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April 28, 2022

MICHAEL T. BROWN
PROVOST AND EXECUTIVE VICE PRESIDENT
UNIVERSITY OF CALIFORNIA

Re: Seven-Year Review of the NRS California Ecology and Conservation Field Course

Dear Michael:

The Academic Council has endorsed the University Committee on Educational Policy's (UCEP) seven-year review of the Natural Reserve System's California Ecology and Conservation field course.

As you know, Senate Bylaw 170.B.3 charges UCEP with approving courses to be offered as systemwide courses. UCEP is to review these courses every seven years per guidelines¹ approved the Academic Council in 2014. UCEP approved the California Ecology and Conservation course in 2015 as the first systemwide course under these guidelines, and its 2022 review is UCEP's first for a systemwide course.

UCEP's review of the course is attached. The Council agrees with UCEP's recommendation to support the continued systemwide status of this course. UCEP also flags a specific concern related to Sexual Violence and Sexual Harassment protocols in field courses, and requests the assistance of the Title IX office to clarify and strengthen these protocols.

Sincerely,

A handwritten signature in cursive script that reads "Robert Horwitz".

Robert Horwitz, Chair
Academic Council

Cc: Vice President Maldonado
Title IX Coordinator Taylor
UCSC Natural Reserves Director Dayton
Chief of Staff Peterson
Academic Council
Executive Director Baxter

Encl.

¹¹ https://senate.universityofcalifornia.edu/_files/committees/ucep/ucep-systemwide-guidelines.pdf



UNIVERSITY COMMITTEE ON EDUCATIONAL POLICY (UCEP)
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April 11, 2022

**ROBERT HORWITZ, CHAIR
ACADEMIC COUNCIL**

RE: REVIEW OF THE SYSTEMWIDE NATURAL RESERVE SYSTEM CALIFORNIA ECOLOGY AND CONSERVATION FIELD COURSE

Dear Robert,

This year, UCEP undertook the review of the systemwide Natural Reserve System's California Ecology and Conservation field course. The systemwide course in California Ecology and Conservation was adapted from a similar course offered at UCSC: Ecology and Conservation in Practice. UCEP reviewed and approved the proposal for the systemwide course in AY 2014-15. Since then, it has been offered 20 times to a total of 536 students across the UC system. Course instructors provided a report to UCEP on the first seven years of the course as a systemwide offering. In this review strengths of the course are presented first with minor weaknesses noted at the end.

Overall, in consideration of the unique resources available to students, small class sizes and a grading system based on review of the literature, presentations and written papers, UCEP expresses enthusiastic support. We do, however, have one significant concern: the lack of a robust protocol for dealing with sexual violence and sexual harassment in the field, where most of this course transpires. UCEP recommends that Academic Council send this memo to the Title IX office at UCOP, which can provide guidance to the course leadership team about developing a clear protocol.

Significance of the Course:

Notably, access to multiple Natural Reserves within the State of California makes this course unique in both the nation and worldwide. The format of the course is immersive and can be likened to a graduate-level educational experience. Students spend 50 days mostly in the field working very closely with instructors. Grades are based on a series of literature presentations, research presentations and paper writing. The course begins with basic training in hypothesis generation, field methods and equipment, statistics, study design, and foundational principles. Students' research focus increases in both length and complexity during the 10-week program. Class size is limited to 27 students; although many courses claim to offer team-building opportunities, this course stands above as students work together for most of the days throughout the quarter. Students can continue to network as alumni of the course through their Facebook page.

Course Structure and Admission:

The 19-quarter-unit course NRS BIOL/ENVS 188 California Ecology and Conservation, is offered in the fall, spring and summer terms (81 students per year). The course is run by a five-person leadership team: two instructors, a graduate student teaching assistant, and two course assistants. Students wishing to apply to the course fill out an online application. Instructors score applicants on the basis of the career goals students profess, seniority, previous experience, background, GPA, and the quality of the writing in application responses. Instructors aspire to admit three students from each campus with high application scores, but this varies depending on the applicant pool. Beyond the 27 students selected (ideally 3 students each from the 9 undergraduate UC campuses), additional students who have high to moderate scores are placed on the course waitlist in order of application score and regardless of campus. Overall, 1020 students have applied since 2015 with more than 500 admitted from a good distribution of UC campuses.

Cost:

The cost of this course is \$3800 in addition to regular tuition. Half of the course fee covers administrative costs of the UCSC Education Abroad Program and the remainder covers food, lodging, transportation and research equipment. The program has a current scholarship fund of \$40,000 that is distributed to selected students for each of the next five course offerings (\$8000 per quarter). Students apply for a fellowship through a separate application in which they explain how financial need has impacted their ability to achieve their academic and career goals. Instructors score the responses by evaluating academic merit, stated academic and career goals, stated financial need, and assessing other challenging circumstances. In allotting fellowships, instructors prioritize increased representation of underrepresented groups. Program administrators note that the course fee is potentially offset by savings in student rent and food if students were on their home campus.

Grading and Student Assessment:

This course is largely experiential with students providing oral and written presentations. Students are evaluated on the following assignments:

- Three natural history and three article summary presentations – 20% of grade
- Three research project presentations – 35%
- Individual scientific paper – 15%
- Final Research Project Group Paper – 20%
- Participation, responsibility, and teamwork – 10%

The assessment of oral and written presentations is a welcome departure from high-stakes, anxiety-inducing exams. Although it could be argued that oral presentations can be stressful, even in a small group, they do offer good training in communication skills. In addition, the low student/instructor ratio of this program allows for detailed feedback of written papers. Sample papers of provided of varying quality show fair evaluations of written reports and detailed feedback comments.

Student Feedback:

Course administrators have identified the following program goals: Improve students' scientific literacy, research capabilities, understanding and awareness of ecology, and increasing the number of students committed to science education and graduate school, or careers in science or conservation.

Students were asked to evaluate their knowledge at the beginning and end of the course with regard to the goals described above. Uniformly, students reported increased understanding and awareness of issues covered in this course. Notably, students also reported an increase in graduate school interest.

Evaluation forms included questions that could be answered numerically according to how the student agreed or disagreed with a statement. The average numerical assessments were very highly in favor of the course. Additional questions on the quality of the course were asked in free-form format. Student free-form responses to these questions were not included in the report.

Anecdotally, informal assessment of faculty who teach Ecology at other UC campuses indicates that the course has an excellent reputation within UC.

Protocols for dealing with Sexual Violence and Sexual Harassment (SVSH):

Although UCEP strongly supports the course, we do think it is imperative that the course leadership team develop clear guidelines for dealing with SVSH incidents. A recently published study revealed that 64% of field researchers surveyed had experienced harassment and 20% had experienced sexual assault. Most of the 666 scientists who participated in this survey did not file a complaint. ([Clancy et al, PLoS One \(2014\) Jul 16;9\(7\):e102172](#), and comment in [“Harrasment, A Field Study.” Nature Ecology & Evolution \(2017\) Vol 1, p1787–1788](#).) These traumatic experiences have been related to the “leaky pipeline” phenomenon and could negate the goal of the course to inspire students to enter careers in ecology. The course report update indicates that they have an emergency procedure defined in a notebook for the case of sexual assault. However, harassment can also be damaging to the victim, especially if they are trapped at a site with the harasser. Nelson et al, noted significant variability in “...appropriate professional conduct (rules) and procedures for recourse in cases of misconduct (consequences)” among field experiences ([American Anthropologist, \(2017\) Vol 119, p 710-722](#)). This study reveals the importance of clear communication regarding rules and a plan of action in preventing harassment. It is not obvious from the update how harassment would be handled. In addition, do the instructors understand that sexual assault can take many different forms? Do they have a clear “no touching other people” policy with real consequences? Although the course report notes that instructors and TAs are mandated to report incidents to the UCSC Title IX office, in most cases surveyed, the harassment or assault was committed by a person who was in a senior position – like an instructor or TA. There should be an emergency contact provided for someone who is not part of the course team so that students do not have to challenge an authority in the class who could influence their grade.

Minor Considerations for Improvement:

- The demographic breakdown of student participants is similar in trend to the ethnic makeup of the entire UC system (<https://universityofcalifornia.edu/about-us/information-center/admissions-residency-and-ethnicity>). However, all non-white ethnicities are slightly under-represented compared to the UC student population.
- The program does not track student gender. Although women are relatively well-represented in Ecology as a STEM field, it would be best if the program could document that student enrollment does not have a gender bias.
- The cost of the program is modest, but could be a deciding factor in student applications. Many students on work-study or who work part time might not be able to participate since they would have a loss of income during this quarter. Additional Scholarship funding could address this problem.
- It would be helpful to include some of the favorable and unfavorable responses from free-form student evaluation questions. In addition, a follow-up survey of student career outcomes following graduation would be of interest since this was identified as a specific goal of the course.
- The course is fortunate to have enthusiastic TAs and Unit-18 lecturers willing to commit to the extra time this course. To ensure that this continues, we encourage clear tracking of hours to ensure that the work demand is consistent with union contracts.

The committee asks that Academic Council endorse this memo and submit it to the Provost’s Office with a request that the memo be forwarded to the systemwide Title IX Office. UCEP appreciates the opportunity to comment on this matter. Please contact me if you have any questions.

Sincerely,



Mary Lynch, Chair
UCEP