

## Earth Systems Sciences, B.S.

Planning for 2005

Students who study Earth Systems Sciences will obtain a quantitative understanding of the physical, chemical, and biological principles that control the processes, reactions, and evolution of the Earth as a support system for life. Upper division emphasis areas include biogeosciences, hydrologic and geochemical sciences, atmosphere and climate.

### Approach

This Earth Systems Sciences will emphasize a highly interdisciplinary approach, incorporating field studies, laboratory experiments, and computations.

### Message from Maria Pallavicini

#### Dean of Natural Sciences

UC Merced's location in the San Joaquin Valley near the Sierra Nevada Mountains offers an excellent and diverse real-world laboratory for studying the natural environment and how it is affected by human activity. Students studying Earth Systems Sciences will gain a firm foundation in the fundamentals of chemistry, biology, hydrology, and earth sciences. The emphasis areas offer students the flexibility for more in-depth pursuit of disciplinary areas of interest. The Earth Systems Sciences major is enhanced by opportunities for interactions with the UC Merced Sierra Nevada Research Institute, which will offer students a rich milieu of faculty expertise, research seminars, and other activities, such as undergraduate internships.

### High School Preparation

Recommended as part of or in addition to the A-G subject requirements: <http://www.ucop.edu/doorways>

- Biology (1 year)
- Chemistry (1 year)
- Physics (1 year)
- Pre-Calculus and/or Calculus (1 year)

### Transfer Preparation

Recommended as part of or in addition to UC minimum admission requirements: <http://www.ucop.edu/pathways>

- Biology (2 semesters)
- Chemistry (2 semesters)
- Organic Chemistry (1 semester)
- Calculus (2 semesters)
- Differential Equations (1 semester)
- Earth Science (1 semester) selected from:
  - Introduction to Geology
  - Physical Geology
  - Physical Geography
  - Soil Science
- Physics (2 semesters)
- Probability and Statistics (1 semester)
- No grade below a "C" in the above preparatory courses
- IGETC is **Not Recommended**

If a college does not offer linear algebra and differential equations as individual courses, students are advised to wait until they transfer.

Transfer students will be expected to take two (2) transitional courses in Computational Modeling and Genomics after transferring to UC Merced.

### Please contact:

UC Merced Admissions/Relations with  
Schools and Colleges  
550 E. Shaw Avenue, Suite 105  
Fresno, CA 93710  
(559) 241-7474  
(559) 241-7480 fax  
(866) 270-7301 toll free in California  
<http://www.ucmerced.edu>

### Research Opportunities, Service Learning Experience, & Internships

Students who choose to participate in UC Merced's Service Learning Initiative can obtain practical experience that complements their formal coursework. Students will gain experience in Earth Systems Sciences by working with student teams that serve non-profit organizations under the direction of a faculty team mentor. Examples activities include

participation in ecosystem restoration projects in Yosemite and Sequoia/Kings Canyon national parks, watershed studies in the Sierra Nevada Mountains and the San Joaquin Valley, and air quality studies throughout the region. Research opportunities with faculty, in their laboratories or in the field, offer a rich experience for students wishing to compliment and extend their formal learning.

## Careers in Earth Systems Sciences

Graduates of the Earth Systems Sciences major will have a strong background in both the theory and application of Earth System Science and therefore will be well prepared for either graduate studies or jobs in the areas of applied environmental, ecological, or agricultural science. Job opportunities also exist in public agencies.

## About Your Professors

Faculty at UC Merced are nationally and internationally recognized researchers in their own fields, and they have also been selected for their excellence as teachers and as mentors.

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## UC Merced's Academic Schools

Campus majors and programs are organized into three academic schools; the **School of Engineering**, the **School of Natural Sciences**, and the **School of Social Sciences, Humanities, and Arts**. UC Merced is planning educational experiences designed to prepare well-educated people of the 21<sup>st</sup> Century for the workplace, for advanced education, and for leadership roles in their own communities. Graduates from UC Merced will find themselves better able to navigate and succeed in a complex world.

## College One

College One will be the home of UC Merced's general education program and will introduce students to the major domains of intellectual inquiry and help them build their college-level skills. What does the educated citizen of the 21<sup>st</sup> Century need to know? How will what students learn in UC Merced's classrooms connect with the world outside the University? What does it mean to be part of a research university? Students will be able to answer these questions, and many more, through their participation in College One.

### Special Note for Transfer Students

We encourage that you contact us before enrolling at a community college so that together we can create an academic plan that will ensure you transfer successfully.

Learn how to:

- Meet UC transfer admission requirements
- Prepare for your major
- Complete your IGETC or General Education
- Apply to UC Merced for 2005-06
- Get a Transfer Admission Guarantee to UC Merced

#### For More Information:

Students are asked to consult their counselor, transfer coordinator, or a UC Merced representative, for assistance in creating an academic plan.

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