the minimum required by either body.

03.02.07 No course from a student's major discipline may be used in satisfaction of breadth requirements 03.02.01 to 03.02.06. However, courses outside the major discipline but required for the major may satisfy these requirements. Students who elect a double or interdisciplinary major may apply courses from one of the majors, departments, or programs in satisfaction of 03.02.01 to 03.02.06. The same course may not be used to meet two breadth requirements.

04 AUTHORIZED DEGREES

04.01 DEGREES

03 The School of Education is authorized to offer the academic degrees of master of arts, master of education, doctor of education, and doctor of philosophy as well as credential programs for public school teachers and administrators. (Am 2001, May)

04.01.01 The School is authorized to offer the academic degrees of Bachelor of Arts, Master of Arts, Master of Education, Doctor of Education, and Doctor of Philosophy as well as credential programs for public school teachers and administrators. (Am 2001, May)

Statement of Purpose and Effect: The purpose of these changes in the School of Education (SOE) Regulations is to establish regulations to govern our undergraduate programs. The SOE has been using the College of Humanities, Arts, and Social Sciences (CHASS) regulations since the establishment of B.A. in Education, Society, and Human Development. We are proposing these regulations to help us further conduct the affairs of our programs and no longer rely on the CHASS regulations. Regulation 01 to 03.02.07 are being established for the undergraduate programs within SOE for the first time. The current 03 has been reassigned as 04.01.01. Please see the included the 'UCR Regulations Comparison and Proposal Justification' for documentation of where we obtained the language for the regulations for the SOE. The regulations were written based on using CHASS regulations and what practices we want to establish going forward based on reviewing and evaluating CHASS, the College of Natural and Agricultural Sciences, and School of Public Policy regulations.

Approved by the SOE Faculty on:

[28 October 2025](#)

And

Submitted by Kinnari Atit, Faculty Executive Committee Chair on: [29 October 2025](#)

Section below is for Senate use only

The Committee on Rules and Jurisdiction finds the wording to be consistent with the code of the Academic Senate:

10/29/2025

Received by Executive Council:

11/10/2025

October 28, 2025

TO: Kenneth Barish, Chair,
Academic Senate

FROM: Kinnari Atit, Chair, SOE Faculty Executive Committee;
Austin Johnson, Associate Dean of Undergraduate Education,
School of Education

RE: Fourth Round Review of Proposed Revisions for the SOE Regulations 01 to 04.01.01

The School of Education (SOE) reviewed the feedback from the Academic Senate in the memo dated October 21, 2025. We appreciate the thoughtful comments made by the Committee on Rules and Jurisdiction. We accept the comments as written and made the changes to the proposed regulations 2.4.3 and 3.1.1 as outlined in the memo from the Committee on Rules and Jurisdiction.

Please see attached.



Academic Senate

*Professor Kenneth Barish
Division Chair*

October 21, 2025

**To: Kinnari Atit, Chair
School of Education Faculty Executive Committee**

RE: 3rd Round - Revisions to the School of Education Regulations 1 to 4.1.1

Dear Kinnari,

Attached is feedback on the [subject proposal](#) from the Committees on Educational Policy, Courses, and Rules & Jurisdiction. Both Courses and CEP are supportive of the proposal. So, I call your attention to the comments from the Committee on Rules and Jurisdiction.

With the aim of inclusion of the proposal in the Fall Division meeting, please review the feedback from R&J. Should you accept their comments as written, please update and resubmit the proposal. Alternatively, should you have a response to their comments, with or without changes to the proposal, please submit that. Either are to be sent to my attention (cc Senate Director Cortez) by October 28, 2025.

Kind Regards,

A handwritten signature in blue ink that reads "Kenneth Barish". The signature is written in a cursive style and is enclosed in a thin black rectangular border.

Ken Barish, Academic Senate Chair

**Cc: Enrollment Manager Jobelius
Senate Director Cortez**



Academic Senate

COMMITTEE ON RULES AND JURISDICTION

Date: October 14, 2025

To: Kenneth Barish, Chair
Riverside Division

A handwritten signature in black ink, appearing to read "R. Head".

From: Randolph C. Head, Chair
Committee on Rules and Jurisdiction

Re: [Campus Review] Proposed Regulation Change: 3rd Round - Revisions to the School of Education Regulations 1 to 4.1.1

The Committee on Rules and Jurisdiction has carefully considered the [Campus Review] Proposed Regulation Change: *3rd Round - Revisions to the School of Education Regulations 1 to 4.1.1*. The Committee appreciates that the proposed regulations are meant to establish regulations to govern the undergraduate programs in the SOE and facilitate conduction of the affairs of the programs. With this, R&J believes the proposed regulations would benefit from modest modifications to increase clarity and consistency. Once completed, the committee approves of these proposed changes.

The Committee on Rules and Jurisdiction offers the following to assist in the above and to ensure overall document consistency:

2.4.3, line 15	No capitalization needed for “transcript”
2.4.3, line 19	Change “and filed” to “...and must be filed by”
2.4.3, line 19	Change “students” to “student with...”
3.1.1, line 2	Change “Not more than six units...” to “No more than six units...”



Academic Senate

COMMITTEE ON EDUCATIONAL POLICY

October 3, 2025

To: Ken Barish, Chair
Riverside Division

From: Annie Ditta, Chair
Committee on Educational Policy

Re: Third Round Revisions to SoE Regulations 01 to 04.01.01

The Committee on Educational Policy (CEP) reviewed the third round of revisions to the School of Education Regulations 01 to 04.01.01 at their October 3, 2025 meeting. The Committee voted to support the revisions.



Academic Senate

COMMITTEE ON COURSES

October 13, 2025

To: Ken Barish, Chair
Riverside Division

From: Emma Stapely, Chair
Committee on Courses

Re: Third Round Review of Proposed Revisions for the SoE Regulations 01 to 04.01.01

The Committee on Courses reviewed the proposed revisions for the SoE Regulations 01 to 04.01.01 at their October 9, 2025 meeting and voted to support the revisions.

April 24, 2025

TO: Kenneth Barish, Chair,
Academic Senate

FROM: Katherine Meltzoff, Chair, SOE Faculty Executive;
Austin Johnson, Associate Dean of Undergraduate Education,
School of Education

RE: Third Round Review of Proposed Revisions for the SOE Regulations 01 to 04.01.01

The School of Education (SOE) reviewed the feedback from the Academic Senate in the memo dated October 30, 2024. We appreciate the thoughtful comments raised by the Committee on Educational Policy and the Committee on Rules and Jurisdiction. We made changes to the proposed regulations 02.01.01, 02.03.01 (removed this regulation), 02.03.03 (now renumbered to 02.03.02), 02.03.09 (now renumbered to 02.03.08), 02.04.03, 02.04.04, 02.04.05, 02.08.02, 02.08.03, 03.01.04, 03.02.01, 03.02.02, 03.02.03, 03.02.04, 03.02.05, 03.02.06, 03.02.06.01, 03.02.06.02, 03.02.06.03, and 03.02.07 per the recommendations of both committees.

The regulation numbered 2.03.01 in Round 2 - we removed this regulation and renumbered the remaining regulations in the section. The regulation is no longer relevant and does not require adoption by the SOE.

SOE has updated proposed regulation 03.01.04 to reflect the information distributed on the memo dated December 17, 2024, regarding changes to Riverside Senate Regulation 6 and adding the campus residency requirement.

Please see attached.

CHANGES TO REGULATIONS
THE SCHOOL OF EDUCATION
REPORT TO THE RIVERSIDE DIVISION
December 2, 2025

To be adopted:

Proposed Changes to SOE Regulations 01 to 04.01.01

PROPOSED:

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02.03.06 With approval of the Associate Dean of Undergraduate Education for the School, students may withdraw from the University on or before the last day of instruction.

02.03.07 Any changes in a student's schedule of classes not covered by the above regulations must have the approval of the Associate Dean of Undergraduate Education for the School.

02.03.08 Attendance requirements for students in specific classes may be established by (a) the Executive Committee of the School, (b) the course syllabus, or (c) the Schedule of Classes. Students who do not meet these requirements may forfeit their seats. Instructors in the School are authorized to enforce these requirements by removing students' names from the roster after the first full week of classes and up to the end of the second full week of classes. A student who is removed from a course roster for not meeting attendance requirements will not be allowed to continue in that course and will receive an "F" or an "NC" unless the student formally drops the class.

02.04 MAJOR REQUIREMENTS

02.04.01 A major shall consist of no fewer than 28 and no more than 72 upper-division units.

02.04.02 Candidates for the Bachelor of Arts degree may not receive more than 80 units of credit toward the degree for work taken in the major discipline (i.e., students must take at least 100 units outside the major discipline).

02.04.03 A student may elect a second or third major offered by another college/school

at UCR. In such cases, the student must complete all course requirements for each of the majors. If the multiple majors lead to the same degree (Bachelor of Arts), students will be expected to satisfy the college/school breadth requirements of their chosen college/school. If the multiple majors lead to different degrees (Bachelor of Arts and Bachelor of Science), the college/school breadth requirements for each degree designation must be satisfied. When the multiple majors lead to different degrees, this will be noted on the Transcript. A declaration of two or three majors requires the approval of the Associate Dean of Undergraduate Education for the colleges/schools concerned and filed by the students with their chosen college/school.

02.04.04 All courses in the major must be completed during Fall quarter, Winter quarter, Spring quarter, or Summer session at UCR. Exceptions to this policy must have the approval of the Associate Dean of Undergraduate Education for the School.

02.04.05 A student may transfer from one major to another by filing a change of major request, which requires approval of the Associate Dean of Undergraduate Education of the School for the program that the student is transferring into. Admission into a given major is subject to that major's eligibility requirements.

02.04.06 Transfer students must complete a minimum of 16 upper-division units in their major at the UCR campus for the Bachelor of Arts degree.

02.04.07 A grade point average of at least 2.00 in upper-division courses taken in the field of the major is required for graduation.

02.05 CREDIT BY EXAMINATION

02.05.01 A student who wishes to have the privilege of examination for degree credit must be in residence and in good academic standing at UCR. In residence is defined as meeting Senate Regulation 610.

02.05.02 A student may take examinations for degree credit in courses offered in the School, without formally enrolling in them, with the exception of English composition courses.

02.05.03 Arrangements for examinations for degree credit must be made in advance with the Associate Dean of Undergraduate Education for the School and with the student's academic advisor. The approval of the Associate Dean of Undergraduate Education for the School, the instructor who is appointed to give the examination, and the academic advisor are necessary before the examination may be given.

02.05.04 The results of all examinations for degree credit, either with grades or with a Satisfactory/No Credit report, are entered into the student's record in the same manner as they are entered for regular courses of instruction.

02.05.05 English composition requirements may not be met with credit by examination.

02.06 UNDERGRADUATE CREDIT FOR GRADUATE COURSES

02.06.01 A student who has a grade point average of at least 3.00 in all courses taken at the University of California or who has shown exceptional ability in a special field may take a graduate course for undergraduate credit, with the permission of the instructor concerned, within the limitations specified by Senate Regulation 740. The determination of exceptional ability is decided by the instructor concerned.

02.07 ENROLLMENT ON A SATISFACTORY/NO CREDIT BASIS

02.07.01 An undergraduate student in good academic standing may receive credit for courses undertaken and graded "S" at the UCR campus to a limit of one third of the total units undertaken and passed at the UCR campus at the time the degree is awarded.

This same limitation applies to courses that are only graded Satisfactory/No Credit. Units completed on another campus of the University of California by a UCR undergraduate enrolled as an intercampus visitor are considered UCR work for the purposes of this regulation.

02.07.02 Courses which are required in, or prerequisite to, the undergraduate student's major subject may not be taken on a Satisfactory/No Credit basis unless approved by the Associate Dean of Undergraduate Education for the School.

02.07.03 Limited status or special status students may take courses on a Satisfactory/No Credit basis only with the approval of the Associate Dean of Undergraduate Education for the School.

02.07.04 Units earned on a Satisfactory/No Credit basis will be counted in satisfaction of degree requirements, but such courses will be disregarded in determining the student's grade point average.

02.07.05 Students may change from letter grading in a course to Satisfactory/No Credit (as permitted), or vice versa, until the end of the eighth week of instruction within the limitations specified by 02.07.02.

02.08 MINORS

02.08.01 A disciplinary minor is a set of courses selected from a non-interdisciplinary major. It is proposed by the sponsoring department or program and approved by the Executive Committee of the School, the UCR Committee on Educational Policy, and the UCR Academic Senate. Among these courses must be a sufficient number (totaling at least 16 units) selected from courses accepted for the major.

02.08.02 An interdisciplinary minor is a set of courses focused on an interdisciplinary thematic area, proposed by the Executive Committee of the School, and approved by the Executive Committee of the School, the

UCR Committee on Educational Policy, and the UCR Academic Senate. Each minor is to be supervised by a representative committee of at least three Faculty members.

02.08.03 A minor shall consist of no fewer than 16 and no more than 28 units of organized upper-division course work. No overlap may occur among courses used to satisfy upper-division course requirements for a major and a minor. A minor may use up to one upper-division course in the major discipline for minors requiring 16 units and up to two upper-division courses in the major discipline for minors requiring 20 units or more, provided that the courses are not also applied to the major.

02.08.04 A grade point average of at least 2.00 in upper-division courses taken in the field of the minor is required for graduation with the minor.

02.08.05 Courses in the minor may be applied toward college/School breadth requirements.

02.08.06 Students must file a declaration of a minor at least two quarters before graduation and must be in good academic standing at the time of filing. The declaration of a minor requires the signature of the Academic Advisor that handles the minor and the signature(s) of the Associate Dean(s) of the college(s) of both the major and the minor. The minor coursework (including all prerequisites for upper-division courses in the minor) must be completed within the overall 216 unit maximum for the Bachelor of Arts degree. A minimum GPA of 2.0 is required for all courses in the minor. If the student declares a minor and for any reason fails to complete the minor, the designation of the minor must be removed from the transcript before the student can graduate.

03 DEGREE REQUIREMENTS

03.01 GENERAL REQUIREMENTS

03.01.01 A minimum of 180 units of academic work is required for graduation. Not more than six units of Physical Education activity courses or their equivalent may be counted toward the 180 unit requirement for the Bachelor of Arts degree. No 400 series or equivalent courses and no more than three courses in the 300 series or equivalent courses may be counted toward the 180 unit requirement. A maximum of 216 units is allowed toward the Bachelor of Arts degree. See definition of these course categories in Senate Regulation 740.

03.01.02 A grade point average of at least 2.00 in all courses undertaken at any University of California campus is required for graduation.

03.01.03 Concurrent enrollment in any course offered by University of California Extension (including correspondence courses) or by other institutions is not permitted except by prior approval of the Associate Dean of Undergraduate Education.

03.01.04 Each undergraduate student must satisfy a campus experience requirement by completing at least 35 units in residence at the UCR campus. This work must be spread over a minimum of three quarters with no more than one of these quarters being in the summer. These quarters need not be consecutive. The 35 units must be in courses designed to deliver at least 50% of instructional hours in person on the UCR campus, with instructors and students in the same physical location. Exceptions to this regulation for students enrolled in the Education Abroad, UC Sacramento, or the UC Washington, D.C. Programs are permissible. Courses completed in the University of California Extension are not considered work in residence.

03.01.05 Students must declare their candidacy for the Bachelor of Arts degree with the Dean's office at the beginning of their final quarter in accordance with the dates published in the Schedule of Classes.

03.01.06 Honors with the Bachelor of Arts degree are awarded to students who complete their work at any University of California campus with distinction and meet the policies laid down by the UCR Committee on Scholarships and Honors. Honors are granted by the Faculty of the School at graduation as follows: honors, high honors, highest honors.

03.02 BREADTH AND SUBJECT REQUIREMENTS FOR THE BACHELOR OF ARTS

03.02.01 English Composition: Students must demonstrate adequate proficiency in English composition by completing a one-year sequence of college-level instruction in English composition, with no grade lower than C as described in R06.01 and its subsections.

03.02.02 Natural Sciences and Mathematics: 20 units in Natural Sciences and Mathematics as described in R06.02.

03.02.03 Humanities: 20 units in Humanities as described in R06.03 and its subsections. Internships and independent study courses may not be used to satisfy this requirement.

03.02.04 Social Sciences: 16 units in Social Sciences as described in R06.04 and its subsections. Internships and independent study courses may not be used to satisfy this requirement.

03.02.05 Ethnicity: 4 units as described in R06.05.

03.02.06 Foreign Language: The Foreign Language Requirement (except for Foreign Language majors who satisfy the spirit of the language requirement by majoring in one or more languages) may be satisfied in two ways:

03.02.06.01 By completing the fourth-quarter level or its equivalent in one foreign language at UCR or at any other accredited college or university with a minimum grade of C.

American Sign Language may also be used to satisfy this requirement.

03.02.06.02 By demonstrating proficiency at the fourth-quarter level on a foreign language placement exam offered by one of the foreign language departments at UCR. This test does not yield unit credit; it only determines whether the Foreign Language Requirement has been met, or in which course in the language sequence a student should enroll.

03.02.06.03 For majors shared between the School and other schools or colleges at UCR, the number of quarters required to fulfill the Foreign Language requirement for the Bachelor of Arts degree will be determined by the Undergraduate Education Committee in the School and the other school or college concerned. In no instance will this requirement be less than the minimum required by either body.

03.02.07 No course from a student's major discipline may be used in satisfaction of breadth requirements 03.02.01 to 03.02.06. However, courses outside the major discipline but required for the major may satisfy these requirements. Students who elect a double or interdisciplinary major may apply courses from one of the majors, departments, or programs in satisfaction of 03.02.01 to 03.02.06. The same course may not be used to meet two breadth requirements.

04 AUTHORIZED DEGREES

04.01 DEGREES

03 The School of Education is authorized to offer the academic degrees of master of arts, master of education, doctor of education, and doctor of philosophy as well as credential programs for public school teachers and administrators. (Am 2001, May)

04.01.01 The School is authorized to offer the academic degrees of Bachelor of Arts, Master of Arts, Master of Education, Doctor of Education, and Doctor of Philosophy as well as credential programs for public school teachers and administrators. (Am 2001, May)

Statement of Purpose and Effect: The purpose of these changes in the School of Education (SOE) Regulations is to establish regulations to govern our undergraduate programs. The SOE has been using the College of Humanities, Arts, and Social Sciences (CHASS) regulations since the establishment of B.A. in Education, Society, and Human Development. We are proposing these regulations to help us further conduct the affairs of our programs and no longer rely on the CHASS regulations. Regulation 01 to 03.02.07 are being established for the undergraduate programs within SOE for the first time. The current 03 has been reassigned as 04.01.01. Please see the included the 'UCR Regulations Comparison and Proposal Justification' for documentation of where we obtained the language for the regulations for the SOE. The regulations were written based on using CHASS regulations and what practices we want to establish going forward based on reviewing and evaluating CHASS, the College of Natural and Agricultural Sciences, and School of Public Policy regulations.

Approved by the SOE Faculty on:

27 February 2024

And

Submitted by Austin Johnson, Associate Dean of Undergraduate Education:

04 April 2025

Section below is for Senate use only

(if applicable) Approved by the Committee on _____: (Insert date of committee approval)

The Committee on Rules and Jurisdiction finds the wording to be consistent with the code of the Academic Senate:

(leave blank)

Received by Executive Council:

(leave blank)



Academic Senate

EXECUTIVE COUNCIL

Kenneth Barish, Chair

October 30, 2024

To: Katherine Meltzoff, Chair, SOE Faculty Executive

Samantha Jobelius, SOE Enrollment Manager, Academic Scheduling and Curriculum Planning Specialist

Re: 2nd Round – Proposed Revisions to the School of Education Regulations 01 to 04.01.01

Dear Colleagues,

On October 28, 2024, the Academic Senate Executive Council discussed the subject thoughtful second round [proposed revisions to the School of Education Regulations 01 to 04.01.01](#) along with the feedback from the Committees on Rules and Jurisdiction, Courses, and Educational Policy. Courses had no comments on the proposal, while CEP and R&J did; and these are attached. Executive Council concurred with the responses from CEP and R&J.

Please consider the attached comments in a future revision that would be submitted to my attention with a copy to Senate Director Cortez.

Sincerely,

A handwritten signature in blue ink that reads "Kenneth Barish".

Kenneth Barish
Chair, Academic Senate

Cc: Executive Council
Director Cortez

Attachment



Academic Senate

COMMITTEE ON EDUCATIONAL POLICY

October 9, 2024

To: Ken Barish, Chair
Riverside Division

From: Annie Ditta, Chair
Committee on Educational Policy

Re: Second Review of Proposed Revisions to SoE Regulations 01 to 04.01.01

The Committee on Educational Policy (CEP) reviewed the proposed revisions to School of Education Regulations 01. To 04.01.01 at their October 4, 2024 meeting and has no concerns related to their charge of undergraduate education.

CEP does recommend that 02.01.01 be updated to remove “the” from before “one of the School’s programs.”



Academic Senate

COMMITTEE ON COURSES

October 14, 2024

To: Ken Barish, Chair
Riverside Division

From: Erin Rankin, Chair
Committee on Courses

Re: Second Round Review of Proposed Revisions to SoE Regulations 01 to 04.01.01

The Committee on Courses reviewed the proposed revision to SoE Regulations 01 to 04.01.01 at their October 10, 2024 meeting and had no concerns related to their charge of courses and instruction.



COMMITTEE ON RULES AND JURISDICTION

Date: October 4, 2024

To: Kenneth Barish, Chair
Riverside Division

From: Kathleen Montgomery 
Chair, Committee on Rules and Jurisdiction

Re: [Campus Review] Proposed Regulation Change: 2nd Round - Revisions to the School of Education Regulations 01 to 04.01.01

The Committee on Rules and Jurisdiction has carefully considered the second round of the *Proposed Revisions to the School of Education regulations 01 through 04.01.01*. The Committee appreciates that the proposed regulation changes are meant to establish regulations to govern the undergraduate programs for the School of Education. With this, R&J believes the proposed regulations would benefit from modest modifications to increase clarity and consistency before final approval. The Committee on Rules and Jurisdiction offers the following to assist in the above and to ensure overall document consistency:

Please note: aspects of the suggested modifications are shown in bold, but need not appear in bold in the actual proposal.

General suggested modifications:

- 02.03.01 R&J finds this section to be unclear. Please rewrite to clarify meaning of **confirmation of classes**.
- 02.03.03 (last sentence) Suggest replacing the final sentence of this section with the following:
Undergraduate students who enroll in fewer than 12 units or more than 20 units in any quarter must obtain the approval of the Associate Dean of Undergraduate Education.
- 02.03.09 (first sentence) Suggest rephrasing for clarity:
Attendance requirements for students in specific classes may be established by (a) the Executive Committee of the School, (b) the course syllabus, or (c) the Schedule of Classes. Students who do not meet these requirements may forfeit

their seats. Instructors in the School are authorized to enforce these requirements by removing students' names from the roster after the first full week of classes and up to the end of the second full week of classes. A student who is removed from a course roster for not meeting attendance requirements will not be allowed to continue in that course and will receive an "F" or an "NC" unless the student formally drops the class.

- 02.04.03 (line 13) The words **Academic Senate** appear to be misplaced. Please remove.
- 02.04.05 Suggest minor rephrasing to avoid confusion (suggestion in bold):
A student may transfer from one major to another by filing a change of major petition, which requires approval of the Associate Dean of Undergraduate Education **of** the school for the program that the student is transferring into. Admission into a given major is subject to that major's eligibility requirements.
- 02.05.04 Suggest two minor changes (suggestions in bold):

The results of all examinations for degree credit, either with grades or with a Satisfactory/No Credit report, are entered **into** the student's record in the same manner as they are entered **for** regular courses of instruction.
- 02.08.02 The wording in this section should be consistent with that in 02.08.01 with regard to the bodies that need to give approval (please see feedback from R&J in first round, where this item was included in comments for 02.08.01)
- 02.08.03 (second-to-last line) Please insert a comma after **more**
- 03.01.04 (suggest slight revisions to align with proposed UCR Regulation 06.14:)
Consistent with Senate Regulation 630A, 35 of the final 45 units completed by each candidate for the Bachelor of Arts Degree must be earned in residence in the School of Education at UCR. Consistent with Senate Regulation 610, residence in any regular term is validated by enrollment in at least six units of courses that were created through the UCR course approval process.

Please note that there are expected changes in the works from both the UCR Division and at Systemwide surrounding the evolving concept of "campus experience". At such point as new guidelines are adopted in either sphere, an updated regulation 03.01.04 may need to be submitted.

Section 03.02 Breadth and Subject Requirements

Please put the SOE breadth requirements in the same order as they are in the campus-wide requirements and include “**and its subsections**” with referenced regulations to achieve greater clarity. With the exception of 03.02.01, outside of the inclusion, there is *no change in wording or content*, just a rearrangement to match the campus regulations.

- 03.02.01 (line 4) Please remove the extra space in **college-level**
English Composition: Students must demonstrate adequate proficiency in English composition by completing a one-year sequence of college- level instruction in English composition, with no grade lower than C as described in R06.01 **and its subsections**.
- 03.02.02 Natural Sciences and Mathematics: 20 units in Natural Sciences and Mathematics as described in R06.02 **and its subsections**.
- 03.02.03 Humanities: 20 units in Humanities as described in R06.03 **and its subsections**. Internships and independent study courses, and courses cross-listed with Business Administration or Physical Education, may not be used to satisfy this requirement.
- 03.02.04 Social Sciences: 16 units in Social Sciences as described in R06.04 **and its subsections**. Internships and independent study courses may not be used to satisfy this requirement.
- 03.02.05 Ethnicity: 4 units as described in R06.05 **and its subsections**.
- 03.02.06 Foreign Language: The Foreign Language Requirement (except for Foreign Language majors who satisfy the spirit of the language requirement by majoring in one or more languages) may be satisfied in two ways:
 - 03.02.06.01 By completing the fourth-quarter level or its equivalent in one foreign language at UCR or at any other accredited college or university with a minimum grade of C. American Sign Language may also be used to satisfy this requirement.
 - 03.02.06.02 By demonstrating proficiency at the fourth-quarter level on a foreign language placement exam offered by one of the foreign language departments at UCR. This test does not yield unit credit; it only determines whether the Foreign Language Requirement has been met, or in which course in the language sequence a student should enroll.
 - 03.02.06.03 For majors shared between the School and other schools or colleges at UCR, the number of quarters required to fulfill the Foreign Language requirement for the

Bachelor of Arts degree will be determined by the Undergraduate Education Committee in the School and the other school or college concerned. In no instance will this requirement be less than the minimum required by either body.

- 03.02.07 No course from a student's major discipline may be used in satisfaction of breadth requirements 03.02.01 to 03.02.06. However, courses outside the major discipline but required for the major may satisfy these requirements. Students who elect a double or interdisciplinary major may apply courses from one of the majors, departments, or programs in satisfaction of 03.02.01 to 03.02.06. The same course may not be used to meet two breadth requirements.

June 3, 2024

TO: Sang-Hee Lee, Chair,
Academic Senate

FROM: Katherine Meltzoff, Chair,
Austin Johnson, Associate Dean of Undergraduate Education,
School of Education

RE: Second Round Review of Proposed Revisions for the SOE Regulations 01 to 04.01.01

The School of Education (SOE) reviewed the feedback from the Academic Senate in the memo dated April 23, 2024. We appreciate the thoughtful comments raised by the Committee on Rules and Jurisdiction. We have made changes to the proposed Regulations per the recommendations of the Committee on Rules and Jurisdiction. We made changes to 02.01.01, 02.03.03, 02.04.02, 02.04.03, 02.04.06, 02.05.01, 02.05.02, 02.06.01, 02.07.01, 02.08.01, 02.08.06, 03.01.01, 03.01.02, 03.01.03, 03.01.04, 03.01.05, 03.01.06, 3.02.05.01, 03.02.05.03, 03.02.07, 04.01.01, and the statement of purpose and effect at the end.

Please see attached.

CHANGES TO REGULATIONS
THE SCHOOL OF EDUCATION
REPORT TO THE RIVERSIDE DIVISION
December 3, 2024

To be adopted:

Proposed Changes to SOE Regulations 01 to 04.01.01

PROPOSED:

~~01 REQUIREMENTS FOR ADMISSION TO THE SCHOOL~~

~~**01.01** Requirements for admission to the school are (a) admission to graduate standing and (b) selection of an approved program in the school.~~

~~**01.02** Students may continue to matriculate in credential programs at the junior level.~~

~~02 STUDY LIST~~

~~**02.01** Procedures for approval of study lists and the assignment of advisers are determined by the Executive Committee of the school.~~

~~**02.02** The presentation of a study list by a student and its acceptance by the school evidences an obligation on the part of the student faithfully to perform the designated work. Withdrawal from, or neglect of, any course entered on the study list, or a change in program without the formal permission of the Dean of the school, renders the student liable to enforced withdrawal from the University or other disciplinary action.~~

01 STATUS OF STUDENTS

01.01 CATEGORIES OF STUDENTS

01.01.01 The categories of students are (1) regular students, (2) special students, (3) limited students as defined in the Manual of the Academic Senate, Regulations 310, 312, 314, 650.

02 REGISTRATION AND COURSE WORK

02.01 ACADEMIC ADVISOR

2.01.01 The School of Education, hereafter referred to as School, will assign an academic advisor to each student majoring in the one of the School's programs.

02.02 STUDENT RESPONSIBILITY

02.02.01 Students should plan their program of studies carefully in consultation with their academic advisor. They should go to the Associate Dean of Undergraduate Education for the School with any irregularities in the program that may require special approval. It is the student's responsibility to ensure that all requirements for graduation are satisfied.

02.02.02 Withdrawal from any course or a change in enrollment after the deadlines published in the Schedule of Classes requires the approval of the Associate Dean of Undergraduate Education for the School.

02.03 REGISTRATION/ENROLLMENT

02.03.01 The confirmation of classes is a student's selection of courses to be pursued in any term.

02.03.02 Each term, students are required to register and enroll by the date set by the campus. If required by the student's program, the selection of courses must be approved by an academic advisor. Students who do not attend the first class meeting may be dropped from the course.

02.03.03 An undergraduate student must make expected progress toward the degree as described in the Regulations of the Riverside Division of the Academic Senate of the University of California, Section 07.01. These regulation sections are hereafter referred to with the prefix "R" (e.g., R 07.01). If an undergraduate student does not make expected progress toward the degree as defined in R 07.02, then the student is considered ineligible for continued registration and will not be able to register for courses unless granted approval by the Associate Dean of Undergraduate Education for the School, hereafter referred to as the Associate Dean of Undergraduate Education. For undergraduate students, enrollment in any quarter of less than 12 units or more than 20 units must have the approval of the Associate Dean of Undergraduate Education.

02.03.04 An undergraduate student on academic probation may not enroll in more than 17 units without the consent of the Associate Dean of Undergraduate Education for the School. An undergraduate who is subject to dismissal may not enroll in more than 15 units without the consent of the Associate Dean of Undergraduate Education for the School.

02.03.05 An undergraduate student may add a course up to the end of the second full week of instruction. Courses may be added until the end of the third week of instruction with the consent of the instructor and

academic advisor. No course may be added after the third week without approval of the Associate Dean of Undergraduate Education for the School.

02.03.06 A course dropped after the end of the second full week of instruction will remain as a permanent transcript entry showing course number and title, with a transcript symbol of W, signifying withdrawal, entered in the grade column.

02.03.07 With approval of the Associate Dean of Undergraduate Education for the School, students may withdraw from the University on or before the last day of instruction.

02.03.08 Any changes in a student's schedule of classes not covered by the above regulations must have the approval of the Associate Dean of Undergraduate Education for the School.

02.03.09 In the School, instructors can enforce policies in which students may be required to forfeit their seats in particular courses by removing students' names from the roster after the first full week of classes and up to the end of the second full week of instruction if students do not meet attendance requirements specified by either (a) the Executive Committee of the School, (b) the course syllabus, or (c) the Schedule of Classes. A student who is removed from a course roster for not meeting attendance requirements will not be allowed to continue in that course and will receive an "F" or an "NC" unless the student formally drops the class.

02.04 MAJOR REQUIREMENTS

02.04.01 A major shall consist of no fewer than 28 and no more than 72 upper-division units.

02.04.02 Candidates for the Bachelor of Arts degree may not receive more than 80 units of credit toward the degree for work taken in the major discipline (i.e., students must take at least 100 units outside the major discipline).

02.04.03 A student may elect a second or third major offered by another college/school at UCR. In such cases, the student must complete all course requirements for each of the majors. If the multiple majors lead to the same degree (Bachelor of Arts), students will be expected to satisfy the college/school breadth requirements of their chosen college/school. If the multiple majors lead to different degrees (Bachelor of Arts and Bachelor of Science), the college/school breadth requirements for each degree designation Academic Senate must be satisfied. When the multiple majors lead to different degrees, this will be noted on the Transcript. A declaration of two or three majors requires the approval of the Associate Dean of Undergraduate Education for the colleges/schools concerned and filed by the students with their chosen college/school.

02.04.04 All courses in the major must be completed during Fall quarter, Winter quarter, Spring quarter, or Summer session at UCR. Exceptions to this policy must have the approval of the Associate Dean of Undergraduate Education for the School.

02.04.05 A student may transfer from one major to another by filing a change of major petition, which requires approval of the Associate Dean of Undergraduate Education for the School for the program that the student is transferring into. Admission into a given major is subject to that major's eligibility requirements.

02.04.06 Transfer students must complete a minimum of 16 upper-division units in their major at the UCR campus for the Bachelor of Arts degree.

02.04.07 A grade point average of at least 2.00 in upper-division courses taken in the field of the major is required for graduation.

02.05 CREDIT BY EXAMINATION

02.05.01 A student who wishes to have the privilege of examination for degree credit

must be in residence and in good academic standing at UCR. In residence is defined as meeting Senate Regulation 610.

02.05.02 A student may take examinations for degree credit in courses offered in the School, without formally enrolling in them, with the exception of English composition courses.

02.05.03 Arrangements for examinations for degree credit must be made in advance with the Associate Dean of Undergraduate Education for the School and with the student's academic advisor. The approval of the Associate Dean of Undergraduate Education for the School, the instructor who is appointed to give the examination, and the academic advisor are necessary before the examination may be given.

02.05.04 The results of all examinations for degree credit, either with grades or with a Satisfactory/No Credit report, are entered upon the student's record in the same manner as they are entered in regular courses of instruction.

02.05.05 English composition requirements may not be met with credit by examination.

02.06 UNDERGRADUATE CREDIT FOR GRADUATE COURSES

02.06.01 A student who has a grade point average of at least 3.00 in all courses taken at the University of California or who has shown exceptional ability in a special field may take a graduate course for undergraduate credit, with the permission of the instructor concerned, within the limitations specified by Senate Regulation 740. The determination of exceptional ability is decided by the instructor concerned.

02.07 ENROLLMENT ON A SATISFACTORY/NO CREDIT BASIS

02.07.01 An undergraduate student in good academic standing may receive credit for courses undertaken and graded "S" at the

UCR campus to a limit of one third of the total units undertaken and passed at the UCR campus at the time the degree is awarded. This same limitation applies to courses that are only graded Satisfactory/No Credit. Units completed on another campus of the University of California by a UCR undergraduate enrolled as an intercampus visitor are considered UCR work for the purposes of this regulation.

02.07.02 Courses which are required in, or prerequisite to, the undergraduate student's major subject may not be taken on a Satisfactory/No Credit basis unless approved by the Associate Dean of Undergraduate Education for the School.

02.07.03 Limited status or special status students may take courses on a Satisfactory/No Credit basis only with the approval of the Associate Dean of Undergraduate Education for the School.

02.07.04 Units earned on a Satisfactory/No Credit basis will be counted in satisfaction of degree requirements, but such courses will be disregarded in determining the student's grade point average.

02.07.05 Students may change from letter grading in a course to Satisfactory/No Credit (as permitted), or vice versa, until the end of the eighth week of instruction within the limitations specified by 02.07.02.

02.08 MINORS

02.08.01 A disciplinary minor is a set of courses selected from a non-interdisciplinary major. It is proposed by the sponsoring department or program and approved by the Executive Committee of the School, the UCR Committee on Educational Policy, and the UCR Academic Senate. Among these courses must be a sufficient number (totaling at least 16 units) selected from courses accepted for the major.

02.08.02 An interdisciplinary minor is a set of courses focused on an interdisciplinary

thematic area, proposed by the Executive Committee, and approved by the Faculty, the Committee on Educational Policy, and the Academic Senate. Each minor is to be supervised by a representative committee of at least three Faculty members.

02.08.03 A minor shall consist of no fewer than 16 and no more than 28 units of organized upper-division course work. No overlap may occur among courses used to satisfy upper-division course requirements for a major and a minor. A minor may use up to one upper-division course in the major discipline for minors requiring 16 units and up to two upper-division courses in the major discipline for minors requiring 20 units or more provided that the courses are not also applied to the major.

02.08.04 A grade point average of at least 2.00 in upper-division courses taken in the field of the minor is required for graduation with the minor.

02.08.05 Courses in the minor may be applied toward college/School breadth requirements.

02.08.06 Students must file a declaration of a minor at least two quarters before graduation and must be in good academic standing at the time of filing. The declaration of a minor requires the signature of the Academic Advisor that handles the minor and the signature(s) of the Associate Dean(s) of the college(s) of both the major and the minor. The minor coursework (including all prerequisites for upper-division courses in the minor) must be completed within the overall 216 unit maximum for the Bachelor of Arts degree. A minimum GPA of 2.0 is required for all courses in the minor. If the student declares a minor and for any reason fails to complete the minor, the designation of the minor must be removed from the transcript before the student can graduate.

03 DEGREE REQUIREMENTS

03.01 GENERAL REQUIREMENTS

03.01.01 A minimum of 180 units of academic work is required for graduation. Not more than six units of Physical Education activity courses or their equivalent may be counted toward the 180 unit requirement for the Bachelor of Arts degree. No 400 series or equivalent courses and no more than three courses in the 300 series or equivalent courses may be counted toward the 180 unit requirement. A maximum of 216 units is allowed toward the Bachelor of Arts degree. See definition of these course categories in Senate Regulation 740.

03.01.02 A grade point average of at least 2.00 in all courses undertaken at any University of California campus is required for graduation.

03.01.03 Concurrent enrollment in any course offered by University of California Extension (including correspondence courses) or by other institutions is not permitted except by prior approval of the Associate Dean of Undergraduate Education.

03.01.04 As defined in Senate Regulation 630A, 35 of the final 45 units completed by each candidate prior to receiving the Degree of Bachelor of Arts must be earned in residence on the Riverside campus. No more than 18 of the 35 units may be completed in summer session courses on the Riverside campus. The minimum residence at the University of California required for a degree is three quarters. One of these required quarters may be completed in the summer session at the UCR campus provided the student carries at least 12 units unless a reduced load is approved by the Associate Dean of Undergraduate Education. Courses completed in the University of California Extension are not considered work in residence.

03.01.05 Students must declare their candidacy for the Bachelor of Arts degree with the Dean's office at the beginning of their final quarter in accordance with the dates published in the Schedule of Classes.

03.01.06 Honors with the Bachelor of Arts degree are awarded to students who complete their work at any University of California campus with distinction and meet the policies laid down by the UCR Committee on Scholarships and Honors. Honors are granted by the Faculty of the School at graduation as follows: honors, high honors, highest honors.

03.02 BREADTH AND SUBJECT REQUIREMENTS FOR THE BACHELOR OF ARTS

03.02.01 English Composition: Students must demonstrate adequate proficiency in English composition by completing a one-year sequence of college- level instruction in English composition, with no grade lower than C as described in R06.01.

03.02.02 Humanities: 20 units in Humanities as described in R06.03. Internships and independent study courses, and courses cross-listed with Business Administration or Physical Education, may not be used to satisfy this requirement.

03.02.03 Social Sciences: 16 units in Social Sciences as described in R06.04. Internships and independent study courses may not be used to satisfy this requirement.

03.02.04 Ethnicity: 4 units as described in R06.05.

03.02.05 Foreign Language: The Foreign Language Requirement (except for Foreign Language majors who satisfy the spirit of the language requirement by majoring in one or more languages) may be satisfied in two ways:

03.02.05.01 By completing the fourth-quarter level or its equivalent in one foreign language at UCR or at any other accredited college or university with a minimum grade of C. American Sign Language may also be used to satisfy this requirement.

03.02.05.02 By demonstrating proficiency at the fourth-quarter level on a foreign language placement exam offered by one of the foreign language departments at UCR. This test does not yield unit credit; it only determines whether the Foreign Language Requirement has been met, or in which course in the language sequence a student should enroll.

03.02.05.03 For majors shared between the School and other schools or colleges at UCR, the number of quarters required to fulfill the Foreign Language requirement for the Bachelor of Arts degree will be determined by the Undergraduate Education Committee in the School and the other school or college concerned. In no instance will this requirement be less than the minimum required by either body.

03.02.06 Natural Sciences and Mathematics: 20 units in Natural Sciences and Mathematics as described in R06.02.

03.02.07 No course from a student's major discipline may be used in satisfaction of breadth requirements 03.02.01 to 03.02.06. However, courses outside the major discipline but required for the major may satisfy these requirements. Students who elect a double or interdisciplinary major may apply courses from one of the majors, departments, or programs in satisfaction of 03.02.01 to 03.02.06. The same course may not be used to meet two breadth requirements.

04 AUTHORIZED DEGREES

04.01 DEGREES

03 The School of Education is authorized to offer the academic degrees of master of arts, master of education, doctor of education, and doctor of philosophy as well as credential programs for public school teachers and administrators. (Am 2001, May)

04.01.01 The School is authorized to offer the academic degrees of Bachelor of Arts, Master of Arts, Master of Education, Doctor of Education, and Doctor of Philosophy as well as credential programs for public school teachers and administrators. (Am 2001, May)

Statement of Purpose and Effect: The purpose of these changes in the School of Education (SOE) Regulations is to establish regulations to govern our undergraduate programs. The SOE has been using the College of Humanities, Arts, and Social Sciences (CHASS) regulations since the establishment of B.A in Education, Society, and Human Development. We are proposing these regulations to help us further conduct the affairs of our programs and no longer rely on the CHASS regulations. Regulation 01 to 03.02.07 are being established for the undergraduate programs within SOE for the first time. The current 03 has been reassigned as 04.01.01. Please see the included the 'UCR Regulations Comparison and Proposal Justification' for documentation of where we obtained the language for the regulations for the SOE. The regulations were written based on using CHASS regulations and what practices we want to establish going forward based on reviewing and evaluating CHASS, the College of Natural and Agricultural Sciences, and School of Public Policy regulations.

Approved by the SOE Faculty on:

27 February 2024

And

Submitted by Austin Johnson, Associate Dean of Undergraduate Education:

03 March 2024

Section below is for Senate use only

(if applicable) Approved by the Committee on _____: (Insert date of committee approval)

The Committee on Rules and Jurisdiction finds the wording to be consistent with the code of the Academic Senate:

(leave blank)

Received by Executive Council:

(leave blank)



EXECUTIVE COUNCIL

Sang-Hee Lee, Chair

Academic Senate

April 23, 2024

To: Katherine Meltzoff, Chair, SOE Faculty Executive Committee

Re: Proposed Revisions to the School of Education Regulations 01 to 04.01.01

Dear Katherine,

Executive Council reviewed and discussed the subject proposal and attached comments from reviewing committees. Both the Committee on Courses and Educational Policy expressed support for the proposed changes.

I trust the comments from the Committee on Rules and Jurisdiction will be helpful in consideration of a potential revised proposal.

Yours,

A handwritten signature in black ink, appearing to read "Sang-Hee Lee", written over a light blue circular stamp.

Sang-Hee Lee

Chair, Academic Senate

Cc: Director Cortez
Enrollment Manager Jobelius

Attachment



Academic Senate

COMMITTEE ON EDUCATIONAL POLICY

April 8, 2024

To: Sang-Hee Lee, Chair
Riverside Division

From: Ward Beyermann, Chair
Committee on Educational Policy

Re: Proposed Changes to SoE Regulations 01 to 04.01.01

The Committee on Educational Policy (CEP) reviewed the proposed changes to SoE Regulations 01 to 04.01.01 at their April 5, 2024 meeting and voted to support the changes.



Academic Senate

COMMITTEE ON COURSES

April 3, 2024

To: Sang-Hee Lee, Chair
Riverside Division

From: James Flegal, Chair
Committee on Courses

Re: Proposed Changes to SoE Regulations 01 to 04.01.01

The Committee on Courses reviewed the proposed changes to SoE Regulations 01 to 04.01.01 at their April 3, 2024 meeting. The Committee is supportive of the proposed changes and appreciates the work of the School to provide a helpful proposal with thorough explanations for the proposed changes.



COMMITTEE ON RULES AND JURISDICTION

April 17, 2024

To: Sang-Hee Lee, Chair
Riverside Division

From: Kathleen Montgomery 
Chair, Committee on Rules and Jurisdiction

**Re: [Campus Review] (Regulation Change) Revisions to the School of Education
Regulations 01 to 04.01.01**

The Committee on Rules and Jurisdiction reviewed the [Campus Review] (Regulation Change) Revisions to the School of Education Regulations 01 to 04.01.01 and offer the below suggestions and questions.

02.01.01

line 3: Please clarify whether the term “majors” refers to students majoring in the School’s programs or a program of study itself

02.03.03

lines 3, 5: Please identify the source for the references to R07.01 and R07.02.

line 5: Please replace “they are” with “the student is”

last line: Is the “Associate Dean of the program” the same as the “Associate Dean of Undergraduate Education for the School”? Please clarify.

02.04.02

line 1: Please spell out Bachelor of Arts degree

02.04.03

For clarity, suggested rewording of this entire section:

A student may elect a second or third major offered by another college/school at UCR. In such cases, the student must complete all course requirements for each of the majors. If the multiple majors lead to the same degree (Bachelor of Arts), students will be expected to satisfy the college/school breadth requirements of their chosen college/school.

If the multiple majors lead to different degrees (Bachelor of Arts and Bachelor of Science), the college/school breadth requirements for each degree designation

must be satisfied.

When the multiple majors lead to different degrees, this will be noted on the transcript.

A declaration of two or three majors requires the approval of the Associate Dean of Undergraduate Education for the colleges/schools concerned and filed by the students with their chosen college/school.

02.04.06

For consistency, please hyphenate upper-division (also **02.04.07**, **02.08.03** and **02.08.04** and **02.08.06**)

02.04.06

line 3: For precision, please replace “at the Riverside campus” with “at the UCR campus”

last line: Please specify Bachelor of Arts degree

02.05.01

line 3: Please clarify intent of “in residence” requirement; consider reference to Senate Regulation 610

02.05.02

line 3: Please add a comma after “them”

02.06.01

lines 2-3: Please clarify whether the intent of this regulation is “all courses taken at UCR,” or simply “all courses taken at the University of California”

line 7-8: Please omit “Systemwide” and specify “Senate Regulation 740” (Reg 740C no longer exists)

02.07.01

lines 4, 6: For precision, please specify “at the UCR campus”

line 10: For precision, please specify the University “of California”

lines 10, 12: Please substitute “UCR” for “Riverside”

02.08.01

line 1: “sub-set” is not needed; “set” will suffice

line 5: Please specify if “Executive Committee” and “the Faculty” refer to the School of Education or to the UCR Academic Senate (also 02.08.02, lines 3-4)

02.08.06

line 12: Please clarify Bachelor of Arts degree

03.01.01

throughout: Please clarify Bachelor of Arts degree

last line: Please consider if parenthetical reference is necessary. If kept, please correct

reference to Senate Regulation 740 (740D and 740E no longer exist.)

03.01.02

line 3: Please clarify if this refers to all courses undertaken at any University of California campus, or just the UCR campus

03.01.03

line 2: Please specify University of California Extension

03.01.04

throughout: Please consider rephrasing to add clarity about Senate Regulation minimum residence requirement (SR 630A)

line 3: Since the School does not offer a BS degree, consider removing reference to Bachelor of Science Degree.

lines 4,7, 11: Please use “at the UCR campus” instead of “Riverside”

03.01.05

line 2: Since the School does not offer a BS degree, consider rephrasing to state Bachelor of Arts degree

03.01.06

line 1: Consider rephrasing to Bachelor of Arts degree

line 3: Please clarify if this section refers to courses taken at any University of California campus or only at the UCR campus

line 5: Please use the official name of the committee and capitalize; also clarify if this is a School or campuswide committee.

line 6: Please clarify if the Faculty refers to the Faculty of the School or the Faculty of UCR.

03.02.05.01

line 3: Please clarify if “another college or university” refers to another institution anywhere or part of the University of California.

03.02.05.03

line 2: Please add “at UCR”

03.02.07

line 3, 10: Reference to last section on breadth requirements should be 03.02.06 (not 03.02.07)

04.01.01

lines 2-4: Please capitalize names of the degrees

Statement of Purpose and Effect: For subject-verb consistency, suggest line 2 change “are” to “is”. Also, please use official name of CHASS.

March 8, 2024

TO: Sang-Hee Lee, Chair,
Academic Senate

FROM: Katherine Meltzoff, Chair,
Austin Johnson, Associate Dean of Undergraduate Education,
School of Education

RE: Proposed Revisions for the SOE Regulations 01 to 04.01.01

The School of Education (SOE) Executive and Undergraduate Education Committees have both discussed the proposed revisions the SOE regulations. The Executive Committee discussed and approved the regulations on February 27, 2024. The Undergraduate Education Committee discussed and approved the regulations on November 28, 2023.

The purpose of these changes in the School of Education (SOE) Regulations are to establish regulations to govern our undergraduate programs. The SOE has been using the College of Humanities and Social Sciences (CHASS) regulations since the establishment of B.A in Education, Society, and Human Development. We are proposing these regulations to help us further conduct the affairs of our programs and no longer rely on the CHASS regulations. Regulation 01 to 03.02.07 are being established for the undergraduate programs within SOE for the first time. The current 03 has been reassigned as 04.01.01. Please see the included the 'UCR Regulations Comparison and Proposal Justification' for documentation of where we obtained the language for the regulations for the SOE. The regulations were written based on using CHASS regulations and what practices we want to establish going forward based on reviewing and evaluating CHASS, the College of Natural and Agricultural Sciences, and School of Public Policy regulations.

**CHANGES TO REGULATIONS
THE SCHOOL OF EDUCATION
REPORT TO THE RIVERSIDE DIVISION
May 21, 2024**

To be adopted:

Proposed Changes to SOE Regulations 01 to 04.01.01

01 REQUIREMENTS FOR ADMISSION TO THE SCHOOL

~~01.01 Requirements for admission to the school are (a) admission to graduate standing and (b) selection of an approved program in the school.~~

~~01.02 Students may continue to matriculate in credential programs at the junior level.~~

02 STUDY LIST

~~02.01 Procedures for approval of study lists and the assignment of advisers are determined by the Executive Committee of the school.~~

~~02.02 The presentation of a study list by a student and its acceptance by the school evidences an obligation on the part of the student faithfully to perform the designated work. Withdrawal from, or neglect of, any course entered on the study list, or a change in program without the formal permission of the Dean of the school, renders the student liable to enforced withdrawal from the University or other disciplinary action.~~

PROPOSED:

01 STATUS OF STUDENTS

01.01 CATEGORIES OF STUDENTS

01.01.01 The categories of students are (1) regular students, (2) special students, (3) limited students as defined in the Manual of the Academic Senate, Regulations 310, 312, 314, 650.

02 REGISTRATION AND COURSE WORK

02.01 ACADEMIC ADVISOR

2.01.01 The School of Education, hereafter referred to as School, will assign an academic advisor to each of their majors and will require students to obtain the academic advisor's signature before submitting an academic petition.

02.02 STUDENT RESPONSIBILITY

02.02.01 Students should plan their program of studies carefully in consultation with their academic advisor. They should go to the Associate Dean of Undergraduate Education for the School with any irregularities in the program that may require special approval. It is the student's responsibility to ensure that all requirements for graduation are satisfied.

02.02.02 Withdrawal from any course or a change in enrollment after the deadlines published in the Schedule of Classes requires

the approval of the Associate Dean of Undergraduate Education for the School.

02.03 REGISTRATION/ENROLLMENT

02.03.01 The confirmation of classes is a student's selection of courses to be pursued in any term.

02.03.02 Each term, students are required to register and enroll by the date set by the campus. If required by the student's program, the selection of courses must be approved by an academic advisor. Students who do not attend the first class meeting may be dropped from the course.

02.03.03 An undergraduate student must make expected progress toward the degree (R07.01). If an undergraduate student does not make expected progress toward the degree as defined in R 07.02, then they are considered ineligible for continued registration and will not be able to register for courses unless granted approval by the Associate Dean of Undergraduate Education for the School. For undergraduate students, enrollment in any quarter of less than 12 units or more than 20 units must have the approval of the Associate Dean of the program.

02.03.04 An undergraduate student on academic probation may not enroll in more than 17 units without the consent of the Associate Dean of Undergraduate Education for the School. An undergraduate who is subject to dismissal may not enroll in more than 15 units without the consent of the Associate Dean of Undergraduate Education for the School.

02.03.05 An undergraduate student may add a course up to the end of the second full week of instruction. Courses may be added until the end of the third week of instruction with the consent of the instructor and academic advisor. No course may be added after the third week without approval of the Associate Dean of Undergraduate Education for the School.

02.03.06 A course dropped after the end of the second full week of instruction will remain as a permanent transcript entry showing course number and title, with a transcript symbol of W, signifying withdrawal, entered in the grade column.

02.03.07 With approval of the Associate Dean of Undergraduate Education for the School, students may withdraw from the University on or before the last day of instruction.

02.03.08 Any changes in a student's schedule of classes not covered by the above regulations must have the approval of the Associate Dean of Undergraduate Education for the School.

02.03.09 In the School, instructors can enforce policies in which students may be required to forfeit their seats in particular courses by removing students' names from the roster after the first full week of classes and up to the end of the second full week of instruction if students do not meet attendance requirements specified by either (a) the Executive Committee of the School, (b) the course syllabus, or (c) the Schedule of Classes. A student who is removed from a course roster for not meeting attendance requirements will not be allowed to continue in that course and will receive an "F" or an "NC" unless the student formally drops the class.

02.04 MAJOR REQUIREMENTS

02.04.01 A major shall consist of no fewer than 28 and no more than 72 upper-division units.

02.04.02 Candidates for the B.A. degree may not receive more than 80 units of credit toward the degree for work taken in the major discipline (i.e., students must take at least 100 units outside the major discipline).

02.04.03 A student may elect a second (or third) major in a department or program of another college. In such cases, the student must complete all course requirements for

each of the two (or three) majors. Where the multiple major offers the same degree and includes departments or programs in more than one college or school, students will be expected to satisfy the college/school requirements of the college/school of their choice. If the multiple majors include different degrees, the college/school breadth requirements for each degree designation must be satisfied. If the multiple majors lead to different degrees (BA and BS) it will be noted on the transcript. A declaration of two (or three) majors requires the approval of the Associate Dean of Undergraduate Education for the colleges/school(s) concerned and filed by the students with their chosen college/school.

02.04.04 All courses in the major must be completed during Fall quarter, Winter quarter, Spring quarter, or Summer session at UCR. Exceptions to this policy must have the approval of the Associate Dean of Undergraduate Education for the School.

02.04.05 A student may transfer from one major to another by filing a change of major petition, which requires approval of the Associate Dean of Undergraduate Education for the School for the program that the student is transferring into. Admission into a given major is subject to that major's eligibility requirements.

02.04.06 Transfer students must complete a minimum of 16 upper division units in their major on the Riverside campus for the bachelor's degree.

02.04.07 A grade point average of at least 2.00 in upper division courses taken in the field of the major is required for graduation.

02.05 CREDIT BY EXAMINATION

02.05.01 A student who wishes to have the privilege of examination for degree credit must be in residence and in good academic standing at UCR.

02.05.02 A student may take examinations for degree credit in courses offered in the School, without formally enrolling in them with the exception of English composition courses.

02.05.03 Arrangements for examinations for degree credit must be made in advance with the Associate Dean of Undergraduate Education for the School and with the student's academic advisor. The approval of the Associate Dean of Undergraduate Education for the School, the instructor who is appointed to give the examination, and the academic advisor are necessary before the examination may be given.

02.05.04 The results of all examinations for degree credit, either with grades or with a Satisfactory/No Credit report, are entered upon the student's record in the same manner as they are entered in regular courses of instruction.

02.05.05 English composition requirements may not be met with credit by examination.

02.06 UNDERGRADUATE CREDIT FOR GRADUATE COURSES

02.06.01 A student who has a grade point average of at least 3.00 in all courses taken in the University or who has shown exceptional ability in a special field may take a graduate course for undergraduate credit, with the permission of the instructor concerned, within the limitations specified by Systemwide Regulation 740C. The determination of exceptional ability is decided by the instructor concerned.

02.07 ENROLLMENT ON A SATISFACTORY/NO CREDIT BASIS

02.07.01 An undergraduate student in good academic standing may receive credit for courses undertaken and graded "S" on the Riverside campus to a limit of one third of the total units undertaken and passed on the Riverside campus at the time the degree is awarded. This same limitation applies to courses that are only graded Satisfactory/No

Credit. Units completed on another campus of the University by a Riverside undergraduate enrolled as an intercampus visitor are considered Riverside work for the purposes of this regulation.

02.07.02 Courses which are required in, or prerequisite to, the undergraduate student's major subject may not be taken on a Satisfactory/No Credit basis unless approved by the Associate Dean of Undergraduate Education for the School.

02.07.03 Limited status or special status students may take courses on a Satisfactory/No Credit basis only with the approval of the Associate Dean of Undergraduate Education for the School.

02.07.04 Units earned on a Satisfactory/No Credit basis will be counted in satisfaction of degree requirements, but such courses will be disregarded in determining the student's grade point average.

02.07.05 Students may change from letter grading in a course to Satisfactory/No Credit (as permitted), or vice versa, until the end of the eighth week of instruction within the limitations specified by 02.07.02.

02.08 MINORS

02.08.01 A disciplinary minor is a sub-set of courses selected from a non-interdisciplinary major. It is proposed by the sponsoring department or program and approved by the Executive Committee, the Faculty, the Committee on Educational Policy, and the Academic Senate. Among these courses must be a sufficient number (totaling at least 16 units) selected from courses accepted for the major.

02.08.02 An interdisciplinary minor is a set of courses focused on an interdisciplinary thematic area, proposed by the Executive Committee, and approved by the Faculty, the Committee on Educational Policy, and the Academic Senate. Each minor is to be

supervised by a representative committee of at least three Faculty members.

02.08.03 A minor shall consist of no fewer than 16 and no more than 28 units of organized upper division course work. No overlap may occur among courses used to satisfy upper-division course requirements for a major and a minor. A minor may use up to one upper-division course in the major discipline for minors requiring 16 units and up to two upper-division courses in the major discipline for minors requiring 20 units or more provided that the courses are not also applied to the major.

02.08.04 A grade point average of at least 2.00 in upper division courses taken in the field of the minor is required for graduation with the minor.

02.08.05 Courses in the minor may be applied toward college/School breadth requirements.

02.08.06 Students must file a declaration of a minor at least two quarters before graduation and must be in good academic standing at the time of filing. The declaration of a minor requires the signature of the Academic Advisor that handles the minor and the signature(s) of the Associate Dean(s) of the college(s) of both the major and the minor. The minor coursework (including all prerequisites for upper division courses in the minor) must be completed within the overall 216 unit maximum for the Bachelor's degree. A minimum GPA of 2.0 is required for all courses in the minor. If the student declares a minor and for any reason fails to complete the minor, the designation of the minor must be removed from the transcript before the student can graduate.

03 DEGREE REQUIREMENTS

03.01 GENERAL REQUIREMENTS

03.01.01 A minimum of 180 units of academic work is required for graduation. Not more than six units of Physical Education activity

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03.01.02 A grade point average of at least 2.00 in all courses undertaken in the University of California is required for graduation.

03.01.03 Concurrent enrollment in any course offered by University Extension (including correspondence courses) or by other institutions is not permitted except by prior approval of the Associate Dean of Undergraduate Education for the School.

03.01.04 35 of the final 45 units completed by each candidate prior to receiving the Degree of Bachelor of Arts or Bachelor of Science must be earned in residence on the Riverside campus. No more than 18 of the 35 units may be completed in summer session courses on the Riverside campus. The minimum residence at the University of California required for a degree is three quarters. One of these required quarters may be completed in the summer session on the Riverside campus provided the student carries at least 12 units unless a reduced load is approved by the Associate Dean of Undergraduate Education for the School. Courses completed in the University of California Extension are not considered work in residence.

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03.02.05 Foreign Language: The Foreign Language Requirement (except for Foreign Language majors who satisfy the spirit of the language requirement by majoring in one or more languages) may be satisfied in two ways:

03.02.05.01 By completing the fourth-quarter level or its equivalent in one foreign language at UCR or at another college or university with a minimum grade of C. American Sign Language may also be used to satisfy this requirement.

03.02.05.02 By demonstrating proficiency at the fourth-quarter level on a foreign language placement exam offered by one of the foreign language departments at UCR. This test does not yield unit credit; it only determines whether the Foreign Language Requirement

has been met, or in which course in the language sequence a student should enroll.

03.02.05.03 For majors shared between the School and other schools or colleges, the number of quarters required to fulfill the Foreign Language requirement for the Bachelor of Arts Degree will be determined by the Undergraduate Education Committee in the School and the other school or college concerned. In no instance will this requirement be less than the minimum required by either body.

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programs within SOE for the first time. The current 03 has been reassigned as 04.01.01. Please see the included the 'UCR Regulations Comparison and Proposal Justification' for documentation of where we obtained the language for the regulations for the SOE. The regulations were written based on using CHASS regulations and what practices we want to establish going forward based on reviewing and evaluating CHASS, the College of Natural and Agricultural Sciences, and School of Public Policy regulations.

Approved by the SOE Faculty on:

27 February 2024

And

Submitted by Austin Johnson, Associate Dean of Undergraduate Education:

03 March 2024

Section below is for Senate use only

(if applicable) Approved by the Committee on _____: (Insert date of committee approval)

The Committee on Rules and Jurisdiction finds the wording to be consistent with the code of the Academic Senate:

(leave blank)

Received by Executive Council:

(leave blank)

College of Humanities, Arts and Social Science Regulations	College of Natural and Agricultural Sciences Regulations	School of Public Policy	SOE (Existing)	SOE (Proposed)
HSR1 STATUS OF STUDENTS HSR1.1 CATEGORIES OF STUDENTS HSR1.1.1 The categories of students are (1) regular students, (2) special students, (3) limited students, as defined in the Manual of the Academic Senate, Regulations 310, 312, 314, 650.	NR1 STATUS OF STUDENTS NR1.1 CATEGORIES OF STUDENTS NR1.1.1 The categories of students are (1) regular students, (2) special students, (3) limited students as defined in the Manual of the Academic Senate, Regulations 310, 312, 314, 650.	PPR1 STATUS OF STUDENTS PPR1.1.1 The categories of students are (1) regular students, (2) special students, (3) limited students, as defined in the Manual of the Academic Senate, Regulations 310, 312, 314, 650. (En 4 Dec 2018) PPR1.1 CATEGORIES OF STUDENTS	1 REQUIREMENTS FOR ADMISSION TO THE SCHOOL 1.1 Requirements for admission to the school are (a) admission to graduate standing and (b) selection of an approved program in the school. 1.2 Students may continue to matriculate in credential programs at the junior level.	1 STATUS OF STUDENTS 1.1 CATEGORIES OF STUDENTS 1.1.1 The categories of students are (1) regular students, (2) special students, (3) limited students as defined in the Manual of the Academic Senate, Regulations 310, 312, 314, 650.
HSR2 REGISTRATION AND COURSE WORK HSR2.1 FACULTY ADVISERS HSR2.1.1 Departments and non-departmental programs in the college may assign a Faculty adviser to each of their majors and may require students to obtain an adviser's signature before enrolling in classes, submitting an academic petition, or making any change to their class schedule. It is the student's responsibility upon declaring a major to inquire whether such counseling is required by the department. Counseling for undeclared students is available in the Student Affairs office of the College of Humanities, Arts, and Social Sciences. (Am 27 Jan 76)(Am 25 May 00) HSR2.2 STUDENT RESPONSIBILITY HSR2.2.1 Students should plan their program of studies carefully in consultation with their academic advisor. They should go to their the Associate Dean of the college with any irregularities in the program that may require special approval. It is the student's responsibility to ensure that all requirements for graduation are satisfied. (Am 25 May 00) HSR2.2.2Withdrawal from any course or a change in enrollment after the deadlines	NR2 REGISTRATION AND COURSE WORK NR2.1 FACULTY ADVISERS NR2.1.1 At the time of registration each student who has declared a major will be assigned to a member of the Faculty of the department or interdepartmental group who will serve as the Faculty adviser. It is the responsibility of the department to inform the student of the assignment to an adviser. Students who are undecided as to a major will be assigned to the Dean's office for advising. NR2.1.2 A student must declare a major by the time they reach junior status (90 earned units excluding college work completed prior to high school graduation). Students who fail to declare a major by this time will not be permitted to register until an approved declaration of major has been submitted to the Dean's office. (Am 13 Jun 2005) NR2.2 STUDENT RESPONSIBILITY NR2.2.1 In consultation with a Faculty adviser (or in the case of an undeclared major, a counselor in the Dean's office), the student should plan a program of studies. It is the student's responsibility to make sure that all of the requirements for graduation are met.	PPR2 REGISTRATION AND COURSEWORK PPR2.1 ACADEMIC ADVISOR PPR2.1.1The School of Public Policy, hereafter referred to as School, will assign an academic advisor to each of their majors and will require students to obtain the academic advisor's signature before submitting an academic petition. (En 4 Dec 2018) PPR2.2 STUDENT RESPONSIBILITY PPR2.2.1 Students should plan their program of studies carefully in consultation with their academic advisor. They should go to the Chair of their program with any irregularities in the program that may require special approval. It is the student's responsibility to ensure that all requirements for graduation are satisfied.(En 4 Dec 2018) PPR2.2.2 Withdrawal from any course or a change in enrollment after the deadlines published in the Schedule of Classes requires the approval of the Chair of the student's program. (En 4 Dec 2018) PPR2.3 REGISTRATION/ENROLLMENT REGULATION The confirmation of classes is a student's selection of courses to be pursued in any term. (En 4 Dec 2018)	2 STUDY LIST 2.1 Procedures for approval of study lists and the assignment of advisers are determined by the Executive Committee of the school. ER2.2 The presentation of a study list by a student and its acceptance by the school evidences an obligation on the part of the student faithfully to perform the designated work. Withdrawal from, or neglect of, any course entered on the study list, or a change in program without the formal permission of the Dean of the school, renders the student liable to enforced withdrawal from the University or other disciplinary action.	2 REGISTRATION AND COURSE WORK 2.1 ACADEMIC ADVISOR 2.1.1 The School of Education, hereafter referred to as School, will assign an academic advisor to each of their majors and will require students to obtain the academic advisor's signature before submitting an academic petition. 2.2 STUDENT RESPONSIBILITY 2.2.1 Students should plan their program of studies carefully in consultation with their academic advisor. They should go to the Associate Dean of Undergraduate Education for the School with any irregularities in the program that may require special approval. It is the student's responsibility to ensure that all requirements for graduation are satisfied. 2.2.2 Withdrawal from any course or a change in enrollment after the deadlines published in the Schedule of Classes requires the approval of the Associate Dean of Undergraduate Education for the School. 2.3 REGISTRATION/ENROLLMENT 2.3.1 The confirmation of classes is a student's selection of courses to be pursued in any term. 2.3.2 Each term, students are required to register and enroll by the date set by the campus. If required by the student's program, the selection of courses must be approved by an academic advisor. Students who do not attend the first class meeting may be dropped from the course. 2.3.3 An undergraduate student must make expected progress toward the degree (R 07.01). If an undergraduate student does not make expected progress toward the degree

published in the Schedule of Classes, requires the approval of the Associate Dean of the college. (Am 25 May 00) HSR2.3 REGISTRATION/ENROLLMENT REGULATION HSR2.3.1 The confirmation of classes is a student's selection of courses to be pursued in any term. HSR2.3.2 Each term, students are required to register and enroll by the date set by the campus. Selection of courses must be approved by an academic if this is required by the student's major department or program. Students who do not attend the first class meeting may be dropped from the course. (Am 25 May 00) (Am 31 May 01) HSR2.3.3 A student is expected to make regular progress toward the degree. For undergraduate students, enrollment in less than 12 units must have the approval of the Associate Dean. (Am 4 Feb 88) (Am 25 May 00) HSR2.3.4 An undergraduate student on probation may not enroll in more than 17 units without the consent of the student's academic advisor. An undergraduate who is subject to dismissal may not enroll in more than 15 units without the consent of the student's academic advisor. (Am 25 May 00)(Am 30 May 06) HSR2.3.5After on-line enrollment in classes is closed, students may request changes in courses by formal petition. (Am 23 Feb 78) (Am 25 May 00) HSR2.3.6 Courses may be added until the end of the third week of instruction with the consent of the instructor. No course may be added after that time without approval of the Associate Dean. Any addition that would increase the student's academic load to more than 20 units must also be approved by the student's academic advisor. (Am 23 Feb 78) (Am 25 May 00) HSR 2.03.07 A student may add a course up to the end of the second full week of instruction. With the approval of the instructor and advisor, a student may also add a course during the	NR2.3 COURSE ENROLLMENT REGULATIONS (AM 21 NOV 02) NR2.3.1 Course enrollments in any quarter of fewer than 12 units must have the approval of the Dean of the college. (Am 21 Nov 02) NR2.3.3 Up to the end of the second full week of instruction a student may add a course to his/her enrollment. During the third full week of instruction a student may, with the approval of his/her advisor and instructor, add a course to his/her enrollment. Before the end of the second full week of instruction a student may, without prior approval, drop a course without penalty. From the second through the sixth full week of instruction, a course may be dropped with the approval of the advisor. (Am 21 Nov 02) NR2.3.4 A student on probation may enroll for more than 15 quarter units only with the consent of the Dean of the college.(Am 30 May 06) NR2.3.5 With the approval of the Dean, students may withdraw from the University at any time prior to the end of instruction. NR2.3.6 Any changes in a student's quarterly course enrollment not covered by the above regulations must have the approval of the Dean. (Am 21 Nov 02) NR2.3.7 Students in "Good Standing" may enroll for more than 20 quarter units only with the consent of the Dean of the College. (En 30 May 06)	PPR2.3.2 Each term, students are required to register and enroll by the date set by the campus. Selection of courses must be approved by the academic advisor if this is required by the School. Students who do not attend the first class meeting may be dropped from the course. (En 4 Dec 2018) PPR2.3.3 A student is expected to make regular progress toward the degree. For undergraduate students, enrollment in less than 12 units must have the approval of the Chair of the student's program. (En 4 Dec 2018) PPR2.3.4 Any addition that would increase the student's academic load to more than 20 units must also be approved by the student's academic advisor. An undergraduate student on probation may not enroll in more than 17 units without the consent of the student's academic advisor. An undergraduate who is subject to dismissal may not enroll in more than 15 units without the consent of the student's academic advisor. (En 4 Dec 2018) PPR2.3.5 After on-line enrollment in classes is closed, students may request changes in courses by formal petition. (En 4 Dec 2018) PPR2.3.6A student may add a course up to the end of the second full week of instruction. Courses may be added until the end of the third week of instruction with the consent of the instructor and academic advisor. No course may be added after third week without approval of the Chair of the student's program (En 4 Dec 2018) PPR2.3.7.1 A student may drop a course without prior approval no later than the end of the second full week of instruction. From the third through the sixth full week of instruction, a course may be dropped with the approval of the academic advisor. No course may be dropped after week 6 without approval of the Chair of the student's program. (En 4 Dec 2018) PPR2.3.7.2 Any withdrawal which would reduce the undergraduate student's academic load to less than 12 units must be	as defined in R 07.02, then they are considered ineligible for continued registration and will not be able to register for courses unless granted approval by the Associate Dean of Undergraduate Education for the School. For undergraduate students, enrollment in any quarter of less than 12 units or more than 20 units must have the approval of the Associate Dean of the program. 2.3.4 An undergraduate student on academic probation may not enroll in more than 17 units without the consent of the Associate Dean of Undergraduate Education for the School. An undergraduate who is subject to dismissal may not enroll in more than 15 units without the consent of the Associate Dean of Undergraduate Education for the School. 2.3.5 An undergraduate student may add a course up to the end of the second full week of instruction. Courses may be added until the end of the third week of instruction with the consent of the instructor and academic advisor. No course may be added after the third week without approval of the Associate Dean of Undergraduate Education for the School. 2.3.6 A course dropped after the end of the second full week of instruction will remain as a permanent transcript entry showing course number and title, with a transcript symbol of W, signifying withdrawal, entered in the grade column. 2.3.7 With approval of the Associate Dean of Undergraduate Education for the School, students may withdraw from the University on or before the last day of instruction. 2.3.8 Any changes in a student's schedule of classes not covered by the above regulations must have the approval of the Associate Dean of Undergraduate Education for the School. 2.3.9 In the School, instructors can enforce policies in which students may be required to forfeit their seats in particular courses by removing students' names from the roster after the first full week of classes and up to the end of the second full week of instruction if students do not meet attendance requirements specified by either (a) the Executive Committee of the School, (b) the course syllabus, or (c) the Schedule of Classes. A student who is removed from a course roster for not meeting attendance requirements will not be allowed to continue in that course and will receive an "F" or an "NC" unless the student formally drops the class. 2.4 MAJOR REQUIREMENTS 2.4.1 A major shall consist of no fewer than 28 and no more than 72 upper-division units.

third full week of instruction. (En 21 Nov 02)(Am 30 May 06) HSR2.3.7.1 A student may drop a course without prior approval no later than the end of the second full week of instruction. From the third through the sixth full week of instruction, a course may be dropped with the approval of the advisor. Any withdrawal which would reduce the undergraduate student's academic load to less than 12 units must be approved by the Dean. (AM 21 Nov 02) HSR2.3.7.2 In the College of Humanities, Arts, and Social Sciences, instructors and departments can enforce policies in which students may be required to forfeit their seats in particular courses by removing students' names from the roster after the first full week of classes and up to the end of the second full week of instruction if students do not meet attendance requirements approved by the Executive Committee and posted in the Schedule of Classes (if they are standing policies) or course syllabi (if they apply to a course that is not taught on a regular basis). A student who is removed from a course roster for not meeting attendance requirements will not be allowed to continue in that course, and will receive an "F" or an "NC" unless the student formally drops the class. (En 21 Nov 02) (AM 22 May 03). HSR2.3.7.3 A course dropped after the end of the second full week of instruction will remain as a permanent transcript entry showing course number and title, with a transcript symbol of W, signifying withdrawal, entered in the grade column. (En 21 Nov 02) HSR2.3.8 With approval of the Associate Dean, students may withdraw from the University until the last day of instruction. (Am 23 Feb 78) (Am 25 May 00) HSR2.3.9 Any changes in a student's schedule of classes not covered by the above regulations must have the approval of the Associate Dean. (Am 23 Feb 78) (Am 25 May 00)	NR2.4 MAJOR REQUIREMENTS NR2.4.1 There are three types of major: departmental, interdepartmental, and individual. Requirements for departmental majors and interdepartmental majors are established by the respective departments or interdepartmental committees. Students wishing to take individual majors should consult with their Faculty adviser. Programs for individual majors are subject to approval by the Executive Committee. NR2.4.2 A major shall consist of not fewer than 36 nor more than 60 upper division units. NR2.4.3 Not more than 9 units of courses in the 190-199 series may be counted in fulfilling the upper division units needed for the major. NR2.4.4 The College of Natural and Agricultural Sciences will not allow concurrent enrollment in double Baccalaureate programs. A student may be considered for a second Baccalaureate only upon	approved by the chair of the student's program. (En 4 Dec 2018) PPR2.3.7.3 In the School of Public Policy, instructors can enforce policies in which students may be required to forfeit their seats in particular courses by removing students' names from the roster after the first full week of classes and up to the end of the second full week of instruction if students do not meet attendance requirements approved by the Executive Committee of the School of Public Policy, hereafter referred to as Executive Committee, or course syllabi. A student who is removed from a course roster for not meeting attendance requirements will not be allowed to continue in that course and will receive an "F" or an "NC" unless the student formally drops the class. (En 4 Dec 2018) PPR2.3.7.4 A course dropped after the end of the second full week of instruction will remain as a permanent transcript entry showing course number and title, with a transcript symbol of W, signifying withdrawal, entered in the grade column. (En 4 Dec 2018) PPR2.3.8 With approval of the Chair of the student's program, students may withdraw from the University up until the last day of instruction. (En 4 Dec 2018) PPR2.3.9 Any changes in a student's schedule of classes not covered by the above regulations must have the approval of the Chair of the student's program. (En 4 Dec 2018) PPR2.4 MAJOR REQUIREMENTS PPR2.4.1 A major shall consist of no fewer than 36 and no more than 72 upper-division units. (En 4 Dec 2018) PPR2.4.2 Candidates for the B.A. degree may not receive more than 80 units of credit toward the degree for work taken in the major discipline (i.e., students must take at least 100 units outside the major discipline) (En 4 Dec 2018)	2.4.2 Candidates for the B.A. degree may not receive more than 80 units of credit toward the degree for work taken in the major discipline (i.e., students must take at least 100 units outside the major discipline). 2.4.3 A student may elect a second (or third) major in a department or program of another college. In such cases, the student must complete all course requirements for each of the two (or three) majors. Where the multiple major offers the same degree and includes departments or programs in more than one college or school, students will be expected to satisfy the college/school requirements of the college/school of their choice. If the multiple majors include different degrees, the college/school breadth requirements for each degree designation must be satisfied. If the multiple majors lead to different degrees (BA and BS) it will be noted on the transcript. A declaration of two (or three) majors requires the approval of the Associate Dean of Undergraduate Education for the colleges/school(s) concerned and filed by the students with their chosen college/school. 2.4.4 All courses in the major must be completed during Fall quarter, Winter quarter, Spring quarter, or summer session at UCR. Exceptions to this policy must have the approval of the Associate Dean of Undergraduate Education for the School. 2.4.5 A student may transfer from one major to another by filing a change of major petition, which requires approval of the Associate Dean of Undergraduate Education for the School for the program that the student is transferring into. Admission into a given major is subject to that major's eligibility requirements. 2.4.6 Transfer students must complete a minimum of 16 upper division units in their major on the Riverside campus for the bachelor's degree. 2.4.7 A grade point average of at least 2.00 in upper division courses taken in the field of the major is required for graduation. 2.5 CREDIT BY EXAMINATION 2.5.1 A student who wishes to have the privilege of examination for degree credit must be in residence and in good academic standing at UCR. 2.5.2 A student may take examinations for degree credit in courses offered in the School, without formally enrolling in them with the exception of English composition courses. 2.5.3 Arrangements for examinations for degree credit must be made in advance with the Associate Dean of

HSR2.4 MAJOR REQUIREMENTS HSR2.4.1 There are three types of majors: departmental, interdepartmental, and individual. Requirements for departmental majors and interdepartmental majors are established by the respective departments or interdepartmental committees. A student may design an individual major in consultation with a Faculty member. Individual majors are subject to approval by the CHA&SS Interdisciplinary Committee and the Associate Dean of the College. (Am 27 Jan 76) (Ed 28 May 98) (Am 28 May 98) HSR2.4.1.1 A major shall consist of no fewer than 36 and no more than 72 upper-division units. (Am 25 May 00) HSR2.4.2For students seeking the Bachelor of Arts Degree, the student's major department or non-departmental program may specify course requirements up to a maximum of 92 quarter units (interdepartmental majors and students majoring in more than one discipline within the same department are excluded from this limitation. Students who are candidates for the degree Bachelor of Arts may not receive more than 80 units of credit for work taken in their major disciplines except for those courses specifically required by the college, with the exception of majors in Music who may count a maximum of 102 units of Music course work toward the Bachelor's Degree. (Am 11 Oct 79) (Am 25 May 00) HSR2.4.3 For students seeking the bachelor of science degree, the student's major department or non-departmental program may specify course requirements up to a maximum of 108 quarter units; provided, however, that of the 108 units not less than 40 upper division units may be required in the major department or non-departmental program. Students who are candidates for the degree bachelor of science may not receive more than 108 units of credit for work taken in their major department or non-departmental program. (Am 27 Jan 76) (Am 25 May 00) HSR2.4.4 A student may elect a second (or third) major within the College of Humanities, Arts, and Social Sciences or a	completion of degree requirements in his/her first degree, providing he/she meets the spirit of Regulation 650 of the Academic Senate, Candidacy for a Second Bachelor's Degree. NR2.4.5 A student may elect to take a second major within the College of Natural and Agricultural Sciences. A course used to satisfy the requirements for one major may be used to fulfill the requirements for a second major as well. Of the required upper division units, a minimum of 24 (no more than 4 of which can be 190-199 courses) must be unique to each major. If the two majors lead to different degrees (B.S. and B.A.), that fact will be noted on the transcript, but only one diploma indicating both degree designations will be issued upon successful completion of such a double major program. Furthermore, if the double major is a mixed B.S./B.A., the college requirements for both majors must be met.(Am 7 Nov 91) (Am 6 Nov 97) NR2.4.5.1 A declaration of a second major, which includes a list of courses used to satisfy the requirements for each major must be signed by both academic major advisors and the Dean. The declaration must be filed at the Dean's office at least two quarters before graduation. At the time of filing, a student must have completed 120 units, with at least 18 upper division units in the primary major and 8 upper division units in the secondary major. To declare a second major, a student must have a cumulative GPA of 2.7 or higher and a major GPA of 2.7 or higher.(En 7 Nov 91)(Am 20 Nov 07) NR2.4.6 A student registered in the College of Natural and Agricultural Sciences may elect a second major in a department or interdepartmental group of another college. A declaration of such second major must be signed by the Deans of both colleges and filed by the student with the primary college. A student will meet requirements of both primary and secondary majors and the college requirements of the primary major if they are both in the same Baccalaureate class. If the two majors lead to different degrees (B.S. and B.A.), that fact will be noted on the transcript, but only one diploma indicating both degree designations will be issued upon successful completion of such a double major program. Furthermore if the double major is	PPR2.4.3 A student may elect a second (or third) major in a department or program of another college. In such cases, the student must complete all course requirements for each of the two (or three) majors chosen and must complete a minimum of 36 upper division units (BA degree) or 40 upper division units (BS degree) in each of the chosen areas. Up to 8 units in courses acceptable for the two (or three) majors may be counted toward the 40 upper division units required for each major. Where the multiple major offers the same degree and includes departments or programs in more than one college or school, students will be expected to satisfy the college/school requirements of the college/school of their choice. If the multiple majors include different degrees, the college/school breadth requirements for each degree designation must be satisfied. If the multiple majors lead to different degrees (BA and BS) it will be noted on the transcript. A declaration of two (or three) majors requires the approval of the Dean of the student's program of the colleges/school concerned and filed by the students with their chosen college/school. (En 4 Dec 2018) PPR2.4.4 All courses in the major must be completed in regular or summer session at UCR. Exceptions to this policy must have the approval of the student's program Chair. (En 4 Dec 2018) PPR2.4.5 A student may transfer from one major to another by filing a change of major petition which requires the approval of the academic advisor and Chair of the student's program. (En 4 Dec 2018) PPR2.4.6 Transfer students must complete a minimum of 16 upper-division units in their major on the Riverside campus for the bachelor's degree. (En 4 Dec 2018) PPR2.4.7 A grade point average of at least 2.00 in upper division courses taken in the field of the major is required for graduation. (En 4 Dec 2018)	Undergraduate Education for the School and with the student's academic advisor. The approval of the Associate Dean of Undergraduate Education for the School, the instructor who is appointed to give the examination, and the academic advisor are necessary before the examination may be given. 2.5.4 The results of all examinations for degree credit, either with grades or with a Satisfactory/No Credit report, are entered upon the student's record in the same manner as they are entered in regular courses of instruction. 2.5.5 English composition requirements may not be met with credit by examination. 2.6 UNDERGRADUATE CREDIT FOR GRADUATE COURSES 2.6.1 A student who has a grade point average of at least 3.00 in all courses taken in the University or who has shown exceptional ability in a special field may take a graduate course for undergraduate credit, with the permission of the instructor concerned, within the limitations specified by Systemwide Regulation 740C. The determination of exceptional ability is decided by the instructor concerned. 2.7 ENROLLMENT ON A SATISFACTORY/NO CREDIT BASIS 2.7.1 An undergraduate student in good academic standing may receive credit for courses undertaken and graded "S" on the Riverside campus to a limit of one third of the total units undertaken and passed on the Riverside campus at the time the degree is awarded. This same limitation applies to courses that are only graded Satisfactory/No Credit. Units completed on another campus of the University by a Riverside undergraduate enrolled as an intercampus visitor are considered Riverside work for the purposes of this regulation. 2.7.2 Courses which are required in, or prerequisite to, the undergraduate student's major subject may not be taken on a Satisfactory/No Credit basis unless approved by the Associate Dean of Undergraduate Education for the School. 2.7.3 Limited status or special status students may take courses on a Satisfactory/No Credit basis only with the approval of the Associate Dean of Undergraduate Education for the School. 2.7.4 Units earned on a Satisfactory/No Credit basis will be counted in satisfaction of degree requirements, but such courses will be disregarded in determining the student's grade point average.

second (or third) major in a department or program of another college. In such cases, the student must complete all course requirements for each of the two (or three) majors chosen, and must complete a minimum of 36 upper division units (BA degree) or 40 upperdivision units (BS degree) in each of the chosen areas. Up to 8 units in courses acceptable for the two (or three) majors may be counted toward the or 40 upper division units required for each major. Where the multiple major offers the same degree and includes departments or programs in more than one college, students will be expected to satisfy the college requirements of the college of their choice. If the multiple majors include different degrees, the college breadth requirements for each degree designation must be satisfied. If the multiple majors lead to different degrees (BA and BS) it will be noted on the transcript. A declaration of two (or three) majors requires approval of the Associate Dean of the colleges concerned and filed by the students with their chosen college. (Am 25 May 00) HSR2.4.5All courses specifically designated for a major must be completed in regular or summer session at UCR. Exceptions to this policy must have the approval of the student's departmental or program Chair. HSR2.4.6 A student may transfer from one major to another by filing a change of major petition which requires approval of the Associate Dean. (Am 25 May 00) HSR2.4.7Transfer students must complete a minimum 16 upper division units in their major on the Riverside campus for the bachelor's degree. HSR2.4.8 A grade point average of at least 2.00 in upper division courses taken in the field of the major is required for graduation. HSR2.5 CREDIT BY EXAMINATION HSR2.5.1 A student who wishes to have the privilege of examination for degree credit must be in residence and in good academic standing.	a mixed B.S./B.A., the college requirements for both majors must be met. (Am 6 Nov 97) NR2.4.7 A student may transfer from one major to another by filing a change of major petition, which requires approval of the Associate Dean of Student Affairs or equivalent. (Am 29 Nov. 2011) NR2.4.8 A grade point average of at least 2.0 in upper division courses taken in the field of the major is a graduation requirement. NR2.5 CREDIT BY EXAMINATION NR2.5.1 A student who wishes to have the privilege of examination for degree credit must be in residence and not on academic probation. NR2.5.2 Arrangements for examination for degree credit must be made in advance with the student's Faculty adviser. The approval of the Faculty adviser, the Dean of the college, and that of the instructor who is appointed to give the examination, are necessary before the examination can be given. NR2.5.3 The results of all examinations for degree credit are entered on the student's record in the same manner as for regular courses of instruction.	PPR2.5 CREDIT BY EXAMINATION PPR2.5.1 A student who wishes to have the privilege of examination for degree credit must be in residence and in good academic standing. (En 4 Dec 2018) PPR2.5.2 A student may take examinations for degree credit in courses offered in the School, without formally enrolling in them with the exception of English composition courses. (En 4 Dec 2018) PPR2.5.3 Arrangements for examinations for degree credit must be made in advance with the Chair of the student's program of the school and (where the student's major department requires it) with the student's academic advisor. The approval of the Chair of the student's program, the instructor who is appointed to give the examination, and the academic advisor (where required by the major department) are necessary before the examination may be given. (En 4 Dec 2018) PPR2.5.4 The results of all examinations for degree credit, either with grades or with a satisfactory/no credit report, are entered upon the student's record in the same manner as they are entered in regular courses of instruction. (En 4 Dec 2018) PPR2.6 UNDERGRADUATE CREDIT FOR GRADUATE COURSES PPR2.6.1 A student who has a grade point average of at least 3.00 in all courses taken in the University, or who has shown exceptional ability in a special field and received approval by the academic advisor, may take a graduate course for undergraduate credit, with the permission of the instructor concerned, within the limitations specified by Systemwide Regulation 740. (En 4 Dec 2018) PPR2.7 ENROLLMENT ON A SATISFACTORY/NO CREDIT BASIS PPR2.7.1 An undergraduate student in good academic standing may receive credit for courses undertaken and graded "S" on	2.7.5 Students may change from letter grading in a course to Satisfactory/No Credit (as permitted), or vice versa, until the end of the eighth week of instruction within the limitations specified by 2.7.2. 2.8 MINORS 2.8.1 A disciplinary minor is a sub-set of courses selected from a non-interdisciplinary major. It is proposed by the sponsoring department or program and approved by the Executive Committee, the Faculty, the Committee on Educational Policy, and the Academic Senate. Among these courses must be a sufficient number (totaling at least 16 units) selected from courses accepted for the major. 2.8.2 An interdisciplinary minor is a set of courses focused on an interdisciplinary thematic area, proposed by the Executive Committee, and approved by the Faculty, the Committee on Educational Policy, and the Academic Senate. Each minor is to be supervised by a representative committee of at least three Faculty members. 2.8.3 A minor shall consist of no fewer than 16 and no more than 28 units of organized upper division course work. No overlap may occur among courses used to satisfy upper-division course requirements for a major and a minor. A minor may use up to one upper-division course in the major discipline for minors requiring 16 units and up to two upper-division courses in the major discipline for minors requiring 20 units or more provided that the courses are not also applied to the major. 2.8.4 A grade point average of at least 2.00 in upper division courses taken in the field of the minor is required for graduation with the minor. 2.8.5 Courses in the minor may be applied toward college/School breadth requirements. 2.8.6 Students must file a declaration of a minor at least two quarters before graduation and must be in good academic standing at the time of filing. The declaration of a minor requires the signature of the Academic Advisor that handles the minor and the signature(s) of the Associate Dean(s) of the college(s) of both the major and the minor. The minor coursework (including all prerequisites for upper division courses in the minor) must be completed within the overall 216 unit maximum for the Bachelor's degree. A minimum GPA of 2.0 is required for all courses in the minor. If the student declares a minor and for any reason fails to complete the minor, the designation of the minor must be removed from the transcript before the student can graduate.

HSR2.5.2 A student may take examinations for degree credit in courses offered in the college, without formally enrolling in them with the exception of English composition courses (see HSR2.05.05) (Am 25 May 00) HSR2.5.3 Arrangements for examinations for degree credit must be made in advance with the Associate Dean of the college and (where the student's major department requires it) with the student's academic advisor. The approval of the Associate Dean of the college, the instructor who is appointed to give the examination, and the academic advisor (where required by the major department) are necessary before the examination may be given. (Am 25 May 00) HSR2.5.4 The results of all examinations for degree credit, either with grades or with a satisfactory/no credit report, are entered upon the student's record in the same manner as they are entered in regular courses of instruction. (Am 25 May 00) HSR2.5.5 English composition requirements may not be met with credit by examination (En 30 May 96) HSR2.6 UNDERGRADUATE CREDIT FOR GRADUATE COURSES HSR2.6.1A student who has a grade point average of at least 3.00 in all courses taken in the University or who has shown exceptional ability in a special field may take a graduate course for undergraduate credit, with the permission of the instructor concerned, within the limitations specified by Systemwide Regulation 740C (Am 27 Jan 76) HSR2.7 ENROLLMENT ON A SATISFACTORY/NO CREDIT BASIS HSR2.7.1 An undergraduate student in good academic standing may receive credit for courses undertaken and graded "S" on the Riverside campus to a limit of one third of the total units undertaken and passed on	NR2.6 UNDERGRADUATE CREDIT FOR GRADUATE COURSES NR2.6.1 An upper division student who had a grade point average of at least 3.0 in all courses taken in the University may take a graduate course for undergraduate credit with the permission of the Faculty adviser and the instructor concerned. Enrollment in more than 8 units of graduate courses requires submission of a petition and approval by the Associate Dean (or equivalent student affairs administrator of the College). (Am 29 Nov. 2011) NR2.7 ENROLLMENT ON A SATISFACTORY/NO CREDIT BASIS NR2.7.1 A student in good standing may enroll in and receive credit for courses graded S to a limit of not more than one-third of the total units undertaken and passed in fulfillment of the undergraduate degree. This one-third will include Physical Education courses and those courses graded on an S/NC basis only. No upper division course may be taken on an S/NC basis to satisfy an upper division requirement without the approval of the adviser and the Chair of the department or interdepartmental group. (R1.2.2, R1.2.3) NR2.7.2 A student may change from letter grading in a course to Satisfactory/No Credit (S/NC), or vice versa, until the end of the eighth week of instruction. (Am 23 May 91)	the Riverside campus to a limit of one-third of the total units undertaken and passed on the Riverside campus at the time the degree is awarded. This same limitation applies to courses that are only graded Satisfactory/No Credit. Units completed on another campus of the University by a Riverside undergraduate enrolled as an intercampus visitor are considered Riverside work for the purposes of this regulation. (En 4 Dec 2018) PPR2.7.1.1 Courses which are required in or prerequisite to the undergraduate student's major subject may not be taken on a Satisfactory/No Credit basis unless approved by the Chair of the student's program. (En 4 Dec 2018) PPR2.7.1.2Limited status or special status students may take courses on a Satisfactory/No Credit basis only with the approval of the Chair of the student's program in which they are enrolled. (En 4 Dec 2018) PPR2.7.2 Units earned on a Satisfactory/No Credit basis will be counted in satisfaction of degree requirements, but such courses will be disregarded in determining the student's grade point average. (En 4 Dec 2018) PPR2.7.3 Students are permitted to add Satisfactory/No Credit their schedule of classes or delete Satisfactory/No Credit from their schedule of classes until the end of the eighth week of instruction. (En 4 Dec 2018) PPR2.8 MINORS PPR2.8.1 A disciplinary minor is a subset of courses selected from a non-interdisciplinary major. It is proposed by the sponsoring department or program and approved by the Executive Committee, the Faculty, the Committee on Educational		

the Riverside campus at the time the degree is awarded. This same limitation applies to courses that are only graded Satisfactory/No Credit. Units completed on another campus of the University by a Riverside undergraduate enrolled as an intercampus visitor are considered Riverside work for the purposes of this regulation. (Am 25 May 00) HSR2.7.1.1 Courses which are required in, or prerequisite to the undergraduate student's major subject may not be taken on a Satisfactory/No Credit basis unless approved by the Chair of the student's major department. (Am 25 May 00) HSR2.7.1.2 Limited status or special status students may take courses on a Satisfactory/No Credit basis only with the approval of the Associate Dean of the school or college in which they are enrolled. (Am 25 May 00) HSR2.7.2 Units earned on a Satisfactory/No Credit basis will be counted in satisfaction of degree requirements, but such courses will be disregarded in determining the student's grade point average. (Am 25 May 00) HSR2.7.3 Students are permitted to add Satisfactory/No Credit their schedule of classes or delete Satisfactory/No Credit from their schedule of classes until the end of the eighth week of instruction. (Am 26 May 88)(Ed June 91) (Am 25 May 00) HSR2.8 MINORS (EN 9 JUN 77) HSR2.8.1 A disciplinary minor is a sub-set of courses selected from a noninterdisciplinary major. It is proposed by the sponsoring department or program and approved by the Executive Committee, the Faculty, the Committee on Educational Policy and the Academic Senate. Among these courses must be a sufficient number (totaling 16 unites) selected from courses accepted for the major. (Am 22 May 86) (Am 25 May 00) HSR2.8.2 An interdisciplinary minor is a set of courses focused on an interdisciplinary thematic area, proposed by the Executive Committee, and approved by the Faculty, the Committee on Educational Policy and		Policy and the Academic Senate. Among these courses must be a sufficient number (totaling 16 units) selected from courses accepted for the major. (En 4 Dec 2018) PPR2.8.2 An interdisciplinary minor is a set of courses focused on an interdisciplinary thematic area, proposed by the Executive Committee, and approved by the Faculty, the Committee on Educational Policy and the Academic Senate. Each minor is to be supervised by a representative committee of at least four Faculty members. (En 4 Dec 2018) PPR2.8.3 A minor shall consist of no fewer than 16 and no more than 28 units of organized upper- division coursework. No overlap may occur among courses used to satisfy upper-division course requirements for a major and a minor. A minor may use up to one upper-division course in the major discipline for minors requiring 16 units and up to two upper-division courses in the major discipline for minors requiring 20 units or more provided that the courses are not also applied to the major. (En 4 Dec 2018) PPR2.8.4 A grade point average of at least 2.00 in upper division courses taken in the field of the minor is required for graduation. (En 4 Dec 2018) PPR2.8.5 Courses in the minor may be applied toward college/School breadth requirements. (En 4 Dec 2018)		

the Academic Senate. Each minor is to be supervised by a representative committee of at least four Faculty members. (Am 22 May 86) HSR2.8.3A minor shall consist of no fewer than 16 and no more than 28 units of organized upper division course work. (Am 22 May 86) (Am 25 May 00) No overlap may occur among courses used to satisfy upper-division course requirements for a major and a minor. (Am 27 May 99) A minor may use up to one upper-division course in the major discipline for minors requiring 16 units and up to two upper-division courses in the major discipline for minors requiring 20 units or more provided that the courses are not also applied to the major. (Am 26 Nov 13) HSR2.8.4A grade point average of at least 2.00 in upper division courses taken in the field of the minor is required graduation. (En 28 Jan 82) (Am 25 May 00) HSR2.8.5 Courses in the minor may be applied toward college breadth requirements (En 30 May 96)				
3 DEGREE REQUIREMENTS 3.1 GENERAL REQUIREMENTS 3.1.1 Units. A minimum of 180 units of academic work is required for graduation. Not more than six units of Physical Education activity courses or their equivalent may be counted toward the 180 unit requirement for the Bachelor's Degree. No 400 series or equivalent courses and no more than three courses in the 300 series or equivalent may be counted toward the 180 unit requirement. A maximum of 216 units is allowed toward the bachelor's degree. (See definition of these course categories in Senate Regulation 740D and 740E) (Am 25 May 00) HSR3.1.2 Grade Average. A grade point average of at least 2.00 in all courses undertaken in the University of California is required for graduation. HSR3.1.3 Concurrent Enrollment. Concurrent enrollment in any course offered by	NR 3 DEGREE REQUIREMENTS NR 3.1 GENERAL REQUIREMENTS NR 3.1.1 A minimum of 180 units is required for graduation. No more than 6 units of Physical Education activity may be counted toward the requirement. No 400 series course and not more than three 300 series courses may be counted toward the requirement. No more than 84 units in any one discipline in which a degree is offered may be applied toward the 180 unit degree requirement. A student is not normally expected to take more than 180 units to attain the Bachelor's Degree. After having credit for 216 units, he will not be permitted to continue, except in cases, approved by the Dean, in which specific academic or professional reasons are involved. (Am 24 Feb 77)(Am 25 Jan 79) NR3.1.2 A grade point average of at least 2.0 in all courses taken in the University of California is required for graduation. NR3.1.3 Concurrent enrollment in any course offered by University Extension or at any other	PPR3 DEGREE REQUIREMENTS PPR3.1 GENERAL REQUIREMENTS PPR3.1.1 Units. A minimum of 180 units of academic work is required for graduation. Not more than six units of Physical Education activity courses or their equivalent may be counted toward the 180-unit requirement for the Bachelor's Degree. No 400 series or equivalent courses and no more than three courses in the 300 series or equivalent may be counted toward the 180-unit requirement. A maximum of 216 units is allowed toward the bachelor's degree. (See definition of these course categories in Senate Regulation 740) (En 4 Dec 2018) PPR3.1.2 English Composition: Students must demonstrate adequate proficiency in English composition by completing a one-year sequence of college- level instruction in English composition, with no grade lower than C as described in R6.1. (En 4 Dec 2018)		3 DEGREE REQUIREMENTS 3.1 GENERAL REQUIREMENTS 3.1.1 A minimum of 180 units of academic work is required for graduation. Not more than six units of Physical Education activity courses or their equivalent may be counted toward the 180 unit requirement for the Bachelor's Degree. No 400 series or equivalent courses and no more than three courses in the 300 series or equivalent courses may be counted toward the 180 unit requirement. A maximum of 216 units is allowed toward the Bachelor's Degree. (See definition of these course categories in Senate Regulation 740D and 740E.) 3.1.2 A grade point average of at least 2.00 in all courses undertaken in the University of California is required for graduation. 3.1.3 Concurrent enrollment in any course offered by University Extension (including correspondence courses) or by other institutions is not permitted except by prior approval of the Associate Dean of Undergraduate Education for the School. 3.1.4 35 of the final 45 units completed by each candidate prior to receiving the Degree of Bachelor of Arts or Bachelor

University Extension (including correspondence courses) or by other institutions is not permitted except by prior approval of the Associate Dean of the college. HSR3.1.4 <i>Senior Residence.</i> Thirty-five of the final 45 units completed by each candidate prior to receiving the Degree of Bachelor of Arts or Bachelor of Science must be earned in residence on the Riverside campus. Nor more than 18 of the 35 units may be completed in summer session courses on the Riverside campus. The minimum residence at the University of California required for a degree is three quarters. One of these may be completed in the summer session on the Riverside campus provided the student carries at least 12 units, unless a reduced load is approved by the Associate Dean of the college. Courses completed in the University of California Extension are not considered work in residence. HSR3.1.5 <i>Filing of Candidacy.</i> Students must declare their candidacy for the Bachelor's Degree with the Dean's office at the beginning of their final quarter in accordance with the dates published in the Schedule of Classes. (Am 25 May 00) HSR3.1.6<i>Honors.</i> Honors with the Bachelor's Degree are awarded to students who complete their work at the University of California with distinction and meet the policies laid down by the committee on honors. Honors are granted by the Faculty at graduation as follows: honors, high honors, highest honors. (Am 25 May 00) HSR3.2 BREADTH AND SUBJECT REQUIREMENTS FOR THE BACHELOR OF ARTS AND BACHELOR OF SCIENCE DEGREES (AM 27 JAN 76) [HSR3.02.01 ENGLISH COMPOSITION: DELETED 7 NOV 91] HSR3.2.1 <i>Humanities:</i> 20 units in Humanities as described in R6.03 for the A.B. Degree; thus, B.S. students are also required to complete 20 units. Internships and independent study courses, and courses cross-listed with Business Administration, Education or Physical Education, may not be used to satisfy this requirement. (Am 22 May 86)(Am 26 May 88)(Am 8 Feb 90)(Am 7	institution is permitted only with prior approval of the Dean of the college. NR3.1.4 Thirty-five of the final 45 units completed by each student prior to receiving the Baccalaureate Degree must be earned in residence. The minimum residence at the University of California required for a degree is three quarters. One of these may be completed in the summer session on the Riverside campus provided the student carries at least 8 units in a six-week summer session or 12 in an eight-week summer session, unless a reduced load is approved by the Dean of the college. Courses completed in University Extension are not considered work in residence. NR3.1.5 Each student must declare candidacy for the Bachelor's Degree with the Dean's office at the beginning of the senior year and again at the beginning of the final quarter. NR3.1.6 Honors with the Bachelor's Degree are awarded to students who complete with distinction the work of the junior and senior years. Policies are determined by the college committee on honors and scholarships. NR3.2 SUBJECT REQUIREMENTS FOR THE BACHELOR OF ARTS DEGREE NR3.2.1 <i>English Composition:</i> Students must demonstrate adequate proficiency in English Composition by completing a one-year sequence of college-level instruction in English Composition with no grade lower than C. UCR's sequence is ENGL 001A, ENGL 001B and ENGL 001C. (ENGL 01HC or ENGL 01SC may be substituted for ENGL 001C, but only one of these courses can be taken for credit). Transfer students who have credit for one semester of English Composition from another institution are required to take two additional quarters, i.e., ENGL 001B and ENGL 001C. Students have the option of using high school advanced placement with a score of 3 in English Composition to satisfy ENGL 001A; they must complete ENGL 001B and ENGL 001C. Students who have high school advanced placement with a score of 4 or 5 in English Composition have satisfied ENGL 001A, ENGL 001B; they must complete ENGL 001C. (Am 13 Jun 2005)	PPR3.1.3 Concurrent Enrollment. Concurrent enrollment in any course offered by University Extension (including correspondence courses) or by other institutions is not permitted except by prior approval of the Chair of the student's program. (En 4 Dec 2018) PPR3.1.4 Senior Residence. Thirty-five of the final 45 units completed by each candidate prior to receiving the Degree of Bachelor of Arts or Bachelor of Science must be earned in residence on the Riverside campus. No more than 18 of the 35 units may be completed in summer session courses on the Riverside campus. The minimum residence at the University of California required for a degree is three quarters. One of these may be completed in the summer session on the Riverside campus provided the student carries at least 12 units unless a reduced load is approved by the academic advisor and Chair of the student's program. Courses completed in the University of California Extension are not considered work in residence. (En 4 Dec 2018) PPR3.1.5 Filing of Candidacy. Students must declare their candidacy for the Bachelor's Degree with the Dean's office at the beginning of their final quarter in accordance with the dates published in the Schedule of Classes. (En 4 Dec 2018) PPR3.1.6Honors. Honors with the Bachelor's Degree are awarded to students who complete their work at the University of California with distinction and meet the policies laid down by the Committee on Honors. Honors are granted at graduation as follows: honors, high honors, highest honors. (En 4 Dec 2018) PPR3.2 BREADTH AND SUBJECT REQUIREMENTS FOR THE BACHELOR OF ARTS PPR3.2.1 English Composition: Students must demonstrate adequate proficiency in English composition by completing a one-year sequence of college- level instruction in English composition, with no grade lower than C as described in R6.1. (En 4 Dec 2018)	of Science must be earned in residence on the Riverside campus. No more than 18 of the 35 units may be completed in summer session courses on the Riverside campus. The minimum residence at the University of California required for a degree is three quarters. One of these required quarters may be completed in the summer session on the Riverside campus provided the student carries at least 12 units unless a reduced load is approved by the Associate Dean of Undergraduate Education for the School. Courses completed in the University of California Extension are not considered work in residence. 3.1.5 Students must declare their candidacy for the Bachelor's Degree with the Dean's office at the beginning of their final quarter in accordance with the dates published in the Schedule of Classes. 3.1.6 Honors with the Bachelor's Degree are awarded to students who complete their work at the University of California with distinction and meet the policies laid down by the committee on honors. Honors are granted by the Faculty at graduation as follows: honors, high honors, highest honors. 3.2 BREADTH AND SUBJECT REQUIREMENTS FOR THE BACHELOR OF ARTS 3.2.1 English Composition: Students must demonstrate adequate proficiency in English composition by completing a one-year sequence of college- level instruction in English composition, with no grade lower than C as described in R6.1. 3.2.2 Humanities: 20 units in Humanities as described in R6.3. Internships and independent study courses, and courses cross-listed with Business Administration or Physical Education, may not be used to satisfy this requirement. 3.2.3 Social Sciences: 16 units in Social Sciences as described in R6.4. Internships and independent study courses may not be used to satisfy this requirement. 3.2.4 Ethnicity: 4 units as described in R6.5. 3.2.5 Foreign Language: The Foreign Language Requirement (except for Foreign Language majors who satisfy the spirit of the language requirement by majoring in one or more languages) may be satisfied in two ways: 3.2.5.1 By completing the fourth- quarter level or its equivalent in one foreign language at UCR or at another college or university with a minimum grade of C. American Sign Language may also be used to satisfy this requirement.

Nov 91 & renumbered from 3.02.02) (Am25 May)(Am 5 Feb 98) HSR3.2.2<i>Social Sciences</i>: 16 units in Social Sciences as described in R6.04 for the A.B. Degree; thus, B.S. students are also required to complete 16 units. Internships, independent study courses, and courses cross-listed with Business Administration, Education or Physical Education may not be used to satisfy this requirement. (Am 22 May 86)(Am 26 May 88)(Am 8 Feb 90)(Am 7 Nov 91 & renumbered from 3.02.03) (Am 5 Feb 98) HSR3.2.3 <i>Foreign Language (Bachelor of Arts Degree)</i>: The Foreign Language Requirement (except for Foreign Language majors who satisfy the spirit of the language requirement by majoring in one or more languages) may be satisfied in two ways: (Am 24 May 90)(renumbered 7 Feb 91)(renumbered from 3.02.05 on 7 Nov 91) (Am 25 May 00) HSR3.2.3.1(1) By completing the fourth-quarter level or its equivalent in one foreign language at UCR or at another college or university with a minimum grade of C; American Sign Language may also be used to satisfy this requirement. (renumbered 7 Feb 91) (renumbered from 3.02.05.01 on 7 Nov 91) (Am 25 May 95) (Am 25 May 00) HSR3.2.3.2(2) By demonstrating proficiency at the fourth-quarter level on a foreign language placement exam offered by one of the foreign language departments at UCR. This test does not yield unit credit; it only determines whether the Foreign Language Requirement has been met, or in which course in the language sequence a student should enroll. (renumbered 7 Feb 91)(Am 7 Nov 91 & renumbered from 3.02.05.02) HSR3.2.3.3For majors shared between the College of Humanities, Arts, and Social Sciences and other schools or colleges the number of quarters required to fulfill the Foreign Language requirement for the A.B. Degree will be determined by a committee appointed by the Executive Committees of the College of Humanities, Arts, and Social Sciences and the other school or college	NR3.2.2 <i>Foreign Language</i>: 16 units. This requirement may be fulfilled in one language by completing course 4 with a minimum grade of C or demonstrating equivalent proficiency; or by completing course 2 with a minimum grade of C in each of the two languages; or by demonstrating equivalent proficiency (level 2) in each of two languages. (American Sign Language may also be used to satisfy this requirement.) (Am 28 Jan 82)(Am 5 Feb 98) NR3.2.3 <i>Humanities</i>: 20 units in Humanities as described in R6.3 for the A. B. Degree. No course used to satisfy the English Composition requirement will apply toward Humanities credit. No more than two courses in performance may be counted in this 20 unit requirement. Foreign language at level 4 or above may be counted toward fulfillment of 4 units in this requirement. The college Executive Committee will determine which additional courses (courses from departments or programs cited in UCR campus regulation R6.3.3) will apply to the requirement and the Dean's office will implement this policy. (Am 28 Jan 82)(Am 12 Nov 92)(Am9 Feb 95)(Am 30 May 96) NR3.2.4 <i>Social Sciences</i>: 16 units in Social Sciences as described in R6.4 for the A. B. Degree. The college Executive Committee will determine which additional courses (courses from departments or programs cited in UCR campus regulation R6.4.3) will apply to the requirement and the Dean's office will implement this policy (Am 28 Jan 82)(Am 9 Feb 95)(Am30 May 96) NR3.2.5 <i>Natural Sciences</i>: 20 units in Natural Sciences and Mathematics as described in R6.2 for the A. B. Degree. No more than 4 units may be counted in Mathematics, Computer Science and Engineering, or Statistics. No course in cultural geography maybe used The biological sciences course must have a laboratory component. The college Executive Committee will determine which courses may be used in satisfaction of the Natural Sciences requirement (courses from departments or programs cited in UCR Campus regulation R6.2.1., R6.2.2, and R6.2.3) and the Dean's office will implement this policy. (Am 28 Jan 82) (Am 9 Feb 96) (Am 30 May 96) NR3.2.6 <i>Ethnicity</i>: One four-unit course dealing with general concepts and issues in the study of	PPR3.2.2 Humanities: 20 units in Humanities as described in R6.3. Internships and independent study courses, and courses cross-listed with Business Administration, Education or Physical Education, may not be used to satisfy this requirement. PPR3.2.3 Social Sciences: 16 units in Social Sciences as described in R6.4. Internships and independent study courses, and courses cross-listed with Business Administration, Education or Physical Education, may not be used to satisfy this requirement. PPR3.2.4Ethnicity: 4 units as described in R6.5. PPR3.2.5 Foreign Language: The Foreign Language Requirement (except for Foreign Language majors who satisfy the spirit of the language requirement by majoring in one or more languages) may be satisfied in two ways: PPR3.2.5.1 By completing the fourth-quarter level or its equivalent in one foreign language at UCR or at another college or university with a minimum grade of C; American Sign Language may also be used to satisfy this requirement. PPR3.2.5.2 By demonstrating proficiency at the fourth-quarter level on a foreign language placement exam offered by one of the foreign language departments at UCR. This test does not yield unit credit; it only determines whether the Foreign Language Requirement has been met, or in which course in the language sequence a student should enroll PPR3.2.5.3 For majors in other schools or colleges the number of quarters required to fulfill the Foreign Language requirement for the B.A. Degree will be determined by a committee appointed by the Executive Committee and the other school or college concerned. In no instance will this requirement be less than the minimum required by either body.	3.2.5.2 By demonstrating proficiency at the fourth-quarter level on a foreign language placement exam offered by one of the foreign language departments at UCR. This test does not yield unit credit; it only determines whether the Foreign Language Requirement has been met, or in which course in the language sequence a student should enroll. 3.2.5.3 For majors shared between the School and other schools or colleges, the number of quarters required to fulfill the Foreign Language requirement for the Bachelor of Arts Degree will be determined by the Undergraduate Education Committee in the School and the other school or college concerned. In no instance will this requirement be less than the minimum required by either body. 3.2.6 Natural Sciences and Mathematics: 20 units in Natural Sciences and Mathematics as described in R6.2. 3.2.7 No course from a student's major discipline may be used in satisfaction of breadth requirements 3.2.1 to 3.2.7. However, courses outside the major discipline but required for the major may satisfy these requirements. Students who elect a double or interdisciplinary major may apply courses from one of the majors, departments, or programs in satisfaction of 3.2.1 to 3.2.7. The same course may not be used to meet two breadth requirements.

concerned. In no instance will this requirement be less than the minimum required by either body. (En 6 Nov 86)(renumbered 7 Feb 91) (renumbered from 3.02.05.03 on 7 Nov 91) (Am 25 May 00) [HSR3.02.04 Sciences (deleted on 7 Nov 91)] HSR3.2.4 Foreign Language (Bachelor of Science Degree): The Foreign Language Requirement (except for Foreign Language majors who satisfy the spirit of the language requirement by majoring in one or more languages) may be satisfied in two ways: (Am 24 May 90)(renumbered 7 Feb 91)(renumbered from 3.02.06 on 7 Nov 91) (Am 25 May 00) HSR3.2.4.1(1) By completing the third-quarter level or its equivalent in one language at UCR or at another college or university with a minimum grade of C; (renumbered from 3.02.06.01 on 7 Feb 91) HSR3.2.4.2(2) By demonstrating proficiency at the third-quarter level on a foreign language placement exam offered by one of the foreign language departments at UCR. This test does not yield unit credit; it only determines whether the Foreign Language Requirement has been met, or in which course in the language sequence a student should enroll. (Am 24 May 90)(Am 7 Nov 91 & renumbered from 3.02.06.02) HSR3.2.4.3 For majors shared between the College of Humanities, Arts, and Social Sciences and other schools or colleges the number of quarters required to fulfill the B.S. Degree will be determined by a committee appointed by the Executive Committees of the College of Humanities, Arts, and Social Sciences and the concerned school or college. In no instance will this requirement be less than the minimum required by either body. (En 6 Nov 86)(renumbered 7 Feb 91)(renumbered from 3.02.06.03 on 7 Nov 91)(renumbered from 3.02.04.03 on 9 Nov 95) (renumbered from 3.02.06 on 24 Feb 00) (Am 25 May 00) HSR3.2.5No course from a student's major discipline may be used in satisfaction of breadth requirements HSR3.02. to	race and ethnicity in California and the United States. Courses that satisfy this requirement must concentrate on one or more of four principal minority groups (African-American, Asian-American, Chicano/Latino, and Native American). These courses must be comparative in nature, analyzing the minority group experience within the present and historical context of other racial and ethnic groups, such as European- American minorities. The courses are to be offered by or cross-listed with the Program in Ethnic Studies. (En 12 Nov 92) NR3.2.6.1 Regardless of the student's college and major, the course may be counted toward the Humanities or the Social Sciences graduation requirements, depending upon the course's content as evaluated by the Committee on Educational Policy. (En 12 Nov 92) NR3.3 SUBJECT REQUIREMENTS FOR THE BACHELOR OF SCIENCE DEGREE NR3.3.1 English Composition: Students must demonstrate adequate proficiency in English Composition by completing a one-year sequence of college-level instruction in English Composition with no grade lower than C. UCR's sequence is ENGL 001A, ENGL 001B and ENGL 001C. (ENGL 01HC or ENGL 01SC may be substituted for ENGL 001C, but only one of these courses can be taken for credit). Transfer students who have credit for one semester of English Composition from another institution are required to take two additional quarters, i.e., ENGL 001B and ENGL 001C. Students have the option of using high school advanced placement with a score of 3 in English Composition to satisfy ENGL 001A; they must complete ENGL 001B and ENGL 001C. Students who have high school advanced placement with a score of 4 or 5 in English Composition have satisfied ENGL 001A and ENGL 001B; they must complete ENGL 001C. (Am 13 Jun 2005) NR3.3.2 Humanities: 12 units in Humanities as described in R6.3 for the B. S. Degree. No course used to satisfy the English Composition requirement will apply toward Humanities credit. No more than one* course in performance may be counted in this 12 unit requirement. Foreign language at level 3 or above may be counted toward fulfillment of 4 units in this requirement.	PPR3.2.6 Natural Sciences and Mathematics: 20 units in Natural Sciences and Mathematics as described in R6.2 PPR3.2.7 No course from a student's major discipline may be used in satisfaction of breadth requirements PPR3.2.1 to PPR3.2.6. However, courses outside the major discipline, but required for the major may satisfy these requirements. Students who elect a double or interdisciplinary major may apply courses from one of the majors, departments or programs in satisfaction of PPR3.2.1 to PPR3.2.6. Also, the same course may not be used to meet two breadth requirements.		

HSR3.02.04 (except for English majors in connection with R6.01, History majors in connection with R6.03.01, Ethnic Studies majors in connection with R6.05, and Foreign Language majors in connection with HSR3.02.03 and HSR3.02.04). However, courses outside the major discipline, but required for the major may satisfy these requirements. Students who elect a double or interdisciplinary major may apply courses from one of the majors, departments or programs in satisfaction of HSR3.02.01 to HSR3.02.04. Also, the same course may not be used to meet two breadth requirements. (En 9 Nov 95) (Am 25 May 00) HSR3.2.6(renumbered 3.02.04.03) HSR3.2.7(deleted 7 Nov 91)	The college Executive Committee will determine which additional courses (courses from departments or programs cited in UCR campus regulation R6.3.3) will apply to the requirement and the Dean's office will implement this policy (Am 28 Jan 82)(Am 11 Nov 93)(Ed 10 Feb 94)(Am 9 Feb 95) (Am 30 May 96) *NR3.2.3 -- A course is defined here as a block of instruction which carries credit of 4 or more units. NR3.3.3 <i>Social Sciences</i>: 12 units in Social Sciences as described in R6.4 for the B.S. Degree. The college Executive Committee will determine which additional courses (courses from departments or programs cited in UCR campus regulation R6.4.3) will apply to the requirement and the Dean's office will implement this policy (Am 28 Jan 82)(Am 9 Feb 95)(Am 30 May 96) NR3.3.4 Additional substantive courses in the major or fields related to the major: 16 units to be specified by the major department. (Am 28 Jan 82) NR3.3.5 <i>Natural Sciences</i>: 20 units in Natural Sciences and Mathematics as described in R6.2 for the B. S. Degree. No more than 4 unites may be counted in Mathematics, Computer Science and Engineering, or Statistics. No course in cultural geography may be used. The biological sciences course must have a laboratory component. The college Executive Committee will determine which courses may be used in satisfaction of the Natural Sciences requirement (courses from departments of programs cited in UCR Campus regulation R6.2.1 and R6.2.3) and the Dean's office will implement this policy (Am 28 Jan 82)(Am 9 Feb 95) (Am 30 May 96) NR3.4 ACADEMIC MINORS (EN 7 NOV 91) NR3.4.1 A disciplinary minor is a set of courses focused on an academic discipline proposed by a department or program and approved by the Executive Committee, the Faculty, the Educational Policy Committee and the Academic Senate. NR3.4.2 An interdisciplinary minor is a set of courses focused on an interdisciplinary thematic area, proposed by more than one department or program and approved by the Executive Committee, the Faculty, the Educational Policy Committee and the Academic Senate. Each interdisciplinary minor is to be supervised by a			

	representative committee of at least three Faculty members, one designated as Chair. NR3.4.3 A minor shall consist of not fewer than 20 nor more than 28 units of organized upper division courses. No more than 4 (four) units of 190-199 courses may be used in fulfilling the upper division unit for a minor. Of the specified upper division units, a minimum of 16 must be unique to the minor and may not be used to satisfy major requirements. *NR3.3.2 -- A course is defined here as a block of instruction which carries credit of 4 or more units. (Am 18 Nov 03) NR3.4.4 The department, program, or interdisciplinary committee offering the minor is responsible for student and administrative issues pertaining to the minor. NR3.4.5 Students must file a declaration of a minor at least two quarters before graduation and must be in good academic standing at the time of filing. The declaration of a minor requires the signature of the Professional Academic Advisor that handles the minor and the signature(s) of the Associate Dean(s) of the college(s) of both the major and the minor. The minor coursework (including all prerequisites for upper division courses in the minor) must be completed within the overall 216 unit maximum for the Bachelor's degree. A minimum GPA of 2.0 is required for all courses in the minor. If the student declares a minor and for any reason fails to complete the minor, the designation of the minor must be removed from the transcript before the student can graduate. (Am 29 Nov. 2011) NR3.4.6 A grade point average of at least 2.0 in upper division courses in the field of the minor is a graduation requirement. When all other requirements for graduation have been met, the student will be graduated without the minor if the minimum GPA in the minor field has not been met. NR3.4.7 A student must be able to complete both the major and the minor requirements without exceeding the 216 unit college maximum. NR3.5 LIFE SCIENCES CORE CURRICULUM (EN 30 MAY 96) NR3.5.1 All students who are life sciences majors (Biochemistry, Biological Sciences, Biology, Botany			

	and Plant Sciences, Entomology, Cell Biology and Neuroscience) will complete a uniform core curriculum prior to advancing to upper division courses not in the core except as provided in NR3.5.7 and NR3.5.8. Specific courses which satisfy the core will be determined by the college Executive Committee. (En 30 May 96)(Am 4 Nov 99)(Am 20 Feb 07) NR3.5.2 Biology: 12 units including laboratory. The Biology component of the core will consist of a one year introductory biology course sequences. (En 30 May 96)(Am 20 Feb 07) NR3.5.3 Chemistry: 27 units including laboratory. The Chemistry component of the core will consist of a one-year course sequence in general Chemistry (at least 12 units including laboratory) and a one-year course sequence in organic chemistry (at least 12 units including laboratory). (En 30 May 96)(Am 20 Feb 07) NR3.5.4 Mathematics: 8 units. The Mathematics component of the course will consist of two courses in calculus. (En 30 May 96) NR3.5.5 Physics: 15 units. The Physics component of the core will consist of a one year general physics course sequence, including laboratory. (En 30 May 96) NR3.5.6 Statistics: 2 units. The Statistics component of this core will consist of at least one course in Statistics. (En 30 May 96) NR3.5.7 Biochemistry: 4 units. The Biochemistry component of the core will consist of at least one course in elementary or introductory biochemistry. This course may be taken concurrently with other upper division life sciences courses as long as they do not have Biochemistry as a prerequisite. (En 30 May 96) NR3.5.8 While the intention is that students will complete all of the core courses before proceeding to upper division courses in their major, a student may begin upper division course while the core is still in progress. Up to 12 units of upper division life sciences courses not being used to satisfy the core may be taken prior to completion of the core; permission of an advisory is required to take upper division units in excess of these 12 units. (En 30 May 96)			

			3 The School of Education is authorized to offer the academic degrees of master of arts, master of education, doctor of education, and doctor of philosophy as well as credential programs for public school teachers and administrators. (Am 2001, May) (EC 28 July 2021)	4 AUTHORIZED DEGREES 4.1 DEGREES 4.1.1 The School of Education is authorized to offer the academic degrees of bachelor of arts, master of arts, master of education, doctor of education, and doctor of philosophy as well as credential programs for public school teachers and administrators. (Am 2001, May) (EC 28 July 2021)



EXECUTIVE COUNCIL

Kenneth Barish, Chair

Academic Senate

October 31, 2025

To: Riverside Division

From: Ken Barish, Chair, Executive Council

A handwritten signature in blue ink, which appears to read "Kenneth Barish".

Re: 2nd Round Bachelor of Science + Master of Science in Mathematics (Applied) Five Year (4+1) Combined-Degree Program

Executive Council, with no additional comments, endorsed the 2nd Round Bachelor of Science + Master of Science in Mathematics (Applied) Five Year (4+1) Combined-Degree Program proposal for inclusion on the Fall 2025 Division meeting agenda.



Academic Senate

COMMITTEE ON EDUCATIONAL POLICY

October 3, 2025

To: Ken Barish, Chair
Riverside Division

From: Annie Ditta, Chair
Committee on Educational Policy

Re: Second Round Review of Proposed B.S. + M.S. in Mathematics (Applied) Five Year Combined Degree Program

The Committee on Educational Policy (CEP) reviewed the revised proposal for the B.S. + M.S. in Mathematics (Applied) Five Year Combined Degree Program at their October 3, 2025 meeting and voted to support the proposal. However, the Committee recommends that the application process section be clarified for students so that the timing of admissions is clear (i.e., end vs. beginning of June). The Committee also recommends that the program be clearly advertised to students early, so that they may be able to plan for the higher courseload that the program requires immediately in the first year.



Academic Senate

GRADUATE COUNCIL

October 16, 2025

To: Kenneth Barish, Chair
Riverside Division

From: Viji Santhakumar, Chair
Graduate Council

**RE: [Campus Review] (Proposed Degree Program) (2nd Round) Bachelor of
Science + Master of Science in Mathematics (Applied) Five Year (4+1)
Combined-Degree Program**

Graduate Council reviewed and discussed the proposal for a BS+MS in Mathematics Five Year 4+1 Combined-Degree Program at their October 16, 2025 meeting. Graduate Council approved the proposal.

B.S. + M.S. in Mathematics (Applied) Five Year (4+1) Combined-Degree Program

Proposed by the Faculty of the Mathematics Department,
College of Natural and Agricultural Sciences
University of California, Riverside, CA 92521

Catalog entry: The College of Natural and Agricultural Sciences offers a combined B.S. + M.S. program in Mathematics (Applied), enabling eligible graduates from the B.S. programs in Applied Mathematics or Computational Mathematics to complete an M.S. in Mathematics (Applied) with just one additional year of study.

Application Eligibility and Process Overview

Eligibility Criteria: To apply to the joint degree program, applicants must meet the following requirements: a cumulative GPA of at least 3.4 across all courses and a GPA of at least 3.2 in all mathematics, science, and engineering courses. Additionally, applicants must be on track to complete their undergraduate degree within four years. Meeting these minimum requirements does not guarantee admission.

Interest Form: Before applying, students are required to submit an interest form for the B.S. + M.S. program. This form helps identify any areas needing attention to ensure eligibility. Submitting the form as early as possible is recommended, as it allows more time to address any potential gaps in eligibility.

Application Process: Students must apply internally through the Mathematics Department before the start of their senior year (4th year), with a deadline of July 15. The application requires an online form, a transcript, and at least two letters of recommendation. A recruitment committee will review all applications based on academic performance, letters of recommendation, and alignment with program objectives, and students who meet these criteria will be granted admission. After being admitted, students must then apply for the M.S. portion of the program through the Graduate Division by June 1 of the following year (5th year). Matriculation into the graduate portion of the combined degree program in the fall following their senior year requires students to (1) have their M.S. application accepted, (2) maintain a cumulative GPA of 3.0 or higher throughout their final undergraduate year, and (3) complete all B.S. degree requirements by the end of their senior year. Students with strong academic records may be admitted with limited coursework deficiencies.

Program Requirements

For detailed program requirements, please refer to the [2024-25 University of California, Riverside General Catalog](#), which includes information on the Breadth Requirement (page 94, in a table called College of Natural and Agricultural Sciences Breadth Requirement Unit Summary), the Natural Sciences requirement (page 476, under the section Major Requirements for the Bachelor of Arts and Bachelor of Science in Mathematics), Major Requirements for Bachelor of Science in Mathematics (page 476), Applied Mathematics programs (page 476), Computational Mathematics program (page 476), and M.S. in Mathematics (Applied) (page 477). Please note that these requirements are specific to the 2024-25 catalog and are subject to change in future editions. For the most current information, visit <https://registrar.ucr.edu/registering/catalog>.

Double counting is not allowed. Units applied to an undergraduate degree cannot also be counted towards a graduate degree. However, a UC campus can allow a portion (no more than half) of the required graduate degree credits to be taken by the student while an undergraduate at that campus.

Recommendations Specific to the 4+1 Program: While not mandatory prerequisites for matriculation into the graduate portion of the program, CS 100 and CS 111 are foundational courses that strongly support success in the 4+1 program. Similarly, MATH 135A, MATH 149A, and MATH 149B are highly recommended to provide essential preparation. Additionally, taking MATH 297 (Directed Research) is recommended but not required, as it offers valuable research experience that can enhance understanding and expertise in the field.

A sample course plan is included below, outlining core and elective courses available. This plan is designed to help students complete their degree efficiently while allowing flexibility to tailor their studies to specific interests within the field.

Sample Course Plan

	FALL	WINTER	SPRING
1st year	MATH 009A (First-Year Calculus 4) CS 010A (Introduction to Computer Science For Science, Mathematics, and Engineering I 4) ENGL 001A (Beginning Composition 4) (Humanities or Social Sciences Breadth 4) 16 UNITS	MATH 009B (First Year Calculus 4) CS 010B (Introduction to Computer Science For Science, Mathematics, and Engineering II 4) CS 011 (Introduction to Discrete Structures 4) ENGL 001B (Intermediate Composition 4) 16 UNITS	MATH 009C (First Year Calculus 4) CS 010C (Introduction to Data Structures and Algorithms 4) MATH 110 (An Introduction to Mathematical Proofs 4) ENGL 001C (Applied Intermediate Composition 4) 16 UNITS
2nd year	MATH 031 (Applied Linear Algebra 5) STAT 010 (Introduction to Statistics 5) CS 100 (Software Construction 5) BIOL 002 (Cellular Basis of Life 4) 19 UNITS	MATH 010A (Calculus of Several Variables 4) MATH 131 (Linear Algebra I 4) CS 111 (Discrete Structures 4) BIOL 003 (Organisms in Their Environment 4) 16 UNITS	MATH 010B (Calculus of Several Variables 4) MATH 046 (Introduction to Ordinary Differential Equations 4) STAT 011 (Introduction to Statistical Modeling 5) BIOL 005A (Introduction to Cell and Molecular Biology 4) 17 UNITS

3rd year	MATH 146A (Ordinary and Partial Differential Equations 4) MATH 149A (Probability and Mathematical Statistics 4) MATH 135A (Introduction to Numerical Analysis 1 4) PHYS 040A (General Physics 5) 17 UNITS	MATH 146B (Ordinary and Partial Differential Equations 4) MATH 149B (Probability and Mathematical Statistics 4) MATH 168 (Introduction to Mathematical Modeling 4) (Humanities or Social Sciences Breadth 4) 16 UNITS	MATH 146C (Ordinary and Partial Differential Equations 4) CS 171 / EE 142 (Introduction to Machine Learning and Data Mining 4) MATH 120 (Optimization 4) (Humanities or Social Sciences Breadth 4) 16 UNITS
4th year	MATH 206A (Theory of Probability 4) MATH 151A (Foundations of Real Analysis I 4) MATH 161a¹ (Mathematical Foundations of Machine Learning 4) (Humanities or Social Sciences Breadth 4) 16 UNITS	MATH 206B (Numerical Analysis 4) MATH 151B (Foundations of Real Analysis II 4) MATH 161b² (Mathematical Foundations of Deep Learning 4) (Humanities or Social Sciences Breadth 4) 16 UNITS	MATH 206C (Methods in Applied Mathematics 4) MATH 161c² (Mathematical Foundations of Artificial Intelligence 4) MATH 163 (Applied Dynamical Systems 4) (Humanities or Social Sciences Breadth 4) 16 UNITS
5th year (M.S.)	MATH 297 (Directed Research 4) MATH 207A (Ordinary Differential Equations 4) STAT 107 (Introduction to Statistical Computing With R 4) CS 170 (Introduction to Artificial Intelligence 4)	MATH 297 (Directed Research 6) MATH 207B (Partial Differential Equations I 4) STAT 108 (Data Science Ethics 4) MATH 401 (Professional Development in Mathematics 2)	MATH 297 (Directed Research 4) MATH 207C (Partial Differential Equations II 4) STAT 167 (Introduction to Data Science 4) CS 173 (Introduction to Natural Language Processing 4)

¹ Math 161 is pending approval to change to Math 161A

² Math 161B and 161C are new courses and are pending approval.

	16 UNITS	16 UNITS	16 UNITS



Academic Senate

Professor Kenneth Barish
Division Chair

May 9, 2025

To: James Kelliher, Chair, Department of Mathematics
Margarita Roman, Student Services Supervisor, Department of Mathematics

From: Ken Barish, Chair, Academic Senate

RE: **Proposed Bachelor of Science + Master of Science in Mathematics (Applied) Five Year (4+1) Combined-Degree Program**

Dear James and Margarita,

I am writing to provide feedback on the proposed [Bachelor of Science + Master of Science in Mathematics \(Applied\) Five Year \(4+1\) Combined-Degree Program](#). The proposal was reviewed by the Committee on Courses, the Committee on Educational Policy (CEP), the Committee on Planning and Budget (CPB), and the Graduate Council. CPB and Courses were fully in favor of the proposal. CEP was supportive though they made recommendations about the program.

The proposal is being returned so that it can be revised in consideration of all the feedback received. Importantly, I draw your attention to the Graduate Council's comment regarding the new systemwide policy that does not allow double counting. I have attached related information regarding double counting credits for your reference. It is my understanding that both the CCGA handbook and potentially the Compendium will soon reflect this policy more clearly. In the coming days, this information will be posted as a resource on the Graduate Council's webpage and shared with relevant campus colleagues.

Should a revised proposal be drafted, it should be sent to me via barish@ucr.edu with a courtesy copy to Senate Director Cherysa Cortez at cherysac@ucr.edu. Please indicate "[New Business]" in the subject line.

Best regards,

A handwritten signature in blue ink that reads "Kenneth Barish".

Ken Barish, Chair
Academic Senate

Cc: CNAS FEC Chair Tom
CNAS FEC Liaison Lizardi
Senate Analyst Beatty
Senate Analyst Miller
Senate Director Cortez

Attachment



Academic Senate

GRADUATE COUNCIL

April 24, 2025

To: Kenneth Barish, Chair
Riverside Division

From: Viji Santhakumar, Chair
Graduate Council

RE: [Campus Review] (Proposed Degree Program) Bachelor of Science + Master of Science in Mathematics (Applied) Five Year (4+1) Combined-Degree Program

Graduate Council reviewed the proposed new Bachelor of Science + Master of Science in Mathematics (Applied) Five Year (4+1) Combined-Degree Program at their April 17, 2025 meeting. Graduate Council cannot approve this proposal as written due to new systemwide policies that do not allow for double-counting of courses in 4+1 programs. Additionally, systemwide requires that the master's requirements in a 4+1 program be the same as the stand-alone master's program requirements or it is considered an entirely different program. Please revise the proposal to remove all double counting, revise the requirements so they match those of the stand-alone master's program, and resubmit your proposal for reconsideration.



COMMITTEE ON EDUCATIONAL POLICY

April 22, 2025

To: Ken Barish, Chair
Riverside Division

From: Stephen Kane, Vice Chair
Committee on Educational Policy

Re: Proposed B.S. + M.S. in Mathematics Combined Degree Program

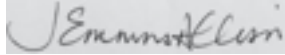
The Committee on Educational Policy (CEP) reviewed the proposal for a B.S. + M.S. in Mathematics at their April 4, 2025 meeting. The Committee voted to support the proposal with the recommendation that a timeline be developed for students for both the application process and the projected progress through the curriculum. The Committee also recommends that the program provide greater clarity for when students can apply for the M.S. portion of the degree.

PLANNING AND BUDGET

April 16, 2025

To: Kenneth Barish, Chair
Riverside Division

From: Juliann Allison, Chair
Committee on Planning and Budget

A handwritten signature in black ink, appearing to read "Juliann Allison", is placed over the printed name in the "From:" line.

RE: [Campus Review] Proposed Degree Program: *Bachelor of Science + Master of Science in Mathematics (Applied) Five Year (4+1) Combined-Degree Program*

At our meeting on April 8, 2025, the Committee on Planning and Budget (CPB) reviewed the proposal for CNAS to offer a combined B.S. + M.S. program in Mathematics (Applied), enabling eligible graduates from the B.S. programs in Applied Mathematics or Computational Mathematics to complete an M.S. in Mathematics (Applied) with just one additional year of study. CPB is generally supportive of the proposed degree program and has no comments.



Academic Senate

COMMITTEE ON COURSES

April 29, 2025

To: Ken Barish, Chair
Riverside Division

From: Erin Rankin, Chair
Committee on Courses

Re: Proposed B.S. + M.S. in Mathematics

The Committee on Courses reviewed the proposal for a B.S. + M.S. in Mathematics at their April 24, 2025 meeting and were generally supportive of the proposal.

Double counting credits

Undergraduate/Graduate Hybrid Degree Programs

Section II.A.1 of the section on Undergraduate/Graduate Hybrid Programs in the Compendium has the phrase that “programs require particular attention to double-counting of units”. We were tasked with making this phrase less ambiguous. To that end, we researched existing policy¹ and offer the following text for consideration:

Double counting is not allowed. Units applied to an undergraduate degree cannot also be counted towards a graduate degree. However, a UC campus can allow a portion (no more than half) of the required graduate degree credits to be taken by the student while an undergraduate at that campus.

Dual Degree Programs

The CCGA’s Handbook (*Appendix W - Consideration in CCGA’s Review of Dual Degree Proposals) states:

“A **dual degree program** is a program of study offered collaboratively by two institutions that leads to the award of two **separate degrees from each of the participating institutions**. “

“CCGA encourages proposers to follow WASC guidance ...”

“**WASC requirements for dual degrees:**

2) No more than 25% of the course credits being offered at the graduate level may be double-counted or overlapping between the two institutions.”

As the phrase “25% of the course credits being offered” is not sufficiently specific, we suggest the following text for inclusion in the guidelines:

Of the total course credits used to satisfy the requirements for a graduate level dual degree program, no more than 25% may be double counted or overlapping between the two institutions. These double counted course credits should be used for degree requirements which are similar between the two participating degree programs and must be approved as such by a mechanism set by the dual degree program.

¹ Perusal of websites shows that UCSD, Berkeley, UCLA Engineering, UCSB explicitly disallow double counting of a course towards both graduate and undergraduate degree credits. UCR (at least Engineering) appears to allow double counting, e.g., 12 units of undergraduate course work by the CS department.

B.S. + M.S. in Mathematics (Applied) Five Year (4+1) Combined-Degree Program

Proposed by the Faculty of the Mathematics Department,
College of Natural and Agricultural Sciences
University of California, Riverside, CA 92521

Catalog entry: The College of Natural and Agricultural Sciences offers a combined B.S. + M.S. program in Mathematics (Applied), enabling eligible graduates from the B.S. programs in Applied Mathematics or Computational Mathematics to complete an M.S. in Mathematics (Applied) with just one additional year of study. Students may apply up to 12 units required for the M.S. degree toward both the B.S. and M.S. degrees, allowing these units to count for both programs.

Application Eligibility and Process Overview

Eligibility Criteria: To apply to the joint degree program, applicants must meet the following requirements: a cumulative GPA of at least 3.4 across all courses and a GPA of at least 3.2 in all mathematics, science, and engineering courses. Additionally, applicants must be on track to complete their undergraduate degree within four years. Meeting these minimum requirements does not guarantee admission.

Interest Form: Before applying, students are required to submit an interest form for the B.S. + M.S. program. This form helps identify any areas needing attention to ensure eligibility. Submitting the form as early as possible is recommended, as it allows more time to address any potential gaps in eligibility.

Application Process: Students must apply internally through the Mathematics Department before the start of their senior year (4th year), with a deadline of July 15. The application requires an online form, a transcript, and at least two letters of recommendation. A recruitment committee will review all applications based on academic performance, letters of recommendation, and alignment with program objectives, and students who meet these criteria will be granted admission. After being admitted, students must then apply for the M.S. portion of the program through the Graduate Division by June 1 of the following year (5th year). Matriculation into the graduate portion of the combined degree program in the fall following their senior year requires students to (1) have their M.S. application accepted, (2) maintain a cumulative GPA of 3.0 or higher throughout their final undergraduate year, and (3) complete all B.S. degree requirements by the end of their senior year. Students with strong academic records may be admitted with limited coursework deficiencies.

Program Requirements

For detailed program requirements, please refer to the [2024-25 University of California, Riverside General Catalog](#), which includes information on the Breadth Requirement (page 94, in a table called College of Natural and Agricultural Sciences Breadth Requirement Unit Summary), the Natural Sciences requirement (page 476, under the section Major Requirements for the Bachelor of Arts and Bachelor of Science in Mathematics), Major Requirements for Bachelor of Science in Mathematics (page 476), Applied Mathematics programs (page 476), Computational Mathematics program (page 476), and M.S. in Mathematics (Applied) (page 477). Please note that these requirements are specific to the 2024-25 catalog and are subject to change in future editions. For the most current information, visit <https://registrar.ucr.edu/registering/catalog>.

Recommendations Specific to the 4+1 Program: While not mandatory prerequisites for matriculation into the graduate portion of the program, CS 100 and CS 111 are foundational courses that strongly support success in the 4+1 program. Similarly, MATH 135A, MATH 149A, and MATH 149B are highly recommended to provide essential preparation. Additionally, taking MATH 297 (Directed Research) is recommended but not required, as it offers valuable research experience that can enhance understanding and expertise in the field.

A sample course plan is included below, outlining core and elective courses available. This plan is designed to help students complete their degree efficiently while allowing flexibility to tailor their studies to specific interests within the field.

Sample Course Plan

	FALL	WINTER	SPRING
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2nd year	MATH 031 (Applied Linear Algebra 5) STAT 010 (Introduction to Statistics 5) CS 100 (Software Construction 5) BIOL 002 (Cellular Basis of Life 4) 19 UNITS	MATH 010A (Calculus of Several Variables 4) MATH 131 (Linear Algebra I 4) CS 111 (Discrete Structures 4) BIOL 003 (Organisms in Their Environment 4) 16 UNITS	MATH 010B (Calculus of Several Variables 4) MATH 046 (Introduction to Ordinary Differential Equations 4) STAT 011 (Introduction to Statistical Modeling 5) BIOL 005A (Introduction to Cell and Molecular Biology 4) 17 UNITS

3rd year	MATH 146A (Ordinary and Partial Differential Equations 4) MATH 149A (Probability and Mathematical Statistics 4) MATH 135A (Introduction to Numerical Analysis 1 4) PHYS 040A (General Physics 5) 17 UNITS	MATH 146B (Ordinary and Partial Differential Equations 4) MATH 149B (Probability and Mathematical Statistics 4) MATH 168 (Introduction to Mathematical Modeling 4) (Humanities or Social Sciences Breadth 4) 16 UNITS	MATH 146C (Ordinary and Partial Differential Equations 4) CS 171 / EE 142 (Introduction to Machine Learning and Data Mining 4) MATH 120 (Optimization 4) (Humanities or Social Sciences Breadth 4) 16 UNITS
4th year	MATH 206A (Theory of Probability 4) MATH 151A (Foundations of Real Analysis I 4) MATH 161a¹ (Mathematical Foundations of Machine Learning 4) (Humanities or Social Sciences Breadth 4) 16 UNITS	MATH 206B (Numerical Analysis 4) MATH 151B (Foundations of Real Analysis II 4) MATH 161b² (Mathematical Foundations of Deep Learning 4) (Humanities or Social Sciences Breadth 4) 16 UNITS	MATH 206C (Methods in Applied Mathematics 4) MATH 161c² (Mathematical Foundations of Artificial Intelligence 4) MATH 163 (Applied Dynamical Systems 4) (Humanities or Social Sciences Breadth 4) 16 UNITS
5th year (M.S.)	MATH 297 (Directed Research 4) MATH 207A (Ordinary Differential Equations 4) STAT 107 (Introduction to Statistical Computing With R 4) CS 170 (Introduction to Artificial Intelligence 4) 16 UNITS	MATH 297 (Directed Research 6) MATH 207B (Partial Differential Equations I 4) STAT 108 (Data Science Ethics 4) MATH 401 (Professional Development in Mathematics 2) 16 UNITS	MATH 297 (Directed Research 4) MATH 207C (Partial Differential Equations II 4) STAT 167 (Introduction to Data Science 4) CS 173 (Introduction to Natural Language Processing 4) 16 UNITS

Approved by the CNAS Faculty Executive Committee on 2/28/25.
Approved by the department faculty on 11/18/24

¹ Math 161 is pending approval to change to Math 161A

² Math 161B and 161C are new courses and are pending approval.

Received
8/7/25
Academic Senate

To Division
11/12/2025

**EXECUTIVE OFFICE
REPORT TO THE RIVERSIDE DIVISION
December 2, 2025**

To Be Adopted

**Proposed Changes to the College of Natural and Agricultural Sciences Bylaws
(Bylaw 4.1.1.1: Committee List)**

PRESENT:

4.1.1.1. The term of office of the Chair of the Faculty is two years, elected in even years. The term of office ~~of~~ members of the Executive Committee is three years. The five members of the Executive Committee from the departments of Chemistry; Evolution, Ecology and Organismal Biology; Molecular, Cell and Systems Biology; Nematology and Environmental Sciences are elected in the same year; the four members of the Executive Committee from the departments of Earth Sciences, Physics and Astronomy, Microbiology and Plant Pathology and Statistics are elected in the same year; the four members of the Executive Committee from the departments of Biochemistry, Botany and Plant Sciences, Entomology, and Mathematics are elected in the same year. (Am 3 Feb 83)(Am 27 May 93)(Am 30 May 06)(Am 20 Nov 07)(Am 30 Nov.10)(An 5 Dec 2017)

PROPOSED:

4.1.1.1. The term of office of the Chair of the Faculty is two years, elected in even years. The term of office for the members of the Executive Committee is three years. The five members of the Executive Committee from the departments of Chemistry; Evolution, Ecology and Organismal Biology; Molecular, Cell and Systems Biology; Nematology and Environmental Sciences are elected in the same year. The four members of the Executive Committee from the departments of Earth and Planetary Sciences; Physics and Astronomy; Microbiology and Plant Pathology; and Statistics are elected in the same year. The four members of the Executive Committee from the departments of Biochemistry; Botany and Plant Sciences; Entomology; and Mathematics are elected in the same year. (Am 3 Feb 83)(Am 27 May 93)(Am 30 May 06)(Am 20 Nov 07)(Am 30 Nov.10)(An 5 Dec 2017)

Statement of Purpose and Effect: To bring the department name "Earth Sciences" into alignment with the Department name change approved by the Division in February 2019 to "Earth & Planetary Sciences."

Submitted by Senate Executive Office: August 7, 2025

Section below is for Senate use only

Approved by the CNAS Faculty Executive Committee on 11/4/25, 11/11/25

The Committee on Rules and Jurisdiction finds the wording to be consistent with the code of the

Academic Senate:

10/8/25, 11/11/25

Received by Executive Council:

11/10/25



COMMITTEE ON RULES AND JURISDICTION

Date: October 8, 2025

To: Kenneth Barish, Chair
Riverside Division

From: Randolph C. Head, Chair
Committee on Rules and Jurisdiction

A handwritten signature in black ink, appearing to read "R. Head".

Re: [Campus Review] Proposed Changes to the College of Natural and Agricultural Sciences Bylaws (Bylaw 4.1.1.1: Committee List)

The Committee on Rules and Jurisdiction has carefully considered the proposed draft of the Proposed Changes to the College of Natural and Agricultural Sciences Bylaws (Bylaw 4.1.1.1: Committee List).

The Committee appreciates that the proposed bylaw changes are meant to bring the department names into alignment with the department name change approved by the Division. With this, R&J believes the proposed regulations would benefit from modest modifications to increase clarity and consistency. The committee conditionally approves of these bylaw changes provided these changes are made.

The Committee on Rules and Jurisdiction offers the following to assist in the above and to ensure overall document consistency:

The punctuation of the lists of departments for the three election cycles are all different and somewhat confusing. The punctuation should be consistent across groups, as well as conforming to the style guide set by the registrar (<https://registrar.ucr.edu/crs/style#commas>).

*Please note: aspects of the suggested modifications are shown in color only for reference. Items should not appear in color in the actual proposal.

Suggestion:

4.1.1.1 The five members of the Executive Committee from the departments of Chemistry; Evolution, Ecology and Organismal Biology; Molecular, Cell and Systems Biology; Nematology; and Environmental Sciences are elected in the same year. The four members of the Executive Committee from the departments of Earth and Planetary Sciences; Physics and Astronomy; Microbiology and Plant Pathology; and Statistics are elected in the same year. The four members of the Executive Committee from the departments of Biochemistry; Botany and Plant Sciences; Entomology; and Mathematics are elected in the same year.

November 4th, 2025

TO: Kenneth N. Barish, Chair, Academic Senate, UCR Division

FROM: Harry Tom, Chair, Faculty Executive Committee, College of Natural and
Agricultural Sciences

SUBJECT: [Campus Review] Bylaw Change: Proposed Changes to the College of Natural and Agricultural
Sciences Bylaws (Bylaw 4.1.1.1: Committee List)

Prof. Barish,

The CNAS Faculty Executive Committee has reviewed the proposed changes to CNAS Bylaw 4.1.1.1:
Committee List and has no objections to the proposed change.

Sincerely,

A handwritten signature in dark ink, appearing to read "Harry Tom". The signature is fluid and cursive, with the first name "Harry" written in a larger, more prominent script than the last name "Tom".

Harry Tom, Ph.D

Chair, Faculty Executive Committee, College of Natural and Agricultural Sciences

Proposed Minor in Geospatial Analysis

Received 3/21/25
Academic Senate

To Division
6/9/2025



Academic Senate

EXECUTIVE COUNCIL

Kenneth Barish, Chair

June 9, 2025

To: Riverside Division

From: Ken Barish, Chair, Executive Council

A handwritten signature in blue ink, reading "Kenneth Barish", written over a horizontal line.

Re: Minor in Geospatial Analysis

Executive Council endorses, with no additional comments, the Proposed Minor in Geospatial Analysis (GIS) program proposal for inclusion on the Fall 2025 Division meeting agenda.



COMMITTEE ON EDUCATIONAL POLICY

April 22, 2025

To: Ken Barish, Chair
Riverside Division

From: Stephen Kane, Vice Chair
Committee on Educational Policy

Re: Proposed Minor in Geospatial Analysis

The Committee on Educational Policy (CEP) reviewed the proposal for a Minor in Geospatial Analysis at their April 4, 2025 meeting. The Committee voted to support the proposal with a reminder that the curriculum cannot be published in the academic catalog until all proposed courses have received final approval in the Course Request System (CRS) by the Committee on Courses.



Academic Senate

COMMITTEE ON COURSES

April 29, 2025

To: Ken Barish, Chair
Riverside Division

From: Erin Rankin, Chair
Committee on Courses

Re: Proposed Minor in Geospatial Analysis

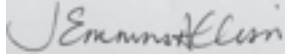
The Committee on Courses reviewed the proposal for a Minor in Geospatial Analysis at their April 24, 2025 meeting and were generally supportive of the proposal. The Committee recommends that the School work to propose the new courses identified in the proposed curriculum in the Course Request System (CRS). The curriculum for the proposed new minor cannot receive final approval or be published in the catalog until all the proposed new courses receive final approval by the Committee on Courses in CRS.

PLANNING AND BUDGET

April 16, 2025

To: Kenneth Barish, Chair
Riverside Division

From: Juliann Allison, Chair
Committee on Planning and Budget

A handwritten signature in black ink, appearing to read "Juliann Allison", is placed over the printed name in the "From:" line.

RE: [Campus Review] Proposal: *Minor in Geospatial Analysis (GIS)*

At our meeting on April 15, 2025, the Committee on Planning and Budget (CPB) reviewed the proposed *Minor in Geospatial Analysis*. CPB is generally supportive of the proposed minor and views it as complementary to the existing majors in the UCR School of Public Policy. CPB did not identify financial-related concerns, as the proposed minor will not create an increased need for teaching personnel or TAs, nor will additional resources be needed to deliver this minor.

Proposal to Create a New Minor in Geospatial Analysis

Submitted by the Faculty Executive Committee of the School of Public Policy

1. Name of the academic program and the department that will administer the new program.

The School of Public Policy will administer the new undergraduate minor named Geospatial Analysis.

2. A thorough justification, including the motivation for the creation of the program in terms of student interest and professional or academic importance.

The motivation in creating this new program is to enhance the ability of undergraduate students to reason spatially and to analyze and manage spatial data. Use of spatial data is routinely used to understand issues and social problems addressed by policy and business analysts, planners, community groups, criminologists, economists, political scientists, sociologists, historians, anthropologists and others. Students who can work with spatial data will be better prepared for data-intensive careers working in both the public and private sectors.

The justification for creating this minor is that there is no program at UCR that currently focuses on student education in spatial analysis. Programs at other UC campuses include a BA in Geography and a Certificate in GIS and Geospatial Technology at UCLA; a BS in Urban Studies and Planning at UCSD; a BA in Geographical Information Science at UCSB; a BS in Community and Regional Development at UC Davis; and BA degrees in Urban Planning and Geography, Geospatial Representation Emphasis at UC Berkeley.¹

Student interest at UCR is difficult to estimate without a survey instrument because there are no programs currently available for students to express interest. However, 76 students enrolled in PBPL 010, Introduction to GIS, in Fall 2024. This class has been offered in the past with a lower enrollment cap and it routinely is at capacity. This enrollment level demonstrates that there exists some level of interest in spatial analysis at UCR. Enrollment in other UC spatial analysis programs may provide guidance about UCR student interest. Geography majors at UCLA and UC Berkeley number 80 and 95 respectively. Geography majors with GIS emphasis at UCSB total 75. Planning majors at UCSD and UC Davis referenced above number 208 and 105 respectively. UC Berkeley's Urban Studies majors total 124. These numbers demonstrate solid interest in majors that emphasize spatial analysis at other UC campuses.

¹ Source: <https://www.gisdegree.org/states/california/>

3. Relationship of the new program to existing programs.

There are no other programs in spatial analysis at UCR. The Department of Earth and Planetary Sciences offers two upper division courses (GEO 157 and GEO 158) that cover GIS but these two courses are targeted at students enrolled in majors administered by that department.

4. The proposed curriculum

The proposed minor consists of 24 units. All students must take PBPL 010 (4 units). This existing course, titled “Introduction to Geographic Information Systems” introduces the fundamental concepts of Geographic Information Systems (GIS), geospatial analysis, and their application to public policy and social science research. The two primary learning objectives of this course is 1) familiarize students to the characteristics of spatial data and 2) introduce students to spatial data analysis using analytical software typically used to analyze such data. To complete the minor students will need to take five classes from the following list:

20 Additional Units, selected from among the following courses:²

- PBPL 150: Urban Informatics for Public Policy
- PBPL xxx: Geovisualization for Public Policy
- PBPL xxx: GIS for Urban Transportation
- PBPL xxx: Drones and Geospatial Analysis for Public Policy
- PBPL xxx: Human-Centered Spatial Data Science
- PBPL xxx: Advanced Spatial Analysis
- PBPL xxx: Geoprogramming
- PBPL xxx: Machine Learning and Deep Learning with GIS

Proposed catalog language:

² Course syllabi for courses that have not yet been approved by the Committee on Courses are provided in Appendix A.

PRESENT:

PROPOSED:

Minor in Geospatial Analysis

1. Lower-division requirements (4 units)
PBPL 010

2. Upper-division requirements (5 courses
required, 20 units)
PBPL 150, (list of 7 additional courses that
need to be submitted and approved.

5. A list of faculty who will be involved in the program, including those teaching, advising, and administering

SPP faculty who will teach PBPL 010 and the upper division courses listed above include Tony Grubestic, Wei Kang, Ran Wei, and Qingfang Wang. SPP's Associate Dean, Bruce Babcock, will administer the program and supervise the SPP advising staff who will be involved in any advising associated with the minor. Professors Grubestic directs SPP's Center for Geospatial Sciences. Professors Kang and Wei are core SPP faculty in the Center. Professor Wang directs the SPP Center for Community Solutions.

6. For interdisciplinary programs, the degree of participation and the role of each department must be explicitly described.

The proposed minor is not an interdisciplinary program. All faculty associated with the minor are SPP faculty and all courses that fulfill minor requirements are offered through SPP.

7. Projected enrollment in the program

We expect 20 to 30 students per year to enroll in the minor. The upper division minor courses will also serve as electives for Public Policy majors which should generate adequate course enrollment to enable SPP to offer the courses.

8. Name of degree, if applicable.

The name of the minor is Geospatial Analysis. It does not lead to a degree.

9. Potential impact of the new program on existing programs

We cannot discern any impact on existing programs. There was some concern a few years ago when an interdisciplinary faculty team explored the feasibility of creating a GIS minor. The concern was that CNAS departments would need to teach additional classes to support the minor. We have included a letter of support from the Department of Environmental Sciences that demonstrates that concern no longer exists because all classes will be taught by SPP faculty.

10. If the proposed program includes required courses from a department other than the administering department, the proposal must include a statement from the department indicating that it has been consulted and that it will provide access to the required courses.

No courses other than those offered by SPP will count towards fulfilling the minor requirements.

11. A full listing of resources required for start-up and for operations.

The new upper division courses that will be comprise most of the upper division content of the proposed minor have already been developed internally by SPP faculty. Some of the new course development was supported by a UC Online grant awarded to Professor Grubestic. The courses can also meet upper division elective requirements of Public Policy students so the course offerings will not increase the need for teaching personnel or TAs. No additional resources will be needed to deliver this minor.

12. Both internal and external letters of support should be provided with the proposal.

We have included a letter from UCR's Department of Environmental Science supporting this proposal. This letter was solicited because the Department had the concern about the GIS minor proposal that was explored a few years ago. Also included is a letter of support from Professor Jennifer Miller, Chair of the Department of Geography and the Environment at the University of Texas.

13. Approvals

SPP faculty approved this proposal on February 11. The SPP Faculty Executive Committee approved this proposal on February 27.

March 21, 2025

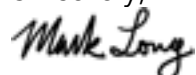
I would like to express my *full and total support* for a minor in Geospatial Analysis, to be housed at the UCR School of Public Policy (SPP).

In numerous fields of study, it is crucial to understand *where* things have happened, *where* they are likely to happen, and why they are happening *here* rather than *there*, and *then*, rather than *now*, or *later*. Geospatial Analysis is a critical skill and methodology to answer these questions.

Personally, I have used geospatial analysis in my research to answer questions such as: When college affirmative action has been banned in states or by court decisions, how has that affected the available level of affirmative action practiced in *nearby* colleges? When a city government has passed a local minimum wage ordinance, how does the effect of that ordinance spillover and affect wages and employment in *surrounding* communities? We just hired an assistant professor using geospatial analytic tools to understand the effects of wind turbines on property values, which requires sophisticated modeling of the *viewshed* (i.e., the ability to see the turbine given the contours of the land). Of course, I am thinking about this from the perspective of a public policy scholar – scholars in other fields would have their own applications. For example, biologists use geospatial analytic techniques to evaluate migrations and changes in environment. The applications of geospatial analytic techniques are nearly endless.

UC-Riverside is the only UC campus that lacks a geography department or geospatial major, minor, degree specialization, or concentration. We do, however, have the Center for Geospatial Sciences (CGS), which is housed in the School of Public Policy. Five (and soon to be seven) of SPP's faculty are among the Center's core and affiliated faculty. These faculty have developed the proposal that is now being submitted to the UCR Academic Senate for review. Note that core CGS faculty and I met with a group of staff at Esri last summer, and we previewed this curriculum and sought their feedback. Esri, located a short distance away in Redlands, is the maker of ArcGIS software and "... is the global market leader in geographic information system (GIS) software, location intelligence, and mapping." Having a collaboration with Esri will provide intellectual exchange and a possible source of future jobs for our students.

The UCR School of Public Policy has ample teaching resources to support this minor in Geospatial Analysis and has my full commitment to maintain this program.

Sincerely,

Mark Long



GEOGRAPHY AND THE ENVIRONMENT
THE UNIVERSITY OF TEXAS AT AUSTIN

305 E. 23rd Street • A3100 • CLA 3.306 • Austin, TX 78712
(512) 471-5116 • Fax (512) 471-5049 • www.utexas.edu/cola/depts/geography

March 20, 2025

Bruce Babcock
Associate Dean and Professor
School of Public Policy
University of California at Riverside

Dear Professor Babcock:

I am writing to express my strong support for the establishment of a new academic minor in Geospatial Analysis and Public Policy at the University of California, Riverside. The integration of geospatial analysis into policy-making is increasingly vital, as these tools provide critical insights into urban planning, environmental sustainability, healthcare accessibility, disaster response, and numerous other fields. Establishing this minor would equip students with in-demand technical skills and analytical expertise, preparing them for impactful careers in both the public and private sectors.

The geospatial industry is experiencing substantial growth, with global market projections estimating it will reach over \$25 billion by 2030, driven by advancements in geospatial technologies, artificial intelligence, and big data analytics. The U.S. Department of Labor identifies geospatial technology as a high-growth industry, with demand spanning government agencies, environmental organizations, healthcare systems, and tech firms. Job prospects for graduates with geospatial analysis expertise are expanding rapidly, with opportunities in urban planning, transportation, epidemiology, business intelligence, and environmental science, among others.

A dedicated Geospatial Analysis and Public Policy minor would allow students from diverse academic backgrounds—ranging from political science and public health to environmental studies and business—to develop spatial literacy and data-driven decision-making skills. By incorporating hands-on training with geospatial software, spatial modeling techniques, and policy applications, this program would produce graduates who are not only well-versed in geospatial technology but also capable of leveraging these tools to address real-world challenges.

The University of California, Riverside has a long-standing reputation for academic excellence and innovation. By introducing a Geospatial Analysis and Public Policy minor, UCR would further enhance its commitment to interdisciplinary education and workforce readiness, ensuring its students are equipped for the evolving demands of the 21st-century job market.

I strongly urge the committee to approve this proposal and support the development of this important academic initiative.

Sincerely,

A handwritten signature in dark ink, appearing to read "Jennifer Miller", written in a cursive style.

Jennifer A. Miller, Professor & Chair
Department of Geography and the Environment,
University of Texas at Austin
Jennifer.miller@austin.utexas.edu

From: Bruce Babcock babcockb@ucr.edu
Subject: Re: [Envisci-faculty] Proposed minor in Geospatial Analysis
Date: January 20, 2025 at 7:44 PM
To: Daniel Schlenk dschlenk@ucr.edu

BB

Dan:

Great. Thanks for doing this and getting back to me so quickly. Very helpful.

Bruce Babcock
Professor and Associate Dean
School of Public Policy
4123 INTS
University of California, Riverside
babcockb@ucr.edu

On Jan 20, 2025, at 7:35 PM, Daniel Schlenk <dschlenk@ucr.edu> wrote:

Hi Bruce,

I received the message below from Hoori Ajami. Seems like the Department is fine with this.

Best,

Dan

Daniel Schlenk, Ph.D.

Distinguished Professor
Aquatic Ecotoxicology and Environmental Toxicology

Chair
Department of Environmental Sciences
University of California, Riverside

Executive and Associate Editor
Environmental Science & Technology

Associate Editor
Environmental Science & Technology Letters

FEDEX and mailing address:
2460A Geology
Department of Environmental Sciences
University of California, Riverside
Riverside, CA 92521

951-827-2018
951-827-3993-FAX

<http://envisci.ucr.edu/faculty/schlenk.html>

Begin forwarded message:

From: Hoori Ajami <hooria@ucr.edu>
Subject: Re: [Envisci-faculty] Fwd: Proposed minor in Geospatial Analysis
Date: January 17, 2025 at 8:58:40 AM PST

To: Daniel Schlenk <daniel.schlenk@ucr.edu>

Cc: envisci-faculty@lists.ucr.edu

Hi Dan,

Yes. In my view, this would be a great program for UCR.

Thanks,

Hoori

On 1/17/2025 8:34 AM, Daniel Schlenk wrote:

Thanks for the background Hoori....so bottom line is that you are ok with this?

Daniel Schlenk
Distinguished Professor Aquatic Ecotoxicology
Chair
Department of Environmental Sciences
Univ of California, Riverside

On Thu, Jan 16, 2025, 7:54 PM Hoori Ajami <hooria@ucr.edu> wrote:

Hi Dan,

Thank you for forwarding the email. I was a member of the Spatial Analysis minor committee a few years ago, but the effort did not progress, partly due to Sergio Rey's relocation to San Diego State. Our department raised a few concerns at the time, not out of concern for losing students from our courses, but for the following reasons:

- 1) The SPP minor listed ENSC 175 as one of its courses. However, in 2020, we lacked a dedicated computer lab to support this course. At that time, I had to secure virtual computer lab services from ITS on a quarterly basis, which cost approximately \$5,000–\$8,000 paid by ITS. Additionally, the Geospatial Sciences Center was not committed to providing computational resources.
- 2) The proposed minor included three introductory GIS courses with significant overlap (PBPL 010, ENSC 175, and GEO 157) and an advanced GIS course from EPS (GEO 158) that had not been offered in several years.
- 3) The curriculum was predominantly focused on the social sciences, and our department would have had to commit to offering ENSC 175 annually. We felt it would be more appropriate to consider joining SAM in the future, once the curriculum included more courses related to the physical sciences.

The new minor is significantly different from what was proposed in 2020 (See attached), and it seems they have addressed all of our prior comments. In my view, establishing a Spatial Analysis minor is a great step forward for UCR.

My only question is about their course list since only 8 credits are currently offered and the remaining 16 credits seem to be pending. However, this may be a concern for the approving committees not us.

Sorry for a very long email ...

Thanks,
Hoori

On 1/16/2025 1:16 PM, Daniel Schlenk via Envisci-faculty wrote:

Please see the message below regarding a minor in Geospatial analysis being proposed by SPP.

Please let me know your concerns.

Best,

Dan

Daniel Schlenk, Ph.D.

Distinguished Professor
Aquatic Ecotoxicology and Environmental Toxicology

Chair
Department of Environmental Sciences
University of California, Riverside

Executive and Associate Editor
Environmental Science & Technology

Associate Editor
Environmental Science & Technology Letters

FEDEX and mailing address:
2460A Geology
Department of Environmental Sciences
University of California, Riverside
Riverside, CA 92521

951-827-2018
951-827-3993-FAX

<http://envisci.ucr.edu/faculty/schlenk.html>

Begin forwarded message:

From: Bruce Babcock <babcockb@ucr.edu>
Subject: Proposed minor in Geospatial Analysis
Date: January 16, 2025 at 11:21:41 AM PST
To: daniel.schlenk@ucr.edu

Daniel:

The School of Public Policy's faculty voted this week to move forward with a proposal to create a new minor in Geospatial Analysis. The proposal is attached. I am writing to you as chair of a potentially interested department in this proposal.

A bit of history may prove useful. A few years ago a team of faculty from SPP, CNAS, BCOE, and CHASS attempted to create a GIS minor. That effort failed in part (I am told) because of concern about the loss of students in existing geo-oriented classes. I believe that some of the opposition to the failed proposal came from your department. Hence, I am reaching out to you to see if you believe that your department would offer any opposition to our proposed minor, and if not, whether you could indicate support via a short letter that we could include in the submission.

As you can see, the proposed minor includes Public Policy courses which are

As you can see, the proposed minor only includes Public Policy courses which are targeted at appealing to social science students who want to expand their quantitative skills. We do not see any adverse impact on demand for CNAS courses or courses in BCOE. However, I would like to account for the possibility that perhaps we are overlooking some aspect of the proposal that may impact your department.

I would be happy to visit with you about the proposal if needed and to answer any questions you may have.

Thanks for your time and I look forward to your response.

Bruce Babcock
Department Chair and Associate Dean
School of Public Policy
4123 INTS
University of California, Riverside
babcockb@ucr.edu

Envisci-faculty mailing list
Envisci-faculty@lists.ucr.edu
<https://lists.ucr.edu/mailman/listinfo/envisci-faculty>

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Hoori Ajami
Associate Professor of Groundwater Hydrology
Department of Environmental Sciences
University of California, Riverside
Room 2322 Geology
Riverside, California 92521
Office: (951) 827-4778
E-mail: hoori.ajami@ucr.edu
Web: <http://envisci.ucr.edu/faculty/ajami.html>

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Hoori Ajami
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Riverside, California 92521
Office: (951) 827-4778
E-mail: hoori.ajami@ucr.edu
Web: <http://envisci.ucr.edu/faculty/ajami.html>



PBPL 010: Introduction to GIS

FACULTY INFORMATION:

Ran Wei (Instructor)
Center for Geospatial Sciences
School of Public Policy
900 University Ave, Riverside, CA 92507
Email: ran.wei@ucr.edu

Sara Bruene (Teaching Assistant)
Email: sbrue001@ucr.edu

COURSE MEETING TIMES AND LOCATION:

Lecture: Monday 1:00 pm – 2:20 pm
Format: Pre-recorded lecture (No Zoom meeting, and watch the lecture at your convenience)

Lab: Wednesday 1:00 pm – 2:20 pm
Format: Pre-recorded lab tutorials (No Zoom meeting, and watch the lecture at your convenience)

Discussion: Monday 03:00 pm – 03:50 pm
Format: Zoom online with TA to help address any questions on the lab tutorials and exercises

This course will be a combination of lectures and labs. For each week, the first class period will entail a lecture by the instructor highlighting the fundamental concepts and theories in spatial data and GIScience; the second class will be a lab session with hands-on exercises using the ArcGIS software. The discussion section on Monday will be a Zoom interactive session with the TA to help address any questions about the lab tutorials and exercises.

OFFICE HOURS AND INSTRUCTOR COMMUNICATION:

Ran (Monday 2-3 pm via Zoom or by appointment)
Sarah (Wednesday 2-3 pm via Zoom or by appointment)

This course uses a "Three Before Me" policy for student-to-faculty or teaching-assistant communications. When questions arise during this class, please remember to check **three** sources for an answer **before** emailing the instructor or TA:

1. Course Syllabus
2. Announcements in Canvas
3. The Q & A Forum

This policy will help you in potentially identifying answers before either Sara or I can get back to you, and it also helps us from answering similar questions or concerns multiple times.

Although your classmates may help answer questions, nothing in this forum constitutes official course policy. In the event of a conflict between the information on the Q&A forum and the information in the syllabus, always refer to the syllabus unless the instructor formally changes the information in the syllabus through an official course announcement. Please note that the instructor or TA will respond to Q&A Forum posts and emails within 24-48 hours on business days.

All instructor correspondence will be sent to your "@ucr.edu" email account. Forwarding emails to and from your UCR to a personal account is not recommended. Instructors **will not respond to any email address other than UCR account-addressed emails.**

NOTE: When emailing your instructor or TA, please include the course number "PBPL 010" in the subject of your email so we can prioritize it over other emails that are not course-related.

COURSE DESCRIPTION:

Locational information or spatially referenced data manifests in many policy and decision-making contexts. This course introduces the fundamental concepts of Geographic Information Systems (GIS), geographic information Science (GIScience), and their application to public policy and social science research. The course will also familiarize students with using geographic data and software in public policy and related practice. Through lectures, discussions, and lab exercises, this course will impart sufficient knowledge and skills to students to use GIS to inform practice, advocacy, and policy work.

COURSE PREREQUISITE(S):

None

LEARNING GOALS:

Upon successful completion of the course, students should be able to:

1. Understand the fundamental concepts and theories in spatial data and GIScience.
2. Acquire, manipulate, process, visualize, and analyze spatial data using ArcGIS.
3. Use spatial data and GIS to provide empirically informed recommendations for changing policy and practice.
4. Appreciate how spatial data analysis and GIS may impact issues of justice, diversity, equity, and inclusion.

A core element of this course will include learning how to use a commercial geographic information system (GIS), ArcGIS Pro, from Environmental Systems Research Institute (Esri).

REQUIRED BOOKS:

Gorr, W. and K.S. Kurland. 2023. GIS Tutorial for ArcGIS Pro 3.1, ESRI Press. ISBN: 9781589487390

OTHER REQUIRED RESOURCES:

A functioning computer, up-to-date within the last five years. Please note that we do not recommend using mobile devices such as tablets or smartphones with Canvas. Students can use the Canvas mobile app to check on the course occasionally, but the mobile app will not fully display the course. You must access the course regularly from a full-featured laptop or desktop computer.

You will need to have access to and be able to use the following hardware and software packages:

- ArcGIS Pro (free; see <https://ucr.maps.arcgis.com/home/index.html> for creating an account to access the software.
- Zoom
- Microsoft Windows
- Presentation software (PowerPoint, Keynote, or similar)
- Word processing software (Word, Pages, or similar)
- Web browsers (Chrome, Mozilla Firefox, or Safari)
- Adobe Acrobat Reader (free)
- Adobe Flash Player (free)
- Microphone and speaker

Running ArcGIS Pro:

This course requires that students use ArcGIS Desktop, an industry-standard desktop GIS software suite produced by Esri. The UCR now provides all students access to the virtual computer lab so that students can run ArcGIS Desktop using an internet browser. Students must visit <https://labs.itopia.com/> and log in using their NetID credentials to access the UCR Open Virtual Lab. The instructions on how to use the virtual lab are available at https://ucrsupport.service-now.com/ucr_portal?id=kb_article_view&sys_id=9111dd8747190ad0a4f4694c716d4335.

Additionally, UCR students can obtain a stand-alone, one-year license for ArcGIS Pro 2.9 that one can install on an personal computer. Detailed instructions on how to download the software and license are available at https://ucrsupport.service-now.com/ucr_portal?id=kb_article&sys_id=6a13c4dd47adc650a4f4694c716d430f&spa=1.

However, ArcGIS runs only on computers with x86 and x64-compatible Microsoft Windows processors. This limitation means some newer Windows 10 tablets cannot run ArcGIS Pro. Windows users can use the "Can You Run It" (<https://links.esri.com/run-arcgis-pro>) utility to check your system's hardware.

If you do not have a computer that can run ArcGIS, please use the virtual lab to access the software. Or computers with ArcPro are also available in the following locations:

Rivera Library, 2nd floor learning commons computers

Orbach Library, 1st floor learning commons computers
Orbach Library, 1st floor near the Geospatial Resources area
Watkins 2111 and 2117 (both computer labs)

NOTE: Please do not underestimate the time required to get a copy of ArcGIS Pro operational on your personal machine. It is a headache every year for everybody. Get this going ASAP.

LEARNING ACTIVITIES:

1. **Quizzes (15%):** Each pre-recorded lecture has three or four quiz questions. The quiz questions are multiple-choice questions, and we structure them to test your understanding of the theoretical and applied material from the lecture.
2. **Lab Tutorials (15%):** A mini assignment is due after each pre-recorded lab tutorial. The mini-assignment will ask you to submit a screenshot of ArcGIS Pro after you finish a specific step of a lab tutorial.
3. **Empirical Exercises (50%):** There will be five exercises during the quarter, typically attached to some type of tutorial that precedes the assignment. The topic of the exercise will relate to the subject matter of the lecture and/or class. This work is both challenging and time-consuming. Do not underestimate the time required to complete these assignments. Collaboration on exercises is encouraged with the understanding that you alone are responsible for mastering the material.
4. **Exam (20%):** One final examination will cover a combination of theoretical and applied material from the lecture and laboratory portions of the course, respectively. The exam will be an open-book test, and we have listed its date in the tentative course schedule. Exams will be held online, including multiple-choice, short-answer, problem-solving, and essay questions. No "make-up" exams will be given without prior approval of the instructor.

SUBMITTING ASSIGNMENTS AND LATE ASSIGNMENTS

All assignments are to be submitted by the due date. Late submissions will not be accepted unless:

1. the instructor granted an extension in advance of the due date;
2. providing documentation of an unforeseeable excused absence
3. Your instructor and TA retain the right of refusal on assignments. In other words, if you are turning in late work, we may not accept it.

Additionally:

4. Unless otherwise announced by the instructor, students must submit all assignments to Canvas. There will be a designated place to submit each assignment in Canvas. Do not submit an assignment via email.
5. Late submission of assignments is subject to penalty (see below). There are no exceptions. Schedule accordingly.

<u>Number of days late</u>	<u>Percentage points taken off</u>
1	20%
2	40%
3	60%
4	80%
>=5	100%

SUMMARY OF GRADED ASSESSMENTS:

Grading Policy: We base the final grade on the proportion of cumulative points you have earned over the quarter.

FINAL COURSE GRADING SCALE:

A+ (97–100), A (93–96), A- (90–92), B+ (87–89), B (83–86), B- (80–82), C+ (77–79), C (73–76), C- (70–72), D+ (67–69), D (65–66), D- (65–60), F (below 60).

ACADEMIC INTEGRITY:

1. Academic Dishonesty – Besides academic performance, we expect students to demonstrate honesty and integrity. We expect all submissions from students to be the original work product of the submitting student. Material that violates this requirement in any way or constitutes any form of dishonesty, cheating, fabrication, the facilitation of academic dishonesty, and/or plagiarism may result in the student receiving a failing grade in the course ('F') and initiating appropriate disciplinary action. The possible sanctions include but are not limited to, grade penalties, a permanent record on your transcript of academic dishonesty, loss of registration privileges, disqualification, and dismissal. Please see the official UCR Policy on Academic Integrity. It is accessible online at:

<https://senate.ucr.edu/appendix/section/1226/06>

2. Electronic Review – To ensure compliance with academic integrity policies, we will submit all written assignments to TurnItIn, or a similar plagiarism detection program. Submission of any writing assignment in the course constitutes consent by the student for the instructor to upload the paper to check against any anti-plagiarism database.
3. Citation Style – We require students to use the citation style and format of either the American Psychological Association (APA) or the American Sociological Association (ASA). It is acceptable to cite legal materials (cases, statutes, regulations, etc.) following the style specified in *The Bluebook* (<https://www.legalbluebook.com/>).
4. Avoiding Plagiarism – Some students may not understand plagiarism and, therefore, plagiarize unwittingly or unintentionally. However, ignorance is not an excuse for unethical academic conduct. To combat such ignorance, here are rules and resources to help you avoid any problems with plagiarism. Of course, these rules apply regardless of the citation form or style you may be using.
 - a. Direct Quotations – Whenever you directly quote someone else, you must cite the source of the material you are quoting. Moreover, you must put the material in quotation marks or

otherwise set it off in an indented quote so the reader knows what words are yours and what words are quoted. It is unacceptable to use the words of others and only partially quote the original source. This remains true even if you cite the source in the text and your references section!

- b. Paraphrasing/Indirect Quotations – Whenever you indirectly quote someone else (i.e., you paraphrase the work of another), you must cite the source of the material from which you are paraphrasing. However, minor structure or word changes do not mean your work is original. Remember, the idea you express is not your own but someone else's.
- c. Using Other's Ideas – Even if you compose an entire paragraph of writing in your own words (i.e., neither quoted nor paraphrased), if the idea you are expressing in that paragraph is not your original idea, you must provide a citation to the source from which you obtained this idea.
- d. Collaborative Work – If you collaborate on any work with someone else and fail to acknowledge that collaboration, you are guilty of plagiarism. If you have received permission from your instructor to collaborate on some assignment, ensure all of the contributors' names appear on the submission.
- e. Altering or Revising Another's Work – If you alter or revise the work done by someone and submit that work as your own, you have plagiarized. Similarly, if you allow someone else to alter or revise the work that you have done and then allow that person to submit it as his or her work, you are both guilty of plagiarism. Work not entirely your own must be credited by citation, both in text and on your references page.
- f. Altering or Revising Your Own Prior Work – You should also be aware that altering or revising your work for another class or another instructor and not bringing it to the attention of the instructor to whom you are submitting the revised work is also academic dishonesty. If, for example, you have two classes that require a term paper, and you can write one paper that meets the requirements of both classes, you may not submit that paper to both instructors unless you get permission to do so in advance. Similarly, if you wrote a paper several quarters ago, that can be revised and submitted in satisfaction of a paper requirement for a course in which you are currently enrolled, doing so is academic dishonesty unless you get the advanced permission of your instructor to do so.
- g. AI challenge – This course emphasizes critical thinking and problem-solving skills, some of which generative AI can mimic (such as Google Bard or ChatGPT). The vitality of a campus community relies on academic honesty and the integrity of intellectual work. The use of generative AI in this course can undermine your learning, limit opportunities for intellectual growth, and impact your performance on in-class assessments. Generative AI also can interfere with a fair and accurate assessment of your work. Therefore, AI should never replace your thinking or research, and all work in this course must be your own. To achieve the best learning outcomes in this class and be fair with everyone in grading, AI cannot be used in the Exam, Quiz, or any other assignments (with actual or potential credits) in this class. Violation of the policy will result in zero credit for the assignment and a substantially reduced grade (most likely "F") for the entire course.

IMPORTANT COURSE POLICIES

1. Required behavior standards are listed in the [Student Code of Conduct and Student Disciplinary Procedures](#), [Computer, Internet and Electronic Communications Policy](#). Anyone in violation of these policies is subject to sanctions.
2. Students are entitled to receive instruction free from interference by other class members. If the instructor identifies disruptive behavior in the classroom, it will be documented, and the instructor will file a formal incident report to the Student Conduct & Academic Integrity Programs office.
3. The Office of Student Rights and Responsibilities accepts [incident reports](#) from students, faculty, staff, or others who believe that a student or student organization may have violated the Student Code of Conduct.
4. All lectures, exercises, and assignment questions are the instructor's intellectual property. Therefore, do not post completed assignments on the web or distribute them unless explicitly requested by the instructor.
5. This class is a [Wikipedia Free Zone](#). Under no circumstances can students use Wikipedia, Infoplease, About.com, or other sites that are considered open "information commons" for assigned work or term papers. Failure to observe this rule will result in a 10% penalty, **FOR EACH INSTANCE**, on a given assignment.
6. To reiterate, notify the instructor or TA **BEFORE** an assignment is due if an urgent situation arises and the assignment will not be submitted on time. Published assignment due dates (Pacific Standard Time) are firm. Please follow the appropriate University policies to request an [accommodation for religious practices](#) or to accommodate a missed assignment due to University-sanctioned activities.
7. Unless otherwise announced, all assignments **MUST** be submitted to the designated area of Canvas. Do not submit an assignment via email. We will not accept it.
8. There is a limited timeline for [dropping or adding the course](#). Consult with your advisor and notify your instructor to add or drop this course. If you are considering a withdrawal, review the following UCR policies: <https://registrar.ucr.edu/registering/cancellation-withdrawal-absence-readmission>
9. Grade disputes must first be addressed by discussing the situation with the instructor. If the dispute is not resolved with the instructor, please consult this page as a resource for the next steps: <https://graduate.ucr.edu/regulations-and-procedures>

SPECIAL LEARNING NEEDS:

In compliance with the Rehabilitation Act of 1973, Section 504, and the Americans with Disabilities Act of 1990, professional disability specialists and support staff at the Student Disability Resource Centers (SDRC) facilitate a comprehensive range of academic support services and accommodations for qualified students with disabilities. SDRC staff coordinate the transition from high schools and community colleges, provide in-service training for faculty and staff, resolve accessibility issues, conduct community outreach, and collaborate with all UCR campuses regarding disability policies, procedures, and accommodations.

1. [Establishing Eligibility for Disability Accommodations](#) – Students who feel they will need disability accommodations in this class but have not registered with the SDRC should contact the SDRC immediately. Students should contact the DRC on the campus where their class is being held.

2. Disability Accommodations – Prior to receiving any disability accommodations, the SDRC requires eligibility verification. Once registered with the SDRC, students with disabilities must meet with me to discuss what reasonable accommodations they will need to be successful in this course. For students with known disabilities, as this course begins, I encourage you to request accommodations at the beginning of the quarter, either during office hours or by appointment. For disabilities that arise after the course has begun, students should meet with me as soon as possible to arrange accommodations for their learning needs. Disability information is confidential.

DUE DATES, ABSENCES, AND EXCUSES:

Planned Excused Absences - **The course due dates are not flexible.** Suppose you know that a future event will interfere with your ability to complete coursework. In that case, you are encouraged to contact the instructor or TA to make arrangements to complete the assignments. Provided that the student informs the instructor of the reason for the absence at least one week in advance of the absence, the instructor will attempt to make arrangements only when absences are due to any of the following three reasons:

- a. Religious reasons;
- b. Jury duty or similar governmental obligation (a copy of the summons or other official paperwork must be provided); and
- c. University-sanctioned and/or university-approved activities (e.g., artistic performances, participation in research conferences, intercollegiate athletic activities, student government, required class field trips, etc.).

MAKE-UP WORK:

If you are seriously ill or injured in a manner that prevents you from completing your work, you should email me to inform me that you are sick or injured as soon as possible. The same is true for an immediate family member's death, injury, or serious illness. Please be advised that for missed work based on an emergency, you may be required to submit corroboratory documentation, such as a note from a physician documenting the illness or injury (notes from family members will not suffice), a death certificate or other proof of a family member's death, etc.

STUDENT CONDUCT:

The University and I expect all students to comport themselves professionally. Toward that end, I expect everyone to abide by the following rules of etiquette:

- Although you are welcome to disagree with the professor or your classmates, we expect everyone to participate respectfully. Students who engage in personal attacks, use rude, insulting, or disrespectful language, or engage in disruptive or threatening behavior may face disciplinary action.

- Further, be aware that it is easy to misconstrue and misunderstand statements in online forums. Try your best to be clear about what you are saying, and expect that people may understand your contribution differently than you intended. Text is not always the best medium for conversation. The tone of voice (e.g., sarcasm, humor, etc.) does not always translate.
- Please use proper grammar, spelling, and punctuation in all course-related communications, whether in the discussion boards, emails to the instructor, or assignments. "Text lingo" and other invented spellings are not allowed.
- What To Call Me – I don't care much for titles, so "Ran" is fine. If that freaks you out, "Dr. Wei" works too.

SEXUAL VIOLENCE AND HARASSMENT:

Title IX is a federal law that provides that no person be excluded based on sex from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity. Title IX and university policy clearly state that sexual violence and harassment based on sex is prohibited. An individual who believes they have been subjected to sexual violence or harassed based on sex can seek support, including counseling and academic support, from the university. If you or someone you know has been harassed on the basis of sex or sexually assaulted, you can find information and resources at <https://titleix.ucr.edu/>

TECHNICAL SUPPORT:

For technical assistance 24 hours a day, 7 days a week, please contact ITS: <https://its.ucr.edu/>

SYLLABUS CHANGES:

I view this course syllabus as an educational contract between the students in the course and me. Accordingly, I will make every effort to avoid changing the course schedule, but the possibility exists that unforeseen events will make syllabus changes necessary. Therefore, I reserve the right to change the syllabus other than the attendance and grading policies.

STUDENT SUCCESS

I expect students to engage with the material via Canvas when given the opportunity. Students who do not regularly check in with the course will not do well in this class. Furthermore, those who do not read the assigned material carefully will also do poorly. All assigned readings and lecture material are examinable. If you have problems with the course material or assignments or seem to be getting behind, please see the instructor as soon as possible.

To summarize:

- Check the canvas daily
- Read announcements
- Read and respond to the course email messages as needed
- Complete assignments by the due dates specified

- Communicate regularly with your instructor and peers
- Create a study and/or assignment schedule to stay on track

COURSE SCHEDULE:

WEEK 1 (09/30 – 10/04)

Lecture: (1) Syllabus; (2) Intro to GIS

Lab: Tutorials 1-1, 1-2, 1-3, 1-4

Reading: Chapter 1 (Gorr and Kurland)

Lesson 1 Quiz (Due 10/04)

Lesson 1 Lab Tutorial (Due 10/04)

WEEK 2 (10/07 – 10/11):

Lecture: Map Design

Lab: Tutorials 2-1, 2-2, 2-3, 2-4, 2-5, 2-6, 2-7, 2-8

Reading: Chapter 2 (Gorr and Kurland)

Lesson 2 Quiz (Due 10/11)

Lesson 2 Lab Tutorial (Due 10/11)

WEEK 3 (10/14 – 10/18)

Lecture: Geographic databases I

Lab: Tutorials 4-1, 4-2, 4-3

Reading: Chapter 4 (Gorr and Kurland)

Empirical Exercise 1 (Due 10/15)

Lesson 3 Quiz (Due 10/18)

Lesson 3 Lab Tutorial (Due 10/18)

WEEK 4 (10/21 – 10/25)

Lecture: Geographic databases II

Lab: Tutorials 4-4, 4-5, 4-6

Reading: Chapter 4 (Gorr and Kurland)

Lesson 4 Quiz (Due 10/25)

Lesson 4 Lab Tutorial (Due 10/25)

WEEK 5 (10/28 – 11/01)

Lecture: Spatial data
Lab: Tutorials 5-1, 5-2, 5-3, 5-4, 5-5
Reading: Chapter 5 (Gorr and Kurland)

Empirical Exercise 2 (Due 10/29)
Lesson 5 Quiz (Due 11/01)
Lesson 5 Lab Tutorial (Due 11/01)

WEEK 6 (11/04 – 11/08)

Lecture: Geoprocessing
Lab: Tutorials 6-1, 6-2, 6-3, 6-4
Reading: Chapter 6 (Gorr and Kurland)

Empirical Exercise 3 (Due 11/05)
Lesson 6 Quiz (Due 11/08)
Lesson 6 Lab Tutorial (Due 11/08)

WEEK 7 (11/11 – 11/15)

Lecture: No lecture due to Veteran's Day
Lab: Tutorials 6-5, 6-6, 6-7
Reading: Chapter 6 (Gorr and Kurland)

Lesson 7 Quiz (Due 11/15)
Lesson 7 Lab Tutorial (Due 11/15)

WEEK 8 (11/18 – 11/22)

Lecture: Spatial analysis
Lab: Tutorials 9-1, 9-2, 9-3, 9-4, 9-5
Reading: Chapter 9 (Gorr and Kurland)

Empirical Exercise 4 (Due 11/19)
Lesson 8 Quiz (Due 11/25)
Lesson 8 Lab Tutorial (Due 11/25)

WEEK 9 (11/25 – 11/29):

Lecture: Exam review
Lab: None
Reading: None

Empirical Exercise 5 (Due 11/26)

WEEK 10 (12/02 – 12/06)

Lecture: None

Reading: None

EXAM (12/06)



PBPL 150: Urban Informatics for Public Policy

FACULTY INFORMATION:

Tony H. Grubestic (Instructor)
Center for Geospatial Sciences
School of Public Policy
900 University Ave, Riverside, CA 92507
Email: tony.grubestic@ucr.edu

Eddie Helderop (Exercise Coordinator)
Email: edward.helderop@ucr.edu

COURSE MEETING TIMES AND LOCATION:

This class meets in person from 8:00 am to 9:20 am on Mondays and Wednesdays in CHASS Interdisciplinary-North, Room 4023. Elements of this course will also include an online component via Canvas and Zoom. All assignments will utilize Internet technologies. I expect you to log into the Canvas course regularly.

OFFICE HOURS AND INSTRUCTOR COMMUNICATION:

Tony (by appointment)
Eddie (Office hours on Zoom: <https://ucr.zoom.us/j/2987782007>) 11 am to 12 pm on Wednesdays, or by appointment)

This course uses a "Three Before Me" policy for student-to-faculty or teaching-assistant communications. When questions arise during this class, please remember to check **three** sources for an answer **before** emailing your instructor or TA:

1. Course Syllabus
2. Announcements in Canvas
3. The Q & A Forum

This policy will help you in potentially identifying answers before either Eddie or I can get back to you, and it also helps us from answering similar questions or concerns multiple times.

Although your classmates may help answer questions, nothing in this forum constitutes official course policy. If there is a conflict between the Q&A forum and the information in the syllabus, always refer to the syllabus unless the instructor formally changes the information through an official course announcement. Please note that your instructor will respond to your Q&A Forum posts and your emails within 24-48 hours on business days.

We will send all instructor-related correspondence to your "@ucr.edu" email account. Forwarding emails to and from your UCR to a personal account is not recommended. Instructors **will not respond to any email address other than UCR account-addressed emails.**

NOTE: When emailing your instructor or TA, please include the course number "PBPL 180" in the subject of your email so we can prioritize it over other emails that are not course-related.

COURSE DESCRIPTION:

PBPL 150 is a survey of ideas and issues impacting urban communities. We use geographic information systems (GIS) and a range of information science/informatics techniques as tools to deepen our understanding of these issues and their spatiotemporal dynamics. While this course emphasizes places (i.e., cities) rather than particular topics (e.g., environmental, social, political, etc.), we can explore many concepts, theories, and classical empirical studies focusing on urban systems. Our focus will primarily be on North American cities, although we will discuss other international cities as appropriate. Again, we pay particular attention to describing and explaining city spatial patterns and the processes that helped fuel these spatial outcomes.

COURSE PREREQUISITE(S):

PBPL 010: Introduction to Geographic Information Systems

LEARNING GOALS:

Upon successful completion of the course, students should be able to:

1. Explain how spatial analysis, mapping, and geovisualization tools can advance our knowledge and understanding of urban communities and the public policies that impact cities from a variety of disciplinary perspectives;
2. Understand the breadth of modern mapping and geovisualization technologies and the social ramifications of their use, including issues of justice, diversity, equity, and inclusion.
3. Apply geographic information systems to urban problems to deepen one's understanding of patterns and processes in urban systems.
4. Understand, convey, and utilize urban theories to identify opportunities for improving public policy and the lives of urban residents.

A core element of this course will include learning how to use various mapping and visualization platforms, including Google Earth and a commercial geographic information system (GIS), ArcGIS Pro, from Environmental Systems Research Institute (ESRI).

REQUIRED BOOKS:

Law, M., & Collins, A. (2021). Getting to know ArcGIS Pro 2.8 (Fourth Edition). Redlands, CA, USA: ESRI press. ISBN: 9781589487017

OTHER REQUIRED RESOURCES:

A functioning computer, up-to-date within the last five years. Please note mobile devices such as tablets or smartphones are not recommended for use with Canvas. Students can use the Canvas mobile app to check on the course occasionally, but the mobile app will not fully display the course. You must access the course regularly from a full-featured laptop or desktop computer.

You will need to have access to and be able to use the following hardware and software packages:

- ArcGIS Pro (free, see <https://ucr.maps.arcgis.com/home/index.html> for creating an account to access the software. Locations where ArcPro is available on campus: <https://storymaps.arcgis.com/stories/2726969cfae443d9b90bb625dc5e106f>

- Zoom
- Microsoft Windows
- Presentation software (PowerPoint, Keynote, or similar)
- Word processing software (Word, Pages, or similar)
- Web browsers (Chrome, Mozilla Firefox, or Safari)
- Adobe Acrobat Reader (free)
- Adobe Flash Player (free)
- Microphone and speaker

Running ArcGIS Pro:

This course requires that students install and use ArcGIS Pro, an industry-standard desktop GIS software suite produced by Esri. UCR students can obtain a stand-alone license for ArcGIS Pro and run it on their personal computers. Stand-alone ArcGIS Pro runs only on computers with x86 and x64-compatible Microsoft Windows processors. This limitation means some newer Windows 10 tablets cannot run ArcGIS Pro. Windows users can use the "Can You Run It" (<https://links.esri.com/run-arcgis-pro>) utility to check your system's hardware.

Suppose you are a Mac or Linux user. To use ArcGIS Pro, you will need a contemporary Mac (MacBook Pro, iMac, or Mac Pro) with a quad-core Intel processor, 256 GB storage, and 8 GB RAM or more is required. Mac systems configured with Apple Silicon (Mx) or non-Intel processors are not compatible until Microsoft Windows OS environments are supported on Apple processors. If you already have an incompatible Mac and want to run ArcGIS Pro, consider the following options:

- Connect to a supported on-premises hosted VM.
- Deploy and connect to a cloud-hosted VM.

For hardware requirements for the host machine, see the ArcGIS Pro system requirements. If you cannot view all the specifications for the host machine, you can use the Can You Run It (<https://links.esri.com/run-arcgis-pro>) utility to check your system's hardware.

Computers with ArcPro are also available in the following locations:

Rivera Library, 2nd floor learning commons computers
Orbach Library, 1st floor learning commons computers
Orbach Library, 1st floor near the Geospatial Resources area
Watkins 2111 and 2117 (both computer labs)

NOTE: Please do not underestimate the time required to get a copy of ArcGIS Pro operational on your personal machine. It is a headache every year for everybody. Get this going ASAP, especially if you use a Mac.

LEARNING ACTIVITIES:

1. **Exam (25%):** One midterm exam in this class will be worth 25% of your final grade. The examination includes multiple choice, true/false, and essay/application questions. We design these questions to evaluate your comprehension of urban theory, maps, map types, and their analytical foundations. Clarity of expression is a factor in assessing these questions. There are no make-up exams.

Exercises (50%): There will be seven exercises during the quarter, typically attached to some type of tutorial that precedes the assignment. The topic of the exercise will relate to the subject matter of the lecture and/or class. This work is both challenging and time-consuming. Do not underestimate the time required to complete these assignments. There will be NO opportunity for making up these exercises. Grading will adhere to the rubric posted in Canvas.

2. **Create a Story Map (25%)**

This is your opportunity to collect your own data and generate a map you LOVE and want to talk about. Tell the class a story using the map as geovisual support. Every student will present their story map at the end of the course. You must create the map using ArcGIS Pro and data you collected from publicly available sources. Make sure to add your unique "take" on a neighborhood, city, or metropolitan area. More information on this assignment will be posted on Canvas during the quarter.

SUBMITTING ASSIGNMENTS AND LATE ASSIGNMENTS

All assignments are to be submitted by the due date. Late submissions will not be accepted unless:

1. the instructor granted an extension in advance of the due date;
2. providing documentation of an unforeseeable excused absence
3. Your instructor and TA retain the right of refusal on assignments. In other words, if you are turning in late work, we may not accept it.

Additionally:

4. Unless otherwise announced by the instructor, students must submit all assignments to Canvas. There will be a designated place to submit each assignment in Canvas. Do not submit an assignment via email.
5. Late submission of assignments is subject to penalty (see below). All assignments are due on Thursdays at 11:59 pm Pacific Standard Time. There are no exceptions. Schedule accordingly.

<u>Number of days late</u>	<u>Percentage points taken off</u>
1	20%
2	40%
3	60%
4	80%
>=5	100%

SUMMARY OF GRADED ASSESSMENTS:

Grading Policy: We base the final grade on the proportion of cumulative points you have earned over the quarter. There are a total of 400 points.

Section Exams:

Exam	100
Tutorials/Exercises	200
Create a Story Map	100
Total	400

FINAL COURSE GRADING SCALE:

Final Grades will be assigned using the following breakdown:

A	372 - 400
A-	360 - 371
B+	348 - 359
B	332 - 347
B-	320 - 331
C+	308 - 319
C	292 - 307
C-	280 - 291
D+	268 - 279
D	252 - 267
D-	240 - 251
F	239 or below

ACADEMIC INTEGRITY:

1. Academic Dishonesty – In addition to academic performance, we expect students to demonstrate honesty and integrity. We expect all submissions from students to be the original work product of the submitting student. Material that violates this requirement in any way or constitutes any form of dishonesty, cheating, fabrication, the facilitation of academic dishonesty, and/or plagiarism may result in the student receiving a failing grade in the course ('F') and initiating appropriate disciplinary action. The possible sanctions include, but are not limited to, grade penalties, a permanent record on your transcript of academic dishonesty, loss of registration privileges, disqualification, and dismissal. Please see the official UCR Policy on Academic Integrity. It is accessible online at:

<https://senate.ucr.edu/appendix/section/1226/06>

2. Electronic Review – To ensure compliance with academic integrity policies, we will submit all written assignments to TurnItIn, or a similar plagiarism detection program. Submission of any writing assignment in the course constitutes consent by the student for the instructor to upload the paper to check against any anti-plagiarism database.
3. Citation Style – We require students to use the citation style and format of either the American Psychological Association (APA) or the American Sociological Association (ASA). It is acceptable to cite legal materials (cases, statutes, regulations, etc.) following the style specified in *The Bluebook* (<https://www.legalbluebook.com/>).
4. Avoiding Plagiarism – Some students truly do not understand plagiarism and therefore plagiarize unwittingly or unintentionally. However, ignorance is not an excuse for unethical academic conduct. To combat such ignorance, here are rules and resources to help you avoid any problems with plagiarism. Of course, these rules apply regardless of the citation form or style you may be using.
 - a. Direct Quotations – Whenever you directly quote someone else, you must cite the source of the material you are quoting. Moreover, you must put the material in quotation marks or otherwise set it off in an indented quote so the reader knows what words are yours and what words are quoted. It is unacceptable to use the words of others and only partially quote the original source. This is true even if you cite the source in the text and your references section!
 - b. Paraphrasing/Indirect Quotations – Whenever you indirectly quote someone else (i.e., you paraphrase the work of another), you must cite the source of the material from which you are paraphrasing. However, minor structure or word changes do not mean your work is original. This is because the idea you are expressing is not your own but someone else's.
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- f. Altering or Revising Your Own Prior Work – You should also be aware that altering or revising your own work for another class or another instructor and not bringing it to the attention of the instructor to whom you are submitting the revised work is also academic dishonesty. If, for example, you have two classes that require a term paper, and you can write one paper that meets the requirements of both classes, you may not submit that paper to both instructors unless you get permission to do so in advance. Similarly, if you wrote a paper several quarters ago, that can be revised and submitted in satisfaction of a paper requirement for a course in which you are currently enrolled, doing so is academic dishonesty unless you get the advanced permission of your instructor to do so.

IMPORTANT COURSE POLICIES

1. Required behavior standards are listed in the [Student Code of Conduct and Student Disciplinary Procedures](#), [Computer, Internet and Electronic Communications Policy](#). Anyone in violation of these policies is subject to sanctions.
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4. All lectures, exercises, and assignment questions are the instructor's intellectual property. Therefore, do not post completed assignments on the web or distribute them unless explicitly requested by the instructor.
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8. There is a limited timeline [for dropping or adding the course](#). Consult with your advisor and notify your instructor to add or drop this course. If you are considering a withdrawal, review the following UCR policies: <https://registrar.ucr.edu/registering/cancellation-withdrawal-absence-readmission>

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1. Establishing Eligibility for Disability Accommodations – Students who feel they will need disability accommodations in this class but have not registered with the SDRC should contact the SDRC immediately. Students should contact the DRC on the campus where their class is being held.
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MAKE-UP WORK:

If you are seriously ill or injured in a manner that prevents you from completing your work, you should email me to inform me that you are sick or injured as soon as possible. The same is true for an immediate family member's death, injury, or serious illness. Please be advised that for missed work based on an emergency, you may be required to submit corroboratory documentation, such as a note from a physician documenting the illness or injury (notes from family members will not suffice), a death certificate or other proof of a family member's death, etc.

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The University and I expect all students to comport themselves professionally. Toward that end, I expect everyone to abide by the following rules of etiquette:

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- Further, be aware that it is easy to misconstrue and misunderstand statements in online forums. Try your best to be clear about what you are saying, and expect that people may understand your contribution differently than you intended. Text is not always the best medium for conversation. The tone of voice (e.g., sarcasm, humor, etc.) does not always translate.
- Please use proper grammar, spelling, and punctuation in all course-related communications, whether in the discussion boards, emails to the instructor, or assignments. "Text lingo" and other invented spellings are not allowed.
- What To Call Me – I don't care much for titles, so "Tony" is fine. If that freaks you out, "Dr. G" or "Dr. Tony" works too.

SEXUAL VIOLENCE AND HARASSMENT:

Title IX is a federal law that provides that no person be excluded based on sex from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity. Title IX and university policy clearly state that sexual violence and harassment based on sex is prohibited. An individual who believes they have been subjected to sexual violence or harassed based on sex can seek support, including counseling and academic support, from the university. If you or someone you know has been harassed on the basis of sex or sexually assaulted, you can find information and resources at <https://titleix.ucr.edu/>

TECHNICAL SUPPORT:

For technical assistance 24 hours a day, 7 days a week, please contact ITS: <https://its.ucr.edu/>

SYLLABUS CHANGES:

I view this course syllabus as an educational contract between the students in the course and me. Accordingly, I will make every effort to avoid changing the course schedule, but the possibility exists that unforeseen events will make syllabus changes necessary. Therefore, I reserve the right to change the syllabus other than the attendance and grading policies.

STUDENT SUCCESS

When given the opportunity, I expect students to engage with the material in the classroom and online. Students who do not regularly check in with the course will not do well in this class. Furthermore, those who do not read the assigned material carefully will also do poorly. All assigned readings and lecture material are examinable. If you have problems with the course material or assignments or seem to be getting behind, please see the instructor as soon as possible.

To summarize:

- Check the course daily
- Read announcements
- Read and respond to the course email messages as needed
- Complete assignments by the due dates specified
- Communicate regularly with your instructor and peers
- Create a study and/or assignment schedule to stay on track

COURSE SCHEDULE:

WEEK 1 (04/01 – 04/05)

Lecture: (1a) Syllabus; (1b) Course Intro: Why Should We Care About Urban Analytics and GIS

Reading: Tao, W. (2013). Interdisciplinary urban GIS for smart cities: advancements and opportunities. *Geo-spatial Information Science*, 16(1), 25-34.

Law and Collins, Chapter 1

WEEK 2 (04/08 – 04/12):

Lecture: (2a) Spatial Data are Special; (2b) Origin and Growth of Cities

Readings: Understanding and Using American Community Survey Data (<https://tinyurl.com/mv87r4w5>)

Fitch, C. A., & Ruggles, S. (2003). Building the national historical geographic information system. *Historical Methods: A Journal of Quantitative and Interdisciplinary History*, 36(1), 41-51.

Law and Collins. Chapter 2

Lesson 1 (Law and Collins Chapter 2 exercises) (Due 04/12)

WEEK 3 (04/15 – 04/19):

Lecture: (3a) The North American City; (3b) Metropolitan Dominance and Spatial Interaction

Reading: Lichter, D. T., Brown, D. L., & Parisi, D. (2021). The rural–urban interface: Rural and small town growth at the metropolitan fringe. *Population, Space and Place*, 27(3), e2415.

Law and Collins. Chapter 3

Lesson 2 (Law and Collins Chapter 3 exercises) (Due 04/19):

WEEK 4 (04/22 – 04/26)

Lecture: (4a) City Development; (4b) Models of Urban Form

Reading: Meyer, W. B., & Esposito, C. R. (2015). Burgess and Hoyt in Los Angeles: testing the Chicago models in an automotive-age American city. *Urban Geography*, 36(2), 314-325.

Law and Collins, Chapter 4

Lesson 3 (Law and Collins Chapter 4 exercises) (Due 04/26)

WEEK 5 (04/29 – 05/03)

Lecture: None (see online review via Canvas)

Reading: None

EXAM (05/01)

WEEK 6 (05/06 – 05/10)

Lecture: (6a) Location of Residences; (6b) Geodemographics

Readings: Schein, R. H. (2012). Urban form and racial order. *Urban Geography*, 33(7), 942-960.

Grubestic, T. H., Miller, J. A., & Murray, A. T. (2014). Geospatial and geodemographic insights for diabetes in the United States. *Applied Geography*, 55, 117-126.

Law and Collins, Chapter 8

Lesson 4 (Law and Collins Chapter 8 exercises) (Due 05/10)

WEEK 7 (05/13 – 05/17)

Lecture: (7a) Social Area Analysis 1; (7b) Social Area Analysis 2

Readings: Fowler, C. (2016). Segregation as a multiscale phenomenon and its implications for neighborhood-scale research: The case of South Seattle 1990–2010. *Urban Geography*, 37(1), 1-25.

Grubestic, T. H., Helderop, E., & Alizadeh, T. (2019). Closing information asymmetries: A scale agnostic approach for exploring equity implications of broadband provision. *Telecommunications Policy*, 43(1), 50-66.

Lesson 5 Exercise Questions (Due 05/17)

WEEK 8 (05/20 – 05/24)

Lecture: (8a) Commercial Geography; (8b) Retail Geography

Reading: Firth, C. L., Carlini, B. H., Dilley, J. A., Wakefield, J., & Hajat, A. (2020). What about equity? Neighborhood deprivation and cannabis retailers in Portland, Oregon. *Cannabis*, 3(2), 157-172.

WEEK 9 (05/27 – 05/31):

Lecture: Environmental Justice

Reading: Pulido, L. (2000). Rethinking environmental racism: White privilege and urban development in Southern California. *Annals of the Association of American Geographers*, 90(1), 12-40.

Lesson 6 Exercise Questions (Due 05/31)

Virtual WEEK 10 (06/03 – 06/07)

Lecture: None

Reading: None

Final Projects Due (06/07). Each student will present their Story Map on Zoom (Due 06/03).



PBPL XXX: Advanced Spatial Analysis

FACULTY INFORMATION:

Wei Kang (Instructor)
Center for Geospatial Sciences
School of Public Policy
900 University Ave, Riverside, CA 92507
Email: wei.kang@ucr.edu

COURSE MEETING TIMES AND LOCATION:

This class meets in person from XX pm to XX pm on XX in CHASS Interdisciplinary-South, Room XX. All assignments will utilize Internet technologies (e.g., Canvas, GitHub). We expect you to log into the Canvas course regularly.

OFFICE HOURS AND INSTRUCTOR COMMUNICATION:

Wei (XXX in INTS 4143 or by appointment)

This course uses a "Three Before Me" policy for student-to-faculty or teaching-assistant communications. When questions arise during this class, please remember to check **three** sources for an answer **before** emailing your instructor or TA:

1. Course Syllabus
2. Announcements in Canvas
3. The Q & A Forum

This policy will help you in potentially identifying answers before we can get back to you, and it also helps us from answering similar questions or concerns multiple times.

Although your classmates may help answer questions, nothing in this forum constitutes official course policy. In the event of a conflict between the information on the Q&A forum and the information in the syllabus, always refer to the syllabus unless the instructor formally changes the information in the syllabus through an official course announcement. Please note that your instructor will respond to your Q&A Forum posts and your emails within 24-48 hours on business days.

All instructor correspondence will be sent to your "@ucr.edu" email account. Forwarding emails to and from your UCR to a personal account is not recommended. Instructors **will not respond to any email address other than UCR account-addressed emails.**

NOTE: When emailing your instructor or TA, please include the course number "PBPL XXX" in the subject of your email, so we can prioritize it over other emails that are not course related.

COURSE DESCRIPTION:

The purpose of this course is to introduce you to methods of spatial data analysis. The focus is on the conceptual and applied aspects of spatial statistical methods. We will place particular emphasis on the computational aspects of Exploratory Spatial Data Analysis (ESDA) methods for three different types of spatial data: lattice, point processes, and geostatistical. Throughout the course, you will gain valuable hands-on experience with several specialized software packages for spatial data analysis. The overriding goal of the course is for you to acquire familiarity with the fundamental methodological and operational issues in the statistical analysis of geographic information and the ability to extend these methods in your research.

COURSE PREREQUISITE(S):

PBPL XXX: Geoprogramming

LEARNING GOALS:

Upon successful completion of the course, students should be able to:

- Demonstrate understanding of advanced concepts of spatial data science (SDS) and use open or commercial tools to load and analyze spatial data.
- Understand the motivation and inner logic of the main methodological approaches of open SDS.
- Critically evaluate the suitability of a specific technique, what it can offer, how it can help answer questions of interest, and how it may impact issues of justice, diversity, equity and inclusion.
- Apply spatial analysis techniques and explain how to interpret the results while turning data into information.
- Work independently using SDS tools to extract valuable insight when faced with a new dataset.

REQUIRED BOOKS:

- (GDS) Sergio Rey, Dani Arribas-Bel, and Levi John Wolf. (2023). Geographic Data Science with Python. Chapman & Hall/CRC Texts in Statistical Science. London, England: Taylor & Francis. First edition. ([Free online version](#))
- (GIA) David O'Sullivan and David J. Unwin. (2010). Geographic Information Analysis, Wiley: Hoboken. Second edition. (Ebook freely available through UCR library)

OTHER REQUIRED RESOURCES:

A functioning computer, up-to-date within the last five years. We do not recommend mobile devices such as tablets or smartphones with Canvas. Students can use the Canvas mobile app to check on the course occasionally, but the mobile app will not fully display the course. You must access the course regularly from a full-featured laptop or desktop computer.

You will need to have access to and be able to use the following hardware and software packages:

- Zoom
- Microsoft Windows
- Presentation software (PowerPoint, Keynote, or similar)
- Word processing software (Word, Pages, or similar)
- Web browsers (Chrome, Mozilla Firefox, or Safari)
- Adobe Acrobat Reader (free)
- Adobe Flash Player (free)
- Microphone and speaker

Core software:

Python 3, Anaconda 3, Jupyter Notebook/Lab/Hub, Git/GitHub

We will cover the installation of these packages/software early in the semester, and you are strongly encouraged to bring your laptop to class so that you can work with these packages outside the classroom. We will use Jupyter Notebook to interact with Python 3, including class lectures and assignments.

LEARNING ACTIVITIES:

1. **Quizzes (20%):** Each week, there will be a quiz on Canvas. The quiz consists of 3-4 multiple-choice questions. The questions check your understanding of the theoretical and applied material from the lecture, reading, and hands-on programming. You will have two attempts at each quiz. The higher score will be counted toward your final grade.
2. **Empirical Exercises (45%):** We will use three hands-on exercises to apply the spatial analytical concepts and tools covered in class to real-world questions. This work is challenging and time-consuming, so do not underestimate the time required to complete these assignments. Collaboration on exercises is encouraged, but you alone are responsible for mastering the material.
3. **Exam (35%):** We will have a final exam covering theoretical and practical material from the lectures and hands-on portions of the course. The exam will include multiple-choice, short-answer, and essay questions. Most questions will focus on the quizzes you have taken in previous weeks. No make-up exams will be given without prior approval from the instructor.

SUBMITTING ASSIGNMENTS AND LATE ASSIGNMENTS

All assignments are to be submitted by the due date. Late submissions will not be accepted unless:

1. the instructor granted an extension in advance of the due date;
2. providing documentation of an unforeseeable excused absence
3. Your instructor and TA retain the right of refusal on assignments. In other words, if you are turning in late work, we may not accept it.

Additionally:

4. Unless otherwise announced by the instructor, students must submit all assignments to Canvas. There will be a designated place to submit each assignment in Canvas. Do not submit an assignment via email.
5. The first assignment gets a free 24-hour extension to accommodate potential technology issues.
6. Late submission of assignments is subject to penalty (see below). All assignments are due on Thursdays at 11:59 pm Pacific Standard Time. There are no exceptions. Schedule accordingly.

<u>Number of days late</u>	<u>Percentage points taken off</u>
1	20%
2	40%
3	60%
4	80%
>=5	100%

SUMMARY OF GRADED ASSESSMENTS:

Grading Policy: We base the final grade on the proportion of cumulative points you have earned over the quarter.

FINAL COURSE GRADING SCALE:

A+ (97–100), A (93–96), A- (90–92), B+ (87–89), B (83–86), B- (80–82), C+ (77–79), C (73–76), C- (70–72), D+ (67–69), D (65–66), D- (63–64), F (below 60).

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- g. AI challenge – This course emphasizes critical thinking and problem-solving skills, some of which generative AI can mimic (such as Google Bard or ChatGPT). The vitality of a campus community relies on academic honesty and the integrity of intellectual work. The use of generative AI in this course can undermine your learning, limit opportunities for intellectual growth, and impact your performance on in-class assessments. Generative AI also can interfere with a fair and accurate assessment of your work. Therefore, AI should never replace your thinking or research, and all work in this course must be your own. To achieve the best learning outcomes in this class and be fair with everyone in grading, AI cannot be used in the Exam, Quiz, or any other assignments (with actual or potential credits) in this class. Violation of the policy will result in zero credit for the assignment and a substantially reduced grade (most likely "F") for the entire course.

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4. All lectures, exercises, and assignment questions are the instructor's intellectual property. Therefore, do not post completed assignments on the web or distribute them unless explicitly requested by the instructor.
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assigned work or term papers. Failure to observe this rule will result in a 10% penalty, **FOR EACH INSTANCE**, on a given assignment.

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- Further, be aware that it is easy to misconstrue and misunderstand statements in online forums. Try your best to be clear about what you are saying, and expect that people may understand your contribution differently than you intended. Text is not always the best medium for conversation. The tone of voice (e.g., sarcasm, humor, etc.) does not always translate.
- Please use proper grammar, spelling, and punctuation in all course-related communications, whether in the discussion boards, emails to the instructor, or assignments. "Text lingo" and other invented spellings are not allowed.
- What To Call Me – I don't care much for titles, so "Wei" is fine. If that freaks you out, "Dr. Kang" works too.

SEXUAL VIOLENCE AND HARASSMENT:

Title IX is a federal law that provides that no person be excluded based on sex from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity. Title IX and university policy clearly state that sexual violence and harassment based on sex is prohibited. An individual who believes they have been subjected to sexual violence or harassed based on sex can seek support, including counseling and academic support, from the university. If you or someone you know has been

harassed on the basis of sex or sexually assaulted, you can find information and resources at <https://titleix.ucr.edu/>

TECHNICAL SUPPORT:

For technical assistance 24 hours a day, seven days a week, please contact ITS: <https://its.ucr.edu/>

SYLLABUS CHANGES:

I view this course syllabus as an educational contract between the students in the course and me. Accordingly, I will make every effort to avoid changing the course schedule, but the possibility exists that unforeseen events will make syllabus changes necessary. Therefore, I reserve the right to change the syllabus other than the attendance and grading policies.

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To summarize:

- Check the course daily
- Read announcements
- Read and respond to the course email messages as needed
- Complete assignments by the due dates specified
- Communicate regularly with your instructor and peers
- Create a study and/or assignment schedule to stay on track

COURSE SCHEDULE:

WEEK 1 (04/01 – 04/05)

Session 1:

Lecture: (1) Syllabus; (2) Course Introduction

Session 2:

Lecture: Spatial Data Analysis

Reading: GIA 1, GDS Part I 1-3

Quiz 1 (Due 4/12)

WEEK 2 (04/08 – 04/12):

Session 1:

Lecture: Spatial Data

Reading: GIA 2, GDS Part I 4

Session 2:

Lecture: Geovisualization and Spatial Process

Reading: GIA 3 & 4, GDS Part II 2

Quiz 2 (Due 4/19)

WEEK 3 (04/15 – 04/19):

Session 1:

Lecture: Spatial Weights

Reading: GDS Part I 5

Session 2:

Lecture: Spatial Dependence

Reading: GIA 7

Quiz 3 (Due 4/26)

WEEK 4 (04/22 – 04/26):

Session 1:

Lecture: Global Autocorrelation

Reading: GDS Part II 3

Session 2:

Lecture: Global Autocorrelation Tests

Reading: GIA 7

Quiz 4 (Due 5/5)

WEEK 5 (05/01 – 05/05)

Session 1:

Lecture: Local Autocorrelation

Reading: GIA 8.1-8.3

Session 2:

Lecture: Local Autocorrelation Tests

Reading: GDS Part II 4, GIA 8.4-8.6

Quiz 5 (Due 5/10)

Empirical Exercise 1 (Due 5/17)

WEEK 6 (05/06 – 05/10)

Session 1:

Lecture: Point Pattern Data

Reading: GIA 5.1

Session 2:

Lecture: Centrography

Reading: GIA 5.2

Quiz 6 (Due 5/17)

WEEK 7 (05/13 – 05/17)

Session 1:

Lecture: Point Processes

Reading: GIA 5.3-5.5

Session 2:

Lecture: Quadrat Statistics

Reading: GDS Part II 5

Quiz 7 (Due 5/24)

Empirical Exercise 2 (Due 5/31)

WEEK 8 (05/20 – 05/24)

Session 1:

Lecture: Distance Based Statistics

Reading: GIA 6

Session 2:

Lecture: Geostatistical Data

Reading: GIA 9

Quiz 8 (Due 5/31)

WEEK 9 (05/27 – 05/31):

Session 1:

Lecture: Variogram Models

Reading: GIA 10.1-10.3

Session 2:

Lecture: Kriging

Reading: GIA 10.4-10.5

Quiz 9 (Due 6/7)

Empirical Exercise 3 (Due 6/12)

WEEK 10 (06/03 – 06/07)

Review for Final Exam

Finals Week (06/10-06/14)

Final Exam



PBPL XXX: Drones and Geospatial Analysis for Public Policy

FACULTY INFORMATION:

Tony H. Grubestic (Instructor)
Center for Geospatial Sciences
School of Public Policy
900 University Ave, Riverside, CA 92507
Email: tony.grubestic@ucr.edu

Eddie Helderop (Exercise Coordinator)
Email: edward.helderop@ucr.edu

COURSE MEETING TIMES AND LOCATION:

This class meets in person from 8:00 am to 9:20 am on Mondays and Wednesdays in CHASS Interdisciplinary-North, Room 4023. Elements of this course will also include an online component via Canvas and Zoom. All assignments will utilize Internet technologies. We expect you to log into the Canvas course regularly.

OFFICE HOURS AND INSTRUCTOR COMMUNICATION:

Tony (by appointment)
Eddie (Office hours on Zoom: <https://ucr.zoom.us/j/2987782007>) 11 am to 12 pm on Wednesdays, or by appointment)

This course uses a "Three Before Me" policy for student-to-faculty or teaching-assistant communications. When questions arise during this class, please remember to check **three** sources for an answer **before** emailing your instructor or TA:

1. Course Syllabus
2. Announcements in Canvas
3. The Q & A Forum

This policy will help you in potentially identifying answers before either Eddie or I can get back to you, and it also helps us from answering similar questions or concerns multiple times.

Although your classmates may help answer questions, nothing in this forum constitutes official course policy. If there is a conflict between the Q&A forum and the information in the syllabus, always refer to the syllabus unless the instructor formally changes the information through an official course announcement. Please note that your instructor will respond to your Q&A Forum posts and your emails within 24-48 hours on business days.

We will send all instructor-related correspondence to your "@ucr.edu" email account. Forwarding emails to and from your UCR to a personal account is not recommended. Instructors **will not respond to any email address other than UCR account-addressed emails.**

NOTE: When emailing your instructor or TA, please include the course number "PBPL 180" in the subject of your email so we can prioritize it over other emails that are not course-related.

COURSE DESCRIPTION:

PBPL XXX, Drones and Geospatial Analysis for Public Policy provides students with introductory-level skills and knowledge needed to understand how remotely sensed imagery and the use of unmanned aerial vehicles (i.e., drones) can provide insight into important public policy problems. In addition to providing students with foundational skills for using remotely sensed data and spatial analysis techniques, this course encourages students to think creatively about real-world public policy challenges and how the fusion of secondary data sources (e.g., imagery, demographic, and socioeconomic) can provide unique insights and solutions for social, environmental, ecological, and infrastructural challenges in complex urban environments.

COURSE PREREQUISITE(S):

None

LEARNING GOALS:

Upon successful completion of the course, students should be able to:

1. Understand the rules and regulations associated with flying UAVs in the United States.
2. Develop safe and legal flight plans for UAVs that adhere to state, regional, and federal guidelines for collecting remotely sensed imagery.
3. Appreciate how remote sensing analysis may impact issues of justice, diversity, equity, and inclusion.
4. Demonstrate a complete understanding of aeronautical maps and their connection to the larger aerospace reference system.
5. Use various data integration and analysis approaches for addressing important public policy questions from a spatial perspective using remotely-sensed data and more classic demographic, environmental, and ecological databases.
6. Design, implement, and communicate about a self-chosen research project using UAV-derived data by proposing a project idea, designing and executing experiments to support the proposed idea, writing a paper about the project, and presenting the project to peers at the end of the course.

A core element of this course will include learning how to use various mapping and visualization platforms, including Google Earth, GeoDa, and a commercial geographic information system (GIS), ArcGIS Pro, from Environmental Systems Research Institute (Esri).

REQUIRED BOOKS:

Grubestic, T. H., & Nelson, J. R. (2020). *UAVs and Urban Spatial Analysis*. Springer International Publishing.

We will provide a digital copy of this book free of charge! Check Canvas.

OTHER REQUIRED RESOURCES:

A functioning computer, up-to-date within the last five years. We do not recommend using mobile devices such as tablets or smartphones with Canvas. Students can use the Canvas mobile app to check on the course occasionally, but the mobile app will not fully display the course. You must access the course regularly from a full-featured laptop or desktop computer.

You will need to have access to and be able to use the following hardware and software packages:

- ArcGIS Pro (free, see <https://ucr.maps.arcgis.com/home/index.html> for creating an account to access the software. Locations where ArcPro is available on campus: <https://storymaps.arcgis.com/stories/2726969cfae443d9b90bb625dc5e106f>

- Zoom
- R (v. 3.6.3 or later: <https://www.r-project.org/>)
- Blue Sky (<https://www.blueskystatistics.com/>) (GUI for R)
- PSPP (<https://www.gnu.org/software/pspp/>) (Open source SPSS)
- Python (v. 3.86 or later: <https://www.python.org/>)
- GeoDa (v. 1.22 or later: <http://geodacenter.github.io/>)
- Presentation software (PowerPoint, Keynote, or similar)
- Word processing software (Word, Pages, or similar)
- Web browsers (Chrome, Mozilla Firefox, or Safari)
- Adobe Acrobat Reader (free)

Running ArcGIS Pro:

This course requires that students install and use ArcGIS Pro, an industry-standard desktop GIS software suite produced by Esri. UCR students can obtain a stand-alone license for ArcGIS Pro and run it on their personal computers. Stand-alone ArcGIS Pro runs only on computers with x86 and x64-compatible Microsoft Windows processors. This limitation means some newer Windows 10 tablets cannot run ArcGIS Pro. Windows users can use the "Can You Run It" (<https://links.esri.com/run-arcgis-pro>) utility to check your system's hardware.

Suppose you are a Mac or Linux user. To use ArcGIS Pro, you will need a contemporary Mac (MacBook Pro, iMac, or Mac Pro) with a quad-core Intel processor, 256 GB storage, and 8 GB RAM or more is required. Mac systems configured with Apple Silicon (Mx) or non-Intel processors are not compatible until Microsoft Windows OS environments are supported on Apple processors. If you already have an incompatible Mac and want to run ArcGIS Pro, consider the following options:

Connect to a supported on-premises hosted VM.
Deploy and connect to a cloud-hosted VM.

For hardware requirements for the host machine, see the ArcGIS Pro system requirements. If you cannot view all the specifications for the host machine, you can use the Can You Run It (<https://links.esri.com/run-arcgis-pro>) utility to check your system's hardware.

Computers with ArcPro are also available in the following locations:

Rivera Library, 2nd floor learning commons computers
Orbach Library, 1st floor learning commons computers
Orbach Library, 1st floor near the Geospatial Resources area
Watkins 2111 and 2117 (both computer labs)

NOTE: Please do not underestimate the time required to get a copy of ArcGIS Pro operational on your personal machine. It is a headache every year for everybody. Get this going ASAP, especially if you use a Mac.

LEARNING ACTIVITIES:

Exam (25%): One midterm exam in this class will be worth 25% of your final grade. The examination includes multiple choice, true/false, and essay/application questions. We design these questions to evaluate your comprehension of urban theory, maps, map types, and their analytical foundations. Clarity of expression is a factor in assessing these questions. There are no make-up exams.

Exercises/Article Reviews (50%): There will be eight exercises/article reviews during the quarter, typically attached to some type of tutorial that precedes the assignment. The exercise or article review topic will relate to the lecture and/or class subject matter. This work is both challenging and time-consuming. Do not underestimate the time required to complete these assignments. There will be NO opportunity for making up these exercises. Grading will adhere to the rubric posted in Canvas. Each of these assignments is worth **25 points**.

UAV Project (25%) This is ½ course-long project that will require a final report and presentation (**90 points**) to the class. Do not ask us what we want your project to be about. This project is an opportunity for you to select a topic that interests you. A one-page proposal of your paper is due on the 4th week of class (**10 points**). The proposal should be written in sentence form (not an outline) and should contain:

- A working title
- A brief description of the topic you plan to investigate
- A brief description of how you will investigate the topic
- A brief hypothesis of what you expect to find for the results
- A bibliography of sources you have already found on this topic (10 minimum)
- A comprehensive description of where you will get data for analysis

The actual project report should adhere to the following guidelines:

- Typed, double-spaced, 1-inch margins on all sides, 11 or 12-point Calibri font. You must also have a separate cover sheet that includes names and contact information (UCR email).
- The report must be referenced (APA style), including complete and specific within-paper citations of all books, articles, and Internet sites consulted (if I can't look these references up... don't use them).
- We will post more information on this project during the quarter on Canvas.

SUBMITTING ASSIGNMENTS AND LATE ASSIGNMENTS

All assignments are to be submitted by the due date. Late submissions will not be accepted unless:

1. the instructor granted an extension in advance of the due date;
2. providing documentation of an unforeseeable excused absence
3. Your instructor and TA retain the right of refusal on assignments. In other words, if you are turning in late work, we may not accept it.

Additionally:

4. Unless otherwise announced by the instructor, students must submit all assignments to Canvas. There will be a designated place to submit each assignment in Canvas. Do not submit an assignment via email.
5. Late submission of assignments is subject to penalty (see below). All assignments are due on Thursdays at 11:59 pm Pacific Standard Time. There are no exceptions. Schedule accordingly.

<u>Number of days late</u>	<u>Percentage points taken off</u>
1	20%
2	40%
3	60%
4	80%
>=5	100%

SUMMARY OF GRADED ASSESSMENTS:

Grading Policy: We base the final grade on the proportion of cumulative points you have earned over the quarter. There are a total of 400 points.

Section Exams:

Exam	100
Tutorials/Exercises/Reviews	200
Project	100
Total	400

FINAL COURSE GRADING SCALE:

Final Grades will be assigned using the following breakdown:

A	372 - 400
A-	360 - 371
B+	348 - 359
B	332 - 347
B-	320 - 331
C+	308 - 319
C	292 - 307
C-	280 - 291
D+	268 - 279
D	252 - 267
D-	240 - 251
F	239 or below

ACADEMIC INTEGRITY:

1. Academic Dishonesty – Besides academic performance, we expect students to demonstrate honesty and integrity. We expect all submissions from students to be the original work product of the submitting student. Material that violates this requirement in any way or constitutes any form of dishonesty, cheating, fabrication, the facilitation of academic dishonesty, and/or plagiarism may result in the student receiving a failing grade in the course ('F') and initiating appropriate disciplinary action. The possible sanctions include, but are not limited to, grade penalties, a permanent record on your transcript of academic dishonesty, loss of registration privileges, disqualification, and dismissal. Please see the official UCR Policy on Academic Integrity. It is accessible online at:

<https://senate.ucr.edu/appendix/section/1226/06>

2. Electronic Review – To ensure compliance with academic integrity policies, we will submit all written assignments to TurnItIn, or a similar plagiarism detection program. Submission of any writing assignment in the course constitutes consent by the student for the instructor to upload the paper to check against any anti-plagiarism database.
3. Citation Style – We require students to use the citation style and format of either the American Psychological Association (APA) or the American Sociological Association (ASA). It is acceptable to cite legal materials (cases, statutes, regulations, etc.) following the style specified in *The Bluebook* (<https://www.legalbluebook.com/>).
4. Avoiding Plagiarism – Some students truly do not understand plagiarism and, therefore, plagiarize unwittingly or unintentionally. However, ignorance is not an excuse for unethical academic conduct. To combat such ignorance, here are rules and resources to help you avoid any problems with plagiarism. Of course, these rules apply regardless of the citation form or style you may be using.
 - a. Direct Quotations – Whenever you directly quote someone else, you must cite the source of the material you are quoting. Moreover, you must put the material in quotation marks or otherwise set it off in an indented quote so the reader knows what words are yours and what words are quoted. It is unacceptable to use the words of others and only partially quote the

original source. This rule is true even if you cite the source in the text and your references section!

- b. Paraphrasing/Indirect Quotations – Whenever you indirectly quote someone else (i.e., you paraphrase the work of another), you must cite the source of the material from which you are paraphrasing. However, minor structure or word changes do not mean your work is original. Why? Because the idea you are expressing is not your own but someone else's.
 - c. Using Other's Ideas – Even if you compose an entire paragraph of writing in your own words (i.e., neither quoted nor paraphrased), if the idea you are expressing in that paragraph is not your own original idea, you must provide a citation to the source from which you obtained this idea.
 - d. Collaborative Work – If you collaborate on any work with someone else and fail to acknowledge that collaboration, you are guilty of plagiarism. If you have received permission from your instructor to collaborate on some assignment, ensure all of the contributors' names appear on the submission.
 - e. Altering or Revising Another's Work – If you alter or revise the work done by someone and submit that work as your own, you have plagiarized. Similarly, if you allow someone else to alter or revise the work that you have done and then allow that person to submit it as his or her own work, you are both guilty of plagiarism. Work not entirely your own must be credited by citation, both in text and on your references page.
 - f. Altering or Revising Your Own Prior Work – You should also be aware that altering or revising your own work for another class or another instructor and not bringing it to the attention of the instructor to whom you are submitting the revised work is also academic dishonesty. If, for example, you have two classes that require a term paper, and you can write one paper that meets the requirements of both classes, you may not submit that paper to both instructors unless you get permission to do so in advance. Similarly, if you wrote a paper several quarters ago that can be revised and submitted in satisfaction of a paper requirement for a course in which you are currently enrolled, doing so is academic dishonesty unless you get the advanced permission of your instructor to do so.
5. AI challenge – This course emphasizes critical thinking and problem-solving skills, some of which generative AI can mimic (such as Google Bard or ChatGPT). The vitality of a campus community relies on academic honesty and the integrity of intellectual work. The use of generative AI in this course can undermine your learning, limit opportunities for intellectual growth, and impact your performance on in-class assessments. Generative AI also can interfere with a fair and accurate assessment of your work. Therefore, AI should never replace your thinking or research, and all work in this course must be your own. To achieve the best learning outcomes in this class and be fair with everyone in grading, AI cannot be used in the Exam, Quiz, or any other assignments (with actual or potential credits) in this class. Violation of the policy will result in zero credit for the assignment and a substantially reduced grade (most likely "F") for the entire course.

IMPORTANT COURSE POLICIES

1. Required behavior standards are listed in the [Student Code of Conduct and Student Disciplinary Procedures](#), [Computer, Internet, and Electronic Communications Policy](#). Anyone in violation of these policies is subject to sanctions.
2. Students are entitled to receive instruction free from interference by other class members. If the instructor identifies disruptive behavior in the classroom, it will be documented, and the instructor will file a formal incident report to the Student Conduct & Academic Integrity Programs office.
3. The Office of Student Rights and Responsibilities accepts [incident reports](#) from students, faculty, staff, or others who believe that a student or student organization may have violated the Student Code of Conduct.
4. All lectures, exercises, and assignment questions are the instructor's intellectual property. Therefore, do not post completed assignments on the web or distribute them unless explicitly requested by the instructor.
5. This class is a [Wikipedia Free Zone](#). Under no circumstances can students use Wikipedia, Infoplease, About.com, or other sites that are considered open "information commons" for assigned work or term papers. Failure to observe this rule will result in a 10% penalty, **FOR EACH INSTANCE**, on a given assignment.
6. To reiterate, notify the instructor **BEFORE** an assignment is due if an urgent situation arises and the assignment will not be submitted on time. Published assignment due dates (Pacific Standard Time) are firm. Please follow the appropriate University policies to request an [accommodation for religious practices](#) or to accommodate a missed assignment due to University-sanctioned activities.
7. Unless otherwise announced, all assignments **MUST** be submitted to the designated area of Canvas. Do not submit an assignment via email. We will not accept it.
8. There is a limited timeline for [dropping or adding](#) the course. Consult with your advisor and notify your instructor to add or drop this course. If you are considering a withdrawal, review the following UCR policies: <https://registrar.ucr.edu/registering/cancellation-withdrawal-absence-readmission>
9. Grade disputes must first be addressed by discussing the situation with the instructor. If the dispute is not resolved with the instructor, please consult this page as a resource for the next steps: <https://graduate.ucr.edu/regulations-and-procedures>

SPECIAL LEARNING NEEDS:

In compliance with the Rehabilitation Act of 1973, Section 504, and the Americans with Disabilities Act of 1990, professional disability specialists and support staff at the Student Disability Resource Centers (SDRC) facilitate a comprehensive range of academic support services and accommodations for qualified students with disabilities. SDRC staff coordinate the transition from high schools and community colleges, provide in-service training for faculty and staff, resolve accessibility issues, conduct community outreach, and collaborate with all UCR campuses regarding disability policies, procedures, and accommodations.

1. [Establishing Eligibility for Disability Accommodations](#) – Students who feel they will need disability accommodations in this class but have not registered with the SDRC should contact the SDRC immediately. Students should contact the DRC on the campus where their class is being held.

2. Disability Accommodations – Prior to receiving any disability accommodations, the SDRC requires eligibility verification. Once registered with the SDRC, students with disabilities must meet with me to discuss what reasonable accommodations they will need to be successful in this course. For students with known disabilities, as this course begins, I encourage you to request accommodations at the beginning of the quarter, either during office hours or by appointment. For disabilities that arise after the course has begun, students should meet with me as soon as possible to arrange accommodations for their learning needs. Disability information is confidential.

DUE DATES, ABSENCES, AND EXCUSES:

Planned Excused Absences - **The course due dates are not flexible.** Suppose you know that a future event will interfere with your ability to complete coursework. In that case, you are encouraged to contact the instructor to make arrangements to complete the assignments. Provided that the student informs the instructor of the reason for the absence at least one week in advance of the absence, the instructor will attempt to make arrangements only when absences are due to any of the following three reasons:

- a. Religious reasons;
- b. Jury duty or similar governmental obligation (a copy of the summons or other official paperwork must be provided); and
- c. University-sanctioned and/or university-approved activities (e.g., artistic performances, participation in research conferences, intercollegiate athletic activities, student government, required class field trips, etc.).

MAKE-UP WORK:

If you are seriously ill or injured in a manner that prevents you from completing your work, you should email me to inform me that you are sick or injured as soon as possible. The same is true for an immediate family member's death, injury, or serious illness. Please be advised that for missed work based on an emergency... you may be required to submit corroboratory documentation, such as a note from a physician documenting the illness or injury (notes from family members will not suffice), a death certificate or other proof of a family member's death, etc.

STUDENT CONDUCT:

The University and I expect all students to comport themselves professionally. Toward that end, I expect everyone to abide by the following rules of etiquette:

- Although you are welcome to disagree with the professor or your classmates, we expect everyone to participate respectfully. Students who engage in personal attacks, use rude, insulting, or disrespectful language, or engage in disruptive or threatening behavior may face disciplinary action.
- Further, be aware that it is easy to misconstrue and misunderstand statements in online forums. Try your best to be clear about what you are saying, and expect that people may

understand your contribution differently than you intended. Text is not always the best medium for conversation. The tone of voice (e.g., sarcasm, humor, etc.) does not always translate.

- Please use proper grammar, spelling, and punctuation in all course-related communications, whether in the discussion boards, emails to the instructor, or assignments. "Text lingo" and other invented spellings are not allowed.
- What To Call Me – I don't care much for titles, so "Tony" is fine. If that freaks you out, "Dr. G" or "Dr. Tony" works too.

SEXUAL VIOLENCE AND HARASSMENT:

Title IX is a federal law that provides that no person be excluded based on sex from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity. Title IX and university policy clearly state that sexual violence and harassment based on sex is prohibited. An individual who believes they have been subjected to sexual violence or harassed based on sex can seek support, including counseling and academic support, from the university. If you or someone you know has been harassed on the basis of sex or sexually assaulted, you can find information and resources at <https://titleix.ucr.edu/>

TECHNICAL SUPPORT:

For technical assistance 24 hours a day, 7 days a week, please contact ITS: <https://its.ucr.edu/>

SYLLABUS CHANGES:

I view this course syllabus as an educational contract between the students in the course and me. Accordingly, I will make every effort to avoid changing the course schedule, but the possibility exists that unforeseen events will make syllabus changes necessary. Therefore, I reserve the right to change the syllabus other than the attendance and grading policies.

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When given the opportunity, I expect students to engage with the material in the classroom and online. Students who do not regularly check in with the course will not do well in this class. Furthermore, those who do not read the assigned material carefully will also do poorly. All assigned readings and lecture material are examinable. If you have problems with the course material or assignments or seem to be getting behind, please see the instructor as soon as possible.

To summarize:

- Check the course daily
- Read announcements
- Read and respond to the course email messages as needed
- Complete assignments by the due dates specified
- Communicate regularly with your instructor and peers
- Create a study and/or assignment schedule to stay on track

COURSE SCHEDULE:

WEEK 1

Syllabus

Lecture: (1a) What are Unmanned Aerial Vehicles (UAVs) and Why Should We Care?

Reading: Grubestic and Nelson, Chapter 1 and Chapter 2

Lecture: (1b) Unmanned Aerial System Platforms

WEEK 2

Lecture: Aeronautical Charts and Maps

Reading: Grubestic and Nelson, Chapter 3

Exercise 1 Due

Article Review 1 Due: Sobczyński, E., & Pietruszka, J. (2018). Military aeronautical charts in the past and today. *Polish Cartographical Review*, 50(1), 5-30.

WEEK 3

Lecture: Legal, Environmental, Operational, and Safety Challenges for UAVs

Reading: Grubestic and Nelson, Chapter 4

Article Review 2 Due: Kurtpinar, Ö., & Scott, B. I. (2024, June). The Legality of Countering Potential Threats Posed by Drones Under International Air Law. In *2024 International Conference on Unmanned Aircraft Systems (ICUAS)* (pp. 347-354). IEEE.

WEEK 4

Lecture: UAVs and Privacy

Reading: Grubestic and Nelson, Chapter 5

Exercise 2 Due

Article Review 3 Due: Lee, D., Hess, D. J., & Heldeweg, M. A. (2022). Safety and privacy regulations for unmanned aerial vehicles: A multiple comparative analysis. *Technology in Society*, 71, 102079.

Mini Project Proposal Due

WEEK 5

Lecture: None (see online review via Canvas)

Reading: None

EXAM

WEEK 6

Lecture: Remote Sensing Basics

Reading: Grubestic and Nelson, Chapter 6

Lecture: (6b): sUAS Data Integration for Urban Spatial Analysis and Policy Analytics

WEEK 7

Lecture: UAV-Derived Imagery in Action Part 1

Reading: Grubestic and Nelson, Chapter 7

Exercise 3 Due

Article Review 4 Due: Kleinschroth, F., Banda, K., Zimba, H., Dondeyne, S., Nyambe, I., Spratley, S., & Winton, R. S. (2022). Drone imagery to create a common understanding of landscapes. *Landscape and Urban Planning*, 228, 104571.

WEEK 8

Lecture: UAV-Derived Data in Action, Part 2

Reading: Grubestic and Nelson, Chapter 8

Interim Project Report Due

WEEK 9

Lecture: Connecting Drones and Remote Sensing to Public Policy in the Real World

Reading: Mohamed, N., Al-Jaroodi, J., Jawhar, I., Idries, A., & Mohammed, F. (2020). Unmanned aerial vehicles applications in future smart cities. *Technological Forecasting and Social Change*, 153, 119293.

Exercise 4 Due

Virtual WEEK 10

Lecture: None

Reading: None

Final Projects Due. Each student will present their Project on Zoom.



PBPL XXX: Geoprogramming

FACULTY INFORMATION:

Wei Kang (Instructor)
Center for Geospatial Sciences
School of Public Policy
900 University Ave, Riverside, CA 92507
Email: wei.kang@ucr.edu

COURSE MEETING TIMES AND LOCATION:

This class meets in person from XX pm to XX pm on XX in CHASS Interdisciplinary-South, Room XX. All assignments will utilize Internet technologies (Jupyter Hub or Canvas). We expect you to log into the Canvas course regularly.

OFFICE HOURS AND INSTRUCTOR COMMUNICATION:

Wei (XXX in INTS 4143 or by appointment)

This course uses a "Three Before Me" policy for student-to-faculty or teaching-assistant communications. When questions arise during this class, please remember to check **three** sources for an answer **before** emailing your instructor or TA:

1. Course Syllabus
2. Announcements in Canvas
3. The Q & A Forum

This policy will help you in potentially identifying answers before we can get back to you, and it also helps us from answering similar questions or concerns multiple times.

Although your classmates may help answer questions, nothing in this forum constitutes official course policy. In the event of a conflict between the information on the Q&A forum and the information in the syllabus, always refer to the syllabus unless the instructor formally changes the information in the syllabus through an official course announcement. Please note that your instructor will respond to your Q&A Forum posts and your emails within 24-48 hours on business days.

All instructor correspondence will be sent to your "@ucr.edu" email account. Forwarding emails to and from your UCR to a personal account is not recommended. Instructors **will not respond to any email address other than UCR account-addressed emails.**

NOTE: When emailing your instructor or TA, please include the course number "PBPL XXX" in the subject of your email, so we can prioritize it over other emails that are not course related.

COURSE DESCRIPTION:

Computational skills of practitioners are in increasing demand in contemporary research in public policy. Advances in spatial data analysis have also largely outpaced the capabilities of standard statistical software. At the same time, the multidisciplinary nature of the spatial sciences often translates into the need to deal with disparate data sources, formats, and programming languages. As such, students undertaking research routinely face daunting tasks that are missing from traditional computational or GIS coursework. This course is designed to address this situation. It introduces public policy and other social and natural science students to basic computational concepts using Python, an object-oriented scripting language, for data processing, analysis, and visualization in geographic research. This course provides students with high-demand skill sets within public policy, commercial and nonprofit spatial data analytics sectors, and GIS development.

COURSE PREREQUISITE(S):

PBPL 010: Introduction to Geographic Information Systems

LEARNING GOALS:

Upon successful completion of the course, students should be able to:

- Describe the basics of Python programming.
- Write Python functions and classes to facilitate code reuse.
- Make their code robust by handling errors and exceptions properly.
- Develop Python programs for spatial data manipulation.
- Create Python programs to address real-world problems and inform policy-making.
- Build a portfolio by creating and sharing an open-source project on GitHub.

REQUIRED BOOKS:

Downey, A.B. Think Python. 3rd Edition. Freely available [online](#).

We will also read some online materials for some of the weeks. I also expect you to learn to explore the vast number of open-source materials on Python whenever needed.

OTHER REQUIRED RESOURCES:

A functioning computer, up-to-date within the last five years. We do not recommend mobile devices such as tablets or smartphones with Canvas. Students can use the Canvas mobile app to check on the

course occasionally, but the mobile app will not fully display the course. You must access the course regularly from a full-featured laptop or desktop computer.

You will need to have access to and be able to use the following hardware and software packages:

- Zoom
- Microsoft Windows
- Presentation software (PowerPoint, Keynote, or similar)
- Word processing software (Word, Pages, or similar)
- Web browsers (Chrome, Mozilla Firefox, or Safari)
- Adobe Acrobat Reader (free)
- Adobe Flash Player (free)
- Microphone and speaker

Core software:

Python 3, Anaconda 3, Jupyter Notebook/Lab/Hub, Git/GitHub, Visual Studio Code (free)

We will cover the installation of these packages/software early in the semester, and you are strongly encouraged to bring your laptop to class so that you can work with these packages outside the classroom. We will use Jupyter Notebook to interact with Python 3, including class lectures and assignments. We will introduce Jupyter Notebook at the beginning of the course.

LEARNING ACTIVITIES:

1. Programming Exercises (50%)

- a. Each exercise contains several Python programming problems in a Jupyter Notebook environment. They are based on the classroom lectures and assigned readings and are to be completed on your own time outside of class. We will have eight exercise sets (each carrying 25 points), and you have about a week to complete each. Occasionally, we will use some classroom time after the submission to discuss the solutions to the exercises.
- b. You will use your UCR NetID and password to log in to the Jupyter Hub XX to complete and submit the assignment. You must connect to UCR VPN beforehand.

2. Labs (10%)

- a. We will have one lab that will guide you in working with Git, GitHub, and Visual Studio Code. We will have another follow-up lab that uses Visual Studio Code to communicate with our course repository. Each lab accounts for 20 points.

3. Exams (40%)

- a. We will have two online exams that cover a combination of theoretical and applied material from the lecture and hands-on programming portions of the course. The exams consist of conceptual questions and programming exercises. The mid-term exam will be an open-book test, and the final exam will be a closed book (dates are listed in the tentative course schedule). Exams may include multiple choice, short answer, problem-solving (python code), and essay questions. No "make-up" exams will be given without prior approval of the instructor. For each exam, you have two attempts, and the highest

score will be used toward your final grade of the course. The midterm exam carries 60 points, and the final exam carries 100 points.

SUBMITTING ASSIGNMENTS AND LATE ASSIGNMENTS

All assignments are to be submitted by the due date. Late submissions will not be accepted unless:

1. the instructor granted an extension in advance of the due date;
2. providing documentation of an unforeseeable excused absence
3. Your instructor and TA retain the right of refusal on assignments. In other words, if you are turning in late work, we may not accept it.

Additionally:

4. Unless otherwise announced by the instructor, students must submit all assignments to Canvas. There will be a designated place to submit each assignment in Canvas. Do not submit an assignment via email.
5. The first assignment gets a free 24-hour extension to accommodate potential technology issues.
6. Late submission of assignments is subject to penalty (see below). All assignments are due on Thursdays at 11:59 pm Pacific Standard Time. There are no exceptions. Schedule accordingly.

<u>Number of days late</u>	<u>Percentage points taken off</u>
1	20%
2	40%
3	60%
4	80%
>=5	100%

SUMMARY OF GRADED ASSESSMENTS:

Grading Policy: We base the final grade on the proportion of cumulative points you have earned over the quarter. There are a total of 800 points.

Programming Exercises	200
Labs	40
Exams	160
Total	400

FINAL COURSE GRADING SCALE:

Final Grades will be assigned using the following breakdown:

- A 372 - 400
- A- 360 - 371
- B+ 348 - 359

B	332 - 347
B-	320 - 331
C+	308 - 319
C	292 – 307
C-	280 - 291
D+	268 - 279
D	252 – 267
D-	240 - 251
F	239 or below

ACADEMIC INTEGRITY:

1. Academic Dishonesty – Besides academic performance, we expect students to demonstrate honesty and integrity. We expect all submissions from students to be the original work product of the submitting student. Material that violates this requirement in any way or constitutes any form of dishonesty, cheating, fabrication, the facilitation of academic dishonesty, and/or plagiarism may result in the student receiving a failing grade in the course ('F') and initiating appropriate disciplinary action. The possible sanctions include but are not limited to, grade penalties, a permanent record on your transcript of academic dishonesty, loss of registration privileges, disqualification, and dismissal. Please see the official UCR Policy on Academic Integrity. It is accessible online at:

<https://senate.ucr.edu/appendix/section/1226/06>

2. Electronic Review – To ensure compliance with academic integrity policies, we will submit all written assignments to TurnItIn, or a similar plagiarism detection program. Submission of any writing assignment in the course constitutes consent by the student for the instructor to upload the paper to check against any anti-plagiarism database.
3. Citation Style – We require students to use the citation style and format of either the American Psychological Association (APA) or the American Sociological Association (ASA). It is acceptable to cite legal materials (cases, statutes, regulations, etc.) following the style specified in *The Bluebook* (<https://www.legalbluebook.com/>).
4. Avoiding Plagiarism – Some students may not understand plagiarism and, therefore, plagiarize unwittingly or unintentionally. However, ignorance is not an excuse for unethical academic conduct. To combat such ignorance, here are rules and resources to help you avoid any problems with plagiarism. Of course, these rules apply regardless of the citation form or style you may be using.
 - a. Direct Quotations – Whenever you directly quote someone else, you must cite the source of the material you are quoting. Moreover, you must put the material in quotation marks or otherwise set it off in an indented quote so the reader knows what words are yours and what words are quoted. It is unacceptable to use the words of others and only partially quote the original source. This rule remains true even if you cite the source in the text and your references section!
 - b. Paraphrasing/Indirect Quotations – Whenever you indirectly quote someone else (i.e., you paraphrase the work of another), you must cite the source of the material from which you are

paraphrasing. However, minor structure or word changes do not mean your work is original. Why? Because the idea you are expressing is not your own but someone else's.

- c. Using Other's Ideas – Even if you compose an entire paragraph of writing in your own words (i.e., neither quoted nor paraphrased), if the idea you are expressing in that paragraph is not your own original idea, you must provide a citation to the source from which you obtained this idea.
- d. Collaborative Work – If you collaborate on any work with someone else and fail to acknowledge that collaboration, you are guilty of plagiarism. If you have received permission from your instructor to collaborate on some assignment, ensure all of the contributors' names appear on the submission.
- e. Altering or Revising Another's Work – If you alter or revise the work done by someone and submit that work as your own, you have plagiarized. Similarly, if you allow someone else to alter or revise the work that you have done and then allow that person to submit it as his or her own work, you are both guilty of plagiarism. Work not entirely your own must be credited by citation, both in text and on your references page.
- f. Altering or Revising Your Own Prior Work – You should also be aware that altering or revising your own work for another class or another instructor and not bringing it to the attention of the instructor to whom you are submitting the revised work is also academic dishonesty. If, for example, you have two classes that require a term paper, and you can write one paper that meets the requirements of both classes, you may not submit that paper to both instructors unless you get permission to do so in advance. Similarly, if you wrote a paper several quarters ago, that can be revised and submitted in satisfaction of a paper requirement for a course in which you are currently enrolled, doing so is academic dishonesty unless you get the advanced permission of your instructor to do so.
- g. AI challenge – This course emphasizes critical thinking and problem-solving skills, some of which generative AI can mimic (such as Google Bard or ChatGPT). The vitality of a campus community relies on academic honesty and the integrity of intellectual work. The use of generative AI in this course can undermine your learning, limit opportunities for intellectual growth, and impact your performance on in-class assessments. Generative AI also can interfere with a fair and accurate assessment of your work. Therefore, AI should never replace your thinking or research, and all work in this course must be your own. To achieve the best learning outcomes in this class and be fair with everyone in grading, AI cannot be used in the Exam, Quiz, or any other assignments (with actual or potential credits) in this class. Violation of the policy will result in zero credit for the assignment and a substantially reduced grade (most likely "F") for the entire course.

IMPORTANT COURSE POLICIES

1. Required behavior standards are listed in the [Student Code of Conduct and Student Disciplinary Procedures](#), [Computer, Internet, and Electronic Communications Policy](#). Anyone in violation of these policies is subject to sanctions.
2. Students are entitled to receive instruction free from interference by other class members. If the instructor identifies disruptive behavior in the classroom, it will be documented, and the

instructor will file a formal incident report to the Student Conduct & Academic Integrity Programs office.

3. The Office of Student Rights and Responsibilities accepts [incident reports](#) from students, faculty, staff, or others who believe that a student or student organization may have violated the Student Code of Conduct.
4. All lectures, exercises, and assignment questions are the instructor's intellectual property. Therefore, do not post completed assignments on the web or distribute them unless explicitly requested by the instructor.
5. This class is a [Wikipedia Free Zone](#). Under no circumstances can students use Wikipedia, Infoplease, About.com, or other sites that are considered open "information commons" for assigned work or term papers. Failure to observe this rule will result in a 10% penalty, **FOR EACH INSTANCE**, on a given assignment.
6. To reiterate, notify the instructor or TA **BEFORE** an assignment is due if an urgent situation arises and the assignment will not be submitted on time. Published assignment due dates (Pacific Standard Time) are firm. Please follow the appropriate University policies to request an [accommodation for religious practices](#) or to accommodate a missed assignment due to University-sanctioned activities.
7. Unless otherwise announced, all assignments **MUST** be submitted to the designated area of Canvas. Do not submit an assignment via email. We will not accept it.
8. There is a limited timeline for [adding or dropping](#) the course. Consult with your advisor and notify your instructor to add or drop this course. If you are considering a withdrawal, review the following UCR policies: <https://registrar.ucr.edu/registering/cancellation-withdrawal-absence-readmission>
9. Grade disputes must first be addressed by discussing the situation with the instructor. If the dispute is not resolved with the instructor, please consult this page as a resource for the next steps: <https://graduate.ucr.edu/regulations-and-procedures>

SPECIAL LEARNING NEEDS:

In compliance with the Rehabilitation Act of 1973, Section 504, and the Americans with Disabilities Act of 1990, professional disability specialists and support staff at the Student Disability Resource Centers (SDRC) facilitate a comprehensive range of academic support services and accommodations for qualified students with disabilities. SDRC staff coordinate the transition from high schools and community colleges, provide in-service training for faculty and staff, resolve accessibility issues, conduct community outreach, and collaborate with all UCR campuses regarding disability policies, procedures, and accommodations.

1. [Establishing Eligibility for Disability Accommodations](#) – Students who feel they will need disability accommodations in this class but have not registered with the SDRC should contact the SDRC immediately. Students should contact the DRC on the campus where their class is being held.
2. [Disability Accommodations](#) – Prior to receiving any disability accommodations, the SDRC requires eligibility verification. Once registered with the SDRC, students with disabilities must meet with me to discuss what reasonable accommodations they will need to be successful in this course. For students with known disabilities, as this course begins, I encourage you to request accommodations at the beginning of the quarter, either during office hours or by appointment. For disabilities that arise after the course has begun, students should meet with me as soon as

possible to arrange for accommodations for their learning needs. Disability information is confidential.

DUE DATES, ABSENCES, AND EXCUSES:

Planned Excused Absences - **The course due dates are not flexible.** Suppose you know that a future event will interfere with your ability to complete coursework. In that case, you are encouraged to contact the instructor or TA to make arrangements to complete the assignments. Provided that the student informs the instructor of the reason for the absence at least one week in advance of the absence, the instructor will attempt to make arrangements only when absences are due to any of the following three reasons:

- a. Religious reasons;
- b. Jury duty or similar governmental obligation (a copy of the summons or other official paperwork must be provided); and
- c. University-sanctioned and/or university-approved activities (e.g., artistic performances, participation in research conferences, intercollegiate athletic activities, student government, required class field trips, etc.).

MAKE-UP WORK:

If you are seriously ill or injured in a manner that prevents you from completing your work, you should email me to inform me that you are sick or injured as soon as possible. The same is true for an immediate family member's death, injury, or serious illness. Please be advised that for missed work based on an emergency, you may be required to submit corroboratory documentation, such as a note from a physician documenting the illness or injury (notes from family members will not suffice), a death certificate or other proof of a family member's death, etc.

STUDENT CONDUCT:

The University and I expect all students to comport themselves professionally. Toward that end, I expect everyone to abide by the following rules of etiquette:

- Although you are welcome to disagree with the professor or your classmates, we expect everyone to participate respectfully. Students who engage in personal attacks, use rude, insulting, or disrespectful language, or engage in disruptive or threatening behavior may face disciplinary action.
- Further, be aware that it is easy to misconstrue and misunderstand statements in online forums. Try your best to be clear about what you are saying, and expect that people may understand your contribution differently than you intended. Text is not always the best medium for conversation. The tone of voice (e.g., sarcasm, humor, etc.) does not always translate.
- Please use proper grammar, spelling, and punctuation in all course-related communications, whether in the discussion boards, emails to the instructor, or assignments. "Text lingo" and other invented spellings are not allowed.

- What To Call Me – I don't care much for titles, so "Wei" is fine. If that freaks you out, "Dr. Kang" works too.

SEXUAL VIOLENCE AND HARASSMENT:

Title IX is a federal law that provides that no person be excluded based on sex from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity. Title IX and university policy clearly state that sexual violence and harassment based on sex is prohibited. An individual who believes they have been subjected to sexual violence or harassed based on sex can seek support, including counseling and academic support, from the university. If you or someone you know has been harassed on the basis of sex or sexually assaulted, you can find information and resources at <https://titleix.ucr.edu/>

TECHNICAL SUPPORT:

For technical assistance 24 hours a day, 7 days a week, please contact ITS: <https://its.ucr.edu/>

SYLLABUS CHANGES:

I view this course syllabus as an educational contract between the students in the course and me. Accordingly, I will make every effort to avoid changing the course schedule, but the possibility exists that unforeseen events will make syllabus changes necessary. Therefore, I reserve the right to change the syllabus other than the attendance and grading policies.

STUDENT SUCCESS

When given the opportunity, I expect students to engage with the material in the classroom and online. Students who do not regularly check in with the course will not do well in this class. Furthermore, those who do not read the assigned material carefully will also do poorly. All assigned readings and lecture material are examinable. If you have problems with the course material or assignments or seem to be getting behind, please see the instructor as soon as possible.

To summarize:

- Check the course daily
- Read announcements
- Read and respond to the course email messages as needed
- Complete assignments by the due dates specified
- Communicate regularly with your instructor and peers
- Create a study and/or assignment schedule to stay on track

COURSE SCHEDULE:

WEEK 1 (04/01 – 04/05)

- Session 1:**
Lecture: (1) Syllabus; (2) Why Should We Care About Python Programming for Open Source Geocomputation?
- Session 2:**
Lecture: Installation, Jupyter Notebook, Markdown
Reading: [Jupyter Notebook Documentation](#)

WEEK 2 (04/08 – 04/12):

- Session 1:**
Lecture: Program, Variables, Operators
Reading: Chapters 1, 2
- Session 2:**
Lecture: Functions (1), Scalar types, Jupyter Hub for Programming Assignments
Reading: Chapter 3
Assignment: HW1 (Due 4/19)

WEEK 3 (04/15 – 04/19):

- Session 1:**
Lecture: Conditionals, Strings (1)
Reading: Chapters 5, 8
- Session 2:**
Lecture: Iterations (1), Strings (2)
Reading: Chapters 7
Assignment: HW2 (Due 4/26)

WEEK 4 (04/22 – 04/26):

- Session 1:**
Lecture: Lists
Reading: Chapter 9
- Session 2:**
Lecture: Tuples, Sets, Dictionaries, Review of Container data types
Reading: Chapters 10, 11, 18
Assignment: HW3 (Due 5/5)

WEEK 5 (05/01 – 05/05)

- Session 1:**
Lecture: Scripts and modules, Python Ecosystem, Midterm prep
Reading: Chapter 10
- Session 2:**
Midterm exam

WEEK 6 (05/06 – 05/10)

- Session 1:** **Lab 1:** GitHub & Git
- Session 2:**
Lecture: Functions (2), Iterations (1)
Reading: Chapter 6
Assignment: HW4 (Due 5/17)

WEEK 7 (05/13 – 05/17)

Session 1:

Lab 2: Collaborate on GitHub projects

Session 2:

Lecture: Object-oriented programming (1)

Reading: Chapters 14, 15, 16

Assignment: HW5 (Due 5/17)

WEEK 8 (05/20 – 05/24)

Session 1:

Lecture: Object-oriented programming (2)

Reading: Chapter 17

Session 2:

Lecture: Scientific Computing with Numpy

Reading: [NumPy Tutorial](#)

Assignment: HW6 (Due 5/24)

WEEK 9 (05/27 – 05/31):

Session 1:

Lecture: Plotting with Matplotlib

Reading: [Matplotlib Tutorial](#)

Session 2:

Lecture: Handling data with Pandas

Reading: [Pandas Tutorial](#)

Assignment: HW7 (Due 5/31)

WEEK 10 (06/03 – 06/07)

Session 1:

Lecture: Handling geospatial data with Geopandas

Reading: [Geopandas Tutorial](#)

Session 2:

Lecture: Geovisualization

Assignment: HW8 (Due 6/7)

Finals Week (06/10-06/14)

Final Exam



PBPL XXX: Geovisualization for Public Policy

FACULTY INFORMATION:

Tony H. Grubestic (Instructor)
Center for Geospatial Sciences
School of Public Policy
900 University Ave, Riverside, CA 92507
Email: tony.grubestic@ucr.edu

Eddie Helderop (Exercise Coordinator)
Email: edward.helderop@ucr.edu

COURSE MEETING TIMES AND LOCATION:

This class meets in person from 8:00 am to 9:20 am on Mondays and Wednesdays in CHASS Interdisciplinary-North, Room 4023. Elements of this course will also include an online component via Canvas and Zoom. All assignments will utilize Internet technologies. We expect you to log into the Canvas course regularly.

OFFICE HOURS AND INSTRUCTOR COMMUNICATION:

Tony (by appointment)
Eddie (Office hours on Zoom: <https://ucr.zoom.us/j/2987782007>) 11 am to 12 pm on Wednesdays, or by appointment)

This course uses a "Three Before Me" policy for student-to-faculty or teaching-assistant communications. When questions arise during this class, please remember to check **three** sources for an answer **before** emailing your instructor or TA:

1. Course Syllabus
2. Announcements in Canvas
3. The Q & A Forum

This policy will help you in potentially identifying answers before either Eddie or I can get back to you, and it also helps us from answering similar questions or concerns multiple times.

Although your classmates may help answer questions, nothing in this forum constitutes official course policy. If there is a conflict between the Q&A forum and the information in the syllabus, always refer to the syllabus unless the instructor formally changes the information through an official course announcement. Please note that your instructor will respond to your Q&A Forum posts and your emails within 24-48 hours on business days.

We will send all instructor-related correspondence to your "@ucr.edu" email account. Forwarding emails to and from your UCR to a personal account is not recommended. Instructors **will not respond to any email address other than UCR account-addressed emails.**

NOTE: When emailing your instructor or TA, please include the course number "PBPL 180" in the subject of your email so we can prioritize it over other emails that are not course-related.

COURSE DESCRIPTION:

PBPL XXX, Geovisualization for Public Policy, provides students with intermediate-level skills and knowledge needed to understand the unique nature of spatial data and how one can apply spatial data analysis and geovisualization techniques to important public policy problems. In addition to providing students with foundational cartographic and spatial analysis skills, this course highlights the many potential ways to think creatively about public policy through a spatial lens and understand the challenges of using (sometimes) uncertain data to develop robust strategies and solutions for pressing social, environmental, and infrastructural problems and conveying solutions through visual means.

COURSE PREREQUISITE(S):

None

LEARNING GOALS:

Upon successful completion of the course, students should be able to:

1. Apply key cartographic standards to map creation and present a comprehensive knowledge of mapping grammar and syntax.
2. Understand data uncertainty and how it impacts geovisualization and spatial analysis tasks for developing public policy.
3. Minimize the influence of data uncertainty and error for constructing more robust spatial analyses and geovisualizations.
4. Independently develop and apply creative approaches for addressing crucial public policy problems through spatial analysis and mapping.
5. Design, implement, and communicate about a self-chosen spatial reasoning and policy analytics project by proposing a project idea, designing and executing experiments to support the proposed idea, writing a paper about the project, and presenting the project to peers at the end of the course. Characterize the process for data acquisition, storage, geovisualization, and clustering, as well as summative/predictive analytics;

A core element of this course will include learning how to use various mapping and visualization platforms, including Google Earth, GeoDa, and a commercial geographic information system (GIS), ArcGIS Pro, from Environmental Systems Research Institute (Esri).

REQUIRED BOOKS:

Field, K. (2018) Cartography. Esri Press. ISBN: 1589484398

OTHER REQUIRED RESOURCES:

A functioning computer, up-to-date within the last five years. We do not recommend using mobile devices such as tablets or smartphones with Canvas. Students can use the Canvas mobile app to check on the course occasionally, but the mobile app will not fully display the course. You must access the course regularly from a full-featured laptop or desktop computer.

You will need to have access to and be able to use the following hardware and software packages:

- ArcGIS Pro (free, see <https://ucr.maps.arcgis.com/home/index.html> for creating an account to access the software. Locations where ArcPro is available on campus: <https://storymaps.arcgis.com/stories/2726969cfae443d9b90bb625dc5e106f>

- Zoom
- R (v. 3.6.3 or later: <https://www.r-project.org/>)
- Blue Sky (<https://www.blueskystatistics.com/>) (GUI for R)
- PSPP (<https://www.gnu.org/software/pspp/>) (Open source SPSS)
- Python (v. 3.86 or later: <https://www.python.org/>)
- GeoDa (v. 1.22 or later: <http://geodacenter.github.io/>)
- Presentation software (PowerPoint, Keynote, or similar)
- Word processing software (Word, Pages, or similar)
- Web browsers (Chrome, Mozilla Firefox, or Safari)
- Adobe Acrobat Reader (free)

Running ArcGIS Pro:

This course requires that students install and use ArcGIS Pro, an industry-standard desktop GIS software suite produced by Esri. UCR students can obtain a stand-alone license for ArcGIS Pro and run it on their personal computers. Stand-alone ArcGIS Pro runs only on computers with x86 and x64-compatible Microsoft Windows processors. This limitation means some newer Windows 10 tablets cannot run ArcGIS Pro. Windows users can use the "Can You Run It" (<https://links.esri.com/run-arcgis-pro>) utility to check your system's hardware.

Suppose you are a Mac or Linux user. To use ArcGIS Pro, you will need a contemporary Mac (MacBook Pro, iMac, or Mac Pro) with a quad-core Intel processor, 256 GB storage, and 8 GB RAM or more is required. Mac systems configured with Apple Silicon (Mx) or non-Intel processors are not compatible until Microsoft Windows OS environments are supported on Apple processors. If you already have an incompatible Mac and want to run ArcGIS Pro, consider the following options:

- Connect to a supported on-premises hosted VM.
- Deploy and connect to a cloud-hosted VM.

For hardware requirements for the host machine, see the ArcGIS Pro system requirements. If you cannot view all the specifications for the host machine, you can use the Can You Run It (<https://links.esri.com/run-arcgis-pro>) utility to check your system's hardware.

Computers with ArcPro are also available in the following locations:

Rivera Library, 2nd floor learning commons computers
Orbach Library, 1st floor learning commons computers
Orbach Library, 1st floor near the Geospatial Resources area
Watkins 2111 and 2117 (both computer labs)

NOTE: Please do not underestimate the time required to get a copy of ArcGIS Pro operational on your personal machine. It is a headache every year for everybody. Get this going ASAP, especially if you use a Mac.

LEARNING ACTIVITIES:

Exam (25%): One midterm exam in this class will be worth 25% of your final grade. The examination includes multiple choice, true/false, and essay/application questions. We design these questions to evaluate your comprehension of urban theory, maps, map types, and their analytical foundations. Clarity of expression is a factor in assessing these questions. There are no make-up exams.

Exercises/Article Reviews (50%): There will be eight exercises/article reviews during the quarter, typically attached to some type of tutorial that precedes the assignment. The exercise or article review topic will relate to the lecture and/or class subject matter. This work is both challenging and time-consuming. Do not underestimate the time required to complete these assignments. There will be NO opportunity for making up these exercises. Grading will adhere to the rubric posted in Canvas. Each of these assignments is worth **25 points**.

Geovisualization Project (25%) This is ½ course-long project that will require a final report and presentation (**90 points**) to the class. Do not ask us what we want your project to be about. This assignment is an opportunity for you to select a topic that interests you. A one-page proposal of your paper is due on the 4th week of class (**10 points**). The proposal should be written in sentence form (not an outline) and should contain:

- A working title
- A brief description of the topic you plan to investigate
- A brief description of how will investigate the topic
- A brief hypothesis of what you expect to find for the results
- A bibliography of sources you have already found on this topic (10 minimum)
- A comprehensive description of where you will get data for analysis

The actual project report should adhere to the following guidelines:

- Typed, double-spaced, 1-inch margins on all sides, 11 or 12-point Calibri font. You must also have a separate cover sheet that includes names and contact information (UCR email).

- The report must be referenced (APA style); including complete and specific within-paper citations of all books, articles, and Internet sites consulted (if I can't look these references up... don't use them).

SUBMITTING ASSIGNMENTS AND LATE ASSIGNMENTS

All assignments are to be submitted by the due date. Late submissions will not be accepted unless:

1. the instructor granted an extension in advance of the due date;
2. providing documentation of an unforeseeable excused absence
3. Your instructor and TA retain the right of refusal on assignments. In other words, if you are turning in late work, we may not accept it.

Additionally:

4. Unless otherwise announced by the instructor, students must submit all assignments to Canvas. There will be a designated place to submit each assignment in Canvas. Do not submit an assignment via email.
5. Late submission of assignments is subject to penalty (see below). All assignments are due on Thursdays at 11:59 pm Pacific Standard Time. There are no exceptions. Schedule accordingly.

<u>Number of days late</u>	<u>Percentage points taken off</u>
1	20%
2	40%
3	60%
4	80%
>=5	100%

SUMMARY OF GRADED ASSESSMENTS:

Grading Policy: We base the final grade on the proportion of cumulative points you have earned over the quarter. There are a total of 400 points.

Section Exams:

Exam	100
Tutorials/Exercises/Reviews	200
Project	100
Total	400

FINAL COURSE GRADING SCALE:

Final Grades will be assigned using the following breakdown:

A	372 - 400
A-	360 - 371
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D+	268 - 279
D	252 – 267
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F	239 or below

ACADEMIC INTEGRITY:

1. Academic Dishonesty – Besides academic performance, we expect students to demonstrate honesty and integrity. We expect all submissions from students to be the original work product of the submitting student. Material that violates this requirement in any way or constitutes any form of dishonesty, cheating, fabrication, the facilitation of academic dishonesty, and/or plagiarism may result in the student receiving a failing grade in the course ('F') and initiating appropriate disciplinary action. The possible sanctions include but are not limited to, grade penalties, a permanent record on your transcript of academic dishonesty, loss of registration privileges, disqualification, and dismissal. Please see the official UCR Policy on Academic Integrity. It is accessible online at:

<https://senate.ucr.edu/appendix/section/1226/06>

2. Electronic Review – To ensure compliance with academic integrity policies, we will submit all written assignments to TurnItIn, or a similar plagiarism detection program. Submission of any writing assignment in the course constitutes consent by the student for the instructor to upload the paper to check against any anti-plagiarism database.
3. Citation Style – We require students to use the citation style and format of either the American Psychological Association (APA) or the American Sociological Association (ASA). It is acceptable to cite legal materials (cases, statutes, regulations, etc.) following the style specified in *The Bluebook* (<https://www.legalbluebook.com/>).
4. Avoiding Plagiarism – Some students truly do not understand plagiarism and, therefore, plagiarize unwittingly or unintentionally. However, ignorance is not an excuse for unethical academic conduct. To combat such ignorance, here are rules and resources to help you avoid any problems with plagiarism. Of course, these rules apply regardless of the citation form or style you may be using.
 - a. Direct Quotations – Whenever you directly quote someone else, you must cite the source of the material you are quoting. Moreover, you must put the material in quotation marks or otherwise set it off in an indented quote so the reader knows what words are yours and what words are quoted. It is unacceptable to use the words of others and only partially quote the original source. This rule is true even if you cite the source in the text and your references section!
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 - d. Collaborative Work – If you collaborate on any work with someone else and fail to acknowledge that collaboration, you are guilty of plagiarism. If you have received permission from your instructor to collaborate on some assignment, ensure all of the contributors' names appear on the submission.
 - e. Altering or Revising Another's Work – If you alter or revise the work done by someone and submit that work as your own, you have plagiarized. Similarly, if you allow someone else to alter or revise the work that you have done and then allow that person to submit it as his or her own work, you are both guilty of plagiarism. Work not entirely your own must be credited by citation, both in text and on your references page.
 - f. Altering or Revising Your Own Prior Work – You should also be aware that altering or revising your own work for another class or another instructor and not bringing it to the attention of the instructor to whom you are submitting the revised work is also academic dishonesty. If, for example, you have two classes that require a term paper, and you can write one paper that meets the requirements of both classes, you may not submit that paper to both instructors unless you get permission to do so in advance. Similarly, if you wrote a paper several quarters ago that can be revised and submitted in satisfaction of a paper requirement for a course in which you are currently enrolled, doing so is academic dishonesty unless you get the advanced permission of your instructor to do so.
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instructor will file a formal incident report to the Student Conduct & Academic Integrity Programs office.

3. The Office of Student Rights and Responsibilities accepts [incident reports](#) from students, faculty, staff, or others who believe that a student or student organization may have violated the Student Code of Conduct.
4. All lectures, exercises, and assignment questions are the instructor's intellectual property. Therefore, do not post completed assignments on the web or distribute them unless explicitly requested by the instructor.
5. This class is a [Wikipedia Free Zone](#). Under no circumstances can students use Wikipedia, Infoplease, About.com, or other sites that are considered open "information commons" for assigned work or term papers. Failure to observe this rule will result in a 10% penalty, **FOR EACH INSTANCE**, on a given assignment.
6. To reiterate, notify the instructor **BEFORE** an assignment is due if an urgent situation arises and the assignment will not be submitted on time. Published assignment due dates (Pacific Standard Time) are firm. Please follow the appropriate University policies to request an [accommodation for religious practices](#) or to accommodate a missed assignment due to University-sanctioned activities.
7. Unless otherwise announced, all assignments **MUST** be submitted to the designated area of Canvas. Do not submit an assignment via email. We will not accept it.
8. There is a limited timeline for [dropping or adding](#) the course. Consult with your advisor and notify your instructor to add or drop this course. If you are considering a withdrawal, review the following UCR policies: <https://registrar.ucr.edu/registering/cancellation-withdrawal-absence-readmission>
9. Grade disputes must first be addressed by discussing the situation with the instructor. If the dispute is not resolved with the instructor, please consult this page as a resource for the next steps: <https://graduate.ucr.edu/regulations-and-procedures>

SPECIAL LEARNING NEEDS:

In compliance with the Rehabilitation Act of 1973, Section 504, and the Americans with Disabilities Act of 1990, professional disability specialists and support staff at the Student Disability Resource Centers (SDRC) facilitate a comprehensive range of academic support services and accommodations for qualified students with disabilities. SDRC staff coordinate the transition from high schools and community colleges, provide in-service training for faculty and staff, resolve accessibility issues, conduct community outreach, and collaborate with all UCR campuses regarding disability policies, procedures, and accommodations.

1. [Establishing Eligibility for Disability Accommodations](#) – Students who feel they will need disability accommodations in this class but have not registered with the SDRC should contact the SDRC immediately. Students should contact the DRC on the campus where their class is being held.
2. [Disability Accommodations](#) – Prior to receiving any disability accommodations, the SDRC requires eligibility verification. Once registered with the SDRC, students with disabilities must meet with me to discuss what reasonable accommodations they will need to be successful in this course. For students with known disabilities, as this course begins, I encourage you to request accommodations at the beginning of the quarter, either during office hours or by appointment. For disabilities that arise after the course has begun, students should meet with me as soon as

possible to arrange accommodations for their learning needs. Disability information is confidential.

DUE DATES, ABSENCES, AND EXCUSES:

Planned Excused Absences - **The course due dates are not flexible.** Suppose you know that a future event will interfere with your ability to complete coursework. In that case, you are encouraged to contact the instructor to make arrangements to complete the assignments. Provided that student informs the instructor of the reason for the absence at least one week in advance of the absence, the instructor will attempt to make arrangements only when absences are due to any of the following three reasons:

- a. Religious reasons;
- b. Jury duty or similar governmental obligation (a copy of the summons or other official paperwork must be provided); and
- c. University-sanctioned and/or university-approved activities (e.g., artistic performances, participation in research conferences, intercollegiate athletic activities, student government, required class field trips, etc.).

MAKE-UP WORK:

If you are seriously ill or injured in a manner that prevents you from completing your work, you should email me to inform me that you are sick or injured as soon as possible. The same is true for an immediate family member's death, injury, or serious illness. Please be advised that for missed work based on an emergency... you may be required to submit corroboratory documentation, such as a note from a physician documenting the illness or injury (notes from family members will not suffice), a death certificate or other proof of a family member's death, etc.

STUDENT CONDUCT:

The University and I expect all students to comport themselves professionally. Toward that end, I expect everyone to abide by the following rules of etiquette:

- Although you are welcome to disagree with the professor or your classmates, we expect everyone to participate respectfully. Students who engage in personal attacks, use rude, insulting, or disrespectful language, or engage in disruptive or threatening behavior may face disciplinary action.
- Further, be aware that it is easy to misconstrue and misunderstand statements in online forums. Try your best to be clear about what you are saying, and expect that people may understand your contribution differently than you intended. Text is not always the best medium for conversation. The tone of voice (e.g., sarcasm, humor, etc.) does not always translate.
- Please use proper grammar, spelling, and punctuation in all course-related communications, whether in the discussion boards, emails to the instructor, or assignments. "Text lingo" and other invented spellings are not allowed.

- What To Call Me – I don't care much for titles, so "Tony" is fine. If that freaks you out, "Dr. G" or "Dr. Tony" works too.

SEXUAL VIOLENCE AND HARASSMENT:

Title IX is a federal law that provides that no person be excluded based on sex from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity. Title IX and university policy clearly state that sexual violence and harassment based on sex is prohibited. An individual who believes they have been subjected to sexual violence or harassed based on sex can seek support, including counseling and academic support, from the university. If you or someone you know has been harassed on the basis of sex or sexually assaulted, you can find information and resources at <https://titleix.ucr.edu/>

TECHNICAL SUPPORT:

For technical assistance 24 hours a day, 7 days a week, please contact ITS: <https://its.ucr.edu/>

SYLLABUS CHANGES:

I view this course syllabus as an educational contract between the students in the course and me. Accordingly, I will make every effort to avoid changing the course schedule, but the possibility exists that unforeseen events will make syllabus changes necessary. Therefore, I reserve the right to change the syllabus other than the attendance and grading policies.

STUDENT SUCCESS

When given the opportunity, I expect students to engage with the material in the classroom and online. Students who do not regularly check in with the course will not do well in this class. Furthermore, those who do not read the assigned material carefully will also do poorly. All assigned readings and lecture material are examinable. If you have problems with the course material or assignments or seem to be getting behind, please see the instructor as soon as possible.

To summarize:

- Check the course daily
- Read announcements
- Read and respond to the course email messages as needed
- Complete assignments by the due dates specified
- Communicate regularly with your instructor and peers
- Create a study and/or assignment schedule to stay on track

COURSE SCHEDULE:

WEEK 1

Syllabus

Lecture: (1a) What is Geovisualization?

Reading: Maciejewski, R. (2021). Geovisualization. In Handbook of regional science (pp. 1651-1670). Berlin, Heidelberg: Springer Berlin Heidelberg.

Lecture: (1b) Public Policy Through a Spatial Lens

WEEK 2

Lecture: Spatial Data and Cartography

Reading: Field, Chapter 1

Exercise 1 Due

Article Review 1 Due: Kainz, W. (2020). Cartography and the others—aspects of a complicated relationship. *Geo-Spatial Information Science*, 23(1), 52-60.

WEEK 3

Lecture: Core Geovisualization Concepts and Applications

Reading: Field, Chapter 2 and 3

Article Review 2 Due: Robinson, A. C., Demšar, U., Moore, A. B., Buckley, A., Jiang, B., Field, K., ... & Sluter, C. R. (2017). Geospatial big data and cartography: research challenges and opportunities for making maps that matter. *International Journal of Cartography*, 3(sup1), 32-60.

WEEK 4

Lecture: Spatial Data Uncertainty and Error

Reading: Field, Chapter 4

Exercise 2 Due

Article Review 3 Due: Chrisman, N. R. (1991). *The error component in spatial data. Geographical Information Systems*, 1(12), 165-174.

Mini Project Proposal Due

WEEK 5

Lecture: None (see online review via Canvas)

Reading: Field, Chapter 5 (no testing on this chapter)

EXAM

WEEK 6

Lecture: (6a) Mapping Techniques

Reading: Field, Chapter 6

Lecture: (6b): Mapping Techniques Cont...

WEEK 7

Lecture: 3D Geovisualization

Reading: Field, Chapter 7

Exercise 3 Due

Article Review 4 Due: Degbelo, A. (2022). FAIR geovisualizations: definitions, challenges, and the road ahead. *International Journal of Geographical Information Science*, 36(6), 1059-1099.

WEEK 8

Lecture: Geovisualization and Public Policy in Action

Reading: Field, Chapter 9

Interim Project Report Due

WEEK 9

Lecture: Connecting Geovisualization and Public Policy in the Real World

Reading: Grubestic, T. H., & Durbin, K. M. (2020). The complex geographies of telelactation and access to community breastfeeding support in the state of Ohio. *PLoS One*, 15(11), e0242457.

Exercise 4 Due

Virtual WEEK 10

Lecture: None

Reading: None

Final Projects Due. Each student will present their Project on Zoom.



PBPL XXX: Human-Centered Spatial Data Science

FACULTY INFORMATION:

Tony H. Grubestic (Instructor)
Center for Geospatial Sciences
School of Public Policy
900 University Ave, Riverside, CA 92507
Email: tony.grubestic@ucr.edu

Eddie Helderop (Exercise Coordinator)
Email: edward.helderop@ucr.edu

COURSE MEETING TIMES AND LOCATION:

This class meets in person from 8:00 am to 9:20 am on Mondays and Wednesdays in CHASS Interdisciplinary-North, Room 4023. Elements of this course will also include an online component via Canvas and Zoom. All assignments will utilize Internet technologies. We expect you to log into the Canvas course regularly.

OFFICE HOURS AND INSTRUCTOR COMMUNICATION:

Tony (by appointment)
Eddie (Office hours on Zoom: <https://ucr.zoom.us/j/2987782007>) 11 am to 12 pm on Wednesdays, or by appointment)

This course uses a "Three Before Me" policy for student-to-faculty or teaching-assistant communications. When questions arise during this class, please remember to check **three** sources for an answer **before** emailing your instructor or TA:

1. Course Syllabus
2. Announcements in Canvas
3. The Q & A Forum

This policy will help you in potentially identifying answers before either Eddie or I can get back to you, and it also helps us from answering similar questions or concerns multiple times.

Although your classmates may help answer questions, nothing in this forum constitutes official course policy. If there is a conflict between the Q&A forum and the information in the syllabus, always refer to the syllabus unless the instructor formally changes the information through an official course announcement. Please note that your instructor will respond to your Q&A Forum posts and your emails within 24-48 hours on business days.

We will send all instructor-related correspondence to your "@ucr.edu" email account. Forwarding emails to and from your UCR to a personal account is not recommended. Instructors **will not respond to any email address other than UCR account-addressed emails.**

NOTE: When emailing your instructor or TA, please include the course number "PBPL 180" in the subject of your email so we can prioritize it over other emails that are not course-related.

COURSE DESCRIPTION:

PBPL XXX, Introduction to Human-Centered Spatial Data Science, provides students with the skills and knowledge needed to explore and analyze 'big data' with an understanding of technical, social, and ethical considerations. It also allows students to appreciate better how one can use spatial theories, data, and analytics to develop strategies, plans, and policies to improve business and community operations and public policy.

COURSE PREREQUISITE(S):

PBPL 010: Introduction to Geographic Information Systems

LEARNING GOALS:

Upon successful completion of the course, students should be able to:

1. Characterize the process for data acquisition, storage, visualization, and clustering, as well as summative/predictive analytics;
2. Identify the societal and ethical challenges and concerns for effectively harnessing 'big' data, including issues of justice, diversity, equity, and inclusion;
3. Evaluate data science methods for tasks including regression, cluster analysis, and exploratory spatial data analysis;
4. Enhance data analysis skills using a range of software packages, Python and R;
5. Design, implement, and communicate about a self-chosen human-centered spatial data science project by proposing a project idea, designing and executing experiments to support the proposed idea, writing a paper about the project, and presenting the project to peers at the end of the course.

A core element of this course will include learning how to use various mapping and visualization platforms, including Google Earth, GeoDa, and a commercial geographic information system (GIS), ArcGIS Pro, from Environmental Systems Research Institute (Esri).

REQUIRED BOOKS:

Provost, F. and T. Fawcett. (2013). *Data Science for Business: What You Need to Know About Data Mining and Data-Analytic Thinking*. O'Reilly Media. ISBN: 978-1449361327

OTHER REQUIRED RESOURCES:

A functioning computer, up-to-date within the last five years. We do not recommend using mobile devices such as tablets or smartphones with Canvas. Students can use the Canvas mobile app to check on the course occasionally, but the mobile app will not fully display the course. You must access the course regularly from a full-featured laptop or desktop computer.

You will need to have access to and be able to use the following hardware and software packages:

- ArcGIS Pro (free, see <https://ucr.maps.arcgis.com/home/index.html> for creating an account to access the software. Locations where ArcPro is available on campus: <https://storymaps.arcgis.com/stories/2726969cfae443d9b90bb625dc5e106f>)
- Zoom
- R (v. 3.6.3 or later: <https://www.r-project.org/>)
- Blue Sky (<https://www.blueskystatistics.com/>) (GUI for R)
- PSPP (<https://www.gnu.org/software/pspp/>) (Open source SPSS)
- Python (v. 3.86 or later: <https://www.python.org/>)
- GeoDa (v. 1.22 or later: <http://geodacenter.github.io/>)
- Presentation software (PowerPoint, Keynote, or similar)
- Word processing software (Word, Pages, or similar)
- Web browsers (Chrome, Mozilla Firefox, or Safari)
- Adobe Acrobat Reader (free)

Running ArcGIS Pro:

This course requires that students install and use ArcGIS Pro, an industry-standard desktop GIS software suite produced by Esri. UCR students can obtain a stand-alone license for ArcGIS Pro and run it on their personal computers. Stand-alone ArcGIS Pro runs only on computers with x86 and x64-compatible Microsoft Windows processors. This limitation means some newer Windows 10 tablets cannot run ArcGIS Pro. Windows users can use the "Can You Run It" (<https://links.esri.com/run-arcgis-pro>) utility to check your system's hardware.

Suppose you are a Mac or Linux user. To use ArcGIS Pro, you will need a contemporary Mac (MacBook Pro, iMac, or Mac Pro) with a quad-core Intel processor, 256 GB storage, and 8 GB RAM or more is required. Mac systems configured with Apple Silicon (Mx) or non-Intel processors are not compatible until Microsoft Windows OS environments are supported on Apple processors. If you already have an incompatible Mac and want to run ArcGIS Pro, consider the following options:

- Connect to a supported on-premises hosted VM.
- Deploy and connect to a cloud-hosted VM.

For hardware requirements for the host machine, see the ArcGIS Pro system requirements. If you cannot view all the specifications for the host machine, you can use the Can You Run It (<https://links.esri.com/run-arcgis-pro>) utility to check your system's hardware.

Computers with ArcPro are also available in the following locations:

Rivera Library, 2nd floor learning commons computers
Orbach Library, 1st floor learning commons computers
Orbach Library, 1st floor near the Geospatial Resources area
Watkins 2111 and 2117 (both computer labs)

NOTE: Please do not underestimate the time required to get a copy of ArcGIS Pro operational on your personal machine. It is a headache every year for everybody. Get this going ASAP, especially if you use a Mac.

LEARNING ACTIVITIES:

Exam (25%): One midterm exam in this class will be worth 25% of your final grade. The examination includes multiple choice, true/false, and essay/application questions. We design these questions to evaluate your comprehension of urban theory, maps, map types, and their analytical foundations. Clarity of expression is a factor in assessing these questions. There are no make-up exams.

Exercises/Article Reviews (50%): There will be eight exercises/article reviews during the quarter, typically attached to some type of tutorial that precedes the assignment. The exercise or article review topic will relate to the lecture and/or class subject matter. This work is both challenging and time-consuming. Do not underestimate the time required to complete these assignments. There will be NO opportunity for making up these exercises. Grading will adhere to the rubric posted in Canvas. Each of these assignments is worth **25 points**.

HCSDS Project (25%) This is ½ course-long project that will require a final report and presentation (**90 points**) to the class. Do not ask us what we want your project to be about. This is an opportunity for you to select a topic that interests you. A one-page proposal of your paper is due on the 4th week of class (**10 points**). The proposal should be written in sentence form (not an outline) and should contain:

- A working title
- A brief description of the topic you plan to investigate
- A brief description of how you will investigate the topic
- A brief hypothesis of what you expect to find for the results
- A bibliography of sources you have already found on this topic (10 minimum)
- A comprehensive description of where you will get data for analysis

The actual project report should adhere to the following guidelines:

- Typed, double-spaced, 1-inch margins on all sides, 11 or 12-point Calibri font. You must also have a separate cover sheet that includes names and contact information (UCR email).

- The report must be referenced (APA style); including complete and specific within-paper citations of all books, articles, and Internet sites consulted (if I can't look these references up... don't use them).
- We will post more information on this assignment in Canvas during the quarter.

SUBMITTING ASSIGNMENTS AND LATE ASSIGNMENTS

All assignments are to be submitted by the due date. Late submissions will not be accepted unless:

1. the instructor granted an extension in advance of the due date;
2. providing documentation of an unforeseeable excused absence
3. Your instructor and TA retain the right of refusal on assignments. In other words, if you are turning in late work, we may not accept it.

Additionally:

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 - e. Altering or Revising Another's Work – If you alter or revise the work done by someone and submit that work as your own, you have plagiarized. Similarly, if you allow someone else to alter or revise the work that you have done and then allow that person to submit it as his or her own work, you are both guilty of plagiarism. Work not entirely your own must be credited by citation, both in text and on your references page.
 - f. Altering or Revising Your Own Prior Work – You should also be aware that altering or revising your own work for another class or another instructor and not bringing it to the attention of the instructor to whom you are submitting the revised work is also academic dishonesty. If, for example, you have two classes that require a term paper, and you can write one paper that meets the requirements of both classes, you may not submit that paper to both instructors unless you get permission to do so in advance. Similarly, if you wrote a paper several quarters ago that can be revised and submitted in satisfaction of a paper requirement for a course in which you are currently enrolled, doing so is academic dishonesty unless you get the advanced permission of your instructor to do so.
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COURSE SCHEDULE:

WEEK 1

Syllabus

Lecture: (1a) Why Should We Care About Data Science (+ Humans)?

Reading: Chapter 1 (Provost & Fawcett)

Lecture: (1b) Data Science Problems and Solutions

Reading: Chapter 2 (Provost & Fawcett)

Article Review 1 Due:

Cao, L. (2017). Data science: challenges and directions. *Communications of the ACM*, 60(8), 59-68

WEEK 2

Lecture: Reproducibility and Accountability + Prepping Data and Models

Reading:

Johnson, Isaac L., et al. (2016). Not at home on the range: Peer production and the urban/rural divide. *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems*.

Exercise 1 Due

WEEK 3

Lecture: Math Boot Camp + Scientific Method + Correlation + Bivariate Regression

Reading: TBD

Article Review 2 Due:

Yamashita, T., & Kunkel, S. R. (2010). The association between heart disease mortality and geographic access to hospitals: county level comparisons in Ohio, USA. *Social Science & Medicine*, 70(8), 1211-1218.

WEEK 4

Lecture: Predictive Modeling (Multivariate Regression Analysis)

Reading: Chapter 3 (Provost & Fawcett)

Exercise 2 Due

Article Review 3 Due:

Florida, R. (2002). The economic geography of talent. *Annals of the Association of American Geographers*, 92(4), 743-755.

Mini Project Proposal Due

WEEK 5

Lecture: None (see online review via Canvas)

Reading: None

EXAM

WEEK 6

Lecture: (6a) More Predictive Modeling and Multivariate Regression;

Reading: Chapter 3 (Provost & Fawcett)

Lecture: (6b): Spatial Analysis (review)

WEEK 7

Lecture: Logistic Regression;

Reading: Chapters 4 and 5 (Provost & Fawcett)

Exercise 3 Due

Article Review 4 Due

Grubestic, T. H. (2003). Inequities in the broadband revolution. *The Annals of Regional Science*, 37(2), 263-289.

WEEK 8

Lecture: Cluster Analysis + Fuzzy Clustering

Reading: Chapter 6 (Provost & Fawcett)

Interim Project Report Due

WEEK 9

Lecture: Advanced Machine Learning + Visualization

Reading: Chapter 7 (Provost & Fawcett)

Exercise 4 Due

Virtual WEEK 10

Lecture: None

Reading: None

Final Projects Due. Each student will present their Project on Zoom.



PBPL XXX: Machine Learning and Deep Learning with GIS

FACULTY INFORMATION:

Wei Kang (Instructor)
Center for Geospatial Sciences
School of Public Policy
900 University Ave, Riverside, CA 92507
Email: wei.kang@ucr.edu

COURSE MEETING TIMES AND LOCATION:

This class meets in person from XX pm to XX pm on XX in CHASS Interdisciplinary-South, Room XX. All assignments will utilize Internet technologies (e.g., Canvas, GitHub). We expect you to log into the Canvas course regularly.

OFFICE HOURS AND INSTRUCTOR COMMUNICATION:

Wei (XXX in INTS 4143 or by appointment)

This course uses a "Three Before Me" policy for student-to-faculty or teaching-assistant communications. When questions arise during this class, please remember to check **three** sources for an answer **before** emailing your instructor or TA:

1. Course Syllabus
2. Announcements in Canvas
3. The Q & A Forum

This policy will help you in potentially identifying answers before we can get back to you, and it also helps us from answering similar questions or concerns multiple times.

Although your classmates may help answer questions, nothing in this forum constitutes official course policy. In the event of a conflict between the information on the Q&A forum and the information in the syllabus, always refer to the syllabus unless the instructor formally changes the information in the syllabus through an official course announcement. Please note that your instructor will respond to your Q&A Forum posts and your emails within 24-48 hours on business days.

All instructor correspondence will be sent to your "@ucr.edu" email account. Forwarding emails to and from your UCR to a personal account is not recommended. Instructors **will not respond to any email address other than UCR account-addressed emails.**

NOTE: When emailing your instructor or TA, please include the course number "PBPL XXX" in the subject of your email, so we can prioritize it over other emails that are not course related.

COURSE DESCRIPTION:

GeoAI is an interdisciplinary field between geography and artificial intelligence (AI) that provides novel approaches for addressing various geospatial problems in the natural environment and our human society. This course will discuss machine learning concepts and models and how to use them to address geospatial problems. This course has an emphasis on both theoretical concepts and hands-on skills.

COURSE PREREQUISITE(S):

PBPL XXX: Geoprogramming

LEARNING GOALS:

Upon successful completion of the course, students should be able to:

- Demonstrate an understanding of advanced machine learning, deep learning, and GeoAI concepts.
- Understand the motivation and inner logic of the main methodological approaches of machine learning.
- Critically evaluate the suitability of specific machine learning models, their capabilities, how they can help answer questions of interest, and how the technique may impact issues of justice, diversity, equity, and inclusion.
- Apply machine learning, deep learning, and GIS methods to solve geospatial problems and inform policymaking.
- Work independently using machine learning and GIS tools to extract valuable insights from new datasets.

REQUIRED BOOKS:

- (ML) Aurélien Géron (2022) Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow: Concepts, Tools, and Techniques to Build Intelligent Systems. Third Edition. Copyright 2023 Aurélien Géron, 978-1-098-12597-4. (Ebook freely available through UCR library)
- (GAI) Gao, S., Yingjie Hu, and Wenwen Li (2010) Handbook of Geospatial Artificial Intelligence. (Ebook freely available through UCR library)

OTHER REQUIRED RESOURCES:

A functioning computer, up-to-date within the last five years. We do not recommend mobile devices such as tablets or smartphones with Canvas. Students can use the Canvas mobile app to check on the course occasionally, but the mobile app will not fully display the course. You must access the course regularly from a full-featured laptop or desktop computer.

You will need to have access to and be able to use the following hardware and software packages:

- Zoom
- Microsoft Windows
- Presentation software (PowerPoint, Keynote, or similar)
- Word processing software (Word, Pages, or similar)
- Web browsers (Chrome, Mozilla Firefox, or Safari)
- Adobe Acrobat Reader (free)
- Adobe Flash Player (free)
- Microphone and speaker

Core software:

Python 3, Anaconda 3, Jupyter Notebook/Lab/Hub, Git/GitHub, ArcGIS Pro

We will cover the installation of these packages/software early in the semester, and you are strongly encouraged to bring your laptop to class so that you can work with these packages outside the classroom. We will use Jupyter Notebook to interact with Python 3, including class lectures and assignments. We will introduce Jupyter Notebook at the beginning of the course.

LEARNING ACTIVITIES:

1. **Quizzes (15%):** Each week, there will be a quiz on Canvas. The quiz consists of 3-4 multiple-choice questions. The questions check your understanding of the theoretical and applied material from the lecture, reading, and hands-on programming. You will have two attempts at each quiz. The higher score will be counted toward your final grade.
2. **Lab Tutorials (15%):** Each lab tutorial will have a mini-assignment. The mini-assignment will ask you to submit a screenshot of the Jupyter Notebook after you finish a specific step of a lab tutorial.
3. **Empirical Exercises (50%):** We will have four hands-on exercises to apply the machine learning concepts and tools from class to geospatial data for addressing policy-relevant questions. This work is both challenging and time-consuming. Do not underestimate the time required to complete these assignments. Collaboration on exercises is encouraged with the understanding that you alone are responsible for mastering the material.
4. **Student chapter presentation (15%) and participation (5%):** Each student will read one book chapter from GAI and present it in class (10 min presentation + 5 min Q&A). 1-2 presentations will be given per week throughout the quarter. You will be asked to choose the chapter and presentation date early in the semester.

SUBMITTING ASSIGNMENTS AND LATE ASSIGNMENTS

All assignments are to be submitted by the due date. Late submissions will not be accepted unless:

1. the instructor granted an extension in advance of the due date;
2. providing documentation of an unforeseeable excused absence
3. Your instructor and TA retain the right of refusal on assignments. In other words, if you are turning in late work, we may not accept it.

Additionally:

4. Unless otherwise announced by the instructor, students must submit all assignments to Canvas. There will be a designated place to submit each assignment in Canvas. Do not submit an assignment via email.
5. The first assignment gets a free 24-hour extension to accommodate potential technology issues.
6. Late submission of assignments is subject to penalty (see below). All assignments are due on Thursdays at 11:59 pm Pacific Standard Time. There are no exceptions. Schedule accordingly.

<u>Number of days late</u>	<u>Percentage points taken off</u>
1	20%
2	40%
3	60%
4	80%
>=5	100%

SUMMARY OF GRADED ASSESSMENTS:

Grading Policy: We base the final grade on the proportion of cumulative points you have earned over the quarter.

FINAL COURSE GRADING SCALE:

A+ (97–100), A (93–96), A- (90–92), B+ (87–89), B (83–86), B- (80–82), C+ (77–79), C (73–76), C- (70–72), D+ (67–69), D (65–66), D- (65–60), F (below 60).

ACADEMIC INTEGRITY:

1. Academic Dishonesty – Besides academic performance, we expect students to demonstrate honesty and integrity. We expect all submissions from students to be the original work product of the submitting student. Material that violates this requirement in any way or constitutes any form of dishonesty, cheating, fabrication, the facilitation of academic dishonesty, and/or plagiarism may result in the student receiving a failing grade in the course ('F') and initiating appropriate disciplinary action. The possible sanctions include but are not limited to, grade penalties, a permanent record on your transcript of academic dishonesty, loss of registration privileges, disqualification, and dismissal. Please see the official UCR Policy on Academic Integrity. It is accessible online at:

<https://senate.ucr.edu/appendix/section/1226/06>

2. Electronic Review – To ensure compliance with academic integrity policies, we will submit all written assignments to TurnItIn, or a similar plagiarism detection program. Submission of any writing assignment in the course constitutes consent by the student for the instructor to upload the paper to check against any anti-plagiarism database.
3. Citation Style – We require students to use the citation style and format of either the American Psychological Association (APA) or the American Sociological Association (ASA). It is acceptable to cite legal materials (cases, statutes, regulations, etc.) following the style specified in *The Bluebook* (<https://www.legalbluebook.com/>).
4. Avoiding Plagiarism – Some students may not understand plagiarism and, therefore, plagiarize unwittingly or unintentionally. However, ignorance is not an excuse for unethical academic conduct. To combat such ignorance, here are rules and resources to help you avoid any problems with plagiarism. Of course, these rules apply regardless of the citation form or style you may be using.
 - a. Direct Quotations – Whenever you directly quote someone else, you must cite the source of the material you are quoting. Moreover, you must put the material in quotation marks or otherwise set it off in an indented quote so the reader knows what words are yours and what words are quoted. It is unacceptable to use the words of others and only partially quote the original source. This rule remains true even if you cite the source in the text and your references section!
 - b. Paraphrasing/Indirect Quotations – Whenever you indirectly quote someone else (i.e., you paraphrase the work of another), you must cite the source of the material from which you are paraphrasing. However, minor structure or word changes do not mean your work is original. Why? Because the idea you are expressing is not your own but someone else's.
 - c. Using Other's Ideas – Even if you compose an entire paragraph of writing in your own words (i.e., neither quoted nor paraphrased), if the idea you are expressing in that paragraph is not your own original idea, you must provide a citation to the source from which you obtained this idea.
 - d. Collaborative Work – If you collaborate on any work with someone else and fail to acknowledge that collaboration, you are guilty of plagiarism. If you have received permission

from your instructor to collaborate on some assignment, ensure all contributors' names appear on the submission.

- e. Altering or Revising Another's Work – If you alter or revise the work done by someone and submit that work as your own, you have plagiarized. Similarly, if you allow someone else to alter or revise the work that you have done and then allow that person to submit it as his or her own work, you are both guilty of plagiarism. Work not entirely your own must be credited by citation, both in text and on your references page.
- f. Altering or Revising Your Own Prior Work – You should also be aware that altering or revising your own work for another class or another instructor and not bringing it to the attention of the instructor to whom you are submitting the revised work is also academic dishonesty. If, for example, you have two classes that require a term paper, and you can write one paper that meets the requirements of both classes, you may not submit that paper to both instructors unless you get permission to do so in advance. Similarly, if you wrote a paper several quarters ago, that can be revised and submitted in satisfaction of a paper requirement for a course in which you are currently enrolled, doing so is academic dishonesty unless you get the advanced permission of your instructor to do so.
- g. AI challenge – This course emphasizes critical thinking and problem-solving skills, some of which generative AI can mimic (such as Google Bard or ChatGPT). The vitality of a campus community relies on academic honesty and the integrity of intellectual work. The use of generative AI in this course can undermine your learning, limit opportunities for intellectual growth, and impact your performance on in-class assessments. Generative AI also can interfere with a fair and accurate assessment of your work. Therefore, AI should never replace your thinking or research, and all work in this course must be your own. To achieve the best learning outcomes in this class and be fair with everyone in grading, AI cannot be used in the Exam, Quiz, or any other assignments (with actual or potential credits) in this class. Violation of the policy will result in zero credit for the assignment and a substantially reduced grade (most likely "F") for the entire course.

IMPORTANT COURSE POLICIES

1. Required behavior standards are listed in the [Student Code of Conduct and Student Disciplinary Procedures](#), [Computer, Internet and Electronic Communications Policy](#). Anyone in violation of these policies is subject to sanctions.
2. Students are entitled to receive instruction free from interference by other class members. If the instructor identifies disruptive behavior in the classroom, it will be documented, and the instructor will file a formal incident report to the Student Conduct & Academic Integrity Programs office.
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COURSE SCHEDULE:

WEEK 1 (04/01 – 04/05)

Lecture: (1) Syllabus; (2) Machine Learning and GIS

Reading: ML 1

Lab 1: Python, Jupyter Notebook, ML 1 (Due 4/12)

Quiz 1 (Due 4/19)

WEEK 2 (04/08 – 04/12):

Lecture: Classification and Regression

Reading: ML 2, 3, 4

Lab 2: ML 2, 3 4(Due 4/19)

Quiz 2 (Due 4/19)

Student presentation

WEEK 3 (04/15 – 04/19):

Lecture: Support Vector Machines

Reading: ML 5

Lab 3: ML 5 (Due 4/26)

Quiz 3 (Due 4/26)

Student presentation

Empirical Exercise 1 (Due 5/5)

WEEK 4 (04/22 – 04/26):

Lecture: Decision Trees and Random Forests

Reading: ML 6, 7

Lab 4: ML 6, 7 (Due 5/5)

Quiz 4 (Due 5/5)

Student presentation

WEEK 5 (05/01 – 05/05)

Lecture: Dimensionality Reduction and Unsupervised Learning

Reading: ML 8, 9

Lab 5: ML 8, 9 (Due 5/10)

Quiz 5 (Due 5/10)

Student presentation

WEEK 6 (05/06 – 05/10)

Lecture: Neural Network and Deep Learning

Reading: ML 10, 11

Lab 6: ML 10, 11 (Due 5/17)

Quiz 6 (Due 5/17)

Student presentation

Empirical Exercise 2 (Due 5/24)

WEEK 7 (05/13 – 05/17)

Lecture: Diving into Tensorflow and ArcGIS GeoAI toolbox

Reading: ML 12, 13

Lab 7: ML 12, 13 (Due 5/24)

Quiz 7 (Due 5/24)

Student presentation

WEEK 8 (05/20 – 05/24)

Lecture: Convolutional Neural Networks

Reading: ML 14

Lab 7: ML 14

Quiz 7 (Due 5/31)

Student presentation

Empirical Exercise 3 (Due 6/7)

WEEK 9 (05/27 – 05/31)

Lecture: Recurrent Neural Networks

Reading: ML 15, 16

Lab: ML 15, 16

Quiz 9 (Due 6/7)

Student presentation

Empirical Exercise 4 (Due 6/12)

WEEK 10 (06/03 – 06/07)

Lecture: Autoencoders, GANs, and Diffusion Models

Reading: ML 17

Lab: ML 17

Quiz 10 (Due 5/17)

Finals Week (06/10-06/14)



PBPL XXX: GIS for Urban Transportation

FACULTY INFORMATION:

Tony H. Grubestic (Instructor)
Center for Geospatial Sciences
School of Public Policy
900 University Ave, Riverside, CA 92507
Email: tony.grubestic@ucr.edu

COURSE MEETING TIMES AND LOCATION:

This class meets in person from 8:00 am to 9:20 am on Mondays and Wednesdays in CHASS Interdisciplinary-North, Room 4023. Elements of this course will also include an online component via Canvas and Zoom. All assignments will utilize Internet technologies. We expect you to log into the Canvas course regularly.

OFFICE HOURS AND INSTRUCTOR COMMUNICATION:

Tony (by appointment)
Eddie (Office hours on Zoom: <https://ucr.zoom.us/j/2987782007>) 11 am to 12 pm on Wednesdays, or by appointment)

This course uses a "Three Before Me" policy for student-to-faculty or teaching-assistant communications. When questions arise during this class, please remember to check **three** sources for an answer **before** emailing your instructor or TA:

1. Course Syllabus
2. Announcements in Canvas
3. The Q & A Forum

This policy will help you in potentially identifying answers before I can get back to you, and it also helps me from answering similar questions or concerns multiple times.

Although your classmates may help answer questions, nothing in this forum constitutes official course policy. If there is a conflict between the Q&A forum and the information in the syllabus, always refer to the syllabus unless the instructor formally changes the information through an

official course announcement. Please note that your instructor will respond to your Q&A Forum posts and your emails within 24-48 hours on business days.

We will send all instructor-related correspondence to your "@ucr.edu" email account. Forwarding emails to and from your UCR to a personal account is not recommended. Instructors **will not respond to any email address other than UCR account-addressed emails.**

NOTE: When emailing your instructor or TA, please include the course number "PBPL 180" in the subject of your email so we can prioritize it over other emails that are not course-related.

COURSE DESCRIPTION:

PBPL XXX, GIS for Urban Transportation, is an introductory course in transportation analysis through the lens of geographic information science/systems, or GIS-T. In addition to the analytical work conducted/reviewed in this class, we will also survey current ideas and issues in the transport field. This course conveys concepts critical to understanding transportation from spatial and user perspectives. This framework includes the social, political, economic, environmental, and policy consequences/outcomes of transportation. The geographic focus of the course will be North America, although when appropriate, additional foci may include developing countries as well.

COURSE PREREQUISITE(S):

PBPL 010: Introduction to Geographic Information Systems

LEARNING GOALS:

Upon successful completion of the course, students should be able to:

1. Demonstrate a conceptual and working knowledge of spatial analysis operations theories and operations including network analysis, spatial interaction modeling, spatial statistics, and estimation of error and uncertainty in a GIS environment.
2. Synthesize and integrate transport theory and methodology concepts, including network data models and socio-economic and demographic facets of transport systems and their use.
3. Demonstrate intermediate network analysis skills as well as intermediate scientific computing skills.
4. Describe and explain pertinent policy issues relating to transport systems in the public and private sectors, including issues of justice, diversity, equity, and inclusion.
5. Employ verbal and written communication and computer technology skills by way of presentations.

A core element of this course will be learning how to use various mapping and visualization platforms, including Google Earth, GeoDa, and a commercial geographic information system (GIS), ArcGIS Pro, from the Environmental Systems Research Institute (Esri).

REQUIRED BOOKS:

Rodrigue, J. P. (2024). *The Geography of Transport Systems*. Routledge. ISBN: 978-1032380407.

OTHER REQUIRED RESOURCES:

A functioning computer, up-to-date within the last five years. Please note that we do not recommend using mobile devices such as tablets or smartphones with Canvas. Students can use the Canvas mobile app to check on the course occasionally, but the mobile app will not fully display the course. You must access the course regularly from a full-featured laptop or desktop computer.

You will need to have access to and be able to use the following hardware and software packages:

- ArcGIS Pro (free, see <https://ucr.maps.arcgis.com/home/index.html> for creating an account to access the software. Locations where ArcPro is available on campus: <https://storymaps.arcgis.com/stories/2726969cfae443d9b90bb625dc5e106f>

- Zoom
- R (v. 3.6.3 or later: <https://www.r-project.org/>)
- Blue Sky (<https://www.blueskystatistics.com/>) (GUI for R)
- PSPP (<https://www.gnu.org/software/pspp/>) (Open source SPSS)
- Python (v. 3.86 or later: <https://www.python.org/>)
- GeoDa (v. 1.22 or later: <http://geodacenter.github.io/>)
- Presentation software (PowerPoint, Keynote, or similar)
- Word processing software (Word, Pages, or similar)
- Web browsers (Chrome, Mozilla Firefox, or Safari)
- Adobe Acrobat Reader (free)

Running ArcGIS Pro:

This course requires that students install and use ArcGIS Pro, an industry-standard desktop GIS software suite produced by Esri. UCR students can obtain a stand-alone license for ArcGIS Pro and run it on their personal computers. Stand-alone ArcGIS Pro runs only on computers with x86 and x64-compatible Microsoft Windows processors. This limitation means some newer Windows 10 tablets cannot run ArcGIS Pro. Windows users can use the "Can You Run It" (<https://links.esri.com/run-arcgis-pro>) utility to check your system's hardware.

Suppose you are a Mac or Linux user. To use ArcGIS Pro, you will need a contemporary Mac (MacBook Pro, iMac, or Mac Pro) with a quad-core Intel processor, 256 GB storage, and 8 GB RAM or more. Mac systems configured with Apple Silicon (Mx) or non-Intel processors are not compatible until Microsoft Windows OS environments are supported on Apple processors. If you already have an incompatible Mac and want to run ArcGIS Pro, consider the following options:

- Connect to a supported on-premises hosted VM.
- Deploy and connect to a cloud-hosted VM.

For hardware requirements for the host machine, see the ArcGIS Pro system requirements. If you cannot view all the specifications for the host machine, you can use the Can You Run It (<https://links.esri.com/run-arcgis-pro>) utility to check your system's hardware.

Computers with ArcPro are also available in the following locations:

Rivera Library, 2nd floor learning commons computers
Orbach Library, 1st floor learning commons computers
Orbach Library, 1st floor near the Geospatial Resources area
Watkins 2111 and 2117 (both computer labs)

NOTE: Please do not underestimate the time required to get a copy of ArcGIS Pro operational on your personal machine. It is a headache every year for everybody. Get this going ASAP, especially if you use a Mac.

LEARNING ACTIVITIES:

Exams (50%): Two midterm exams in this class will be worth 50% of your final grade. The examination includes multiple choice, true/false, and essay/application questions. We design these questions to evaluate your comprehension of urban theory, maps, map types, and their analytical foundations. Clarity of expression is a factor in assessing these questions. There are no make-up exams.

Exercises (25%): There will be four exercises during the quarter. The topic of the exercise will relate to the subject matter of the lecture and/or class. This work is both challenging and time-consuming. Do not underestimate the time required to complete these assignments. There will be NO opportunity for making up these exercises. Grading will adhere to the rubric posted in Canvas. Each of these assignments is worth **25 points**.

Transport Analysis Project (25%) This project requires a final report and recorded presentation (via Zoom) (**90 points**). Do not ask us what we want your project to be about. This project allows you to select a topic that interests you. A one-page proposal of your paper is due on the 4th week of class (**10 points**). The proposal should be written in sentence form (not an outline) and should contain:

- A working title
- A brief description of the topic you plan to investigate
- A brief description of how will investigate the topic
- A brief hypothesis of what you expect to find for the results
- A bibliography of sources you have already found on this topic (10 minimum)
- A comprehensive description of where you will get data for analysis

The actual project report should adhere to the following guidelines:

- Typed, double-spaced, 1-inch margins on all sides, 11 or 12-point Calibri font. You must also have a separate cover sheet that includes names and contact information (UCR email).
- The report must be referenced (APA style); including complete and specific within-paper citations of all books, articles, and Internet sites consulted (if I can't look these references up... don't use them).
- We will post more information on this assignment in Canvas during the quarter.

SUBMITTING ASSIGNMENTS AND LATE ASSIGNMENTS

All assignments are to be submitted by the due date. Late submissions will not be accepted unless:

1. the instructor granted an extension in advance of the due date;
2. providing documentation of an unforeseeable excused absence
3. Your instructor and TA retain the right of refusal on assignments. In other words, if you are turning in late work, we may not accept it.

Additionally:

4. Unless otherwise announced by the instructor, students must submit all assignments to Canvas. There will be a designated place to submit each assignment in Canvas. Do not submit an assignment via email.
5. Late submission of assignments is subject to penalty (see below). All assignments are due on Thursdays at 11:59 pm Pacific Standard Time. There are no exceptions. Schedule accordingly.

<u>Number of days late</u>	<u>Percentage points taken off</u>
1	20%
2	40%
3	60%
4	80%
>=5	100%

SUMMARY OF GRADED ASSESSMENTS:

Grading Policy: We base the final grade on the proportion of cumulative points you have earned over the quarter. There are a total of 400 points.

Section Exams:

Exams	200
Exercises	100
Project	100
Total	400

FINAL COURSE GRADING SCALE:

Final Grades will be assigned using the following breakdown:

A	372 - 400
A-	360 - 371
B+	348 - 359
B	332 - 347
B-	320 - 331
C+	308 - 319
C	292 - 307

C-	280 - 291
D+	268 - 279
D	252 – 267
D-	240 - 251
F	239 or below

ACADEMIC INTEGRITY:

1. Academic Dishonesty – Besides academic performance, we expect students to demonstrate honesty and integrity. We expect all submissions from students to be the original work product of the submitting student. Material that violates this requirement in any way or constitutes any form of dishonesty, cheating, fabrication, the facilitation of academic dishonesty, and/or plagiarism may result in the student receiving a failing grade in the course ('F') and the instructor initiating appropriate disciplinary action. The possible sanctions include, but are not limited to, grade penalties, a permanent record on your transcript of academic dishonesty, loss of registration privileges, disqualification, and dismissal. Please see the official UCR Policy on Academic Integrity. It is accessible online at:

<https://senate.ucr.edu/appendix/section/1226/06>

2. Electronic Review – To ensure compliance with academic integrity policies, we will submit all written assignments to TurnItIn, or a similar plagiarism detection program. Submission of any writing assignment in the course constitutes consent by the student for the instructor to upload the paper to check against any anti-plagiarism database.
3. Citation Style – We require students to use the citation style and format of either the American Psychological Association (APA) or the American Sociological Association (ASA). It is acceptable to cite legal materials (cases, statutes, regulations, etc.) following the style specified in *The Bluebook* (<https://www.legalbluebook.com/>).
4. Avoiding Plagiarism – Some students truly do not understand plagiarism and, therefore, plagiarize unwittingly or unintentionally. However, ignorance is not an excuse for unethical academic conduct. To combat such ignorance, here are rules and resources to help you avoid any problems with plagiarism. Of course, these rules apply regardless of the citation form or style you may be using.
 - a. Direct Quotations – Whenever you directly quote someone else, you must cite the source of the material you are quoting. Moreover, you must put the material in quotation marks or otherwise set it off in an indented quote so the reader knows what words are yours and what words are quoted. It is unacceptable to use the words of others and only partially quote the original source. This is true even if you cite the source in the text and your references section!
 - b. Paraphrasing/Indirect Quotations – Whenever you indirectly quote someone else (i.e., you paraphrase the work of another), you must cite the source of the material from which you are paraphrasing. However, minor structure or word changes do not mean your work is original. Why? The idea you express is not your own but someone else's.

- c. Using Other's Ideas – Even if you compose an entire paragraph of writing in your own words (i.e., neither quoted nor paraphrased), if the idea you are expressing in that paragraph is not your own original idea, you must provide a citation to the source from which you obtained this idea.
 - d. Collaborative Work – If you collaborate on any work with someone else and fail to acknowledge that collaboration, you are guilty of plagiarism. If you have received permission from your instructor to collaborate on some assignment, ensure all of the contributors' names appear on the submission.
 - e. Altering or Revising Another's Work – If you alter or revise the work done by someone and submit that work as your own, you have plagiarized. Similarly, if you allow someone else to alter or revise the work that you have done and then allow that person to submit it as his or her work, you are both guilty of plagiarism. Work not entirely your own must be credited by citation, both in text and on your references page.
 - f. Altering or Revising Your Own Prior Work – You should also be aware that altering or revising your own work for another class or another instructor and not bringing it to the attention of the instructor to whom you are submitting the revised work is also academic dishonesty. If, for example, you have two classes that require a term paper, and you can write one paper that meets the requirements of both classes, you may not submit that paper to both instructors unless you get permission to do so in advance. Similarly, if you wrote a paper several quarters ago that can be revised and submitted in satisfaction of a paper requirement for a course in which you are currently enrolled, doing so is academic dishonesty unless you get the advanced permission of your instructor to do so.
5. AI challenge – This course emphasizes critical thinking and problem-solving skills, some of which generative AI can mimic (such as Google Bard or ChatGPT). The vitality of a campus community relies on academic honesty and the integrity of intellectual work. The use of generative AI in this course can undermine your learning, limit opportunities for intellectual growth, and impact your performance on in-class assessments. Generative AI also can interfere with a fair and accurate assessment of your work. Therefore, AI should never replace your thinking or research, and all work in this course must be your own. To achieve the best learning outcomes in this class and be fair with everyone in grading, AI cannot be used in the Exam, Quiz, or any other assignments (with actual or potential credits) in this class. Violation of the policy will result in zero credit for the assignment and a substantially reduced grade (most likely "F") for the entire course.

IMPORTANT COURSE POLICIES

1. Required behavior standards are listed in the [Student Code of Conduct and Student Disciplinary Procedures](#), [Computer, Internet, and Electronic Communications Policy](#). Anyone in violation of these policies is subject to sanctions.
2. Students are entitled to receive instruction free from interference by other class members. If the instructor identifies disruptive behavior in the classroom, it will be documented, and the instructor will file a formal incident report to the Student Conduct & Academic Integrity Programs office.

3. The Office of Student Rights and Responsibilities accepts [incident reports](#) from students, faculty, staff, or others who believe that a student or student organization may have violated the Student Code of Conduct.
4. All lectures, exercises, and assignment questions are the instructor's intellectual property. Therefore, do not post completed assignments on the web or distribute them unless explicitly requested by the instructor.
5. This class is a [Wikipedia Free Zone](#). Under no circumstances can students use Wikipedia, Infoplease, About.com, or other sites that are considered open "information commons" for assigned work or term papers. Failure to observe this rule will result in a 10% penalty, **FOR EACH INSTANCE**, on a given assignment.
6. To reiterate, notify the instructor **BEFORE** an assignment is due if an urgent situation arises and the assignment will not be submitted on time. Published assignment due dates (Pacific Standard Time) are firm. Please follow the appropriate University policies to request an [accommodation for religious practices](#) or to accommodate a missed assignment due to University-sanctioned activities.
7. Unless otherwise announced, all assignments **MUST** be submitted to the designated area of Canvas. Do not submit an assignment via email. We will not accept it.
8. There is a limited timeline for [dropping or adding](#) the course. Consult with your advisor and notify your instructor to add or drop this course. If you are considering a withdrawal, review the following UCR policies: <https://registrar.ucr.edu/registering/cancellation-withdrawal-absence-readmission>
9. Grade disputes must first be addressed by discussing the situation with the instructor. If the dispute is not resolved with the instructor, please consult this page as a resource for the next steps: <https://graduate.ucr.edu/regulations-and-procedures>

SPECIAL LEARNING NEEDS:

In compliance with the Rehabilitation Act of 1973, Section 504, and the Americans with Disabilities Act of 1990, professional disability specialists and support staff at the Student Disability Resource Centers (SDRC) facilitate a comprehensive range of academic support services and accommodations for qualified students with disabilities. SDRC staff coordinate the transition from high schools and community colleges, provide in-service training for faculty and staff, resolve accessibility issues, conduct community outreach, and collaborate with all UCR campuses regarding disability policies, procedures, and accommodations.

1. Establishing Eligibility for Disability Accommodations – Students who feel they will need disability accommodations in this class but have not registered with the SDRC should contact the SDRC immediately. Students should contact the DRC on the campus where their class is being held.
2. Disability Accommodations – Prior to receiving any disability accommodations, the SDRC requires eligibility verification. Once registered with the SDRC, students with disabilities must meet with me to discuss what reasonable accommodations they will need to be successful in this course. For students with known disabilities, as this course begins, I encourage you to request accommodations at the beginning of the quarter, either during office hours or by appointment. For disabilities that arise after the course has begun, students should meet with me as soon as possible to arrange accommodations for their learning needs. Disability information is confidential.

DUE DATES, ABSENCES, AND EXCUSES:

Planned Excused Absences - **The course due dates are not flexible.** Suppose you know that a future event will interfere with your ability to complete coursework. In that case, you are encouraged to contact the instructor to make arrangements to complete the assignments. Provided that the student informs the instructor of the reason for the absence at least one week in advance of the absence, the instructor will attempt to make arrangements only when absences are due to any of the following three reasons:

- a. Religious reasons;
- b. Jury duty or similar governmental obligation (a copy of the summons or other official paperwork must be provided); and
- c. University-sanctioned and/or university-approved activities (e.g., artistic performances, participation in research conferences, intercollegiate athletic activities, student government, required class field trips, etc.).

MAKE-UP WORK:

If you are seriously ill or injured in a manner that prevents you from completing your work, you should email me to inform me that you are sick or injured as soon as possible. The same is true for an immediate family member's death, injury, or serious illness. Please be advised that for missed work based on an emergency... you may be required to submit corroboratory documentation, such as a note from a physician documenting the illness or injury (notes from family members will not suffice), a death certificate or other proof of a family member's death, etc.

STUDENT CONDUCT:

The University and I expect all students to comport themselves professionally. Toward that end, I expect everyone to abide by the following rules of etiquette:

- Although you are welcome to disagree with the professor or your classmates, we expect everyone to participate respectfully. Students who engage in personal attacks, use rude, insulting, or disrespectful language, or engage in other disruptive or threatening behavior may face disciplinary action.
- Further, be aware that it is easy to misconstrue and misunderstand statements in online forums. Try your best to be clear about what you are saying, and expect that people may understand your contribution differently than you intended. Text is not always the best medium for conversation. The tone of voice (e.g., sarcasm, humor, etc.) does not always translate.
- Please use proper grammar, spelling, and punctuation in all course-related communications, whether in the discussion boards, emails to the instructor, or assignments. "Text lingo" and other invented spellings are not allowed.

- What To Call Me – I don't care much for titles, so "Tony" is fine. If that freaks you out, "Dr. G" or "Dr. Tony" works too.

SEXUAL VIOLENCE AND HARASSMENT:

Title IX is a federal law that provides that no person be excluded based on sex from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity. Title IX and university policy clearly state that sexual violence and harassment based on sex is prohibited. An individual who believes they have been subjected to sexual violence or harassed based on sex can seek support, including counseling and academic support, from the university. If you or someone you know has been harassed on the basis of sex or sexually assaulted, you can find information and resources at <https://titleix.ucr.edu/>

TECHNICAL SUPPORT:

For technical assistance 24 hours a day, 7 days a week, please contact ITS: <https://its.ucr.edu/>

SYLLABUS CHANGES:

I view this course syllabus as an educational contract between the students in the course and me. Accordingly, I will make every effort to avoid changing the course schedule, but the possibility exists that unforeseen events will make syllabus changes necessary. Therefore, I reserve the right to change the syllabus other than the attendance and grading policies.

STUDENT SUCCESS

When given the opportunity, I expect students to engage with the material in the classroom and online. Students who do not regularly check in with the course will not do well in this class. Furthermore, those who do not read the assigned material carefully will also do poorly. All assigned readings and lecture material are examinable. If you have problems with the course material or assignments or seem to be getting behind, please see the instructor as soon as possible.

To summarize:

- Check the course daily
- Read announcements
- Read and respond to the course email messages as needed
- Complete assignments by the due dates specified
- Communicate regularly with your instructor and peers
- Create a study and/or assignment schedule to stay on track

COURSE SCHEDULE:

WEEK 1

Syllabus

Lecture: (1a) What is Transport and GIS-T?

Reading: Chapter 1 (Rodrique)

WEEK 2

Lecture: (2a) Transport Systems and Spatial Structures

Reading: Chapters 2 and 3 (Rodrique)

Exercise 1 Due

WEEK 3

Lecture: (3a) Networks and Network Analysis

Readings: Black, W.R. (2003). Basic Elements of Transport Networks: Nodes and Links, in *Transportation: A Geographical Analysis*, 57-71.

Black, W.R. (2003). Measurement of Transportation Networks, Chapter 5 in *Transportation: A Geographical Analysis*, pp. 72-91.

WEEK 4

Lecture: (4a) Advanced Network Analysis (Shortest Path)

Reading: Zeng, W., & Church, R. L. (2009). Finding shortest paths on real road networks: the case for A*. *International Journal of Geographical Information Science*, 23(4), 531-543.

Exercise 2 Due

Mini Project Proposal Due

WEEK 5

Lecture: None (see online review via Canvas)

Reading: None

EXAM

WEEK 6

Lecture: (6a) Flow Analysis 1

Lecture: (6b): Flow Analysis 2

Reading: Chapter 7 (Rodrique)

Smith, R. H. (1970). Concepts and methods in commodity flow analysis. *Economic Geography*, 46(sup1), 404-416.

WEEK 7

Lecture: (7a) Simple Spatial Interaction Models

Lecture (7b) Four Step Travel Model

Reading: Black, W.R. (2003). Spatial Interaction and the Gravity Model, Chapter 10 in *Transportation: A Geographical Analysis*, pp. 162-184.

Exercise 3 Due

WEEK 8

Lecture: (8a) Access, Accessibility, and Equity

Reading: Geurs, K. T., & Van Wee, B. (2004). Accessibility evaluation of land-use and transport strategies: review and research directions. *Journal of Transport Geography*, 12(2), 127-140.

Exercise 4 Due

WEEK 9

Lecture: (9a) Agent-Based Modeling and Transport

Exam 2 Review (Posted on Canvas)

Reading: Huang, J., Cui, Y., Zhang, L., Tong, W., Shi, Y., & Liu, Z. (2022). An Overview of Agent-Based Models for Transport Simulation and Analysis. *Journal of Advanced Transportation*, 2022(1), 1252534.

Virtual WEEK 10

Lecture: None

Reading: None

EXAM 2

Final Projects and Presentation Recordings due Friday.

CHANGES TO BYLAWS

SCHOOL OF MEDICINE FACULTY EXECUTIVE COMMITTEE REPORT TO THE RIVERSIDE DIVISION

To Be Adopted

Proposed Changes School of Medicine Bylaw ME 05.05

PRESENT

ME05.05

There shall be a Medical School Progress and Promotions Committee appointed by the Faculty Executive Committee composed of at least six (6) members ~~drawn from Senate or non-Senate Faculty~~ plus a Chair. This committee shall include representatives of both Biomedical Sciences and Clinical Sciences Faculty. The Senior Associate Dean for Medical Education serves as an ex officio, non-voting member of this committee. Members shall be appointed annually, with no term limit. All appointed members have the right to vote whether members of the Academic Senate or not. (Am 21 Feb 2012) (Am 25 Feb 2014) (Am 13 Oct 2016)

ME05.05

There shall be a Medical School Progress and Promotions Committee appointed by the Faculty Executive Committee composed of at least six (6) members plus a Chair. **Four of the members will be drawn from Senate or non-Senate Faculty. Two additional members will be ex-officio voting members designated from and by the Faculty Executive Committee. The Medical School Progress and Promotions Committee shall include** representatives of both Biomedical Sciences and Clinical Sciences Faculty. The Senior Associate Dean for Medical Education serves as an ex officio, non-voting member of this committee. **Non-ex officio** Members shall be appointed annually, with no term limit. **The quorum requires at least four members, with at least one of them being an ex-officio Faculty Executive Committee member.** All appointed members have the right to vote whether members of the Academic Senate or not. (Am 21 Feb 2012) (Am 25 Feb 2014) (Am 13 Oct 2016)

PROPOSED

Statement of Purpose and Effect: The proposed revision to the composition of the Medical School Progress and Promotions Committee will enable the school of medicine to revise its student appeals policy to improve responsiveness to student appeals while reduce duplication of faculty effort. This allows the School of Medicine to reform its student appeals process to

make this committee the principal faculty forum for student appeals while ensuring senate shared governance participation in the process. This also bring UCR medical school in line with best practices of other UC Medical Schools when it comes to handling student appeals.

Approved by the Committee on: SOM Faculty Executive Committee on 05/15/2025

Or

Submitted by Marcus Kaul, PhD., Chair of SOM Faculty Executive Committee 07/25/2025

Section below is for Senate use only

Approved by the Committee on Committees: 10/23/2025

The Committee on Rules and Jurisdiction finds the wording to be consistent with the code of the

Academic Senate: November 4, 2025

Received by Executive Council: November 10, 2025



COMMITTEE ON COMMITTEES

October 23, 2025

To: Kenneth Barish, Chair
Riverside Division

From: Francesca Hopkins, Chair
Committee on Committees

**Re: [Campus Review] (Bylaw Change) Proposed Changes to School of Medicine Bylaw
ME 05.05 - Membership**

The Committee on Committees (CoC) discussed the Proposed Changes to the School of Medicine Bylaw ME 05.05 – Membership at their October 23, 2025 meeting. CoC has no comments or suggested revisions and was supportive of the proposed changes.

**EXECUTIVE OFFICE
REPORT TO THE RIVERSIDE DIVISION
DECEMBER 2, 2025**

To Be Adopted

**Proposed Changes to Undergraduate Admissions Committee Bylaw
Bylaw 8.23.1: Lived Name Policy**

PRESENT:

8.23

Undergraduate Admissions Committee (En 5 Jun 75) (Am 19 May 09)

8.23.1

The Committee consists of seven members of the Division, one of whom shall be the Chair; one Divisional representative to the Board of Admissions and Relations with Schools; one undergraduate student representative, who shall not have the right to vote; and the Associate Vice Chancellor for Enrollment Services, ex officio, or ~~his/her~~ designee. The Chair can also serve as the Division representative in addition to his or her Chair duties. (Am 5 Nov 87)(Am 18 Nov 03) (Am 19 May 09) (Am 28 May 13)(Am 26 June 17)

8.23.2

It is the duty of the Undergraduate Admissions Committee to: (Am 19 May 09)

8.23.2.1

Advise the Division and the administration on matters having to do with admissions and enrollment on the Riverside campus. These matters, which are the primary concern of the Undergraduate Admissions Committee, include but are not limited to: recruitment and outreach; special action admissions; articulation with community colleges; and relations with high schools and community colleges. (Am 5 Nov 87)(Am 19 May 09)

PROPOSED:

8.23

No Change.

8.23.1

The Committee consists of seven members of the Division, one of whom shall be the Chair; one Divisional representative to the Board of Admissions and Relations with Schools; one undergraduate student representative, who shall not have the right to vote; and the Associate Vice Chancellor for Enrollment Services, ex officio, who may name a designee. The Chair can also serve as the Division representative in addition to his or her Chair duties. (Am 5 Nov 87)(Am 18 Nov 03) (Am 19 May 09) (Am 28 May 13)(Am 26 June 17)

8.23.2

No Change.

8.23.2.1

No Change.

Statement of Purpose and Effect:

The proposed changes are summarized below:

- Editorial changes to be in concordance with the Systemwide Lived Name Policy

Submitted by the Executive Office on: September 28, 2024

Section below is for Senate use only

Approved by the Committee on Undergraduate Admissions: October 20, 2023

The Committee on Rules and Jurisdiction finds the
wording to be consistent with the code of the
Academic Senate: October 15, 2025

Received by Executive Council: October 27, 2025

**EXECUTIVE OFFICE
REPORT TO THE RIVERSIDE DIVISION**
December 2, 2025

To Be Adopted

Proposed Changes to Committee on Privilege and Tenure Bylaws

Bylaw 8.19 through 8.19.2: Lived Name Policy, Committee membership & Ex-officio Service

PRESENT:

8.19

Privilege and Tenure

8.19.01

This committee consists of at least five members. (Am 7 Dec 71) (Am 18 May 2004)

8.19.2

It is the duty of this committee to deal with three distinct categories of cases; grievance cases (SBL 335), where a member of the Senate claims injury through the violation of his/her rights and privileges; disciplinary cases (SBL 336) where a member of the Senate is accused of having violated the Faculty Code of Conduct; and early termination cases (SBL 337), where a Senate or non- Senate faculty member challenges ~~whether there is good cause for his/her~~ early termination. The committee may also be called upon by campus administration to render advice on campus policies or local regulations that may affect academic privileges and tenure. The committee is guided by procedures in UC Senate Bylaw 334-337. (Am 5 Nov 69)(Am 18 May 2004)

PROPOSED:

8.19

No Change.

8.19.1

This committee consists of at least eight members. (Am 7 Dec 71) (Am 18 May 2004). The Chair also serves as an ex-officio member on the committee on Academic Freedom. The committee may appoint ad-hoc members to the committee for the purpose of fulfilling the duty described in 8.19.2

8.19.2

It is the duty of this committee to deal with three distinct categories of cases; grievance cases (SBL 335), where a member of the Senate claims injury through the violation of that member's rights and privileges; disciplinary cases (SBL 336) where a member of the Senate is accused of having violated the Faculty Code of Conduct; and early termination cases (SBL 337), where a Senate or non- Senate faculty member challenges whether there is good cause for early termination. The committee may also be called upon by campus administration to render advice on campus policies or local regulations that may affect academic privileges and tenure. The committee is guided by procedures in UC Senate Bylaws 334-337. (Am 5 Nov 69)(Am 18 May 2004)

Statement of Purpose and Effect:

The proposed changes are summarized below:

- Aligning committee bylaws with membership practices reflecting committee workload reaching as far back 2011 necessitating an increased membership minimum.
- Addition of ex-officio language to align with bylaws of the Committee on Academic Freedom.
- Impending increasing workload year over year, the committee has the ability to appoint additional members to serve on hearing panels for the purpose of being designated among the current membership of P&T per SBL 3.3.6, SBL 3.3.5 regarding hearing procedures.
- Editorial changes to be in concordance with the Systemwide Gender Recognition and Lived Name Policy.

Submitted by the Executive Office on: October 28, 2024

Section below is for Senate use only

Approved by the Committee on Privilege and Tenure on: November 20, 2024

The Committee on Rules and Jurisdiction finds the
wording to be consistent with the code of the
Academic Senate: October 14, 2025

Received by Executive Council: October 27, 2025



Academic Senate

COMMITTEE ON ACADEMIC FREEDOM

October 16, 2025

To: Ken Barish, Chair
Riverside Division Academic Senate

From: Quinn McFrederick, Chair
Committee on Academic Freedom

Re: **Proposed Changes to Committee on Privilege and Tenure Bylaws 8.19
through 8.19.2**

The Committee on Academic Freedom reviewed the proposed changes to the Committee on Privilege and Tenure Bylaws 8.19 through 8.19.2 at their October 13, 2025 meeting and voted to support the proposed revisions.



COMMITTEE ON COMMITTEES

October 9, 2025

To: Kenneth Barish, Chair
Riverside Division

From: Francesca Hopkins, Chair
Committee on Committees

Re: [Campus Review] (Bylaw Change) Proposed Changes to Committee on Privilege and Tenure Bylaws (Bylaw 8.19 through 8.19.2: Lived Name Policy, Committee membership & Ex-officio Service)

The Committee on Committees discussed the proposed bylaw changes to Committee on Privilege & Tenure Bylaws at their October 9, 2025 meeting and approved of the changes.

REPORT TO THE RIVERSIDE DIVISION
December 2, 2025

To be adopted:

**Proposed changes to the following regulations: 06.12 -
Campus Graduation Requirements**

<u>PRESENT:</u>	<u>PROPOSED:</u>
06.12 ~~To be awarded the Bachelor's Degree, a student must either (a) meet graduation requirements in the UCR catalog in effect in the year of his/her graduation from the Riverside Campus; or (b) fulfill graduation requirements in one UCR catalog applicable during any of the previous four years in which the student successfully completed at least one quarter or one semester of full-time college-level work, regardless of where matriculated. Upon applying for candidacy, the student must specify the applicable catalog. (En 5 November 87)~~	06.12 <u>To be awarded the bachelor's degree, an undergraduate entering as a 1st year student, may meet graduation requirements in the UCR catalog either: (1) in effect at the time of entrance to UCR, or (2) those subsequently established after entrance. An undergraduate entering as a transfer student may choose either of those options, or (3) those in effect up to two years prior to matriculation. Students may not utilize a catalog greater than six years prior to the student's graduation term. Exceptions for extraordinary reasons must be approved by the student's College/School Dean.</u> <u>To be awarded a graduate degree, graduate students may either: (1) meet graduate requirements in the UCR Catalog in effect at the time of entrance to UCR, or (2) petition to the Vice Provost and Dean of Graduate Studies to use those established after entrance and prior to the student's graduation.</u>

JUSTIFICATION and EXPLANATION OF CHANGES

This update was coordinated between the Registrar's Office, Undergraduate Colleges, and the Graduate Division.

The current policy for undergraduates has historically created challenges with interpretation based on the reliance on enrollment. The Colleges/School's Advising are supportive of a policy that is more definitive in its definition, while maintaining the need to provide support for transfer students. An exception, if needed, can be made but it is felt that the majority of students can be served with the above language.

The previous regulation only referenced undergraduate students, with no mention of graduate students. This update adds clear information for graduate student catalog year expectations and matches what Graduate Division is enforcing now.

Approvals:

Approved by the Graduate Council: March 20, 2025

Committee on Rules & Jurisdiction finds the wording to be consistent with the code of the Academic

Senate: 10/14/2025, 11/12/25

Received by Executive Council: 11/10/25

October 23, 2025

TO: Ken Barish, Chair
Riverside Division of the Academic Senate

FROM: Evangelos (Vagelis) Christidis, Chair 
BCOE Executive Committee

RE: Campus Review: 6.12 - Campus Graduation Requirements

The BCOE Executive Committee met on October 16th, 2025. Regarding [6.12 - Campus Graduation Requirements](#), the committee voted unanimously in favor of these changes.



COMMITTEE ON EDUCATIONAL POLICY

October 3, 2025

To: Ken Barish, Chair
Riverside Division

From: Annie Ditta, Chair
Committee on Educational Policy

Re: Proposed Changes to UCR Regulation 6.12 – Campus Graduation Requirements

The Committee on Educational Policy (CEP) reviewed the proposed changes to UCR Regulation 6.12 for Campus Graduation Requirements at their October 3, 2025 meeting. The Committee voted to support the changes.



October 28, 2025

TO: Ken Barish, Chair
Riverside Division of the Academic Senate

FROM: Iván Aguirre, Interim Chair
CHASS Executive Committee

RE: Proposed Regulation Change: Changes to UCR Regulations: 6.12 - Campus
Graduation Requirements (Catalog Year)

The CHASS Executive Committee reviewed the Proposed Regulation Change: Changes to UCR Regulations: 6.12 - Campus Graduation Requirements (Catalog Year). The committee wanted more clarification regarding the “Exceptions for extraordinary reasons must be approved by the student’s College/School Dean” portion of the regulation. In CHASS, the department chair is an integral part of reviewing exceptions due to their understanding of the major requirements. The committee approved the regulation change with a suggestion of adding department chairs as part of the approval process for exceptions.



October 24th, 2025

TO: Kenneth N. Barish, Chair, Academic Senate, UCR Division

FROM: Harry Tom, Chair, Faculty Executive Committee, College of Natural and Agricultural Sciences

SUBJECT: [Campus Review] (Proposed Regulation Change) Changes to UCR Regulations: 6.12 - Campus Graduation Requirements (Catalog Year)

Prof. Barish,

The CNAS Faculty Executive Committee has reviewed the proposal at their October 7th meeting, has no objections, and supports the proposed changes.

Sincerely,

A handwritten signature in black ink that reads "Harry Tom".

Harry Tom, Ph.D

Chair, Faculty Executive Committee, College of Natural and Agricultural Sciences



Academic Senate

COMMITTEE ON RULES AND JURISDICTION

Date: October 14, 2025

To: Kenneth Barish, Chair
Riverside Division

A handwritten signature in black ink, appearing to read "R. Head".

From: Randolph C. Head, Chair
Committee on Rules and Jurisdiction

Re: [Campus Review] Proposed Changes to UCR Regulations: 6.12 - Campus Graduation Requirements (Catalog Year)

The Committee on Rules and Jurisdiction has carefully considered the Changes to UCR Regulations: 6.12 - Campus Graduation Requirements (Catalog Year). The Committee appreciates that the proposed changes are meant to clarify catalog-year expectations for different categories of undergraduates, and to add clear information for graduate student catalog-year expectations to align with current practices. With this, R&J believes the proposed regulations would benefit from modest modifications to increase clarity and consistency. **Once completed**, the committee approves of these proposed changes.

The Committee on Rules and Jurisdiction offers the following suggestions to assist in the above and to ensure overall document consistency:

Line 7 Add the word “student” after “transfer” to maintain parallel phrasing with the previous provisions

Change the imprecise verb from “have.” Consider replacements such as “choose” or “use”.

Paragraph 2 Suggested clarification:
“To be awarded a graduate degree, graduate students may either (1) meet graduate requirements in the UCR Catalog in effect at the time of entrance to UCR, or (2) petition to the Vice Provost and Dean of Graduate Studies to use those established after entrance and prior to the student’s graduation.”



10/23/2025

To: Kenneth Barish, Chair of the Assembly of the Academic Senate
and Cherysa Cortez, Executive Director of the UCR Academic Senate

From: Kinnari Atit, Ph.D., Faculty Chair of the School of Education Executive Committee

Subject: Feedback on Proposed Regulation Change: Changes to UCR Regulations: 6.12 - Campus Graduation Requirements (Catalog Year)

The SOE Executive Committee reviewed the Proposed Regulation Change: Changes to UCR Regulations: 6.12 - Campus Graduation Requirements (Catalog Year). Comments/feedback were solicited at our executive committee meeting and via email.

The SOE Executive Committee has no comments on this document.

Thank you for the opportunity to provide feedback.

Sincerely,

A handwritten signature in black ink, appearing to read "Kinnari Atit", followed by a stylized flourish.

Kinnari Atit
Chair, Faculty Executive Committee
School of Education
University of California, Riverside
Email: kinnari.atit@ucr.edu



October 31, 2025

TO: Ken Barish, PhD, Chair, Academic Senate, UCR Division

FROM: Adam Godzik, Ph.D., Chair, Faculty Executive Committee, UCR School of Medicine

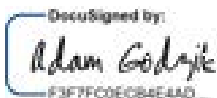
SUBJECT: **[Campus Review] Proposed Regulation Change: *Changes to UCR Regulations: 6.12 - Campus Graduation Requirements***

Dear Ken,

The SOM Faculty Executive Committee has reviewed the ***Proposed Regulation Change: Changes to UCR Regulations: 6.12 - Campus Graduation Requirements.***

The committee did not have any concerns and approved the changes.

Yours sincerely,

DocuSigned by:

F3F7F0CECB4E4AD

Adam Godzik, Ph.D.
Chair, Faculty Executive Committee School of Medicine

TO: Ken Barish, Chair
Riverside Division

FR: Kurt Schwabe, Chair 
Executive Committee, School of Public Policy

RE: **[Comments] *Proposed Regulation Change: Changes to UCR Regulations: 6.12 - Campus Graduation Requirements (Catalog Year).***

Date: October 21, 2025

The Executive Committee of the School of Public Policy has reviewed the ***Proposed Regulation Change: Changes to UCR Regulations: 6.12 - Campus Graduation Requirements (Catalog Year)***. Seeing that this is a change proposed by the advising directors and managers across campus for clarity, we agree that these changes do indeed seem to provide more clarity and are fully supportive of them.



Academic Senate

EXECUTIVE COUNCIL

Kenneth Barish, Chair

November 10, 2025

To: Riverside Division

From: Ken Barish, Chair, Executive Council

A handwritten signature in blue ink that reads "Kenneth Barish".

Re: Committee on Academic Freedom Proposed Resolution to Establish Mutual Academic Defense Compacts in Defense of Academic Freedom, Free Expression, Institutional Integrity, and the Research Enterprise

Executive Council, with no additional comments, endorsed the subject resolution on November 10, 2025.

Resolution to Establish Mutual Academic Defense Compacts in Defense of Academic Freedom, Free Expression, Institutional Integrity, and the Research Enterprise

Background

The federal government has withheld funding and used other tactics to obtain concessions by universities in ways that violate academic freedom and institutional self-governance.

Executive Orders and Dear Colleague letters seek to censor speech and mandate programming at publicly funded universities. The government has deployed its Homeland Security Department ICE agents to baselessly revoke student visas in order to arrest and detain international students as punishment for exercising their First Amendment rights. This resolution seeks to unite institutions to collectively defend and safeguard our shared values of academic freedom, free expression, democratic governance, civic responsibility, scientific discovery, and the pursuit of knowledge in all fields. Following the example of the University of Massachusetts Amherst, which passed a similar resolution on April 10, 2025, and the University of California, Santa Cruz (whose passed resolution serves as a template for this resolution), we propose the following.

Resolution to Establish Mutual Academic Defense Compacts in Defense of Academic Freedom, Free Expression, Institutional Integrity, and the Research Enterprise

Whereas, escalating actions by governmental bodies threaten foundational principles of American higher education, including the autonomy of university governance, the integrity of scientific research and other scholarship and arts, and the protection of the freedoms of inquiry, speech, and association;

Whereas, political actors have targeted individual institutions with legal, financial, and political incursions designed to undermine their public mission, silence dissenting voices, and exert unlawful control over academic inquiry;

Whereas, governmental actors have signaled a willingness to censor curricula, restrict inquiry, target scholars and students, and carry out politically motivated detentions;

Whereas, America's Public and Land-Grant Universities (APLU) represent a longstanding tradition of academic collaboration, research excellence, and commitment to democratic values and shared governance;

Whereas, these nearly 250 APLU institutions represent more than one million faculty and staff members and 6.6 million undergraduate and graduate students;

Whereas, institutions of higher education in California—public and private, large and small—share a longstanding commitment to academic freedom, democratic governance, civic responsibility, and the pursuit of knowledge for the public good;

Whereas, California is home to a diverse and internationally respected higher education ecosystem that serves hundreds of thousands of students and employs tens of thousands of educators, researchers, and staff whose work supports innovation, critical inquiry, social mobility, and community engagement;

Whereas, the preservation of one institution's integrity is the concern of all, and an infringement against one institution shall be considered an infringement against all;

Be it resolved that the University of California Riverside Faculty Senate urges the President of the University of California system and the Chancellor of the University of California, Riverside to formally propose and help establish a Public and Land-Grant University Mutual Academic Defense Compact (PLUMADC) among all public and land grant universities that choose to participate;

Be it further resolved that, the Faculty Senate of the University of California Riverside urges the President of the University of California system and the Chancellor of the University of California Riverside to formally propose and help establish a California Higher Education Mutual Academic Defense Compact (CHEMADC) among public and private colleges and universities across the state that choose to participate;

Be it further resolved that, under these compacts, participating institutions shall commit meaningful support—financial, legal, organizational, and/or strategic—to a shared or distributed defense infrastructure designed to respond immediately and collectively to attacks by governmental actors on any member institution;

Be it further resolved that, these compacts shall facilitate the mobilization of institutional resources—including legal counsel, governance experts, public affairs professionals, faculty governance leaders, research capacity, and media relations—to coordinate a unified and robust response, including but not limited to:

- Legal representation and, where appropriate, countersuit actions;
- Public communication strategies to counter misinformation and defend academic principles;
- Filing of amicus briefs, publication of expert testimony, and other legal interventions;
- Legislative advocacy, coalition-building, and coordinated policy engagement at the state and federal levels;
- The development of collaborative strategies and frameworks to diversify funding streams beyond the federal government; and
- Rapid-response research and public-education initiatives;

Be it further resolved that, this resolution be transmitted to the leadership of all Public and Land-Grant Universities across the nation and all institutions of higher education in California as well as their shared governance bodies;

Be it finally resolved that, the President of the University of California system and the Chancellor of the University of California Riverside take leading roles in convening summits of faculty and administration leaders to initiate the implementation of these compacts and affirm the collective commitment to defend academic freedom, free expression, institutional autonomy, and the public mission of higher education in the state.

Sponsors; Members of the UC Riverside Committee on Academic Freedom:

Quinn McFrederick, Chair

Crystal Baik

Annika Speer

Salman Asif, Ex Officio

Jennifer Doyle, Ex Officio

**EXECUTIVE OFFICE
REPORT TO THE RIVERSIDE DIVISION
DECEMBER 2, 2025**

To be adopted

**Proposed Changes to Senate Bylaw
Bylaw 2.2 through 2.2.8: Lived Name Policy**

PRESENT:

PROPOSED:

2

2

Officers and the Executive Office (Am 24 May 2005)

No Change.

2.1

2.1

The elected officers of the Division are the Chair, the Vice Chair, and the Divisional Representatives to the Assembly of the Academic Senate. Their election is conducted in accordance with the procedure prescribed for elections. The appointed officer of the Division is the Secretary-Parliamentarian. The terms of office begin on September 1 following election or appointment to a normal term of office. (Am 22 Oct 73)(Am 5 Feb 87) (Am 24 May 2005)

No Change.

2.1.1

2.1.1

No individual may hold two offices of the Division simultaneously. (Am 24 May 2005)

No Change.

2.2

2.2

Chair. The Chair of the Division is elected for a two-year term. In case the Chair is unable to complete the term of office, the Vice Chair shall become Chair pro tempore. The Chair pro tempore shall serve out the unexpired term, unless that term is longer than three months. If it is longer, the Secretary-Parliamentarian shall conduct an election for the unexpired term so that the Chair pro tempore serves no longer than three months. The result of this election shall be reported to the members of the Division as soon as it is known. (Am 22 Oct 73) (Am 24 May 2005)

No Change.

2.2.1

No one shall serve as Chair of the Division for more than two consecutive terms, but shall become eligible to serve again after lapse of two years following expiration of the second consecutive term. (Am 24 May 2005)

2.2.1

No Change.

2.2.2

The Chair of the Division presides over the meetings of the Division. The Chair is ex officio a member of the Assembly of the Academic Senate and is a member of the Academic Council of the Assembly. (Am 24 May 2005)

2.2.2

No Change.

2.2.3

The Chair is responsible for coordinating the work of all standing and special committees of the Division. Except when a Divisional committee or subcommittee is considering matters not to be reported directly to the Division, the Chair may attend the meetings of any such committee or subcommittee and may participate in its deliberations ~~without vote unless he or she is a~~ member of such committee. The Chair may present in person or in writing any matters he or she believes should be brought before a committee and call to its attention materials that may be useful to it. (Am 24 May 2005)

2.2.3

The Chair is responsible for coordinating the work of all standing and special committees of the Division. Except when a Divisional committee or subcommittee is considering matters not to be reported directly to the Division, the Chair may attend the meetings of any such committee or subcommittee and may participate in its deliberations. The Chair may not vote in committee meetings except when serving as a member of such committee. The Chair may present in person or in writing any matters he or she believes should be brought before a committee and call to its attention materials that may be useful to it. (Am 24 May 2005)

2.2.4

The Chair shall determine initially whether any action considered by the Division is solely of Divisional concern. Such decisions may be appealed to the Division. (Am 24 May 2005)

2.2.4

No Change.

2.2.5

The Chair submits annually a budget request for the work of the Division, its committees, and the Executive Office of the Division; supervises the expenditure of appropriations that may be made; and reports annually to the Division on the work of the Executive Office together with any proposals for improvement

2.2.5

No Change.

of its operation which require action by the Division. (Am 24 May 2005)

2.2.6

2.2.6

The Chair exercises general supervision of the Executive Office. (Am 24 May 2005)

No Change.

2.2.7

2.2.7

Unless otherwise specified in these Bylaws or in enabling acts, the Division's Chair shall be chosen from other than the President of the University, the Chancellor at Riverside, the University Librarian, the Registrar, any Vice Chancellor, Associate Chancellor, Associate or Assistant Vice Chancellor, any Dean, Associate or Assistant Dean, any Provost, any department chair or a program director of an ORU or MRU. (En 22 May 2007)

No Change.

2.2.8

2.2.8

In the absence of both the Chair and Vice Chair, the succession order among Division Officers shall be: Secretary/Parliamentarian, then longer serving Assembly Representative, then second Assembly Representative.(AM 20 March 2020)

No Change.

Statement of Purpose and Effect:

The proposed changes are summarized below:

- Editorial changes to be in concordance with Systemwide Lived Name Policy

Submitted by the Executive Office on: September 9, 2024

Section below is for Senate use only

The Committee on Rules and Jurisdiction finds the wording to be consistent with the code of the Academic Senate: October 15, 2025

Received by Executive Council: October 27, 2025