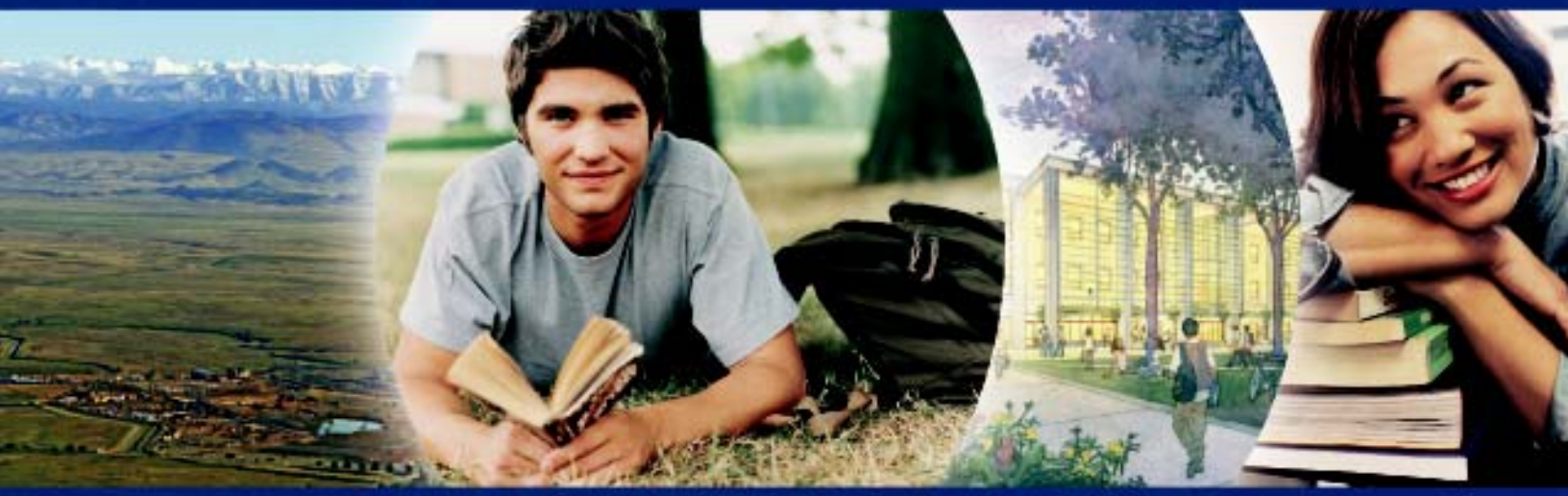

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HOW TO OBTAIN THE CATALOG

Copies of this catalog may be obtained from:
Office of Admissions/Relations with Schools and Colleges
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PLEASE NOTE

This catalog contains information about UC Merced. Because the UC Merced Catalog must be prepared well in advance of the year it covers, changes in some programs and courses inevitably will occur. Updates to this information are available online at http://www.ucmerced.edu. The selection of courses to be offered each semester is subject to change without notice, and some courses are not offered each year. The Schedule of Classes, available on the Web shortly before registration begins each semester, provides more current information on courses, instructors, enrollment procedures and restrictions, class hours, room assignments, and final examination schedules. Students should consult the appropriate school or campus unit for even more up-to-date information. Contact information appears on page 3 of this catalog.

It is the responsibility of the student to become familiar with the announcements and regulations of the university that are printed in this catalog and other campus publications. The catalog is the document of records for undergraduate major requirements and is updated annually.

Printed on recycled paper with soy-based inks.

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FALL SEMESTER 2004

Semester begins	August 23, 2004	Monday
Instruction begins	August 30, 2004	Monday
Labor Day holiday	September 6, 2004	Monday
Veterans Day holiday	November 11, 2004	Thursday
Thanksgiving holiday	November 25-26, 2004	Thursday-Friday
Instruction ends	December 10, 2004	Friday
Final examinations	December 13-17, 2004	Monday-Friday
Semester ends	December 17, 2004	Friday
Winter holiday	December 24-27, 2004	Friday-Monday
New Year's holiday	December 30-31, 2004	Thursday-Friday

SPRING SEMESTER 2005

Semester begins	January 11, 2005	Tuesday
Martin Luther King, Jr. holiday	January 17, 2005	Monday
Instruction begins	January 18, 2005	Tuesday
Presidents' Day holiday	February 21, 2005	Monday
Spring recess	March 21-25, 2005	Monday-Friday
Cesar Chavez Day holiday	March 25, 2005	Friday
Instruction ends	May 10, 2005	Tuesday
Final examinations preparation	May 11, 2005	Wednesday
Final examinations	May 12-18, 2005	Thursday-Wednesday
Semester ends	May 18, 2005	Wednesday

FALL SEMESTER 2005

Semester begins	August 29, 2005	Monday
Labor Day holiday	September 5, 2005	Monday
Instruction begins	September 6, 2005	Tuesday
Veterans Day holiday	November 11, 2005	Friday
Thanksgiving holiday	November 24-25, 2005	Thursday-Friday
Instruction ends	December 15, 2005	Thursday
Final examinations preparation	December 16, 18, 2005	Friday, Sunday
Final examinations	December 17, 19-20, 2005	Saturday, Monday-Tuesday
Semester ends	December 20, 2005	Tuesday
Winter holiday	December 26-27, 2005	Monday-Tuesday
New Year's holiday	December 30, 2005-January 2, 2006	Friday, Monday

SPRING SEMESTER 2006

Semester begins	January 10, 2006	Tuesday
Martin Luther King Jr. holiday	January 16, 2006	Monday
Instruction begins	January 17, 2006	Tuesday
Presidents' Day holiday	February 20, 2006	Monday
Spring recess	March 20-24, 2006	Monday-Friday
Cesar Chavez Day holiday	March 24, 2006	Friday
Instruction ends	May 10, 2006	Wednesday
Final examinations preparation	May 11-12 & 14, 2006	Thursday-Friday, Sunday
Final examination	May 13, 15-16, 2006	Saturday, Monday-Tuesday
Semester ends	May 16, 2006	Tuesday

SUMMER SESSIONS 2006

Memorial Day holiday	May 29, 2006	Monday
Six-week session	June 5, 2006-July 14, 2006	Monday, Friday
Eight-week session	June 5, 2006-July 28, 2006	Monday, Friday
Independence Day holiday	July 4, 2006	Tuesday

UNDERGRADUATE DEGREES – 2005-2006

Bioengineering, B.S.
Emphasis: Nanobioengineering

Biological Sciences, B.S.
Emphases: Cell Biology and Development
Microbiology/Immunology
Molecular Biology/Biochemistry
Bioinformatics/Computational Biology

Computer Science and Engineering, B.S.

Earth Systems Science, B.S.
Emphases: Geochemistry and Biogeochemistry
Hydrologic and Climate Sciences
Ecosystem Sciences

Environmental Engineering, B.S.
Emphases: Environmental Hydrology
Environmental Quality
Energy and Environmental Sustainability

Human Biology, B.A.
Emphases: Natural Sciences
Social Sciences

Management, B.A.
Emphases: Business Economics and Management
Public Policy and Management

Social, Behavioral and Cognitive Sciences, B.A., B.S.
Emphases: Economics
Psychology

World Cultures and History, B.A.
Emphases: History
Literature

PLANNED ENGINEERING MAJORS

- Chemical Engineering, B.S.
- Civil Engineering, B.S.
- Electrical Engineering, B.S.
- Industrial and Systems Engineering, B.S.
- Materials Engineering, B.S.
- Mechanical Engineering, B.S

PLANNED NATURAL SCIENCES MAJORS

- Applied Mathematics and Physics, B.S.
- Biochemistry, B.S.
- Chemistry, B.S.
- Ecology, B.S.
- New Energy, B.A., B.S.

PLANNED SOCIAL SCIENCES, HUMANITIES & ARTS MAJORS

- Anthropology, B.A. & B.S.
- Art History, B.A.
- Comparative Ethnic and Cultural Studies, B.A.
- Creative Writing, B.A.
- Economics, B.A., B.S.
- Government, B.A.
- History, B.A.
- Literature and Languages, B.A.
- Performance Studies, B.A.
- Psychology, B.A, B.S.
- Sociology, B.A.

GRADUATE DEGREES – 2004-2006

Individual Graduate Program M.A., M.S., Ph.D.
Graduate Group Emphases:
Environmental Systems
Quantitative and Systems Biology
Molecular Science and Engineering
Social, Behavioral and Cognitive Sciences (planned)

Additional Planned Individual Graduate Program
Graduate Group emphases include:
Computer and Information Systems
World Cultures

Sierra Nevada Reseach Institute Director Sam Traina (foreground) leads a hydrology session in Yosemite National Park for San Joaquin Valley science teachers.

IF YOU ARE THINKING ABOUT A CAREER IN TEACHING...

UC Merced can help you prepare! California urgently needs teachers in many fields, especially in science and mathematics. An additional special need in the San Joaquin Valley is for teachers of English. Your undergraduate education at UC Merced can give you the subject expertise to teach in these fields. In addition, UC Merced's Advising Services and Career Services centers can help you plan for the coursework and exams required to be admitted to fifth-year teaching credential programs offered at University of California or California State University campuses. UC Merced is working in conjunction with CSU Stanislaus, the closest CSU campus to UC Merced, on special pathways to credential programs. Emphasis will be placed on special pathways to math, science and English credential programs for UC Merced students.

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Fresno, CA 93710
(559) 241-7400

Merced Tri-College Center
3600 M Street
Merced, CA 95348
(209) 381-6545

Attending a university opens a range of unexplored vistas and invites you to engage in a discovery process, examining each new vista in an open, welcoming and stimulating environment.

In the social realm, you will encounter individuals from all over the world, each of whom brings a unique perspective to the campus. Years after you graduate, you will remember discussions with your classmates that changed your perspective, modified your values, or altered a previously held position.

Individually, you will learn a great deal about yourself during the college years. You will see your unique strengths more clearly, and will be able to pinpoint your values, your preferences for careers and the qualities you appreciate in a friend. When combined with the varied intellectual experiences at a university campus, such exploration fosters personal awareness and integrity.

Intellectually, the college years promise enormous growth – a growth which then provides a baseline of intellectual inquiry for the rest of your life. Individual classes, the faculty, activities on and off campus, and study sessions conducted in an environment that promotes unfettered inquiry provoke a new awareness of the world and your place in that world.

At UC Merced, we are committed to developing the potential of every student, prompting your leadership, encouraging your intellectual advancement, providing context and depth to your ideas, and helping you chart a life course that is comfortable but challenging. We promise to prod your creativity and introduce the global society that will be the backdrop for your career. In the process, you will encounter the research that leads to breakthroughs in science and artistic achievement, gives birth to new industries, and improves our quality and understanding of the social milieu.

Learning is a treasure that will follow its owner everywhere.

Chinese proverb

As the pioneer class at UC Merced, you will benefit from the quality of a UC education in the supportive setting of a small campus with unprecedented, personalized access to world-renowned scholars.

It is with great pride and anticipation that I invite you to embark on an exceptional educational journey at UC Merced.

Carol Tomlinson-Keasey
Chancellor

The University of California, Merced is opening a new chapter of academic excellence as the 10th campus of the University of California system. Welcoming students in Fall 2005, UC Merced will uphold the highest standards of teaching, research and public service.

As the nation's first major research university to be built in the 21st century, UC Merced offers an innovative, hands-on approach to education and the unparalleled opportunity for a life-transforming educational experience. Undergraduate and graduate students will be able to explore new areas of inquiry and work with our distinguished faculty on cutting-edge research, including projects conducted through our signature research institutes: the Sierra Nevada Research Institute and the World Cultures Institute.

THE CAMPUS

UC Merced's three initial schools — the School of Engineering, School of Natural Sciences, and School of Social Sciences, Humanities and Arts — will offer both undergraduate and graduate degree programs, and emphasize links between disciplines. State-of-the-art library resources and laboratories will further enrich your educational experience.

This January 2004 aerial view of the UC Merced campus showcases the stunning Sierra Nevada range in the background.

Conveniently located in the center of California, the 910-acre campus is under construction just outside the city of Merced, next to Lake Yosemite Park. Between the Sierra Nevada range to the east and the Coastal Range to the west, the campus is situated within a short two-hour drive from San Francisco, the Pacific Ocean and Sacramento; less than two hours from Yosemite National Park and other Sierra Nevada destinations; and an hour from Fresno. Merced County and the surrounding region also offer a unique selection of cultural, entertainment and recreational options for students to explore.

DID YOU KNOW?

UC Merced Chancellor Carol Tomlinson-Keasey is the first woman to lead the founding of a new UC campus.

The world-renowned natural splendor of Yosemite National Park is less than two hours from Merced.

STUDENT LIFE

Back on campus, students who join UC Merced's pioneer classes will have a once-in-a-lifetime chance to assist in crafting the student life experience for the UC Merced students who will follow. You are invited to help shape campus traditions, create student organizations and activities, and offer your ideas on student services, planning priorities and university philosophy.

As a student at UC Merced, you can gain valuable skills through internships and service learning, expand your cultural awareness and understanding, develop your leadership potential and make lifelong friends through involvement in a variety of student programs. Student government, intercultural and residential programs, intramural sports, university events and a variety of clubs and organizations will be among your choices. Students also will have access to a wide array of support services as well as academic, social, recreational and wellness activities.

ACADEMIC BUILDINGS

The first phase of campus development, spanning approximately 100 acres, includes three academic buildings, in addition to housing and dining complexes. At the heart of the campus, featuring a library collection that blends books and bytes, the Kolligian Library will be home to campus student services and administrative offices. It also will be a welcoming meeting place for individual study, small group work and encounters with your friends.

The majority of your classrooms, lecture halls and computer labs will be located in the Classroom Building. Featuring the 360-seat Lakireddy Auditorium and multi-media and studio laboratory spaces, other building amenities will include faculty and graduate student offices. The three-story Science and Engineering Building will incorporate teaching into both wet and dry research laboratories.

LIVING ON CAMPUS

UC Merced looks forward to students living on campus within the safe, comfortable environment of the Valley Terraces. Undergraduate and graduate students will make their home-away-from-home in these apartment-style suites. Serving up a range of healthy and satisfying cuisine for breakfast, lunch and dinner, the Valley Dining Commons will cater to on-campus and commuter students, faculty and staff. Visitors and members of the campus community seeking a quick meal on the run, a light snack or a cup of coffee will find what they're looking for as well. By Fall 2006, the Joseph Edward Gallo Recreation and Wellness Center will open its doors to offer traditional health services, recreational activities from aerobics classes to whitewater rafting, and wellness activities such as student peer health counseling, nutrition programs and more.

DID YOU KNOW?

UC Merced has partnerships with Lawrence Livermore National Laboratory, Yosemite National Park and Sequoia and Kings Canyon National Parks.

This historic art deco-style movie theater is part of downtown Merced's lively arts scene.

LIVING IN MERCED

In the neighboring city of Merced, students interested in living off campus will find affordable housing options and an excellent quality of life. Currently home to almost 70,000 people, the city retains the charm of a small town and boasts an average commute time of only 15 minutes.

Many educational, cultural and co-curricular activities will connect students with Merced and the surrounding region, and all students are encouraged to experience the warmth of UC Merced's host community and discover its treasures. Wandering through the pedestrian-friendly downtown is a good place to start. Brick-paved walking areas, alleys decorated with murals and Italian trellises, an award-winning multicultural arts center, a community playhouse and several historically significant buildings are among the features. Merced also is home to a number of shops, restaurants and major retail stores, with additional choices available in the nearby cities of Modesto and Fresno.

UC MERCED OPENING

UC Merced will open for the 2005-06 year with about 1,000 students, including 900 freshmen and transfer students and 100 graduate students. UC Merced seeks and welcomes students, faculty and staff of diverse ethnic and cultural backgrounds to enrich the academic, learning and social environment. The campus is expected to grow rapidly, with an addition of about 800 students in 2006 and every year thereafter. Full development of the campus is anticipated within about three decades, or around the year 2035, when UC Merced will serve an estimated 25,000 students.

UNIQUE EDUCATIONAL EXPERIENCE

To better meet the needs of students from the region, the state and the nation, a network is being created to extend outstanding educational opportunities far beyond the UC Merced campus. As part of this educational network, the campus is establishing interconnected centers to serve the San Joaquin Valley and southern Sierra Nevada with a broad spectrum of programs and services. UC Merced centers in Fresno and Bakersfield and the Tri-College Center in Merced already have offered numerous UC credit courses, professional development opportunities, student outreach activities and many other programs. Other unique off-campus locations, such as the Sierra Nevada Research Institute's Yosemite Field Station in Wawona, will expand the educational experience at UC Merced.

We invite you to visit the UC Merced campus and the Merced community to get a feel for the home of the 10th University of California campus. Available by reservation on weekdays and selected Saturdays, UC Merced guided tours consist of an admission presentation as well as a walking tour near the campus site. To make a reservation, please call the Office of Admissions/Relations with Schools & Colleges toll free in California at (866) 270-7301.

FOR INFORMATIONAL UPDATES ON UC MERCED, PLEASE VISIT US ONLINE AT WWW.UCMERCED.EDU.

SERVING THE SAN JOAQUIN VALLEY THROUGH THE 10TH UNIVERSITY OF CALIFORNIA CAMPUS

UC Merced's history dates back to 1988, when the University of California Board of Regents first authorized planning for at least one additional campus based on projections of long-range enrollment demand. The Regents targeted the San Joaquin Valley as the region where the 10th University of California campus should be located. As one of the fastest-growing regions in the state, the Valley population was one of the most distant from the nine existing UC campuses. The Regents wanted to encourage more Valley students to attend the University and to extend the University's role in contributing to the region. Following an initial review of more than 85 sites in the region, 20 were advanced for further study. Subsequently, eight were forwarded for additional consideration, and three sites were chosen to undergo final analysis and a full environmental impact report. As a result of this complex process, in May 1995 the Board of Regents selected the site in eastern Merced County owned by the Virginia Smith Educational Trust.

Locating UC Merced in the San Joaquin Valley has given the campus access to a rich natural laboratory for scientific and cultural research. UC Merced's proximity to the Sierra Nevada has also led to creation of a special relationship for education and research with three crown jewels of the U.S. National Park Service: Kings Canyon, Sequoia and Yosemite National Parks.

Ready to welcome students to UC Merced (l to r): Provost David Ashley and founding faculty members Roland Winston, Gregg Herken, Will Shadish, Peggy O'Day, Mike Colvin, Anne Myers Kelley, David Kelley, Sam Traina, Christopher Viney and Henry Forman.

FIAT LUX. LET THERE BE LIGHT.

Perfectly captured in this motto is the essence of the University of California, one of the largest and most highly acclaimed institutions of higher learning in the world.

Established in 1868, fewer than 20 years after California became a state, the University of California opened with 10 faculty members offering classes to 40 students the following year in Oakland. By 1873, the first academic buildings were completed on the UC Berkeley campus and the University moved to its new home. Today, the University of California serves almost 200,000 students; encompasses 10 campuses, five medical centers, four law schools and a statewide Division of Agriculture and Natural Resources; and manages three national laboratories for the U.S. Department of Energy. Each year, more than 40,000 students graduate from University of California campuses, including about 7.5 percent of the nation's Ph.D.s. The University has awarded approximately 1.5 million degrees and has 1 million living alumni.

The Science and Engineering Building will be home to the School of Natural Sciences and School of Engineering.

UC FACULTY

A leading center for innovation for more than a century, the University of California has responded to the needs of California through research, education and public service, and has helped to transform the world. University of California faculty members and researchers are pioneers in fields as diverse as agriculture, biological sciences, engineering, the environment, the arts, economics, medicine and technology, and 45 have garnered Nobel Prizes for their pioneering discoveries and advances of knowledge. Among the University's current faculty are more members of the National Academy of Sciences than at any other university in the United States.

Dean of Natural Sciences Maria Pallavicini, left, and student Nagvir Sidhu, take a break from their lab work during UC Merced's summer course in computational biology.

UNIVERSITY OF CALIFORNIA: AN ECONOMIC FORCE IN CALIFORNIA

The University also fuels the state and national economies through the creation of thousands of California jobs and billions of dollars in revenues, countless discoveries that improve our quality of life, and research to support innovation in fields critical to the future of our country. Technology developed by the University powers many of the state's top and emerging industries, and University of California faculty and alumni have founded or led such major companies as Chiron, Genentech, Intel Corp., Apple Computer, Inc. and Gap, Inc.

A driving force in the daily life of Californians, the University is a critical source of civic leaders, social service programs and providers, and teachers at all levels of education.

RESEARCH AND EDUCATION NETWORK

Teaching and research are strengthened within the University through an extensive network of laboratories, museums and galleries, UC Extension centers, and research and field stations, which provide valuable public service to the communities of California and the nation. The University of California further extends its resources to the public through its performing arts centers, athletic facilities and botanical gardens. With collections totaling more than 32 million volumes, the University's libraries are yet another valuable public asset and are surpassed in size on the North American continent only by the Library of Congress collection.

WHAT I LEARNED IN COLLEGE:
Get grounded in the basics, especially math and science, and also learn quantitative and computer skills. Also learn to write well.

Roger Bales, Professor of Engineering

UC OUTREACH TO K-12 AND COMMUNITY COLLEGE STUDENTS

Beyond its tripartite mission of teaching, research and public service, the University is committed to expanding the educational horizons of California's students, and is engaged in a growing number of initiatives to bolster achievement in the state's schools and better prepare students for college. Student-centered outreach efforts connect with K-12 students through mentoring, tutoring, college advising and other academic programs, while community college students benefit from services that help them prepare for transfer to the University. The University of California's school partnerships offer curriculum development, direct instruction and community engagement, along with additional assistance for many of California's lowest-performing schools. For teachers and administrators, the University of California provides professional development opportunities designed to improve skills and effectiveness. Overall, the University of California's K-14 outreach and partnership initiatives directly affect hundreds of thousands of students and educators each year.

FOR COMPLETE INFORMATION ABOUT THE UNIVERSITY OF CALIFORNIA SYSTEM, PLEASE VISIT WWW.UNIVERSITYOFCALIFORNIA.EDU

A group of San Joaquin Valley high school students tour the UC Merced campus site.

GOVERNANCE OF THE UNIVERSITY OF CALIFORNIA

The University of California system is governed by the 26-member Board of Regents, including 18 general members appointed by the Governor of California. Charged with setting general policy and making budgetary decisions for the University, the Regents also appoint the UC President, the 10 campus chancellors, and other top administrators for individual campuses and systemwide divisions. Authority for University-wide academic matters is delegated to the Academic Senate, which is composed of faculty members and administrative officers from throughout the University of California system. For each campus, a division of the University of California Academic Senate guides academic policy. Students also have the opportunity to participate in policy-making at both the campus-wide and system-wide levels.

Wildflowers spring into bloom after winter rains.

UC Merced is using the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED™) system for all major campus development and construction. The LEED™ system provides a national standard for what constitutes a "green building." Using these stewardship elements in campus development will have the following environmental, economic, health, and community benefits:

DID YOU KNOW?

UC Merced is the first university campus to be designed and constructed with green building practices.

RECYCLING – Construction practices recycle more than 75 percent of the job site waste, limit the distance that materials are transported to the site and incorporate recycled content materials and sustainably harvested wood products.

INDOORS – The indoor environment will provide good ventilation, incorporate day lighting and views, and use low-emitting paints, carpets and sealants.

ENERGY EFFICIENCY – Energy-use reduction techniques will create buildings that are far more energy efficient than code requirements.

WATER CONSERVATION – Building and landscape designs will reduce water use.

AIR QUALITY – Campus layout and construction will emphasize pedestrian traffic and non-polluting circulation methods for campus traffic as well as campus-community traffic.

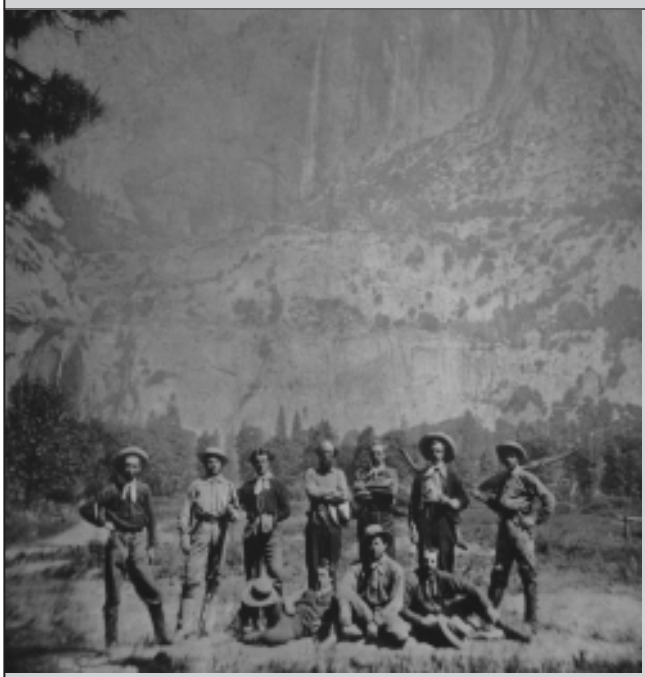
LEARNING FROM THE PHYSICAL CAMPUS – The buildings will become ongoing teaching tools for the campus and community.

UC MERCED'S ENVIRONMENTAL STEWARDSHIP: LANDSCAPE PRESERVATION

Thanks to support from the State of California, the Virginia Smith Trust, and groups such as the David and Lucile Packard Foundation and The Nature Conservancy, the creation of the new UC Merced campus will help protect an important part of California's natural wetland and rangeland heritage. The Packard Foundation's historic gift to UC Merced preserves more than 5,000 acres of vernal pool habitat next to the new campus. Funding from the State of California has supported conservation easements, allowing continued grazing and preservation of thousands of acres of additional seasonal wetland habitat in eastern Merced County. As Chancellor Carol Tomlinson-Keasey observes, "The creation of UC Merced provides an unparalleled opportunity for environmental preservation. Vernal pool habitat in eastern Merced County has been disappearing for decades. The preservation efforts undertaken as part of the creation of our campus will permanently protect thousands of acres of this sensitive habitat."

The Sierra Nevada provides a majestic backdrop for the water tower at Lake Yosemite.

NEW CAMPUSES – NEW GENERATIONS



University Excursion Party of 1870 – eight pioneer UC students with founding faculty members Joseph LeConte and Frank Soule in Yosemite.

UCLA in 1929.

Gregg Herken in 1967 as a UC Santa Cruz pioneer student.

Gregg Herken in 2004, UC Merced founding faculty member.

ALMOST 35 YEARS AGO, MY UC SANTA CRUZ CLASSMATES AND I MARCHED INTO OUR GRADUATION UNDER THE BANNER, "THE PURSUIT OF TRUTH IN THE COMPANY OF FRIENDS." I TRANSFERRED TO SANTA CRUZ BECAUSE I WANTED TO BE PART OF THAT EXPERIMENT, THAT ENTHUSIASM, AND I HAVE NEVER REGRETTED MY DECISION. THE SAME DESIRE TO BE PART OF SOMETHING BIG, NEW AND EXCITING HAS MOTIVATED MY FACULTY COLLEAGUES AND ME TO COME TO UC MERCED.

– PROFESSOR GREGG HERKEN

UC MERCED

The University of California, Merced is committed to serving the people of the San Joaquin Valley, California, the nation and the world through excellence in education, research and public service. We strive to provide educational opportunities for all.

Our founding principles of community guide both the individual and collective behaviors of students, faculty and staff. The university expects that all of its members will emulate these fundamental principles as individuals and as a community.

We celebrate the spirit of academic excellence and strive to promote our University and its strengths through our daily interactions with students, staff, faculty and the community at large.

We maintain a working and learning environment based on integrity, fairness, cooperation, professionalism and respect.

We are a community comprised of individuals with multiple cultures, lifestyles and beliefs. We celebrate this diversity for the breadth of ideas and perspectives it brings.

We value the creativity of our students, staff and faculty, and acknowledge both their individual and collaborative achievements.

We encourage health and wellness and strive to develop a sense of environmental responsibility and stewardship among all the members of our community.

We are committed to achieving tolerance in our community. All persons – faculty, staff and students – regardless of background or lifestyle should participate and work together in a collegial atmosphere that we strive to make free of any and all acts of discrimination or harassment.

We respect, support and value the civil and respectful expression of individual beliefs and opinions.

Note: These are the Founding Principles of Community of the University of California, Merced. In the years ahead, they will undoubtedly be reviewed and modified by future UC Merced faculty, students and staff.

For those who wish to review Academic and Staff Personnel Policies regarding nondiscrimination, please refer to www.atyourservice.ucop.edu. For further information, please contact the Director of Human Resources/Affirmative Action Officer at ucmercedjobs@ucmerced.edu.

Approved: January 2003

UNIVERSITY OF CALIFORNIA MISSION STATEMENT

The distinctive mission of the University is to serve society as a center of higher learning, providing long-term societal benefits through transmitting advanced knowledge, discovering new knowledge, and functioning as an active working repository of organized knowledge. That obligation, more specifically, includes undergraduate education, graduate and professional education, research, and other kinds of public service, which are shaped and bounded by the central pervasive mission of discovering and advancing knowledge.

— cited in the University of California Academic Plan, 1974-1978

Faculty members from UC Merced's School of Engineering and Merced students participate in Merced's winter holiday parade.

COLLEGE ONE

College One is responsible for overseeing the general education experience at UC Merced, including the required core courses and the freshman seminar program. College One will provide a network to connect students with advising and coursework that meets the UC Merced faculty principles for a well-rounded education.

SCHOOL OF ENGINEERING

Engineering combines scientific understanding with technical innovation to build things that determine our quality of life: new products and services, new technologies and methodologies, and new technological processes and industries. Engineering education at UC Merced will provide students the knowledge and know-how to solve societal problems, and to become the technical leaders of tomorrow. The School of Engineering will offer three initial undergraduate majors: Computer Science and Engineering, Environmental Engineering and Bioengineering.

SCHOOL OF NATURAL SCIENCES

The School of Natural Sciences encompasses fields of study that are devoted to understanding our physical and natural world: mathematics, biology, physics, chemistry and the earth sciences. Advances in these fields promise solutions to many of humankind's most pressing problems, from fighting new diseases to creating sustainable energy sources. Students will gain a deep understanding of physical and biological processes. Natural Sciences will offer three initial undergraduate majors: Biological Sciences, Earth Systems Science and Human Biology.

> I would hope that UC Merced will be a light on the hill for students in the Valley.
>
> *Paul Lo, Merced attorney and member of the UC Merced Foundation*

UC Merced deans (l. to r.): Jeff Wright, Engineering; Keith Alley, Graduate Studies; Kenji Hakuta, Social Sciences, Humanities and Arts; and Maria Pallavicini, Natural Sciences; with Bruce Alberts, President of the National Academy of Sciences (second from right).

SCHOOL OF SOCIAL SCIENCES, HUMANITIES AND ARTS

The educational mission of the School of Social Sciences, Humanities and Arts is to create a rich learning environment for looking at human nature through the lenses of many disciplines broadly divided into the humanities, the social sciences and the arts. Social Sciences, Humanities and Arts will offer three initial undergraduate majors: Management; Social, Behavioral and Cognitive Sciences; and World Cultures and History.

GRADUATE EDUCATION AND RESEARCH

The UC Merced Division of Graduate Studies oversees master's and doctoral degree education. Society's most intractable problems are broad based and multifaceted. Viable solutions to these problems require a scope of multidisciplinary approaches that can benefit the people of California and the world beyond. UC Merced is committed to offering graduate students an opportunity to work on many of society's most pressing and important problems. UC Merced will offer an individually tailored graduate program with emphases in six areas. These include Quantitative and Systems Biology; Molecular Science and Engineering; Environmental Systems; Social, Behavioral and Cognitive Sciences; World Cultures; and Computer and Information Science. Each of these is highly interdisciplinary in approach and designed to facilitate interactions between faculty and students from a broad scope of traditional academic disciplines.

Research at UC Merced is integral to the educational experience. As apprentice scholars, graduate students join faculty in the work of discovery of new knowledge. Faculty research enriches undergraduate education through the continual updating of courses and curriculum, and special opportunities such as freshman seminar and undergraduate research programs. Interdisciplinary faculty research is fostered through research organizations such as the Sierra Nevada Research Institute and World Cultures Institute.

Students relax by the fountain in downtown Merced's Bob Hart Square.

PROFESSIONAL STUDIES

Small business owners and other professionals can find numerous resources at UC Merced.

UC Merced's Division of Professional Studies was established in 1999 to increase professional development opportunities for residents throughout California's San Joaquin Valley. In an effort to equip professionals with transferable knowledge and skills for personal, professional and organizational growth, the division offers seminars, conferences, certificate programs, community classes, customized training courses and traditional continuing education courses in Merced, Fresno, Modesto and Bakersfield as well as other locations throughout the region.

The high standards set by UC Merced's Division of Professional Studies attract expert instructors who are leaders in their fields and motivated participants who bring a wide range of experience to the classroom. Additionally, division classes provide excellent networking opportunities. The ultimate goal of the Division of Professional Studies is to help build stronger leadership-management teams and a more highly trained workforce in the San Joaquin Valley.

Undergraduate students may wish to enroll in such Division of Professional Studies career development classes as the Business Management Certificate Program or the Leadership Development Program. For more information, please visit our Web site at http://www.ucmerced.edu/professional_dev/ or call (559) 241-7414.

DID YOU KNOW?

The first book acquired by the UC Merced Library is *Too Many Tamales*, written by Gary Soto with illustrations by Ed Martinez.

THE UC MERCED LIBRARY

Not the way research libraries are…
the way research libraries will be.

The University of California, Merced library is both a physical building – the Leo and Dottie Kolligian Library – and an information nexus. As a research library for the 21st century, it is a physical place on campus as well as a digital presence on student and faculty computers.

UC Merced's library will offer wireless terminals, open windows and a café area to make study time more enjoyable.

The Kolligian Library houses a concentrated, highly dynamic collection of information resources and serves as a center for study, collaboration and research. The collections and services support undergraduate and graduate instructional programs as well as advanced research. Library resources and services are available in the building and from computers connected to the campus network and to the Internet. Some library resources are in physical packages that sit on the shelves, including books, paper archives, sound recordings, photographs and much more. Others are in digital packages, such as online journal articles, data sets and geographic information systems.

In addition to library services and collections, the Kolligian Library houses Student Affairs and campus administrative offices.

The main entrance to the building opens onto the Ed and Jeanne Kashian Floor, an open-air breezeway during fair weather and a lively focal point for social, educational and research activities on campus. The entranceway reading room has an adjacent coffee house, bookstore, and print and copy services. Quieter spaces and collaborative workrooms are found throughout the building. Wireless and hard-wired computer network access is available in all library spaces. The magnificent McFadden/Willis reading room on the fourth floor is open to all for study and quiet reflection.

As an information nexus, UC Merced's library provides instant, around-the-clock access to the resources of the California Digital Library, an unequaled online collection of more than 130,000 online books, 8,000 online scholarly journals, 4,500 online statistical files, 250 reference databases and one of the world's largest online collections of historical art images – more than 300,000 digital images representing works in architecture and the visual arts. With collections totaling 32 million volumes, the libraries of the University of California system are surpassed in size on the American continent only by the Library of Congress collection.

The digital imaging project at the Library has gathered striking images such as *Lady Tokiwa fleeing with her children* by Kunistsugu Utagawa, from the Ruth and Sherman Lee Collection.

Using the UC MELVYL catalog, members of the UC Merced community can request next-day delivery of books and articles from any UC system library. The UC Merced library is actively involved in creating digital access to research information and fine art as well, placing particular emphasis on the digitization of specialized materials that are of importance to the Sierra Nevada and San Joaquin Valley regions.

http://www.ucmerced.edu/library

INFORMATION TECHNOLOGY

The use of computers and networks has become pervasive in higher education. However, because information technology has evolved over a long period of time, computer applications and network use are not always straightforward or easy. UC Merced is committed to deploying the best of current and emerging technologies and practices to help students make maximum use of information technology for academic purposes, administrative transactions and other activities.

From applying to UC Merced and tracking the application process to registering for courses and ultimately seeing grades, students will be able to use the Internet. For courses in which they are enrolled, collaborative learning software will allow students to see syllabi, course materials, library resources, assignments, grade books and course calendars; submit assignments; and chat or send e-mail to other students and faculty in the course. Additionally, many courses, including those in the social sciences and humanities, are being designed to use computers in the classroom and/or will have homework assignments using specialized software in computer labs.

Assistant professor Ruth Mostern shows the animated maps she has helped create for the Electronic Cultural Atlas Initiative.

The campus is planned to be laptop friendly, with wireless access planned in common and outdoor areas, as well as in classrooms. Inside the library, wireless access will be available in the stacks and electrical outlets in carrels and other work areas.

Students living on campus will have 10/100 MB Ethernet connectivity to the campus network, and secure access to the campus network will be available for those living off campus. All students will have UC Merced e-mail accounts and access to the Internet through CalREN, the California research network. A customizable portal, myUCMerced, will provide a single location from which to access all applications and information, including e-mail, course software, registration materials and information, and much more.

Because of the pervasive use of computer technology at UC Merced, it is strongly advised that students have their own personal computers, which should be capable of running typical Web and word processing applications. Students may find that their specific school has additional recommendations or requirements. Check the UC Merced Web site in the summer of 2005 for more specific information.

STUDENT LIFE

Students – their education and development – lie at the center of all planning at UC Merced. Our goal is to be a student-centered research university with learning taking place both in and outside of the classroom. Our student life programs have been designed to support student success and to create a vibrant community where students from all backgrounds can excel as they live and learn together.

LIVING ON CAMPUS IN MERCED

As part of the pioneer class at UC Merced, you will find that living on campus will help you make friends and become familiar with the growing campus. Student and full-time residential life staff will live on campus, providing the resources, programs and services that are essential to a safe and comfortable living environment.

Residence Life Director Valery Oehler foretold great things at the groundbreaking celebration for student housing in Fall 2003.

UC Merced's first residential community, the Valley Terraces, will offer apartment-style suites located in nine two-story buildings. Some halls will feature living-learning themes, such as Community Service and Arts & Culture. All will plan field trips, workshops and events for getting to know faculty better. Each suite has two or three bedrooms attached to a furnished living room. Bedrooms will have a bed, wardrobe, desk and bookshelf for each resident. A limited number of singles will be available for graduate students and resident advisors. Study, recreation, laundry, meeting rooms and mail facilities are located in the Community Center near the Residential Life administrative offices.

On-campus residents will enjoy apartment-style housing with the latest features for high-tech learning and comfortable living.

It is our goal to provide on-campus housing to approximately 50 percent of our students, and our first residence complex will house 600 students. Room and board rates, once established, will be posted on the UC Merced Web site at http://students.ucmerced.edu/. All freshmen, transfers and graduate students are encouraged to consider on-campus housing. On-campus housing options will continue to expand, as the campus grows, with an additional 400 beds available in the fall of 2007.

Bike race past the Merced County Courthouse Museum.

LIVING OFF CAMPUS

A variety of off-campus housing options are highlighted on the UC Merced Web site, where information about local apartment complexes and links to rental listings will be updated each semester. The site includes average rental rates, amenities of the complex, distance from local services and contact information. When possible, photographs of the apartment facilities are included. In addition to this service, local landlords and homeowners will be encouraged to list their rental properties or rooms for rent with our Off-Campus Housing listing service. Please go to the campus Student Life Web site at http://students.ucmerced.edu or contact the Office of Residential Life for more information about living off campus in Merced and Atwater.

For further information, contact:

Office of Residence and Student Life
http://students.ucmerced.edu
housing@ucmerced.edu
(209) 724-4482

TRANSPORTATION AND PARKING SERVICES

BICYCLES

Bicycles are encouraged and welcomed at UC Merced. With their flat terrain and mild climate, the city and county of Merced offer excellent conditions for bicycle riding. In addition, the city of Merced boasts over 12 miles of class one, grade-separated bike paths, which, along with the city's other bike lanes, connect most of Merced's open-space park system. Special areas have been set aside near UC Merced's academic buildings for bicycle parking. If you plan to bring your bicycle to campus, you are encouraged to register your bicycle. It is usually a quick and simple process, and the costs are minimal. Bicycles may be registered in Merced at:

The City of Merced Police Department
611 West 22nd Street
Merced, CA
For more information call (209) 385-6912

PUBLIC TRANSIT

As limited parking will be available on campus, UC Merced encourages students and staff to use alternative public transit. Merced County boasts a full-service, comprehensive transit system. UC Merced is working with the public transit authority to provide bus service to and from the campus via various routes within Merced County.

VEHICLE PARKING

Parking, while limited, will be available on campus. Some parking will be reserved specifically for students living on campus in the residence halls. Traffic will be restricted within the academic core of the main campus. All vehicles parking anywhere on campus must display a valid regular or visitor UC Merced parking permit from 7 a.m. to 4 p.m. daily, Monday through Friday. New and commuter students will have an opportunity to purchase parking permits during orientation. Parking permits may also be obtained from the Cashier's Office located on the first floor of the Kolligian Library. There will be a fee for permits. Information on fees can be obtained from our Web site in the summer of 2005.

Transportation and Parking Services
UC Merced – Facilities
(209) 724-4320

CAREER SERVICES CENTER

The UC Merced Career Services Center, located on the first floor of the Kolligian Library, assists students with a range of career-related programs and services and on-campus employment opportunities. The Career Services Center will help students to explore career options, determine career goals and develop skills to conduct a successful job search. The center also will assist students interested in pursuing graduate or professional education following graduation from UC Merced.

On–Campus Student Employment

The Career Services Center coordinates all on-campus, part-time student employment. When the campus opens, information on part-time job opportunities will be available on the Career Services Web site. In the interim, check UC Merced's Student Life Web site at http://students.ucmerced.edu/ for listings of job opportunities on campus.

Internship Programs

Internship programs provide students with the opportunity to obtain career-related work experience in regional profit and not-for-profit organizations. Students may complete internships, some which may be paid, during the academic year or during the summer. Contact the Career Services Center at careerservices@ucmerced.edu for more information.

LEARNING ASSISTANCE CENTER

UC Merced faculty and staff are committed to the academic success of every student. The Learning Assistance Center, located on the first floor of the Kolligian Library, assists students to acquire the skills they need to develop intellectually, become successful learners and achieve their academic goals. Center staff will offer programs focusing on effective study skills, critical reading and analytical writing that will help all students, regardless of major. Mathematics, science and writing courses sometimes present challenges for students. Individual tutoring and group study sessions, often led by peer tutors, will be available to provide assistance. Additional programs

and study sessions will assist students in specific courses and areas such as engineering, English, math, science and the social sciences. The Learning Assistance Center, working closely with the Career Services and Academic Advising centers, will ensure that students receive the support and assistance they need. Contact the Learning Assistance Center for more information at learning@ucmerced.edu.

COUNSELING AND HEALTH SERVICES

Health and wellness services will be provided for UC Merced students in the Joseph Edward Gallo Recreation and Wellness Center, scheduled to open in the fall of 2006. During the 2005-06 academic year, limited health services will be provided from offices located within the Valley Terraces.

Psychological counseling will be available in the Counseling Center on the first floor of the Kolligian Library. Counseling and Health Services will enable you to pursue your academic goals in an optimal state of health. To that end, the campus will provide treatment and prevention services that enhance and maintain your physical, emotional and social well-being. These services will be provided by health professionals and will range from treating asthma and allergies to reproductive health care and counseling. Professional and peer counselors will provide information on issues such as safety, stress management, nutrition, alcohol and drug use, and smoking cessation. In short, Counseling and Health Services will assist all residents in minimizing the risk of illness, injury and distress and provide cost-effective services that meet your health-related needs.

WHAT I LEARNED IN COLLEGE

Ask questions in class. Make use of office hours and be sure you try to get involved in a research project.

Martha Conklin, Professor of Engineering

All students attending a UC campus are required to have health insurance, an important component to accessing health care and extended services when you need them. An affordable health insurance plan will be available to UC Merced students through Student Health Services. For further information on health or counseling services, contact health@ucmerced.edu.

Skiing and snowboarding are available at nearby ski resorts such as Badger Pass in Yosemite National Park, Sierra Summit at Huntington Lake and Dodge Ridge near Sonora.

RECREATIONAL AND WELLNESS ACTIVITIES

As a UC Merced student you will benefit from the campus commitment to wellness. Wellness encompasses an individual's social, physical, emotional, vocational, intellectual, environmental and spiritual health. The Joseph Edward Gallo Recreation and Wellness Center will serve as the physical "home" of wellness and will offer a range of wellness activities from student peer counseling and nutrition programs to aerobics classes and white water rafting excursions.

Recreation opportunities will be plentiful at UC Merced. Immediately adjacent to the campus, Lake Yosemite offers swimming, boating and other outdoor activities. The city of Merced has an extensive network of biking and running paths, as well as city parks including a zoo and amusement area. The nearby Yosemite, Sequoia, and Kings Canyon National Parks and other Sierra recreation areas will provide easy access to a broad range of outdoor sports such as snow skiing and snow boarding, hiking and backpacking, boating, whitewater rafting and kayaking, horseback riding and much more. There is a daily shuttle service to Yosemite from Merced. See the following Web site for schedules: www.yarts.com. Not far from Merced are a number of golf courses including Stevinson Ranch, voted the second-best golf course in California.

Campus Recreation will organize a variety of activities and excursions. When completed, the Joseph Edward Gallo Recreation and Wellness Center will feature a full complement of fitness classes, cardio-vascular machines, weights and drop-in recreation such as basketball and soccer. Campus Recreation staff also will coordinate intramural sports programs based upon student interest.

High country in nearby Kings Canyon National Park offers recreation and research opportunities for UC Merced students.

STUDENT GOVERNMENT, CLUBS AND ORGANIZATIONS

The first UC Merced students will have the unique opportunity to establish UC Merced's Associated Student government, as well as the first clubs and organizations that will enrich campus life. These organizations will provide opportunities for students with common interests to help shape the direction of the new campus, build friendships, learn from each other, and provide opportunities for social and academic networking. The procedures and policies related to establishing student organizations will be available starting in Fall 2004. Check the Student Life section of our Web site at http://students.ucmerced.edu/ or e-mail: studentlife@ucmerced.edu for further information.

ARTS AND ENTERTAINMENT

UC Merced is part of a vibrant community in the San Joaquin Valley and is located close to the city of Merced. The city has a population of almost 70,000 and offers restaurants, parks, a weekly farmers market and an active multicultural arts center. In addition to the local cinemas, Playhouse Merced and the Mainzer Theater have full calendars of live performances and films. A variety of speakers and shows make appearances in town, and UC Merced will work with student clubs and organizations to add to those events.

A Merced Shakespeare Festival production of "As You Like It" is performed outdoors at Applegate park.

In addition, Modesto (45 minutes to the north of Merced), Fresno (one hour to the south of Merced) and the San Francisco Bay area (two hours to the west of Merced) have an abundance of museums, theaters, arts centers and events. The San Joaquin Valley region is home to a variety of attractions including Hershey's Visitors Center in Oakdale, Hilmar Cheese Factory, Castle Air Museum, and Mariposa Museum and History Center, with many other destinations to be found on the Merced Conference and Visitors Bureau Web site at http://www.yosemite-gateway.org/attractions.htm.

While growing up in Mariposa, Psychology faculty member Teenie Matlock went on annual family visits to the Castle Air Museum in Atwater.

CAMPUS AND STUDENT CONDUCT POLICIES

The University of California, Merced is committed to providing its students with the best education possible. The finest faculty and staff, excellent facilities and co-curricular activities all contribute to the overall learning and development experience at UC Merced. In addition to the people, places and activities that are essential to a university, UC Merced strives to create an environment that fosters individual growth, freedom of expression and sense of community. The viability of this community depends on a common understanding among its members regarding their rights and responsibilities. The UC Standards of Conduct for Students (from University of California Policies Applying to Campus Activities, Organizations and Students) lays the foundation for that understanding and governs the conduct of all University of California students. It articulates the University's expectations regarding standards of conduct – in both academic and non-academic settings. In addition, the campus Principles of Community further reinforces the expectations, obligations and privileges of participating as a member of the UC Merced community.

Student services contact list, for further information:

- Web site: http://students.ucmerced.edu
- E-mail: careerservices@ucmerced.edu
- E-mail: health@ucmerced.edu
- E-mail: housing@ucmerced.edu
- E-mail: learning@ucmerced.edu
- E-mail: studentlife@ucmerced.edu
- E-mail: housing@ucmerced.edu

AVERAGE ANNUAL EXPENSES

The range of estimated nine-month expenses, including fees, for students attending UC Merced during the 2004-2005 academic year are shown below. Cost-of-living expenses are adjusted annually and fees are subject to change. These figures are only a guide in computing average expenses, and your own living expenses may differ somewhat from these. If you will need funds beyond those that you and your family can provide, you should apply for financial aid well in advance of enrollment. Please see the appropriate Undergraduate or Graduate sections on Financial Aid and Scholarships for more information.

AVERAGE ANNUAL EXPENSES (ESTIMATES ONLY)

Student Status	Living Arrangement	Estimated Nine-Month Expenses
Undergraduate (California resident*)	On campus	$20,236
(Please note: UC Merced is not	Off campus	$18,636
accepting undergraduate	At home	$14,771
students for the 2004-2005		
academic year)		
Graduate (California resident*)	Off campus	$21,776

**Nonresident undergraduate students should add $16,956 and nonresident graduate students should add $14,934 for additional fees and nonresident tuition.*

STUDENT FEES

At the time of registration each semester, every student must pay the semester fees as shown below:

2004-05 FEE SCHEDULE

Note: Fees shown are per semester

UNDERGRADUATES *(Please note: UC Merced is not accepting undergraduates for the 2004-2005 academic year)*

	Residents	Nonresidents
University registration fee	$356.50	$356.50
Educational fee	$2,485.50	$2,725.50
Nonresident tuition fee	N/A	$8,238.00
TOTAL	**$2,842.00**	**$11,320.00**

GRADUATES

	Residents	Nonresidents
University registration fee	$356.50	$356.50
Educational fee	$2,778.00	$2,900.50
Graduate student health insurance fee*		
Nonresident tuition fee	N/A	$7,347.00
TOTAL	**$3,134.50**	**$10,604.00**

**To be determined. Graduate students must purchase the Graduate Student Health Insurance Plan (GSHIP).*

All fees are accurate as of the date published and are subject to change without notice.

Please note that the following fees are under consideration and will likely be in place during the 2005-2006 academic year: parking, transportation, student health and student life. A recreation fee has been approved by the UC Regents ($146.00 per semester for undergraduate and graduate students) and will be charged beginning in Fall 2005.

Detailed information regarding on-campus room and board charges will be available in Spring 2005.

COURSE MATERIALS FEES

Students may be charged fees in some courses for the use, rental or consumption of materials, tools or equipment, or for the costs of materials or services necessary to provide a special supplemental educational experience. For example, course materials fees may cover the purchase of chemicals and glassware for a science laboratory or of art supplies for a studio class. They might also cover film rentals, field trips or the purchase/rental of specific equipment. Courses that are subject to the course materials fee are listed in the Schedule of Classes.

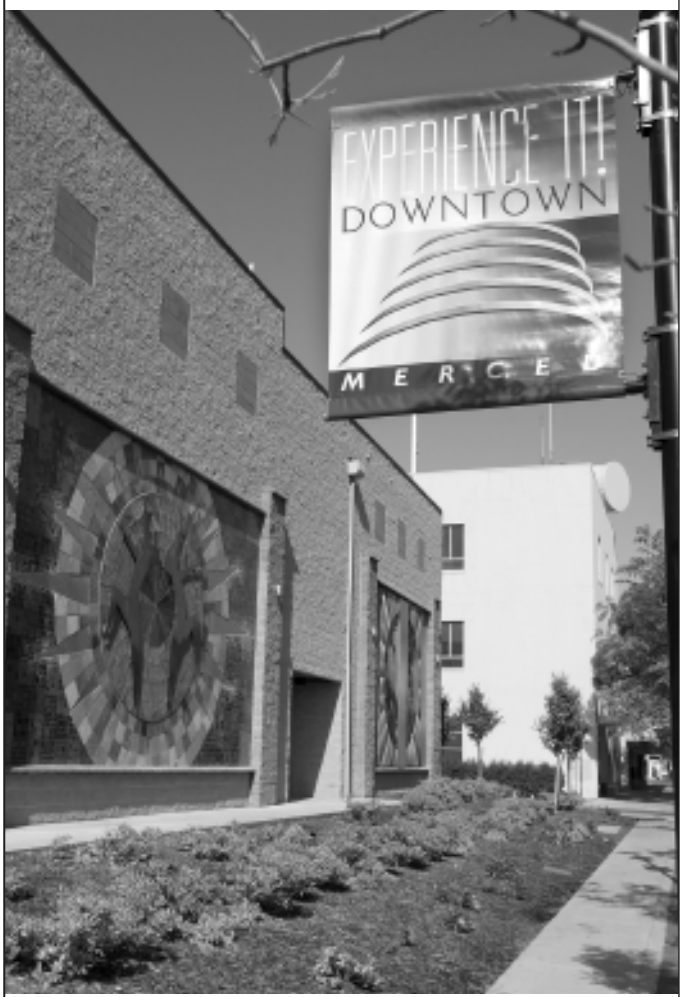
UC EMPLOYEE-STUDENT FEES

Reduced fees are available to UC career employees and certain UC retirees who are eligible for admission to the university. Once admitted, the employee-student must file a petition for the reduction in fees before each semester of enrollment. Employee-students pay one-third of the full-time registration fee and one-third of the full-time educational fee.

Employee-students may enroll for up to nine units or three courses per semester, whichever is greater. Contact the Human Resources office for further information.

PART-TIME STUDY

Students approved for enrollment on a part-time basis pay the same fees as full-time students, but pay only one-half of the educational fee. Part-time, nonresident students pay one-half of the nonresident tuition fee. Undergraduate students must file their petition for part-time study with the Office of the Registrar. Graduate students must file their petition with Division of Graduate Studies. For more information on the eligibility requirements for part-time study, please see the Academic Policies section of this catalog.



Mosaics decorate the Mainplace Stadium Cinemas in downtown Merced.

MOTOR VEHICLE PARKING PERMIT

All vehicles parking anywhere on campus must display a valid regular or visitor UC Merced parking permit from 7 a.m. to 4 p.m. daily, Monday through Friday. Parking permit rate information is available at Parking Services.

PAYMENT OF REGISTRATION FEES

Registration at UC Merced is a two-step process: (1) enrollment in classes and (2) payment of fees. You must enroll first so that your fees can be assessed. You can pay fees anytime after you enroll in classes, but a failure to pay fees in full by the 10th day of instruction will result in you being dropped for non-payment and officially withdrawn from the university.

A billing statement will be available to you after enrollment; however, if you wait to enroll just prior to the enrollment deadline, do not wait for a billing statement to pay your fees. Fees are due and payable by the published deadline whether or not a billing statement is available.

Your billing statement from the university will list credits and charges. Credits include all payments as well as financial aid disbursements. Charges include registration fees, housing charges, parking charges and charges for other services. If you are a financial aid recipient, the funds disbursed through UC Merced will be applied to allowable charges on your account. Financial aid disbursed, less allowable charges, will be refunded to you. You are responsible for the payment of any charges not covered by your financial aid.

REGISTRATION AND OTHER PAYMENTS THROUGH THE CAMPUS CASHIER'S OFFICE

You must make your registration payment as soon after enrollment as possible. The campus Cashier's Office accepts payments for all university services. Checks or money orders should be made payable to UC Regents. Additional payment options will be available.

DEADLINES AND PENALTY FINES

You must pay all prior delinquent debts prior to registering. An additional charge will be made for failure to pay required fees or deposits by the dates announced in this catalog. If you enroll in courses after the enrollment deadline, you may be assessed a late enrollment fee and/or a late payment fee.

RETURNED CHECK POLICY

Campus cashiering at UC Merced accepts personal checks as well as cash payments. Any individual who writes checks with insufficient funds will be subject to all legal action deemed appropriate by the university and will be assessed a fine currently set at $20 per returned check. In addition, anyone who writes to the university three or more checks that are subsequently returned will have his/her check writing privileges permanently revoked.

FEE REFUNDS

CANCELLATION, WITHDRAWAL AND FEE REFUNDS

To cancel registration before the first day of instruction or to withdraw from the university on or after the first day of instruction, you must complete a Cancellation/Withdrawal form and return the form to the Office of the Registrar. If you do not submit a Cancellation/Withdrawal form, you will be liable for fees according to University policy (below). It is very important that you contact the Office of the Registrar and initiate withdrawal/leave of absence procedures even if your fees are fully paid by financial aid or other programs. Failing to do so may result in you owing money to the university.

The effective date for determining a refund of fees is the date a completed Cancellation/Withdrawal form is received by the Office of the Registrar. It is presumed that no university services will be provided to the student after that date. If a student is enrolled in classes, he or she will be dropped from all courses automatically when the Cancellation/Withdrawal form is processed.

The percentage of fees that may be refunded is determined by the number of calendar days (not school days) elapsed, beginning with the first day of instruction of the semester. For students who paid fees and then canceled or withdrew by filing with the Office of the Registrar, fees may be refunded according to the Schedule of Refunds.

New undergraduate students:

The $100 deposit paid with the Statement of Intent to Register (SIR) is not refundable. Because it is not refundable, it is not included in the balance when applying the Schedule of Refunds. Thus, before or on the first day of instruction, registration fees paid are refunded in full minus $100.

All continuing students, readmitted students and new graduate students:

On or before the first day of instruction, registration fees are refunded in full minus a service charge for cancellation/withdrawal. After the first day of instruction, the Schedule of Refunds is applied to the total of fees assessed.

Failure to submit a Cancellation/Withdrawal form:

If you are not a financial aid recipient and you fail to submit a Cancellation/Withdrawal form to the Office of the Registrar, you will be presumed to have left at the end of the semester and will not be eligible for a fee refund. If you are a financial aid recipient, you must contact the Office of Financial Aid and Scholarships for information on how this will affect your refund.

SCHEDULE OF FEE REFUNDS

The Schedule of Fee Refunds applies to all new students who do not receive federal financial aid* and continuing and readmitted students.

The Schedule of Refunds refers to calendar days beginning with the first day of instruction of the semester. The number of days elapsed is determined from the date the completed Notice of Cancellation/Withdrawal form is received in the Office of the Registrar. Percentages listed (days 1-54) should be applied respectively to the university registration fee, educational fee, nonresident tuition and other student fees.

University Registration Fee, Educational Fee, Nonresident Tuition and Other Student Fees:

CALENDAR DAYS ELAPSED	PERCENTAGE OF FEES REFUNDED
0-1 days	100% less any applicable fees
2-11 days	75%
12-27 days	50%
28-53 days	10%
54 days or more	0%

**New students who receive federal financial aid and withdraw during their first academic term may be refunded fees according to a Modified Fee Refund Schedule, available at the Office of Financial Aid and Scholarships.*

Federal regulations require UC Merced to calculate the amount of federal financial aid that has been "earned" for all students who are receiving financial aid and withdraw from UC Merced during a semester. If the student withdraws prior to completing 60 percent of the semester, a pro rata portion of the aid must be returned to the federal government. Any portion of unearned aid that must be returned to federal aid programs by UC Merced will be deducted from the amount of the tuition and fee refund. If the amount UC Merced must return to federal aid programs exceeds the amount of the student's institutional refund, the student's account may be billed for the balance.

Several cafés in downtown Merced offer al fresco options for catching up with friends or an informal study session.

REFUND OF HEALTH INSURANCE FEE

Health insurance is mandatory for all students, both graduate and undergraduate, as a condition of enrollment. All students will be assessed the health insurance fee; however undergraduate students who already have adequate health insurance should request a waiver of this fee. Health insurance fees cannot be waived for graduate students. If you have paid the health insurance fee and cancel your registration on or before the first day of instruction, you are entitled to a full refund of this fee. Insurance fees are not refundable after the first day of instruction and coverage remains in effect until the last day of the term.

OTHER REFUNDS

Charges other than the registration fee, the educational fee, nonresident tuition and campus-based fees are refunded according to guidelines and schedules published by the appropriate department.

UNDERGRADUATE ADMISSION

Prospective students interested in attending the University of California, Merced are encouraged to contact Admissions/Relations with Schools and Colleges well in advance of their intended entrance. The office provides information and advice for prospective students as they prepare for university work. Future UC Merced students planning to enroll as freshmen or transfer students can get assistance in planning their pre-university course work and with the application process. If you are interested in enrolling at UC Merced, Admissions/Relations with Schools staff members are available to assist you via e-mail, telephone or in person.

ADMISSIONS/RELATIONS WITH SCHOOLS AND COLLEGES (ARSC)

550 East Shaw Avenue, Suite 105

Fresno, CA 93710

(559) 241-7474

(866) 270-7301 (toll-free in California)

- **Campus tours**
- **Admissions presentations**
- **Application workshops**
- **Pre-application advising**

Web site: http://students.ucmerced.edu (Click on Admissions link)

E-mail: admissions@ucmerced.edu

In August 2005, Admissions/Relations with Schools and Colleges (ARSC) will move to the UC Merced campus site.

UC MERCED OFFICE OF FINANCIAL AID AND SCHOLARSHIPS

P.O. Box 2039

Merced, CA 95344

(209) 724-4384

- **Grants, loans, scholarships information**
- **Financial Aid Application information**
- **Prospective student financial aid assistance**

Web site: http://students.ucmerced.edu (Click on Money Matters link)

E-mail: finaid@ucmerced.edu

UNIVERSITY OF CALIFORNIA ONLINE RESOURCES

Admissions information:	www.ucop.edu/pathways
Online application:	www.universityofcalifornia.edu/apply
Approved high school courses:	https://pathways.ucop.edu/doorways/list/
Transferable California Community College courses:	www.assist.org
Admissions examination information:	www.collegeboard.com, www.act.org
AP and IB Examination information:	http://www.ucop.edu/pathways/infoctr/qr/qrcredit.html
Quick reference for counselors:	www.ucop.edu/pathways/infoctr/qr/
$ & SENSE @ UC (Financial aid information):	www.ucop.edu/pathways/finaid

Merced's Golden Valley High School students look forward to the summer.

APPLICATION PROCESS

HOW TO APPLY

The University of California Undergraduate Application for Admission & Scholarships is available online at http://www.universityofcalifornia.edu/apply. Students may apply to UC Merced and any number of the additional eight general campuses of the University of California with one application. The San Francisco campus, which is devoted to the health sciences, has its own application and filing procedures.

Students who cannot apply online at their home, school or local library may visit Admissions/Relations with Schools and Colleges (ARSC) in Fresno to apply online using one of our free-access computers for prospective students (open 9 a.m. to 5 p.m. Monday through Friday, excluding university holidays). If you do not have access to the online application and cannot travel to Fresno, you may contact ARSC for assistance. The application for admission is also available in paper format and can be obtained from California high school guidance offices, community college transfer centers and UC campus Admissions and Relations with Schools offices. It can be downloaded in printable format from the Web site at www.universityofcalifornia.edu/apply.

WHAT I LEARNED IN COLLEGE

Try everything that is available to do—don't limit yourself to what you already know.

Patti Waid Istas, Director of Communications

WHEN TO APPLY

To ensure that applicants are considered for admission, the completed application and the application fee should be postmarked (or electronically filed) during the priority filing period shown below. Prospective applicants who have not filed during the priority filing period should contact Admissions/Relations with Schools and Colleges for more information about the advisability of filing a late application.

SEMESTER OF ATTENDANCE	PRIORITY FILING PERIOD
Fall 2005	November 1 – 30, 2004
Spring 2006	July 1 – 31, 2005

The online application center opens for fall applications prior to November 1, usually during early October, and in late June for spring applications. Students can begin the application, save their information on the secure site and continue filling out the application at their convenience up to the filing deadline. Applicants must meet the deadline (last day of the application filing month). Students who miss the November 30 deadline for fall or the July 31 deadline for spring should contact ARSC for assistance.

APPLICATION ADVICE

All applicants are asked to submit self-reported academic records on the application. Obtain copies of your grades and test scores prior to completing the application. Do not rely on memory. Your admission to UC Merced is provisional, based on verification of the information you provide. If admitted, you will be asked to submit final, official transcripts from all schools and colleges attended and official test score reports for the purpose of verifying the information you provided on your application.

APPLICATION ACKNOWLEDGEMENT

After you submit your application for admission you will receive notification that it was received. If you do not receive notification that UC Merced received your application within six weeks of submitting it, contact ARSC immediately by calling (866) 270-7301 or sending an e-mail message to admissions@ucmerced.edu.

NOTIFICATION AND ENROLLMENT

All on-time applicants for admission to a fall term will be notified of their admission decision between March 1 and 31 (freshman applicants) and March 1 through April 30 (transfer applicants). To reserve your space after being admitted to the entering class, you must submit the Statement of Intention to Register (SIR) along with a $100 deposit by May 1 for freshmen and June 1 for transfers. If you cannot afford the $100 deposit, contact ARSC immediately. Applicants for spring term will be notified of their admission decision between September 1 and October 7. The SIR deadline for spring semester is typically October 15. Admission is specific to a particular semester. If you have questions about deferring your admission to another semester, contact ARSC for assistance.

The UC Merced campus is designed to be friendly for bicyclists and pedestrians.

APPLICATION FEES / FEE WAIVER

Students applying to UC Merced must submit the application fee along with the paper application or following the submission of the online application. If you apply to more than one campus, a per-campus fee must be submitted. Application fees are not refundable.

If you cannot afford the application fee and you are a U.S. citizen or permanent resident, you may request a fee waiver in advance or at the time of submitting the online application. If your family income and the number of dependents in your household meet specifications of the University of California fee waiver guidelines, the fee will be waived for a maximum of four campus choices. Students who qualify for fee waivers and who wish to apply to more than four campuses must pay a fee for each additional campus choice.

HOW TO OBTAIN A FEE WAIVER

High school students may use the College Board fee waiver, available from your school counselor or may obtain a fee waiver authorization from any UC campus Admissions and Relations with Schools or Educational Opportunity Program office. California community college students enrolled in an Extended Opportunity Programs and Service (EOPS) program can obtain a fee waiver authorization from the EOPS office. All students: If you cannot afford the application fee and meet fee waiver guidelines, you can request a fee waiver authorization from any UC campus Admissions, Relations with Schools or Educational Opportunity Programs and Services office, or simply request a fee waiver when you submit the online application. Be prepared to answer questions about your gross family income and family size.

CATEGORIES OF APPLICANTS

- ***Undergraduate or regular status*** applicants are students who wish to enroll in an established curriculum of a school at UC Merced for the purpose of completing the Bachelor of Arts or Bachelor of Science degree.
- ***Freshman*** applicants are students who are currently enrolled in high school at the time of application or students who have graduated from high school – or have completed a California Certificate of Proficiency, an equivalent proficiency examination from another state or the General Education Development (GED) certificate – but have not enrolled in a college or university since the summer after leaving high school.
- ***Transfer*** applicants are students who have enrolled in a regular term at a college or university after leaving high school. Students who meet this definition cannot disregard their college record and apply as freshmen.
- ***Nonresidents*** are applicants whose legal permanent residence (as determined by the University) is outside of the State of California. Nonresident applicants are generally required to pay nonresident tuition and must also present a higher grade point average than is required of California residents.
- ***International*** applicants are students who hold or expect to hold student, exchange, visitor or diplomatic visas. International applicants are required to pay nonresident tuition and must also present a higher grade point average than is required of California residents. At the time of catalog publication, UC Merced has not yet been authorized to enroll international students. The campus is working with the U.S. government to gain authorization to issue visas. Prospective international students are encouraged to contact the Office of Admissions/Relations with Schools and Colleges for the latest information on the University's visa authorization status.
- ***Second baccalaureate*** applicants are college or university graduates whose educational objective has changed substantially after receiving the bachelor's degree. Applicants for the second bachelor's degree must be fully eligible for admission to UC Merced and have strong promise of academic success in the new major. All such admissions are subject to the approval of the dean of the UC Merced school in which the second degree will be earned. Candidates for a second bachelor's degree are subject to the general requirements for the bachelor's degree and to the particular requirements of the school in which they are enrolled.
- ***Limited status*** applicants are students whose special attainments qualify them to take certain courses in the university toward a definite and limited objective. To apply for limited status admission, students must either have a bachelor's degree but not be a candidate for an advanced degree, or have completed a substantial amount of college work with satisfactory grade point average. Prospective students must submit an undergraduate application with fees as well as a limited status petition and official transcripts from all schools attended. Limited status students are expected to maintain a certain scholarship average during a predetermined time of enrollment. Admission requires the approval of the dean of the school in which the student intends to study.
- ***Special status*** applicants are 21 years of age or older who have not had the opportunity to complete the full requirements for admission or who have not completed a substantial amount of college work but for reason of special attainment or background may be prepared to undertake certain courses at UC Merced toward a definite and limited objective. Conditions for special status are determined by the director of admissions and are subject to the approval of the dean of the school in which the student wants to study. Approval to matriculate also must be made by the school dean. Application, fees and filing dates are the same as those for new applicants and a petition for special status must be submitted with the application.

READMISSION TO UC MERCED

Students who were formally admitted, registered and enrolled at UC Merced, then interrupted their studies for any length of time other than summer, must apply for readmission to the campus. The application for readmission is available from the Office of the Registrar.

IMPORTANT DEADLINES RELATED TO ADMISSION 2005-06

November 30	Application priority filing deadline for admission to fall semester
March 2	Financial aid priority deadline: FAFSA and CAL Grant GPA verification
	Check the Financial Aid section of the UC Merced catalog for more information and deadlines
May 1	Statement of Intent to Register (SIR) fall semester deadline: freshmen
June 1	Statement of Intent to Register (SIR) fall semester deadline: transfers
July 15	Final, official transcripts due to ARSC (fall term applicants)
July 31	Application priority filing deadline for admission to spring semester
October 15	Statement of Intent to Register (SIR) spring semester deadline
December 15	Final, official transcripts due to ARSC (spring term applicants)

PREPARING FOR UNIVERSITY WORK

As a prospective UC Merced undergraduate, you are encouraged to give careful thought to preparing yourself adequately in reading, writing, mathematics and other subject areas relevant to your intended major. Many undergraduate majors require preparation in mathematics beyond the three years required for admission to the University. The more comprehensive and challenging your high school or college program is, the better prepared you will be for your course work at UC Merced. Honors-level, Advanced Placement and college courses are good preparation for UC Merced. These challenging courses will help you develop the good study habits and skills you will need at UC Merced. Give priority to completing the high school or college course patterns required for admission and for your interest area. Check the UC Merced Admissions Web site at http://students.ucmerced.edu for the most current information.

University of California Entry-Level Writing Requirement/Analytical Writing Placement Exam (formerly Subject A) Every undergraduate is required to demonstrate an acceptable level of ability in English composition. For further details on the UC Entry-Level Writing Requirement and Analytical Writing Placement Exam, see the General Education section of this catalog.

FRESHMAN ADMISSION

California Residents

There are three pathways of eligibility for resident students to enter UC Merced as freshmen: eligibility in the statewide context, eligibility in the local context and eligibility by examination alone.

Eligibility in the statewide context is the path by which most students attain UC eligibility. To be eligible in the statewide context, students must satisfy the **subject, scholarship and examination requirements** described below.

SUBJECT REQUIREMENT

To satisfy the subject requirement you must complete, with grades of C or better, the 15 units of high school course work listed in the following subject pattern, known as the A-G subjects or requirements. A one-year course is equivalent to one unit and a one-semester course is equal to one-half unit. Courses certified to meet the A-G requirements are identified for each California high school on the UC-certified course list available online at www.ucop.edu/doorways, or in paper format from your principal or guidance counselor. Courses from schools and colleges outside California must provide the same rigor and level of instruction to meet the A-G requirements.

A-G Subject Requirements

A. ***History/Social Science:*** 2 years required. Two years of history/social science, including one year of U.S. history or one-half year of U.S. history and one-half year of civics or American government; and one year of world history, cultures and geography.

B. ***English:*** 4 years required. Four years of college-preparatory English composition and literature. All English courses must require frequent and regular writing and reading of classic and modern literature, poetry and drama. Not more than two semesters of ninth-grade English can be used to meet this requirement. Also, only two semesters of a certified, advanced English-as-a-Second-Language course (ESL or ELD) will be accepted for this requirement.

C. ***Mathematics:*** 3 years required; 4 years recommended. Three years of college preparatory mathematics that include the topics covered in elementary and advanced algebra and two- and three-dimensional geometry. Approved integrated math courses may be used to fulfill part of or the entire requirement, as may courses taken in the seventh and eighth grades that your high school accepts as equivalent to its own math courses.

D. ***Laboratory science:*** 2 years required; 3 years recommended. Two years of laboratory science providing fundamental knowledge in at least two of these three disciplines: biology (which includes anatomy, physiology, marine biology, aquatic biology, etc.), chemistry and physics. Laboratory courses in earth sciences are acceptable if they have as prerequisites or provide basic knowledge in biology, chemistry or physics. The appropriate two years of an approved, integrated science program may be used to fulfill this requirement. Not more than one year of ninth-grade laboratory science can be used to meet this requirement.

E. ***Language other than English:*** 2 years required; 3 years recommended. Two years of the same language other than English. Courses should emphasize speaking and understanding, and include instruction in grammar, vocabulary, reading and composition. Courses in a language other than English taken in the seventh and eighth grades may be used to fulfill part of this requirement if your high school accepts them as equivalent to its own courses.

F. ***Visual and performing arts:*** 1 year required. One year of visual and performing arts chosen from the following: dance, drama/theater, music and/or visual art.

Note about the visual and performing arts requirement: Beginning with applicants for Fall 2004 and Fall 2005, students must satisfy the "F" requirement by completing two semesters of approved arts courses from a single visual and performing arts (VPA) discipline. Beginning with applicants for Fall 2006, students must satisfy the "F" requirement by completing a yearlong, approved course from a single VPA discipline.

G. ***College-preparatory electives:*** 1 year required. One year (two semesters), in addition to those required in "A-F" above, chosen from the following areas: visual and performing arts (non-introductory level courses), history, social science, English, advanced mathematics, laboratory science and language other than English (a third year in the language used for the "e" requirement or two years of another language).

Nine miles of paved bike and walking paths meander along beautiful, shady Bear Creek and Black Rascal Creek in Merced.

SCHOLARSHIP REQUIREMENT

The scholarship requirement defines the grade point average (GPA) you must attain in the "A-G" subjects **and** the SAT I (or ACT) and SAT II test scores you must earn to be eligible for admission to the university. If your GPA on the "A-G" subjects is 2.80 or above, you satisfy the minimum scholarship requirement if you achieve the test score total indicated in the Eligibility Index on Table 1, below.

DID YOU KNOW?
UC Merced professor Dunya Ramicova is an Emmy Award-winning costume designer.

The university calculates your GPA in the "A-G" subjects by assigning point values to the grades you earn, totaling the points and dividing by the total number of "A-G" course units. Points are assigned as follows: A=4 points, B=3 points, C=2 points, D=1 point and F=0 points. Only the grades you earn in "A-G" subjects in the tenth, eleventh and twelfth grades are used to calculate your GPA. Courses you take in ninth grade can be used to meet the subject requirements if you earned grades of C or better, but they will not be used to calculate your GPA.

- ***Honors courses***: The University assigns extra points for up to 4 units of certified honors-level and Advanced Placement courses taken in grades 10 – 12: A=5 points, B=4 points and C=3 points. No more than 2 units of certified honors-level courses taken in grade 10 may be assigned extra points. Grades of D are not assigned extra points. The courses must be in the following "A-G" subjects: history, English, advanced mathematics, laboratory science and visual and performing arts. In these fields, as well as in the fields of computer science and social science, courses that are designed to prepare students for Advanced Placement Examinations, the International Baccalaureate Higher Level Examination and college courses that are transferable to the University are acceptable honors-level courses.
- ***D/F and repeated grades***: Students who receive D and F grades in "A-G" courses must repeat those courses with grades of C or better. In the subject areas of mathematics, chemistry and foreign language, however, a D or F grade can be "validated" by earning a C grade or better in the second semester or more advanced level in the same subject. Courses that have been "validated" with a more advanced-level course cannot be subsequently repeated for a better grade. Consult with the Office of Admissions/Relations with Schools and Colleges or your counselor to determine how D or F grades can be improved and how the University will use them in evaluating your scholarship record. Grades will not be used for repeated courses in which you initially received a C or better.

EXAMINATION REQUIREMENT

Students applying for admission during November 2004 for the Fall 2005* term must submit the following test scores:

- Either the SAT I: Reasoning Test or the ACT. Verbal and mathematics scores on the SAT I must be from the same sitting.
- Three SAT II: Subject Tests, including Writing, Mathematics Level 1 or 2, and one test in any one of the following areas: English literature, foreign language, science or social studies.

For more information about taking the tests to fulfill the examination requirement, talk to your school counselor or contact the appropriate testing organization. Contact information for the SAT is available at www.collegeboard.com; for the ACT at www.act.org. The University requires you to take these tests by December of your senior year. To be eligible in the Statewide Context, your combined test scores must match or exceed the scores indicated for your "A-G" GPA. See the Table 1: Eligibility Index and Table 2: ACT to SAT I Conversion Table, below.

**NOTE: For admission to the Fall 2006 term, students must submit scores in the new SAT core Critical Reading, Mathematics and Writing, or the new ACT with Writing. The new SAT core and ACT examinations will be offered for the first time in March 2005. For more information about the examinations required for admission to Fall 2006, see the section, Notice of Change in Examination Requirements for Freshman Admission for Fall 2006 and Thereafter, below.*

Prospective UC Merced students participate in an information session.

TABLE 1: ELIGIBILITY INDEX

A-G GPA	Test Score Total	A-G GPA	Test Score Total
2.80 – 2.84	4640	3.20 – 3.24	3408
2.85 – 2.89	4384	3.25 – 3.29	3320
2.90 – 2.94	4160	3.30 – 3.34	3248
2.95 – 2.99	3984	3.35 – 3.39	3192
3.00 – 3.04	3840	3.40 – 3.44	3152
3.05 – 3.09	3720	3.45 – 3.49	3128
3.10 – 3.14	3616	>3.50	3120

Test Score Total equals [SAT I composite score] + [2x(SAT II Writing score + SAT II mathematics score + third required SAT II score)]. SAT I composite is the highest combined mathematics and verbal scores from a single sitting. The highest individual SAT II scores from any sitting will be considered. See the table below to convert and ACT score to an SAT I composite.

TABLE 2: ACT TO SAT I CONVERSION TABLE

ACT Score	Equivalent SAT I Score	ACT Score	Equivalent SAT I Score
36	1600	23	1070
35	1580	22	1030
34	1520	21	990
33	1470	20	950
32	1420	19	910
31	1380	18	870
30	1340	17	830
29	1300	16	780
28	1260	15	740
27	1220	14	680
26	1180	13	620
25	1140	12	560
24	1110	11	500

Eligibility in the Local Context

Under the Eligibility in the Local Context (ELC) path, the top 4 percent of students at each participating California high school are designated UC eligible for admission. To be considered for ELC, a student must complete 11 specific units of the "A-G" subject requirements by the end of the junior year. With the assistance of each participating high school, the University will identify the top 4 percent of students on the basis of GPA in the required course work.

The 11 units include 1 unit of history/social science, 3 units of English, 3 units of mathematics, 1 unit of laboratory science, 1 unit of language other than English and 2 units chosen from among the other subject requirements. The University will notify ELC students of their status at the beginning of their senior year. If you are designated UC eligible through ELC, you must submit the University's undergraduate application for admission during the November filing period and complete remaining eligibility requirements – including the subject and examination requirements – to enroll.

Eligibility by Examination Alone

If you do not meet the requirements for Eligibility in the Statewide Context or Eligibility in the Local Context, you may be able to qualify for admission to the University by examination. To satisfy the minimum requirements for eligibility by examination alone, you must achieve a total score of at least 1400 on the SAT I, or a composite score of 31 or higher on the ACT.

In addition, you must earn a total score of 1760 or higher on the three SAT II Subject Tests, with a minimum score of 530 on each test. You cannot qualify for admission by examination alone if you have completed 12 or more units of transferable college or university courses following high school graduation, or if you have taken transferable college courses in any subject covered by the SAT II Subject Tests.

Nonresident Freshmen Applicants

There are two paths to UC eligibility for nonresidents at the freshman level. The first is the same as described above under Eligibility in the Statewide Context and the second is the same as described above under Eligibility by Examination Alone, with the following exceptions:

Scholarship Requirement: Your grade point average in the "A-G" subjects must be 3.4 or higher, regardless of your SAT I (or ACT) and SAT II scores. The Eligibility Index (for grade point averages lower than 3.4) is used only for California residents.

Admission by Examination Alone: You must earn a composite score of 31 or higher on the ACT or a total score on the SAT I of at least 1400. Your total score on the three SAT II Subject Tests must be at least 1850, with a minimum score of 530 on each test.

MINIMUM ELIGIBILITY VS. SELECTION: FRESHMAN APPLICANTS

If the number of applicants exceeds the spaces available for a particular term or major, UC Merced may use selection criteria beyond minimum eligibility requirements to identify applicants who will be admitted. The following factors may be considered in a comprehensive review of eligible applicants for admission to UC Merced as freshmen:

- Academic grade point average in all required "A-G" courses, including additional points for completion of University-certified honors courses.
- Scores on the SAT I or the ACT, and the SAT II Subject Tests.
- Number, content of and performance in academic courses beyond the minimum "A-G" requirements.
- Number of and performance in University-approved honors courses and Advanced Placement, International Baccalaureate and transferable college courses.
- Identification as being ranked in the top 4 percent of your high school class at the end of your junior year ("eligible in the local context").
- Quality of your senior-year program, as measured by the type and number of academic courses in progress or planned.
- Quality of your academic performance relative to the educational opportunities available in your secondary school.
- Outstanding performance in one or more academic subject areas.
- Outstanding work in one or more special projects in any academic field of study.
- Recent, marked improvement in academic performance, as demonstrated by your academic GPA and the quality of course work completed or in progress.
- Special talents, achievements and awards in a particular field, such as visual and performing arts, communication or athletic endeavors; special skills, such as demonstrated written and oral proficiency in other languages; special interests, such as intensive study and exploration of other cultures; experiences that demonstrate unusual promise for leadership, such as significant community service or significant participation in student government; or other significant experiences or achievements that demonstrate your promise for contributing to the intellectual vitality of the campus.
- Completion of special projects undertaken either in the context of your high school curriculum or in conjunction with special school events, projects or programs.
- Academic accomplishments in light of your life experiences and special circumstances.
- Location of your secondary school and residence.

Outdoor hiking and recreation opportunities, such as those available at Hites Cove, are a short drive from Merced.

NOTICE OF CHANGE IN EXAMINATION REQUIREMENTS FOR FRESHMAN ADMISSION FOR FALL 2006 AND THEREAFTER

The SAT I and ACT examinations are undergoing revisions. New formats of these examinations will be offered beginning in spring 2005. Effective for students entering UC as freshmen for Fall 2006, each applicant must submit scores on the ACT with Writing or the new SAT core examination (Critical Reading, Mathematics and Writing).

In addition, all applicants must complete two SAT II examinations in two different subject areas of the student's choice: History/Social Science, English Literature, Mathematics, Laboratory Science or Language Other Than English. NOTE: Completion of the SAT II Writing (with Essay) and Math Level IC will not meet the Fall 2006 examination requirement. Applicants may, however, submit a Mathematics IIC score in fulfillment of the requirement. The following Subject Examinations can be used to fulfill this requirement: Literature, U.S. History, World History, Math Level IIC, Biology E/M, Chemistry, Physics, French, French with Listening, German, German with Listening, Spanish, Spanish with Listening, Modern Hebrew, Italian, Latin, Japanese with Listening, Korean with Listening and Chinese with Listening.

To learn about the new tests, visit the Web sites: www.collegeboard.com and www.act.org.

FRESHMEN WITH ADVANCED STANDING

If you complete transferable college courses as defined below or achieve an appropriate score on Advanced Placement or International Baccalaureate Higher Level examinations while in high school, you may receive transfer credits when you enter UC Merced as a freshman. Completing examinations and transferable college courses while still in high school or in the summer immediately following high school graduation does not make you a transfer student, even though you may have earned a significant number of college credits. Tables on the following pages identify the amount and type of transfer credit awarded for appropriate scores in the identified examinations.

TRANSFERABLE COLLEGE COURSES

The University awards transfer credit for courses that are determined by Admissions/Relations with Schools and Colleges to be comparable to those offered for the undergraduate degree at any UC campus, when taken at a regionally accredited institution of higher education. Transferable courses offered by California community colleges are listed on the UC Transferable Courses section of the California public institution articulation database, found on the World Wide Web at www.assist.org.

ADVANCED PLACEMENT (AP) AND INTERNATIONAL BACCALAUREATE (IB) EXAMINATIONS

The University awards credit for successful completion of the College Board Advanced Placement (AP) and the International Baccalaureate Higher Level Examinations (IB). Students must have official test score reports sent directly from the testing service to UC Merced to receive credit. All credit awarded for AP and IB examinations will be initially categorized as elective unit credit toward the undergraduate degree. Students will meet with advising staff during orientation to discuss which courses or requirements they may have waived based on their scores in these and other examinations.

CREDIT FOR IB EXAMS

The International Baccalaureate Organization (IBO) awards either a diploma or awards a certificate for individual IB exams. Students completing the IB diploma with a score of 30 or above will receive a total of 20 semester units of **elective credit** toward their UC Merced undergraduate degree, as approved by UC faculty for implementation in 2002. To complete the IB diploma, students are required to take one subject from each of the six subject groups and complete an extended essay. At least three of the six subjects must be taken at the Higher Level. The University grants 5.3 semester units to students who receive IB certificates for each individual Higher Level Exam on which the student scores 5, 6, or 7. The exam credit for individual IB Higher Level certificates is listed in Table 3 below. The University does not grant credit for Standard Level exams.

TABLE 3: CREDIT FOR IB EXAMS

IB Subject Group	Exam Area	UC Semester Units
Languages A1 (native)	English A1, French A1, etc.	5.3
Second Languages A2, B	English A2, English B, French A2, French B, etc.	5.3
Individuals and Societies	Economics, Geography, History, History of the Islamic World, Philosophy, Psychology, Social and Cultural Anthropology	5.3
Experimental Sciences	Biology, Chemistry, Physics	5.3
Mathematics	Mathematics Higher Level, Computer Science	5.3
Arts	Visual Arts, Dance, Film, Music, Theater Arts	5.3

CREDIT FOR AP EXAMS

UC Merced grants **elective credit** for all College Board AP examinations on which a student scores 3 or better. Prior to enrolling in their first classes at UC Merced, students will meet with an academic advisor to discuss their academic plans and test scores. At that time the advisor will inform the student if credit earned through AP examinations may be applied to specific course requirements at UC Merced. See Table 4 below for information about unit credit for AP examinations.

TABLE 4: CREDIT FOR AP EXAMS

AP Test	UCM Semester Units	AP Test	UCM Semester Units
Art, Studio (5.33-unit maximum for all three tests)		**Human Geography**	2.7
Drawing Portfolio	5.3	**Language Other Than English**	
2-D Design Portfolio	5.3	French Language	5.3
3-D Design Portfolio	5.3	French Literature	5.3
Art, History of	5.3	German Language	5.3
Biology	5.3	Spanish Language	5.3
Chemistry	5.3	Spanish Literature	5.3
Computer Science (2.7-unit maximum for both tests)		**Latin**	
Computer Science A	1.3	Latin Literature	2.7
Computer Science AB	2.7	Virgil	2.7
Economics		**Mathematics** (5.3-unit maximum for both tests)	
Macroeconomics	2.7	Calculus AB	2.7
Microeconomics	2.7	Calculus BC	5.3
English (5.3-unit maximum for both tests)		**Music Theory**	5.3
Language and Composition	5.3	**Physics** (5.3-unit maximum for all three tests)	
Literature and Composition	5.3	Physics B	5.3
Environmental Science	2.7	Physics C Mechanics	2.7
		Physics C Electricity &	2.7
Government and Politics		Magnetism	
United States	2.7	**Psychology**	2.7
Comparative	2.7	**Statistics**	2.7
History			
United States History	5.3		
European History	5.3		
World History	5.3		

ADMISSION AS A TRANSFER STUDENT

If you have enrolled in a regular session of college or university-level course work after leaving high school, you are considered to be a transfer student and cannot ignore your college records to apply as a freshman. UC Merced has a strong commitment to enrolling well-prepared transfer students. Following California's Master Plan for Higher Education, UC Merced will give highest priority to students transferring from California's community colleges. UC Merced will give priority to junior-level transfer students – students who have completed at least 60 and no more than 80 transferable semester units (90 to 120 quarter units). While preparing to transfer at the junior level, we encourage you to complete a pattern of courses that will best prepare you for upper division work in your chosen field of study. It is helpful if you identify an intended major early in your college course work. Contact ARSC for assistance in planning to transfer. Information about UC Merced majors and transfer preparation is available at http://students.ucmerced.edu. If you plan to transfer from a California community college, contact Admissions/Relations with Schools and Colleges to inquire about Transfer Admission Guarantee contracts or visit www.assist.org.

FOUNDATIONS FOR TRANSFER TO UC MERCED

Students who graduated from high school before June 2004 and began their college course work using the Foundations for Transfer to UC Merced, published in 2001, are encouraged to contact ARSC for advising updates.

TRANSFERABLE COLLEGE UNITS AND GRADE POINT AVERAGE (GPA)

The University awards transfer credit for courses that are determined by Admissions/Relations with Schools and Colleges (ARSC) to be essentially the same as those offered for the undergraduate degree at any UC campus, and taken at a regionally accredited institution of higher education. Transferable courses offered by California Community Colleges are listed on the UC Transferable Courses section of the California public institution articulation database, found on the Web site at www.assist.org.

Grade points for all UC-transferable courses attempted on a letter grade basis will be computed into the grade point average (GPA) that will be used to determine admission. Units for courses in which you earned grades of W, Pass or Credit, and No Pass or No Credit, are excluded from the computation of your grade point average. Honors courses taken in college are not weighted when computing the transferable GPA for admission. For more information about determining your GPA, contact ARSC or visit the Web site: http://students.ucmerced.edu.

If you have attended only community colleges or two-year postsecondary institutions, all of your UC-transferable college courses will be accepted in transfer for subject credit and your GPA for admission is computed using all UC-transferable college courses attempted. When you transfer, however, the total number of units is limited to a maximum total of 70 semester units (105 quarter units).

EXCESS UNITS

Students transferring to UC Merced from a regionally accredited four-year college or university may have up to 80 transferable semester (120 quarter) units and still be eligible to transfer. It is important to note, however, that UC Merced considers students who have completed more than 80 semester units to have excess units, and will not admit those students without special approval. A student who completed 80 or fewer units at a four-year institution, then transfers to a community college to complete course work that is necessary for admission, will not have excess units and can be considered for admission to UC Merced.

ADMISSION ELIGIBILITY FOR TRANSFERS

California Residents

There are three ways for you to meet the University's minimum eligibility requirements for transfer admission:

1. **Eligible for admission upon high school graduation**: If you were eligible for admission to the University when you graduated from high school – meaning you satisfied the subject and scholarship requirements – you are eligible to transfer if you have a C (2.0) grade point average in your transferable college course work.
2. **Lacking in subject requirements upon high school graduation**: If you met the scholarship but you did not satisfy the subject requirements when you graduated from high school, you must take transferable college courses in the subjects you are missing, earn a grade of C or better in each of these required courses, and earn an overall C (2.0) average in all transferable college course work to be eligible to transfer.

The Mainzer theater and café in downtown Merced features patio dining and live performances.

3. **Lacking in scholarship requirement upon high school graduation**: If you were not eligible for admission to the University when you graduated from high school because you did not meet the scholarship requirement, you must complete all of the following in (a) and (b) below. Any student planning to enter UC Merced as a junior-level transfer student may complete the following requirements in place of (1) or (2) above.

(a) 60 semester units (90 quarter units) of UC-transferable college course work with a grade point average of at least 2.4, and

(b) A course pattern requirement to include:

- Two transferable college courses (3 semester or 4-5 quarter units each) in English composition, *and*
- One transferable college course (3 semester or 4-5 quarter units) in mathematical concepts and quantitative reasoning, *and*
- Four transferable college courses (3 semester or 4-5 quarter units each) chosen from at least two of the following subject areas:
  - Arts and humanities
  - Behavioral and social sciences
  - Physical and biological sciences

Students who have completed courses listed on the Intersegmental General Education Transfer Curriculum (IGETC) before they transfer to the University will have already satisfied the course pattern requirement.

TRANSFER REQUIREMENTS FOR NONRESIDENTS

Transfer students who are not residents of California must meet the same requirements as California residents and must have a grade point average (GPA) of 2.8 or better in all transferable college work.

MINIMIM ELIGIBILITY VS. SELECTION: TRANSFER APPLICANTS

If the number of transfer applicants exceeds the number of transfer enrollment spaces available, UC Merced may use supplemental criteria to select from among the qualified transfer applicants. Highest-priority consideration is given to students transferring from a California Community College who meet the University's definition of a California Community College student.

Definition of a California Community College student: A California Community College student applying for admission to the University of California in advanced standing will be given priority admission over all other applicants if: 1) he/she was enrolled at one or more California Community Colleges for at least two terms (excluding summer sessions); 2) the last college he/she attended before admission to a UC campus was a California Community College (excluding summer sessions); and 3) he/she has completed at least 30 semester (45 quarter) UC transferable units at one or more California Community Colleges.

WHAT I LEARNED IN COLLEGE

If you get a chance to go on a semester abroad, take it, especially if you're able to go to a country where they don't speak your native language.

Gail Benedict,
Assistant to the Vice Chancellor of Administration

SELECTION CRITERIA FOR TRANSFER APPLICANTS:

- Completion of a specified pattern or number of courses that meet breadth or general education requirements.
- Completion of a specified pattern or number of courses that provide continuity with upper division courses in your major.
- Your grade point average in all transferable courses.
- Participation in academically selective honors courses or programs.
- Special talents, achievements and awards in a particular field, such as visual and performing arts, communication or athletic endeavors; special skills, such as demonstrated written and oral proficiency in other languages; special interests, such as intensive study and exploration of other cultures; experiences that demonstrate unusual promise for leadership, such as significant community service or significant participation in student government; or other significant experiences or achievements that demonstrate your promise for contributing to the intellectual vitality of the campus.

- Completion of special projects undertaken in the context of your college curriculum or in conjunction with special school events, projects or programs.
- Academic accomplishments in light of your life experiences and special circumstances.
- Location of your college and residence.

IGETC NOTES FOR CALIFORNIA COMMUNITY COLLEGE TRANSFERS

If you complete the Intersegmental General Education Transfer Curriculum (IGETC) prior to transfer, the campus-specific, lower-division general education requirements for graduation from UC Merced will be waived. Official certification of your completed IGETC must be sent to Admissions/Relations with Schools and Colleges at UC Merced, along with your final, official transcript, from the last community college you attended.

UC INTERCAMPUS TRANSFERS

If you are already enrolled at a University of California campus as a degree-seeking student, you may apply to UC Merced as a transfer student. Intercampus transfers follow the same procedures and deadlines as transfers from other colleges and universities. If you complete the general education or breadth requirements for your UC school or college prior to transfer and obtain a letter from the dean declaring your requirements satisfied, UC Merced will use your letter to waive campus-specific, lower-division general education requirements at Merced.

TRANSFER ADMISSION PROGRAMS

Concurrent Enrollment Program (CAP): Admissions/Relations with Schools and Colleges (ARSC) coordinates the Concurrent Enrollment Program that identifies potential participants at specified local-area high schools for simultaneous admission to UC Merced and one of the following community colleges at the point of high school graduation: Fresno City College, Merced College and Modesto Junior College. Participants in CAP are advised on a frequent basis and invited to participate in special activities designed to motivate them for transfer. CAP students are guaranteed transfer to UC Merced when they meet specified criteria. Interested high school seniors may contact ARSC at (559) 241-7474 or (866) 270-7301 toll-free in California.

TRANSFER ADMISSION GUARANTEE (TAG)

UC Merced offers Transfer Admission Guarantee (TAG) contracts for California Community College students throughout California. TAG contracts specify the courses to be completed and grade point averages students must earn at the community college to be guaranteed admission to their major. If you are interested in receiving a TAG contract, call ARSC at (559) 241-7474 or (866) 270-7301 toll free in California. The following majors are available for fall 2005 and 2006 TAG contracts:

Required GPA	Major, Degree
2.40	Computer Science & Engineering, B.S.
2.40	Environmental Engineering, B.S.
2.50	Biological Sciences, B.S.
2.50	Earth Systems Science, B.S.
2.50	Human Biology, B.A.
2.80	Social, Behavioral and Cognitive Sciences, B.A., B.S.
2.80	World Cultures and History, B.A.

ADMISSIONS INFORMATION FOR INTERNATIONAL STUDENTS

UC Merced is not yet authorized to issue immigration documents. If you require a visa to study in the United States, UC Merced cannot accommodate you at this time. We hope to receive authorization to process students for Fall 2007. For up-to-date information contact Admissions/Relations with Schools and Colleges.

International students who plan to enter UC Merced as freshmen must have completed a rigorous program of studies and activities comparable to that required of domestic freshman applicants selected for admission and must demonstrate proficiency in the English language by one of the methods described later in this section.

International students enrolled in California Community Colleges and other post-secondary institutions in the United States will be considered for admission according to the same guidelines and requirements as those required of domestic transfer students, except that they must present a grade point average of at least 2.8 for admission consideration.

Courses comparable to those offered for undergraduate degree credit in the University of California and completed in post-secondary institutions outside the United States will transfer to UC Merced if taken at institutions recognized by the Ministry of Education in the institution's home country. International students with previous college attendance cannot disregard their academic records and apply as freshmen.

International students whose native language is not English must demonstrate language proficiency by one of the following methods:

- Take the Test of English as a Foreign Language (TOEFL) and earn a minimum score of 220 (computer-based TOEFL) or 550 (paper-based TOEFL). Information about the TOEFL is available at www.toefl.org.
- Earn a score of 3, 4 or 5 on the Advanced Placement International English Language (APIEL). Information about the APIEL is available at www.collegeboard.com/ap/students/apiel/
- Earn a score of 560 or higher on the SAT II Writing examination. Information about the SAT II is available at www.collegeboard.com
- Earn grades of B or better in each of two UC-transferable English composition courses taken at a regionally accredited post-secondary institution in the United States.

COST OF ATTENDANCE AND FINANCIAL AID

See the Financial Aid section of this catalog for detailed information about the estimated cost of attendance and information about financing your education.

ORIENTATION FOR ADMITTED STUDENTS

All admitted students receive an invitation to attend New Student Orientation during Summer 2005 for fall semester and during January 2006 for spring semester. At orientation, students will meet with an academic advisor, plan their program of study and enroll in classes. See the Orientation section of this catalog for more information.

CALIFORNIA RESIDENCY STATUS

The admission requirements for California residents also apply to dependents of the University of California employees. The manner in which legal residence is defined for tuition purposes is different than that for admission purposes. If you have questions about your residency status for tuition purposes, contact the Office of the Registrar at registrar@ucmerced.edu.

Students enjoy taking a break in downtown Merced.

FINANCIAL AID AND SCHOLARSHIPS

The Office of Financial Aid and Scholarships strives to make a college education affordable for all students regardless of their families' financial situations. While students are expected to contribute a certain amount toward their education, UC Merced will offer a number of financial aid and scholarship resources to assist students in meeting their educational expenses. (Exceptions: The Office of Financial Aid and Scholarships does not have funds available to offer assistance to international students, students on special or limited status or students enrolled in the Division of Professional Studies.)

All students, regardless of income, are encouraged to apply for financial aid. Throughout the University of California system, 65 percent of all undergraduate students receive some form of financial assistance. Financial aid is intended both to remove financial barriers for families who cannot afford the cost of a higher education and to fill in the gap for families who can afford only part of the cost. A number of factors in addition to family income are considered in determining your financial eligibility, including the size of your family and the number of family members in college. Although most grant awards are based on financial need, some loans and scholarships are available regardless of need.

The Office of Financial Aid and Scholarships is dedicated to helping students and their parents understand the financial aid opportunities available as well as the criteria used in determining eligibility for the various financial aid programs available at UC Merced. The Office of Financial Aid and Scholarships welcomes your questions and is here to provide services and guidance that will contribute to your educational experiences at UC Merced. If you have questions or need additional information, please do not hesitate to contact us.

Office of Financial Aid and Scholarships:
Web site: http://students.ucmerced.edu
E-mail: finaid@ucmerced.edu
Phone: (209) 724-4384
Address: P.O. Box 2039
Merced, CA 95344

Other important Web addresses:
Web site: FAFSA: http://www.fafsa.ed.gov
Web site: CSAC: http://csac.ca.gov

HOW TO APPLY

Students applying for financial aid from UC Merced, the federal government and/or the state of California must complete the Free Application for Federal Student Aid (FAFSA). The 2005-2006 FAFSA will be available beginning in December 2004. For faster and more accurate filing, students can apply for financial aid online at www.fafsa.ed.gov. The FAFSA as well as the Cal Grant GPA Verification form should be completed and submitted as soon as possible after January 1, 2005 and no later than March 2, 2005. If the March 2 deadline has already passed, some funding may still be available. Apply as soon as possible! We receive and process financial aid applications throughout the year and students will be considered for Pell Grants and Federal Loans at all times.

A Financial aid advisor is available to assist students and parents with the financial aid application and award process, and can review special circumstances that may affect eligibility. Please contact the Office of Financial Aid and Scholarships for assistance.

Applying for Financial Aid is as easy as 1,2,3!

1. Complete and submit the University of California Application for Admissions & Scholarships by November 30, 2004.
2. Complete and submit the Free Application for Federal Student Aid (FAFSA) and a GPA Verification form by March 2, 2005.
3. Complete and return any additional documents requested by the Office of Financial Aid and Scholarships.

TYPES OF FINANCIAL AID

Students who receive financial aid may receive funds from one or more of the following sources: scholarships, grants and loans.

SCHOLARSHIPS

Scholarships are awarded on the basis of merit, academic achievement or special talents and do not have to be repaid. Some scholarships are also awarded on the basis of financial need. The University of California, Merced will administer a number of scholarship funds designed to benefit undergraduate students. These scholarships are provided through the generosity of UC alumni, friends of UC Merced, corporations, businesses, professional associations and the university itself. Following is a partial list of scholarships that will be available for undergraduate students:

- Regents Scholarship
- Louis P. Gonella Memorial Scholarship
- Lucia Myers Endowed Scholarship
- SBC Pacific Bell Scholarship
- Stewart A. Resnick Scholarship
- Wells Fargo Scholarship
- Willer-BUR Scholarship

To be considered for all campus scholarships, students simply fill out the 2005-2006 University of California Application for Admissions & Scholarships (for students entering UC Merced for the first time). Student must have a 3.25 cumulative GPA to be considered for a UC Merced scholarship. Students should carefully read the Application for Undergraduate Admission and Scholarships for information about required supporting documentation and deadline dates. To be considered for need-based scholarships, students will also need to complete and submit the Free Application for Federal Student Aid (FAFSA) as discussed above.

GRANTS

Grants are awarded on the basis of financial need and do not have to be repaid. The federal government provides funds for some grants (Federal Pell Grants). The State of California also offers grants to qualified undergraduate students (Cal Grants A and B). In addition, grant funds are provided by the University of California.

Federal Pell Grants: To be eligible for a Federal Pell Grant, applicants must be U.S. citizens or eligible noncitizens, be enrolled as undergraduates, have not previously received a bachelor's degree and demonstrate financial need. The amount you receive depends on your financial need as determined by completing the FAFSA.

Cal Grants: To be eligible for a Cal Grant award, applicants must be California residents, demonstrate financial need and meet appropriate deadlines. The California Student Aid Commission (CSAC) administers the Cal Grant program. Go to the CSAC Web site at http://www.csac.ca.gov for more information.

Cal Grant A awards are based on financial need and academic achievement. This grant pays partial registration fees.

Cal Grant B awards are based on financial need and are for entering undergraduate students, primarily from low-income backgrounds. Cal Grant B pays a stipend each semester for living expenses for first-year students, and a portion of the registration fees plus a stipend each semester for living expenses for students in their second through fourth years.

University Grants: The University offers an institutional grant program to eligible students. To determine eligibility, we subtract a student and parent contribution, any federal or state resources the student receives and a standard work and loan contribution from the cost of attendance.

Chancellor Carol Tomlinson-Keasey accepts a gift in support of student scholarships at UC Merced from Wells Fargo Bank Executive Vice President JoAnn Bertges.

LOANS

Loans are financial aid awards that require repayment. They offer the opportunity to defer the cost of your educational expenses by borrowing now and repaying later. Some loan programs are based on financial need, but there are loan programs available to all students regardless of income. Loan programs available through UCM are federally funded, providing long-term, low-interest loans.

Federal Subsidized Stafford Loans are awarded to students with financial need. This loan is "subsidized" in that the U.S. government pays the interest while the student is in school and during the grace period (the first six months after leaving school or dropping to less than half-time enrollment status).

Federal Unsubsidized Stafford Loans are not based on financial need and are available to all eligible students, regardless of income. This loan is "unsubsidized" in that the student is responsible for paying all interest due. There is no federal interest subsidy for the loan. Interest accrues immediately upon disbursement. Borrowers may elect to pay accrued interest on a monthly or quarterly basis or have it added back to the principal balance in a process called capitalization.

ELIGIBILITY REQUIREMENTS

Federal financial aid programs are subject to regulations that define the criteria students must meet to qualify and maintain eligibility for those programs. The regulations state that a student must: (1) be a U.S. citizen or an eligible noncitizen of the U.S.; (2) be accepted for admission to the University; (3) be enrolled in good standing at the University (units taken through the Division of Professional Studies are not counted toward half- or full-time enrollment); (4) demonstrate financial need (except for Federal Unsubsidized Loans and Federal PLUS Loans); (5) maintain satisfactory academic progress for financial aid, as outlined below; (6) be registered for the selective service if the student is a male at least 18 years old, born after December 31, 1960, and not on active duty with the armed forces; and (7) not owe a refund on a federal grant or be in default on a federal educational loan.

Please note: Financial need is the difference between the reasonable, approved expenses of attending UC Merced and all available resources, including the expected contribution from parents, the student and any outside aid.

FULL-TIME ENROLLMENT AND SATISFACTORY PROGRESS

Students not enrolled full time by the end of the fifth week of the semester may have to pay back some of their financial aid.

Federal regulations require that financial aid recipients meet the published Standards for Satisfactory Academic Progress for Financial Aid concerning units, grade point average and maximum semesters of attendance allowed to obtain a degree.

LIMITED NUMBER OF SEMESTERS

Financial aid is not available for an indefinite period. You are allowed up to 10 semesters of financial aid eligibility, depending on your class standing when you were admitted. The semester limit applies to time you have spent at any college or post-secondary institution; it includes semesters during which you received no financial aid, as well as terms during which you withdrew. It does not include semesters when you were not registered or summer sessions. The initial class level is assigned by the Office of Admissions and Relations with Schools and Colleges and it is based on transfer credits accepted, including Advanced Placement units. *Note*: Terms that you withdraw count toward the total number of semesters.

Student's Status	Financial Aid Eligibility at UC Merced
Entering freshman	10 semesters
Entering sophomore	8 semesters
Entering junior	6 semesters
Entering senior	4 semesters

MINIMUM NUMBER OF UNITS EACH YEAR

You must accumulate a certain number of units by the end of each year to remain eligible for financial aid. If you fail to complete sufficient units, you will receive a warning letter. If you do not complete the minimum unit level within a year after being sent a warning, you are no longer eligible for financial aid. The chart below shows the number of units you must have completed by the end of each term at UC Merced to maintain your eligibility.

Academic Year	Normal Progress	Subject to Probation	Subject to Disqualification
1	27-30	<27	N/A
2	54-60	52-53	<52
3	81-90	79-80	<80
4	108-120	106-107	<106

Dropped, failed and incomplete courses; remedial courses for which no credit is received; and repeated courses (in which you previously received a passing grade) do not count toward unit credit. To earn units for a course, you must complete and pass that course. Units are measured and warning letters are mailed at the end of the spring semester.

SATISFACTORY GRADES

An undergraduate student will be placed on academic probation if at the end of any term the student's grade point average:

is less than 2.0, but not less than 1.5, for the term;

or

is less than 2.0 for all courses taken within the University of California.

An undergraduate student is subject to academic disqualification for further registration in the University if at the end of any term:

the student's grade point average for that term is less than 1.5;

or

if the student has completed two consecutive terms on academic probation without achieving a cumulative grade point average of 2.0.

You *may receive* financial aid while you are on probation, but you will lose all financial aid if you are dismissed (unless dismissal is waived).

APPEALS

If your financial aid is denied, suspended or terminated for failure to achieve *satisfactory academic progress*, you may appeal if extenuating circumstances hindered academic performance. Appeal forms are available from the Office of Financial Aid and Scholarships. To file an appeal, complete the form, obtain and attach all documents that support the basis for your appeal, and return the form and documentation to the Office of Financial Aid and Scholarships. You are strongly encouraged to file your appeal form immediately after receiving notification that your aid has been denied. You are not eligible to receive financial aid while your appeal is under consideration, and the appeal process normally takes 2-4 weeks.

EFFECTS OF WITHDRAWING ON FINANCIAL AID

Students sometimes find that they need to withdraw from school. This may be owing to illness or a family emergency. If you leave school after the term begins this is considered a withdrawal. (If you cancel your registration for a term before the term begins, you are not eligible to receive any financial aid for that term.) Whatever the reason, if you are considering withdrawal, you should first discuss your decision with a financial aid advisor. **Financial aid recipients who withdraw may no longer be eligible for all of the financial aid they have received**. If you are a financial aid recipient and withdraw, you should expect to pay back part of your financial aid. UC Merced uses the Federal Formula required for Title IV aid recipients (Pell Grants, FFELP, Parent Loans for Undergraduate Students) to determine the amount of all forms of aid a student must return, including Cal Grants and scholarships.

The percentage of aid to be repaid is the percentage of the total days in the semester that are remaining after the date of withdrawal. For instance, if you received $2,000 in financial aid and withdraw when the semester is exactly 50 percent over, you will need to repay $1,000.

IMPORTANT WARNING: Your semesters of financial aid eligibility are limited. When you withdraw you use up one semester of eligibility!

FOR ADDITIONAL INFORMATION:

Please refer to the Money Matters Web site (http://students.ucmerced.edu) for additional information and assistance.

THE ACADEMIC YEAR

THE SEMESTER SYSTEM

The University of California, Merced is on the semester system. The academic year is divided into two semesters and two summer sessions. Quarter units earned previously at another institution are converted to semester units by multiplying by two-thirds; for example, 180 quarter units equals 120 semester units.

SUMMER COURSES

Every summer, students can earn units, expand their knowledge, take special study courses, fulfill prerequisites, and complete general education or major requirements by enrolling in summer courses. UC Merced offers two summer sessions. A wide variety of courses are offered each summer in subjects that are transferable to most campuses. Enrollment in summer session courses is open to UC Merced students and other UC students, as well as students from other colleges and universities, adults, and high school juniors and seniors. For additional information about summer courses, contact summersession@ucmerced.edu.

ENROLLMENT AND ENROLLMENT LIMITS

ENROLLING IN COURSES

UC Merced students register each semester using the online registration system, RegCat. The registration process includes enrolling in classes, paying fees and other financial obligations, filing a current address with the Office of the Registrar, and completing and filing other information forms.

RegCat is an interactive computer system that allows the student to enroll in classes via the Internet. With UC Merced's Internet registration, students will always receive the most up-to-date information regarding their registration and class enrollment. Pre-assigned appointments that are spread throughout the registration period regulate access to the registration system. For security purposes, students are assigned a unique login user code and password/PIN that must be entered to access RegCat.

Students may add and drop courses during the adjustment period, which starts one week before instruction and extends through the first three weeks of instruction.

WHAT I LEARNED IN COLLEGE

Study what your heart yearns for, not necessarily what your head tells you to do. The journey will take you to places you never imagined.

Mas Masumoto,
San Joaquin Valley author and farmer

A new or re-entering student must also:

- Obtain a student ID card, and
- Submit a Statement of Legal Residence (see Appendix).

The Schedule of Classes and other information on registration are available on the RegCat Web site.

The UC Irvine campus shown here in its early years of development, shares with UC Merced its agricultural origins.

Registration Priority: Access to registration (via RegCat) is by priority groups. The groups are established according to student class level as determined by the number of units completed, with the seniors registering first, juniors second, etc. The number of semester units a student has completed determines undergraduate classification:

Class Level	Units
Freshman	0.0–29.9
Sophomore	30.0–59.9
Junior	60.0–89.9
Senior	90.0 or more

Late Registration

Students who have not registered prior to the first day of instruction are considered late registrants. Late registration begins after the first day of instruction and extends through the 10th day of instruction. Students are, however, assessed a late registration fee. Approval from the student's school is required to register late.

Adding and Dropping Courses

Adding a Course: During the first week of instruction, students may add a course or courses if space is available. During the second and third weeks of instruction, a student may add courses only with the permission of the instructor. After the third week of instruction, students may add a class only with the permission of both the instructor and the appropriate dean. A fee will be assessed for adding a course after the third week.

- First week: Students may add if space available
- Second and third weeks: Students may add only with instructor's approval
- After third week: Students may add only with instructor's and appropriate dean's approvals; fee assessed

Dropping a Course: During the first three weeks of instruction, students may drop a class or classes without paying a fee and without a dean's approval. After the third week of instruction, a student may drop only if the student is not failing the course, if the student is not subject to disqualification and if dropping the course would be to the educational benefit of the student. For courses dropped after the third week of instruction, a student must receive the appropriate dean's approval, a fee will be assessed and a notation indicating the week of the term in which the course was dropped will appear on the student's transcript. The Undergraduate Council may designate certain courses to have a drop date that is shorter than three weeks.

- First through third week: Students may drop with no penalty
- After third week: Students may drop only with the appropriate dean's approval; fee assessed

Repetition of Courses

A student may repeat only those courses in which a grade of D, F, U, or Not Passed was received. Undergraduate courses in which a grade of D or F has been earned may not be repeated on a passed/not passed basis. Similarly, a graduate course in which a C, D or F grade is received may not be repeated with the S/U option.

WHAT I LEARNED IN COLLEGE

To solve a problem, you have to experiment with different solutions; you have to try them and see if they work; you have to act.

Will Shadish,
Professor of Psychology, UC Merced

Repetition of a course more than once requires approval by the appropriate dean in all instances. Degree credit for a course will be given only once, but the grade assigned at each enrollment shall be permanently recorded.

In computing the grade point average of an undergraduate who repeats courses in which the student received a D or F, only the most recently earned grade and grade points shall be used for the first 16 units repeated. In the case of further repetitions, the grade point average shall be based on all grades assigned and total units attempted.

Enrollment Status

Certification of Full-Time Status: Undergraduate students must carry a study load of at least 15 units (including workload units) each semester in order to maintain normal progress toward their degree. At least 12 units are required for undergraduates to be certified as full-time students for financial aid purposes and to meet minimum progress requirements. Graduate students must also carry a study load of at least 12 units each semester in order to be certified as full-time students.

Part-Time Student Status: If, for reasons of occupation, family responsibility, health or graduating senior status (one term only), a student is unable to attend the university on a full-time basis, he/she may qualify for enrollment in part-time status. The student must file for part-time status each semester. To be considered eligible, undergraduate students must be registered for 10 units (including workload units) or fewer by the 10th day of instruction that semester, and graduate students must be registered in 6 units or fewer by the 10th day of instruction. Minimum progress requirements are waived for approved part-time students. Undergraduate petitions are available on the Office of the Registrar's Web site at registrar.ucmerced.edu, and at the Graduate Studies Web site at graduatedivision.ucmerced.edu.

Students approved for enrollment on a part-time basis pay the same fees as full-time students, but pay only one-half of the Educational Fee. Part-time nonresidents pay one-half of the Nonresident Tuition Fee. Undergraduates file their part-time petition with the Office of the Registrar; graduate students file their petition with the Graduate Studies division.

Normal Progress to Degree

UC Merced undergraduate degree programs are designed to be completed in eight terms or four academic years. To meet the normal progress requirement, undergraduate students are expected to enroll in and pass an average of 15 units per term, completing the 120 units necessary for graduation in four years. The Office of the Registrar and the appropriate dean will ensure that students are making normal progress toward their degrees. An extension of enrollment beyond nine terms requires the approval of the student's school. In order to remain in good standing, students must meet the minimum progress requirements of the campus. (See Minimum Progress section of catalog.)

On the right, Anne Myers Kelly, a professor in the School of Natural Sciences, works with a student in her laboratory.

ADDITIONAL ENROLLMENT OPPORTUNITIES

Intercampus Transfer: Undergraduates may apply for transfer to another University of California campus. Copies of the Application for Undergraduate Admission are available from the Office of Admissions & Relations with Schools & Colleges and must be filed with the University of California, Undergraduate Application Processing Service, P.O. Box 23460, Oakland, CA 94623-0460.

The application is also available online at UC's PATHWAYS Web site at www.ucop.edu/pathways. Students may apply online or download a copy of the application to mail to the postal address above.

Students who are or have been enrolled in a regular UC Merced semester may apply for an intercampus transfer to another UC campus, provided they have not been registered subsequently in a regular term at another collegiate institution. A nonrefundable fee is required at the time an application is submitted.

UC/CSU/Community College Intersegmental Cross Enrollment: Senate Bill 361 requires that the University of California, California State University, and the California Community Colleges permit students to enroll in one course per term at a campus of either of the other two systems on a space-available basis at the discretion of the two campuses involved. Enrollment is limited to one course per term and participating students need the approval of both the home and the host campus.

Please see the Office of the Registrar's Web site for specific eligibility criteria. Generally, students will be allowed to add a class, if space is available, after the add/drop period on the host campus. To add a course, students must obtain the faculty member's approval and signature on a Cross-Enrollment form, available at their home campus Registrar's Office. The student submits the signed form to the Office of the Registrar at the host campus for processing. All course work taken via the Intersegmental Cross Enrollment program is recorded on a host campus transcript and must follow the normal transfer of credit procedures at the home campus.

Simultaneous Enrollment for Graduate Students: UC Merced graduate students may enroll, without formal admission and without payment of additional University fees, in courses at another UC campus on a space-available basis at the discretion of the appropriate campus authorities on both campuses. To qualify for this program, students must complete a minimum of 12 units as a matriculated student at the home campus. (This requirement can be waived at the discretion of the Graduate Studies Dean.) Students must be enrolled at both campuses in the current term with a minimum of 12 units as a matriculated student at the home campus; be in good academic standing; and be certified by their home campus as to eligibility, residence, fee, financial aid and health status.

To participate in this program, please see the Office of the Registrar's Web site for form(s) that must be completed by appropriate authorities on both campuses, and to ensure that the application of a non-home UC course will satisfy degree, graduation or other specific requirements (other than unit credit). Failure to ensure the applicability of the non-home UC course to UC Merced requirements could result in a refusal to allow the course to satisfy any specific requirements (other than unit requirements). For further information, contact Graduate Studies and the Office of the Registrar.

Intercampus Exchange Program for Graduate Students

A graduate student registered on the UC Merced campus may become an intercampus exchange student for a full term at any of the other UC campuses with the approval of the graduate adviser, the director of the graduate group and the deans of Graduate Studies on both the home and host campuses. To be eligible, the graduate student must have attended UC Merced for a minimum of one term before participating in the intercampus exchange program. Students are limited to a maximum of two consecutive semester-based terms or three quarter-based terms on intercampus exchange. Permission for exchange is done on a semester-by-semester basis. Application forms may be obtained in the Office of Graduate Studies and should be submitted four weeks in advance of the semester you wish to participate.

Intercampus exchange students register at both campuses and pay fees on their home campus, but they have access to student services available on the host campus. Students should make arrangements with the Office of the Registrar to follow the enrollment procedure of the host campus so that the grades students obtain in courses taken on the host campus will be transferred to your record on the home campus. Grades from courses completed on the host campus will be transferred to the home campus and become part of the student's official graduate transcript. Exchange students are considered graduate students in residence on the home campus and are not formally admitted to the host graduate school and department. For further information, contact Graduate Studies and the Office of the Registrar.

Concurrent Credit from Another Institution: With the exception of current registered students participating in the UC/CSU/Community College Intersegmental Cross-Enrollment Program, a student may not obtain transfer credit for courses at a non-University of California campus in a term during which the student is registered as a full-time student at UC Merced. An exception can be obtained only by petitioning the appropriate school dean well in advance of the desired registration, and the student must still be enrolled in at least 12 units at the UC Merced campus during the term in which the exception applies.

EXAMINATIONS

FINAL EXAMINATIONS

Scheduling: The Schedule of Classes lists the times that final examinations are to be held. These are set up according to the day-and-hour periods in which the classes are given during the semester. This information is available online or in the Schedule of Classes each term so that students can avoid final examination conflicts. A student who has multiple exams on the same day may discuss the situation with the instructors of the course. An instructor has the option to agree to provide the student the exam on a different day, but is not required to do so.

Disabilities: Students with documented disabilities may be entitled to in-class accommodations. The student must provide the instructor with a letter from the Disability Services Center recommending those academic accommodations that the instructor is responsible for providing. Students must request accommodation as soon as possible to allow the university reasonable time to evaluate the request and offer necessary adjustments. No accommodations shall alter the nature of the academic demands made of the student nor decrease the standards and types of academic performance, nor require facilities or personnel that cannot reasonably be provided. The instructor should consult with the student and the Disability Services Center with any questions or concerns.

Religious Observances: UC Merced seeks to accommodate any student who, in observance of a religious creed, encounters an unavoidable conflict with an examination schedule. In order to request accommodation, the student is responsible for providing, in writing and at the beginning of the semester, notification of a potential conflict to the individual responsible for administering the examination. Instructors will consider such requests on a case-by-case basis and determine whether such conflicts can be resolved without imposing on the instructor or the other students in the class an undue hardship that cannot be reasonably avoided. If so, the instructor will determine, in consultation with the student, a time during which the student can take the examination without incurring a penalty or violation of the student's religious creed.

Credit by Examination: Students currently registered in any regular term and in good academic standing who by reason of advance preparation believe themselves to be adequately grounded in the materials and principles of a given course may petition for credit by examination for any course offered at UC Merced without formally enrolling in that course. Students may obtain a petition and a copy of the prescribed conditions from the Office of the Registrar's Web site at registrar.ucmerced.edu.

The petition is subject to the approval of the instructor giving the examination and the dean of the school involved. Once the petition has the signed approvals of the appropriate dean, it should be submitted to the Office of the Registrar, accompanied by the mandatory fee.

Due to special features of the instruction, such as extensive laboratory work, certain courses may not be considered appropriate for obtaining credit by examination. In addition, credit by examination will not be approved in the following circumstances: (1) if the student has had prior instruction in the topic, (2) for the purpose of repeating a course, (3) for courses in subjects in which the student has completed more advanced work, (4) for elementary and intermediate courses in a student's native language, or (5) for granting credit for a course which the student has attended and audited.

To earn credit through the credit by examination process, the examination must be given by a UC Merced instructor and be for a course listed in the current General Catalog. The final results will be reported to the Office of the Registrar, who will record the appropriate grade and grade points. Since failure to pass the examination will be recorded as an F, students are encouraged to prepare fully for such an examination before attempting it.

Grades, Progress to Degree and Dismissal

Grades: The work of all students on the UC Merced campus is reported in terms of the following grades:

- **A** (excellent)
- **B** (good)
- **C** (fair)
- **D** (barely passing)
- **F** (not passing)
- **P** (passed at a minimum level of C- or better by an undergraduate student)
- **S** (satisfactory - passed at a minimum level of B or better by a graduate student)
- **NP** (not passed)
- **U** (unsatisfactory)
- **I** (incomplete)
- **IP** (in progress)
- **NR** (No report, when an instructor fails to report a grade for a student).

Grades of A, B, C and D may be modified by a plus (+) or minus (-).

Social Sciences, Humanities and Arts Dean Kenji Hakuta scales the heights in California.

Student researchers use a penetrometer to measure density profiles in a 2-meter pit at Summit, Greenland.

Credit Toward Degree Requirements: A course in which the grade A, B, C, D, P or S is received is counted toward degree requirements. A course in which the grade F, NP or U is received is not counted toward degree requirements. Grades of I or IP are not counted until such times as they are replaced by grades A, B, C, D, P or S.

Grade Points: Grade points are assigned as follows: A+ = 4.0, A = 4.0, A- = 3.7, B+ = 3.3, B = 3.0, B- = 2.7, C+ = 2.3, C = 2.0, C- = 1.7, D+ = 1.3, D = 1.0, D-= 0.7, F = 0.0, I= 0.0, and P/NP = N/A.

The grades P, S, NP, U, I and IP carry no grade points and the units in courses so graded are excluded in determination of the grade point average.

> Acquiring a healthy lifestyle will be another hallmark of the student experience at UC Merced.
>
> *Jane Lawrence,*
> *Vice Chancellor for Student Affairs*

Grade Point Average: A student's grade point average is computed on courses undertaken in the University of California, with the exception of courses undertaken in University Extension. Grades A, B, C, D and F are used in determining the grade point average; grades I, IP, P, S, NP and U carry no grade points and are excluded from all grade point computations. The grade of I is excluded from computations.

Change of Grade: All grades except Incomplete and In-Progress are considered final when assigned by an instructor at the end of a term. An instructor may request a change of grade when a computational or procedural error occurred in the original assignment of a grade, but a grade may not be changed as a result of re-evaluation of a student's work. No final grade may be revised as a result of re-examination or the submission of additional work after the close of term.

Grade I (Incomplete): The grade of I may be assigned when the instructor determines that a student's work is of passing quality and represents a significant portion of the requirements for a final grade, but is incomplete for a good cause. (Good cause may include current illness, serious personal problems, an accident, a recent death in the immediate family, a large and necessary increase in working hours, or other situations of equal gravity.) It is the student's responsibility to obtain written permission from the instructor to receive an I grade as opposed to a non-passing grade. An Incomplete petition is available from the Office of the Registrar's Web site and must be filed prior to the end of the final examination period.

If an I grade is assigned, students may receive unit credit and grade points by satisfactorily completing the coursework as specified by the instructor. Students should not re-enroll in the course; if they do, it is recorded twice on the transcript. Once an I grade is assigned, it remains permanently on the transcript along with the passing grade students may later receive for that course.

I grades are not counted in computing the grade point average. An I grade received in the fall term must be replaced by the first day of instruction in the following fall term. An I grade received in the spring or summer terms must be replaced by the first day of instruction in the following spring term.

Except as noted below, any I grade that has not been replaced within the deadlines above will be converted to grade F (or NP/U if taken passed/not passed). After that time, but not retroactively, the grade is counted in computing a student's grade point average.

Exception: If a degree is conferred before the end of the deadlines above following the assignment of an I grade, the grade will not be converted to an F (or NP/U). However, the student still has the option of removing the I grade within the deadlines above.

Students with 15 or more units of I on their record may not register without permission of the appropriate dean.

Grade IP (In Progress): For a course extending over more than one term where the evaluation of the student's performance is deferred until the end of the final term, provisional grades of In Progress (IP) shall be assigned in the intervening terms. The provisional grades shall be replaced by the final grade if the student completes the full sequence. The grade IP is not included in the grade point average. If the full sequence of courses is not completed, the IP will be replaced by a grade of Incomplete. Further changes in the student's record will be subject to the rules pertaining to I grades.

Passed/Not Passed (P/NP): Undergraduate students in good standing who are enrolled in at least 12 units may take certain courses on a passed/not passed (P/NP) basis. Students may enroll in one course each term on a P/NP basis (two courses if they have not elected the P/NP in the preceding term).

Changes to and from the P/NP option must be made during the enrollment period. No changes can be made after the first two weeks of classes without the approval of the appropriate dean.

WHAT I LEARNED IN COLLEGE

The college experience is a banquet of opportunities that nourish one's mind, body and spirit. Invest in yourself and attend college.

Susan Fauroat, Associate Director of Admissions

The grade P is assigned for a letter grade of C- or better. If the student earns a grade of D+ or below, the grade will be recorded as NP. In both cases, the student's grade will not be computed into the grade point average. A student may not repeat on a P/NP basis a course that was previously taken on a letter-graded basis.

Credit for courses taken on a P/NP basis is limited to one-third of the total units taken and passed on the UC Merced campus at the time the degree is awarded.

A course that is required, or a prerequisite, for a student's major may be taken on a P/NP basis only upon approval of the faculty. Schools may designate some courses as passed/not passed only. Students do not have the option of taking these courses for a letter grade.

Satisfactory/Unsatisfactory (S/U): The grade of S is awarded to graduate students for work in graduate courses that otherwise would receive a grade of B or better.

Graduate students, under certain circumstances, may be assigned grades of S or U, but units earned in this way will not be counted in calculating the grade point average. Petitions to elect S/U grading are available from the Graduate Studies Office Web site at graduatedivision.ucmerced.edu and must be signed by the student's graduate adviser. Graduate students may petition to take no more than one course per semester on an S/U grading basis. A graduate course in which a C, D or F grade is received may not be repeated with the S/U option.

In specific approved courses, instructors will assign only Satisfactory or Unsatisfactory grades. Such courses count toward the maximum number of units graded S allowable toward the degree, as specified by each degree program.

Retroactive Grade Changes

All grades except I and IP are final when filed by an instructor at the end of the semester. No final grade except I may be revised by examination or the submission of additional work after the close of the semester.

If a clerical or procedural error in the reporting of a grade by the instructor can be documented, the student may request a change of grade with a petition available from school dean's office. The request must be made by the fifth week of the following semester.

Grade changes for "clerical" errors (such as incorrect addition of points), upon documentation, are automatically granted. Requests to interchange P, NP, S or U grades with normal letter grades based upon student need (such as to allow graduation or to meet entrance requirements for professional school) do not involve clerical or procedural errors and are automatically denied. Thus, students should exercise the passed/not passed or satisfactory/unsatisfactory grading options with caution.

Students are reminded of their responsibility to be aware of the procedures and regulations contained in this catalog and the Schedule of Classes, to verify their class schedules, and to familiarize themselves with the expectations of their instructors. No changes, except completion of an I grade as noted above, can be made to the student's record once he or she has graduated.

Final Grades

Grades are generally available as soon as possible after a semester has ended. Students can check their grades online using the RegCat enrollment/records system.

Grade Reports: After grades are recorded for a semester or summer session, they are available online via RegCat. With the availability of online grade reporting, students can print their grade reports from the Internet. Grade reports printed by the Office of the Registrar will be provided at the request of the student.

Minimum Progress

The following provisions apply to all undergraduates. Graduate and professional students with scholarship deficiencies are subject to action at the discretion of the Office of Graduate Studies.

a. Minimum Progress-Qualitative Standards

An undergraduate student will be placed on academic probation if at the end of any term the student's grade point average:

is less than 2.0, but not less than 1.5, for the term;

or

is less than 2.0 for all courses taken within the University of California.

An undergraduate student is subject to academic disqualification for further registration in the University if at the end of any term:

the student's grade point average for that term is less than 1.5;

or

the student has completed two consecutive terms on academic probation without achieving a cumulative grade point average of 2.0.

In the case of probation or dismissal, the official transcript will state "not in good standing." Once a student has met qualitative standards for scholarship, the notation will be removed from the transcript and the student will return to good standing.

b. Minimum Progress-Quantitative Standards

An undergraduate student is subject to probation if he or she does not complete a minimum of 27 cumulative units by the end of the first academic year, a minimum of 54 cumulative units by the end of the second academic year, a minimum of 81 cumulative units by the end of the third academic year and a minimum of 108 cumulative units by the end of the fourth academic year (including workload credits). An academic year consists of fall, spring and summer terms. If the student meets the next applicable minimum progress requirement, the student will return to good standing at that time. Students who do not meet the next applicable minimum progress requirement are subject to dismissal.

Minimum progress requirements do not apply to students who have a dean's approval to carry less than the minimum progress load because of medical disability, employment, a serious personal problem, a recent death in the immediate family, the primary responsibility for the care of a family or a serious accident involving the student.

Probation and Disqualification

An undergraduate student on academic probation or subject thereto is under such supervision as the faculty of that student's school may determine. Continued registration of an undergraduate student subject to academic disqualification is at the discretion of the faculty concerned, or its authorized agent, and is subject to such conditions as that faculty may impose.

A student will be placed on probation or subject to disqualification for failure to meet qualitative or quantitative standards of scholarship as described in the minimum progress section.

The qualitative standards of scholarship require that a student maintain a C average (2.0) or better for all work undertaken in the University and for the work undertaken in any one semester.

The quantitative standards, referred to as minimum progress requirements, define scholarship in terms of the number of units that a student must satisfactorily complete. It is assumed that a student will earn the 120-unit minimum degree requirement within 8 semesters (four years). This means students must plan to complete, on average, 15 units per semester.

Dismissal

Undergraduate students may be dismissed for either qualitative or quantitative reasons (defined above) based on the decision of the dean of the school in which the student is enrolled. Should a former UC Merced student later wish to be readmitted to UC Merced, the authority to do so rests with the dean of the school from which the student was dismissed. Students are encouraged to see their adviser or go to the dean's office of their school if they need academic advising about probation and dismissal.

Transfer with Scholastic Deficiencies

To transfer from one campus of the University to another, or from one school to another on the same campus, a student who has been academically disqualified or is on academic probation must obtain the approval of the dean to whose jurisdiction the student seeks to transfer.

Transcripts and Records

Transcripts: Transcripts (official and unofficial) may be ordered via RegCat as soon as possible after the end of the semester. Alumni and students who are not registered may order transcripts from the Office of the Registrar. See the Office of the Registrar's Web site at registrar.ucmerced.edu, for further information. At times other than the end of the semester, the normal period required for processing and issuing transcripts for both registered and former students is 7 to 10 working days after receipt of the student's request. There is a charge for each transcript. The total amount due must accompany the application. Students who urgently need a transcript that would normally take 7 to 10 days to issue can request a 48-hour turn-around at a special charge for each copy.

Transcripts of all work done through UC Merced's Division of Professional Studies must be requested directly from that division. Contact Professional Studies at (559) 241-7400. Transcripts of work completed at another campus of the University or at another institution must be requested directly from the campus or institution concerned.

Access to Records: Students are entitled by law and University policy to examine and challenge most of the records that the University maintains on them. These records are confidential and in most circumstances may be released to third parties only with the student's prior consent. Such matters are detailed on Office of the Registrar's Web site.

Change of Name and Address

Change of Name: Students may petition to change their name on official University records. These petitions can be downloaded from the Office of the Registrar's Web site. Legally recognized proof of the change of name will be required before the petition is accepted and implemented. (Students planning to graduate should file this petition no later than the fifth week of the semester in which they intend to graduate.)

Change of Address: Students may also update their address(es) using RegCat or a Change of Address form downloaded from Office of the Registrar's Web site. Failure to file a current address can result in a hold on a student's registration.

Leaving UC Merced

Cancellation/Withdrawal from the University: Students who find that they will not attend the University for a semester in which they have enrolled may cancel their registration only if instruction for that semester has not yet begun. To do so, they must formally request a cancellation of their registration from the University. If instruction has already begun and students find it necessary to stop attending classes, they must formally request a withdrawal from the University. Whether students cancel or withdraw, any classes in which they are enrolled will be dropped from their schedule, and they will no longer be eligible to attend for that semester or any future semester until they are readmitted.

Engineering Professor Roger Bales enjoys kayaking in Merced area waterways.

Withdrawing from the University means disenrolling from all courses in which a student is enrolled. Students who withdraw during a term must file a Notice of Withdrawal, available from the Office of the Registrar's Web site at registrar.ucmerced.edu. Before withdrawing, students are urged to consult an academic advisor and the Office of Financial Aid and Scholarships, if appropriate, to consider the full implications of this action.

The Notice of Withdrawal requires approval from the appropriate dean. Please review the refund policies for specific details on refund rules. Students who fail to submit an approved petition for withdrawal will receive F, NP or U grades, as appropriate, for all courses in which they are enrolled for that term.

GRADUATION

Undergraduate Students

Declaration of Candidacy: Students expecting to complete work for their degree by the end of a semester must declare their candidacy by filing an Application for Graduation, accompanied by an appropriate fee, with the Office of the Registrar for the semester in which they plan to receive the degree. Students have until the end of the fifth week of classes in which to declare.

Nonregistered Students: Students who are not registered must submit the Declaration of Candidacy form that can be downloaded from the Office of the Registrar's Web site at registrar.ucmerced.edu. It can be mailed along with the appropriate fee to the Office of the Registrar. The form must be received by the Registrar's Office by the end of the fifth week of classes.

Degree Check: The Office of the Registrar will check all pertinent records to ensure that the student has completed a minimum of 120 units and appropriate institutional requirements and is in good academic standing. The student's school will check for the fulfillment of major and school requirements.

Confirmation of Candidacy: Students will receive an electronic notification indicating whether they have been advanced to candidacy. To report an error, go to the Office of the Registrar.

Graduate Students

Before a graduate degree can be conferred, candidates must have been advanced to candidacy and completed the master's thesis or doctoral dissertation and any required comprehensive or oral examinations.

Commencement

Commencement exercises to honor students who have earned baccalaureate and graduate degrees, and to give recognition and awards to students who are graduating with distinction, are held each year in May. Students who have earned their degrees in the previous fall semester or in summer sessions are welcome to participate.

Diplomas

Diplomas are not distributed at commencement but are available several months afterward. A student may pick up his or her diploma at the Office of the Registrar or request that it be mailed for a domestic/international mailing fee. The Office of the Registrar will retain diplomas for five years only.

QUESTIONS

For further questions on Academic Policies and Procedures, registration or grades, please contact the Office of the Registrar at (209) 724-2960; visit the Web site at http://registrar.ucmerced.edu, or e-mail registrar@ucmerced.edu.

EDUCATION IS WHAT REMAINS AFTER ONE HAS FORGOTTEN EVERYTHING...LEARNED IN SCHOOL.

Albert Einstein, Recipient of Nobel Prize in Physics and Professor of Theoretical Physics, Princeton University

Postdoctoral researcher Bob Rice (on left) and undergraduate student Ryan Dewitt lay out snow measurement stakes at Gin Flat in Yosemite National Park, with Park Service research coordinator Jim Roche (in back) in December 2003. Ryan Dewitt was an undergraduate at Merced College working part time at UC Merced on snow research at the time.

All universities aspire to educate the whole student. As John Nichols of St. Joseph's University puts it, your major will prepare you to make a living, while general education will equip you with the skills, knowledge and attitudes to make a life. Society's thorniest problems increasingly require practitioners with diverse knowledge and training to blend their skills in the search for solutions. General education is a pathway for a student to become one of the problem-solvers. You will be entering society in an era of fast-paced change; your future career may be in a field that doesn't even exist today. Through general education, you will craft for yourself the tools that will let you continue to grow in a world that demands lifelong learning for success.

General education at UC Merced will help you grow intellectually by:

- Building your abilities in quantitative reasoning and written, oral and other communication skills; and
- Providing functional exposure to broad domains of knowledge: arts and humanities; social, behavioral and cognitive sciences; natural sciences; and technologies and engineering methods.

Throughout your four undergraduate years, UC Merced's general education program will help you build your ability to communicate with words, numbers and images and let you discover the many ways in which knowledge is created. While your major in a single field will help you gain an in-depth mastery, general education promises you the flexibility to be ready for the six or seven career changes that most Americans experience during their working lives.

General education at UC Merced places a high premium on demonstrating the ways in which the disciplines can make links with each other. There will also be an emphasis on practicing and applying what you are learning in the classroom, an educational value also reflected in the undergraduate majors at UC Merced.

GUIDING PRINCIPLES FOR GENERAL EDUCATION AT UC MERCED

UC Merced is planning educational experiences designed to prepare well-educated people of the 21st century for the workplace, for advanced education and for a leadership role within their communities. UC Merced graduates will be exceptionally well prepared to navigate and succeed in a complex world. The principles guiding the design and implementation of our academic program are envisioned within a continuum that ranges from preparatory and advanced curricula in general education and in the majors, through a variety of educational activities inside and outside the classroom.

All UC Merced graduates will reflect these principles, which provide the foundation for their education:

- **Scientific Literacy:** To have a functional understanding of scientific, technological and quantitative information, and to know both how to interpret scientific information and effectively apply quantitative tools;
- **Decision Making:** To appreciate the various and diverse factors bearing on decisions and the know-how to assemble, evaluate, interpret and use information effectively for critical analysis and problem solving;
- **Communication:** To convey information to and communicate and interact effectively with multiple audiences, using advanced skills in written and other modes of communication;
- **Self and Society:** To understand and value diverse perspectives in both the global and community contexts of modern society in order to work knowledgeably and effectively in an ethnically and culturally rich setting;
- **Ethics and Responsibility:** To follow ethical practices in their professions and communities, and care for future generations through sustainable living and environmental and societal responsibility;
- **Leadership and Teamwork:** To work effectively in both leadership and team roles, capably making connections and integrating their expertise with the expertise of others;
- **Aesthetic Understanding and Creativity:** To appreciate and be knowledgeable about human creative expression, including literature and the arts; and
- **Development of Personal Potential:** To be responsible for achieving the full promise of their abilities, including psychological and physical well-being.

GENERAL EDUCATION REQUIREMENTS

The UC Merced general education program consists of courses that are guided by the Guiding Principles and meet the following requirements for graduation:

- University requirements,
- Campus requirements, and
- School requirements.

A. University Requirements

- University of California Entry Level Writing Requirement (formerly, Subject A Requirement)
- American History and Institutions

University of California Entry Level Writing Requirement (formerly, Subject A Requirement): To succeed at UC Merced, you must be able to understand and to respond adequately to written material typical of reading assignments in freshman courses, including being able to structure and develop an essay that uses written English effectively. If students have not yet satisfied this entrance requirement through one of the alternatives listed below, it is essential that they complete it by the end of the second semester of enrollment at UC Merced. Failure to complete this requirement in the time allowed will result in a hold on a student's registration. Students may satisfy the University of California Entry Level Writing Requirement in any of the following ways:

- Score 3, 4 or 5 on the College Board Advanced Placement Examination in English (Language or Literature);
- Score 680 or higher on the SAT II: Subject Test in Writing;
- Score 5 or higher on the International Baccalaureate Higher Level Examination in English (Language A only);
- Prior to enrolling in the University, complete with a grade of C or better a transferable college course in English composition worth four quarter or three semester units;
- Achieve a passing score on the University's writing proficiency examination, called the University of California Analytical Writing Placement Exam (formerly, Subject A Examination); or
- Complete an acceptable writing course at UC Merced (see the UC Merced Web site during Spring 2005 for courses that fulfill this requirement).

The University offers the University of California Analytical Writing Placement Exam (formerly, Subject A Examination) each spring on the second Saturday in May at test centers throughout the state for students who plan to enroll in the University the following fall. California residents who will enter the University as freshmen in Fall 2005 must take the exam if they have not otherwise satisfied the requirement (by one of the methods listed above). Students must pay a nonrefundable fee of $65 to cover test administration costs. Students who received admission application fee waivers will automatically have this fee waived.

Students will receive detailed information about the exam in April from the Educational Testing Service (ETS). Students must make checks or money orders payable to ETS and submit them by the date indicated. A postage-paid return envelope will be included. Students who are not from California may take the exam in the fall after enrolling at the University.

Philosophy faculty member Jeff Yoshimi encourages UC Merced students to achieve philosophical heights and let their spirits soar.

University of California Entry Level Writing Requirement/Subject A Online: Comprehensive information about the University of California Entry Level Writing Requirement/Subject A Requirement and examination is available at http://www.ucop.edu/sas/sub-a/.

American History and Institutions Requirement: As a candidate for an undergraduate degree at UC Merced, you need to demonstrate knowledge of American history and of the principles of American institutions under the federal and state constitutions. You may meet the requirement by completing specific courses or earning a certain score on an examination. Transfer students are urged to complete the requirement before they enroll.

You may satisfy both the American History and American Institutions requirements in the following ways:

1. Complete in high school one year of United States history with grades of C or better, *or* one semester of United States history and one semester of United States government with grades of C or better;
2. Achieve a score of 3, 4 or 5 on the College Board Advanced Placement Examination in U.S. History.
3. Achieve a score of 550 or better on the SAT II: U.S. History test;
4. Complete acceptable course work at a community college or other accredited institution; or
5. Complete acceptable course work at UC Merced (see the UC Merced Web site during Spring 2005 for courses that fulfill this requirement).

B. Campus Requirements

- Two-Semester Core Course
- Lower division writing course
- College-Level mathematics/quantitative reasoning course

Two-Semester Core Course: Each new freshman class will share a common intellectual experience through signature Core Courses that are linked and interdisciplinary and that integrate ideas and concepts from the arts, humanities, social sciences, natural sciences and engineering.

CORE 1 and CORE 2:
The World at Home—Planning for the Future in a Complex World

In the Core Courses for 2005-2008, you will study how individuals and societies can make the best choices in preparing for an uncertain future. How can we understand the myriad factors that lead to societal and personal decisions, as well as their inevitable, unexpected consequences? The courses will link such diverse topics as economics, government, urban planning, sociology, history, multicultural studies, religion and science-based risk-assessment though a series of thematic modules. Multidisciplinary faculty teams will assemble each module to provide an in-depth understanding of how their disciplines tackle the problem, and how working together enables a better understanding of the problem and related issues. The contemporary San Joaquin Valley will act as a common reference point for highlighting the regional implications of global events or the global consequences of seemingly local choices. In the Core Courses, you will work both individually and in teams with fellow students, with a strong emphasis on writing, quantitative reasoning, critical thinking and understanding events in their historical and cultural contexts.

Lower Division Writing Course: Analytical writing is a means for understanding better what you are learning and conveying your ideas to different audiences: your instructors, your fellow students and people outside the university. The lower division writing requirement will start you on a path of writing development that will continue through your four years at UC Merced.

WRI 1: *College Reading and Composition*

This course is designed to help you develop your college-level skills in effective use of language, analysis and argumentation, organization, and strategies for creation, revision and editing. It must be completed during your freshman or sophomore year.

Mathematics/Quantitative Reasoning: All students will take a college-level mathematics/quantitative reasoning course. For some of you, mathematics and statistics will be an essential tool for mastering a field in depth. For others, you will build your ability to understand how quantitative methods are applied in society to support arguments and solve problems. A variety of courses will be available to meet this requirement, based on your field of interest.

C. School Requirements

The Schools of Engineering, Natural Sciences, and Social Sciences, Humanities and Arts each have a set of general education requirements to be completed if you choose a major offered by that school. School requirements include courses to help you build the collateral knowledge and skills you will need in order to succeed in your major. School requirements also include courses to help you understand the broad domains of knowledge. Check the school section of this catalog for specific requirements.

College One

College One is responsible for assuring that your general education experience succeeds in meeting the Guiding Principles above. College One is the home of the Core Courses, which will start UC Merced students on their intellectual adventure – together. In the larger sense, it is the academic framework from within which UC Merced's students and faculty will focus together on common problems and possibilities. College One will sponsor the Freshman Seminar program – an opportunity for you to meet in a small student group with a faculty member on a specific research question or academic topic. College One is the cornerstone of a learning environment having the following goals:

- Making the big university small – maintaining a place where students can work with and get to know a group of fellow students and faculty personally, from their freshman year on; and
- Offering a unique intellectual experience through general education that will be shared by students in the College.

College One will provide an information framework and student support services for your general education. This framework will connect you with:

- Advising for freshmen, sophomores, juniors and seniors who have questions about any aspect of their general education programs
- Information on courses that meet general education requirements
- Information on the Freshman Seminar program
- Advising for students who have not yet decided on their major
- Information for undergraduates who would like to work with faculty on their research
- Referrals for students interested in internships or in the University of California's unique programs in Washington, D.C., and Sacramento

College One is committed to helping all undergraduates identify and obtain the courses and services that will assure a rich educational experience at UC Merced.

TO THE ENGINEER FALLS THE JOB OF CLOTHING THE BARE BONES OF SCIENCE WITH LIFE, COMFORT AND HOPE.

Herbert Hoover,
Engineer and 31st President of the United States

SCHOOL OF ENGINEERING

The mission of the School of Engineering is to provide an exceptional technical and professional education that instills in our students advanced technical skills, effective leadership qualities, and the ability to recognize and build on individual strengths throughout one's career.

WHAT IS ENGINEERING?

Engineering is about problem solving and innovation and about the creation of devices, systems, processes and structures for human use. Engineers create new ideas, and then transform those ideas into products and services that improve people's lives. Engineers apply mathematics and the principles of science – particularly chemistry and physics – to solve problems and meet the needs of society. Engineering spans the very small to the very large, from microsensors that can continuously monitor human health to space stations that can support the exploration of new worlds. It also touches our everyday lives. Engineering has provided our shelter, our transportation, our entertainment, our medical supplies and technologies, our water supplies, the food we eat, the movies we watch, the appliances that make our lives easier, and the protection of our environment. Engineering careers are among the highest in demand in the United States, and as a result, provide great personal satisfaction and quality of life. Engineering is a "people-serving profession" and a pathway to financial security. In short, engineering makes the world work!

SCIENCE CAN AMUSE AND FASCINATE US ALL, BUT IT IS ENGINEERING THAT CHANGES THE WORLD.

Isaac Asimov,
Russian-American biochemist and writer

THE SCHOOL OF ENGINEERING WILL OFFER THE FOLLOWING MAJORS IN 2005-06:

- Computer Science and Engineering
- Environmental Engineering
- Bioengineering

LETTER OF WELCOME FROM THE DEAN

Dear Future Engineering Student:

I am delighted to learn of your interest in UC Merced and, in particular, your interest in becoming an engineer. Engineering is a people-serving profession – one that provides a solid foundation for careers of leadership and responsibility. You are about to begin an exciting journey.

Your engineering education at UC Merced will be both challenging and satisfying, and will give you the chance to meet some extraordinary people: world-class faculty, committed fellow students and dedicated staff. These associations will develop during your time at UC Merced, last throughout your careers and be a source of intellectual nourishment well into the future. From the time you enter our program you will be exposed to new technologies that will become the tools that you will use in solving problems that deliver exciting new products and services to society. Engineers have been and will continue to be the builders of the things that improve people's lives.

Engineering education is a launch pad. Some of you will go on to pursue careers in engineering design, others will become engineering managers and still others will pursue graduate education in engineering or perhaps go on to other professions such as law or medicine. Once you master the methods of engineering problem solving, you will have the skills and flexibility to chart your own course. You are to be congratulated for your vision and initiative. I look forward to welcoming you into our program, and watching you develop into a leader of tomorrow.

Jeff Wright, Dean
School of Engineering

Members of UC Merced's Engineering Vanguard – inaugural engineering students from the region – gain hands-on experience while preparing to enroll at UC Merced. Shown are Engineering Dean Jeff Wright (top 2nd from r.) with (top row, l. to r.) Ryan DeWitt, Kip Hemsley, Crystal Wuebker (Vanguard president); (bottom row, l. to r.) Juan Soriano, Benjamin Sherrill, Paul Sherrill, Antony Hayes.

SCHOOL OF ENGINEERING REQUIREMENTS

All Engineering students, regardless of major, are expected to meet the minimum requirements for the B.S. degree. The School of Engineering degree requirements are:

At least 120 but not more than 132 semester units to include the following:

- At least 45 **general education** semester units; 28 units are specified
- 16 semester units specified as the **science and engineering core**
- At least 16 but not more than 20 **engineering fundamentals** semester units selected from a list of acceptable courses
- At least 26 upper division (major area) semester units selected from a list of acceptable courses designated by the faculty in that area, some of which may be specified
- At least 6 but not more than 12 **technical elective** semester units
- At most, 10 **service learning** units
- Freshman Seminar (ENGR 90x) or 1 semester unit of service learning during the freshman year
- 1 unit of Professional Seminar (ENGR 191) during the senior year

GENERAL EDUCATION REQUIREMENTS (45 UNITS)

School of Engineering students are required to complete the following list of general education courses.

Lower Division General Education Requirements:

- The World at Home (CORE 1 and CORE 2) . . . . . .8 units
- College Reading and Composition (WRI 1) . . . . . .4 units
- Integrated Calculus and Physics (ICP 1 and ICP 2) . . . . . .8 units
- Contemporary Biology (BIS 1) . . . . . .4 units
- Introduction to Computing I and II (CSE 20 and CSE 21) . . .4 units

Additional General Education Requirements:

- Not more than 6 Service Learning units (ENGR 97 or ENGR 197) can qualify for general education units
- General Education Electives (selected from a list of acceptable courses)

First-year Engineering students will have a freshman year that lays the foundation for further study in the majors. Students will have the opportunity to explore the different UC Merced majors during that year through freshman seminars, service learning, research experiences and informal contact with faculty and graduate students.

Two of the freshman courses are common for all UC Merced students: CORE 1 and 2, The World at Home. These provide a framework for the skills and ideals articulated in the UC Merced Guiding Principles for General Education (see General Education section of this catalog), including decision-making, communication, ethics, responsibility, leadership, teamwork, aesthetic understanding, creativity and an appreciation of diverse perspectives in both the global and community contexts.

Engineering Professor Martha Conklin, prepares for class in the field.

Science and Engineering Core (16 units): Engineering students are required to complete the following list of science and engineering core courses:

Lower Division Requirements

- General Chemistry (CHEM 2) . . . . . .4 units
- Probability and Statistics (MATH 10) . . . . . .3 units
- Applied Mathematical Methods I (MATH 25) . . . . . .3 units

Upper Division Requirements

- Applied Mathematical Methods II and III (MATH 126 and MATH 127) . . . . . .6 units

Engineering Fundamentals (16 units; 4 units specified):
Lower Division Requirements

- Engineering Economic Analysis (ENGR 55) . . . . . .4 units

Remaining courses should be selected from the list of approved Engineering Fundamentals courses. Some majors may specify particular courses (see your advisor).

A partial list of Engineering Fundamentals courses include:

- Statics and Dynamics (ENGR 50) . . . . . .4 units
- Strength of Materials (ENGR 51) . . . . . .4 units
- Computer Modeling and Analysis (ENGR 52) . . . . . .4 units
- Materials and the Environment (ENGR 53) . . . . . .4 units
- Fluid Mechanics (ENGR120) . . . . . .4 units
- Thermodynamics (ENGR 130) . . . . . .4 units
- Heat Transfer (ENGR 135) . . . . . .4 units
- Introduction to Object-Oriented Programming (ENGR 140) .4 units
- Discrete Math and Computer Modeling (ENGR 160) . . . . . .4 units
- Spatial Analysis and Modeling (ENGR 180) . . . . . .4 units

Service Learning (SL): Under the advisement of a faculty mentor, students will have the opportunity to form teams that will work with and for an approved community not-for-profit organization — or client — to solve practical engineering problems. For example, a team composed of both lower and upper division students might work together to design, develop, implement and test an information system to serve the needs of a local non-profit service organization. Students will develop skills to create organizational structures within the team; a communications structure with their client organization; and a strategic plan, mission statement and work plan to guide the activities of the team. Interacting closely and continuously with the client, students will learn about the needs of the organization, delineate project objectives, formulate work plans, conduct design activities, implement resulting solutions, and monitor and assess program effectiveness. Students' performance and contribution to the team effort will be formally assessed through regular written reports and panel interviews.

In addition to obtaining practical experience that complements their formal course work, students will gain experience in working in teams, organizing and writing reports and proposals, interacting with clients, performing and evaluating basic engineering designs, and formally evaluating outcomes. Because teams and team activities will extend across multiple semesters and years, clients will be assured of continuity of technical support and ongoing attention to their needs. Students electing to enroll in the UC Merced Service Learning initiative may earn up to two credits per semester for participation, depending on their leadership position within the team for that semester. Not more than a total of 10 service learning credits may be used to fulfill the degree requirement, including up to 6 units that may be counted as general education units.

Engineering fundamentals, major area upper division courses, and technical electives requirements are specific to each major. These are presented in the following section on majors.

THE MAJORS

COMPUTER SCIENCE AND ENGINEERING PROGRAM

The undergraduate major in Computer Science and Engineering is designed to provide students with both breadth and depth in the exciting and rapidly expanding fields of

- **Computer science** – the study of computation, including algorithms and data structures, and
- **Computer engineering** – including hardware, software and network architecture

A degree in Computer Science and Engineering from UC Merced will prepare students to assume leadership roles in designing, building and implementing a vast array of powerful new technologies that will continue to advance humankind. As the foundation for innovation in areas ranging from robotics and automation, to informatics and personal computation, careers in computer science and engineering are among the most satisfying and rewarding of any.

Computer Science and Engineering students at UC Merced will work with the top computer scientists and engineers in the world. Our faculty has developed a program of study that combines practical exposure to the most modern technologies available with a theoretical foundation that will empower students to master future changes and innovation as technologies continue to evolve at an astonishing pace. Our graduates will thus have both tools and insights to propel them into positions of responsibility and leadership across virtually any occupation.

Computer science and engineering constitutes one of the strongest industrial sectors in the region and the nation, offering a broad spectrum of career opportunities. Education at UC Merced will provide the opportunity to participate in innovative classroom learning experiences, to become involved in laboratory research, to participate with fellow students in team activities and projects, and to interact directly with our remarkable faculty. From introductory programming courses through architecture design experiences and research and team project activities, our students will gain insights that will allow them to excel throughout their chosen career path.

The program includes service learning components designed to engage students in the solution of real-world problems in their community. The team projects will resemble what is found in actual engineering practice, with increasing responsibility as students progress through the program. Engineers need to understand not only the technical but also the social and political contexts of their work. They must be able to communicate and to plan, finance and market their products and ideas. Social science, business, humanities and arts are an important part of the curriculum. The result is a learning experience that is hands-on and creative, engaging and adaptable.

REQUIREMENTS FOR THE COMPUTER SCIENCE AND ENGINEERING (CSE) MAJOR

The **additional** requirements that must be met to receive the B.S. in Computer Science and Engineering at UC Merced:

Computer Science and Engineering Core (30 units): The computer science and engineering core consists of 8 courses (2 lower division and 6 upper division) designed to provide students a common foundation of core knowledge specific to the discipline.

Lower Division Courses

- Introduction to Computer Science and Engineering I and II (CSE 30 and CSE 31) . . . . . .6 units

Upper Division Courses

- Algorithm Design and Analysis (CSE 100) . . . . . .4 units
- Database Systems (CSE 111) . . . . . .4 units
- Software Engineering (CSE 120) . . . . . .4 units
- Computer Architecture (CSE 140) . . . . . .4 units
- Introduction to Operating Systems (CSE 150) . . . .4 units
- Networking (CSE 160) . . . . . .4 units

Technical Electives: Technical electives should be selected in a manner that is complementary to, yet integrated with, your major area of study, and should be determined through close interaction with your major area advisor. These courses should be selected from the computer science upper division technical electives, or with approval, include other upper division courses outside your major.

SAMPLE PLAN OF STUDY FOR ENGINEERING – COMPUTER SCIENCE AND ENGINEERING DEGREE

SEMESTER 1		SEMESTER 2	
CORE 1 The World at Home	4	CORE 2 The World at Home	4
CSE 20 Introduction to Computing I	2	CSE 21 Introduction to Computing II	2
BIS 1 Contemporary Biology	4	CHEM 2 General Chemistry	4
ICP 1 Integrated Calculus and Physics I	4	ICP 2 Integrated Calculus and Physics II	4
		ENGR 90x Freshman Seminar or Service Learning	1
Semester Units	**14**	**Semester Units**	**15**

SEMESTER 3		SEMESTER 4	
ENGR 55 Engineering Economic Analysis	4	Engineering Fundamental I	4
MATH 25 Applied Mathematical Methods I	3	MATH 10 Probability and Statistics	3
WRI 1 College Reading and Composition	4	General Education Elective	4
CSE 30 Introduction to Computer Science I	3	CSE 31 Introduction to Computer Science II	3
Service Learning	1	Service Learning	1
Semester Units	**15**	**Semester Units**	**15**

SEMESTER 5		SEMESTER 6	
CSE 100 Algorithm Design and Analysis	4	CSE 140 Computer Architecture	4
Engineering Fundamental 2	4	CSE 120 Software Engineering	4
MATH 126 Applied Mathematical Methods II	3	MATH 127 Applied Mathematical Methods III	3
General Education Elective	4	Engineering Fundamental 3	4
Service Learning	1	Service Learning	1
Semester Units	**16**	**Semester Units**	**16**

SEMESTER 7		SEMESTER 8	
CSE 150 Introduction to Operating Systems	4	CSE 111 Database Systems	4
Technical Elective	3	Technical Elective	3
Technical Elective	4	Technical Elective	3
General Education Elective	4	CSE 160 Networking	4
ENGR 191 Professional Seminar	1	Service Learning	1
Service Learning	1		
Semester Units	**17**	**Semester Units**	**15**
		Total Program Units	**123**

ENVIRONMENTAL ENGINEERING PROGRAM

The undergraduate major in Environmental Engineering prepares students for careers in both industry and government agencies concerned with managing water, energy, public health and the environment. The program is also a good foundation for further study in earth science, engineering, business, management, law and public health. The curriculum provides students with a quantitative understanding of the physical, chemical and biological principles that control air, water and habitat quality and sustainability on Earth, along with expertise in the design, development, implementation and assessment of engineering solutions to environmental problems.

Environmental engineers are distinguished from other environmental professionals through their focus on problem solving, design and implementation of technological or management systems. Environmental engineers search for creative and economical ways to use resources efficiently, limit the release of residuals into the environment, develop sensitive techniques to track pollutants once released and find effective methods to remediate spoiled resources. They serve as the vital link between scientific discovery, technological development, and the societal need for protecting human health and ecological integrity. In the coming decades, environmental engineers will increasingly be called upon to address broader issues of environmental sustainability by minimizing the release of residuals through altered production processes and choice of materials; by capturing the resource value of wastes through recovery, recycling and reuse; and by managing natural resources to meet competing societal objectives.

UC Merced emphasizes a highly interdisciplinary approach to environmental engineering, combining a strong theoretical foundation with field studies, laboratory experiments and computations. Core courses within the major provide students with a firm foundation in the physical and life sciences and the ways that they apply to energy, hydrology, air and water quality issues. Emphasis areas allow students the flexibility to study in more depth by following tracks developed in consultation with their academic advisor(s). The main areas of emphasis for Environmental Engineering at UC Merced are hydrology, water quality and energy sustainability.

The program includes service learning components designed to engage students in the solution of real-world problems in their community. The team projects will resemble those found in actual engineering practice, with increasing responsibility as students progress through the program. Engineers need to understand not only the technical but also the social and political contexts of their work. They must be able to communicate, and to plan, finance and market their products and ideas. Social science, business, humanities and arts are an important part of the curriculum. The result is a curriculum that is hands-on and creative, engaging and adaptable.

Engineering Professor Christopher Viney's research in biomolecular materials has included work on the special characteristics of giraffe saliva, spider silk and slug slime.

REQUIREMENTS FOR THE ENVIRONMENTAL ENGINEERING (ENVE) MAJOR

The **additional** requirements that must be met to receive the B.S. in Environmental Engineering at UC Merced:

Environmental Engineering Core (16 units): The environmental engineering core consists of 4 courses designed to give all students a common foundation of core knowledge specific to the discipline:

Lower Division Courses

- Introduction to Environmental Science and Technology (ENVE 20) . . .4 units

Upper Division Courses

- Environmental Chemistry (ENVE 100) . . . . . .4 units
- Hydrology and Climate (ENVE 110) . . . . . .4 units
- Meteorology and Air Pollution (ENVE 130). . . . . .4 units

Technical electives: Technical electives should be selected in a manner that is complementary to, yet integrated with, your major area of study, and should be determined through close interaction with your major area advisor. These courses should be selected from the following list of approved technical electives or, with approval, include other upper division courses outside your major:

- Subsurface Hydrology (ENVE 112) . . . . . .4 units
- Mountain Hydrology of the Western States (ENVE 114) . . . . . .4 units
- Global Change (ENVE 118) . . . . . .4 units
- Environmental Microbiology (ENVE 121) . . . . . .4 units
- Water Resources and Management (ENVE 140) . . . . . .3 units
- Remote Sensing of the Environment (ENVE 152) . . . . . .3 units
- Sustainable Energy (ENVE 160) . . . . . .4 units
- Modeling and Design of Energy Systems (ENVE 162) . . . . . .3 units
- Contaminant Fate and Transport (ENVE 170) . . . . . .3 units
- Water and Wastewater Treatment (ENVE 176) . . . . . .3 units
- Field Methods in Snow Hydrology (ENVE 181) . . . . . .1-3 units
- Field Methods in Surface Hydrology (ENVE 182) . . . . . .1-3 units
- Field Methods in Subsurface Hydrology (ENVE 183) . . . . . .1-3 units
- Field Methods in Environmental Chemistry (ENVE 184) . . . . . .1-3 units
- Watershed Biogeochemistry (ESS 105) . . . . . .3 units

Additional degree requirements (5-7 units):

- Principles of Organic Chemistry (CHEM 8) . . . . . .4 units
- At least one Field Methods course 1-3

SAMPLE PLAN OF STUDY FOR ENVIRONMENTAL ENGINEERING DEGREE

SEMESTER 1		SEMESTER 2	
CORE 1 The World at Home	4	CORE 2 The World at Home	4
CSE 20 Introduction to Computing I	2	CSE 21 Introduction to Computing II	2
BIS 1 Contemporary Biology	4	CHEM 2 General Chemistry	4
ICP 1 Integrated Calculus and Physics I	4	ICP 2 Integrated Calculus and Physics II	4
		ENGR 90x Freshman Seminar or Service Learning	1
Semester Units	**14**	**Semester Units**	**15**

SEMESTER 3		SEMESTER 4	
MATH 10 Probability & Statistics	3	ENGR 55 Engineering Economic Analysis	4
CHEM 8 Organic Chemistry	4	MATH 25 Applied Mathematical Methods I	3
General Education Elective	4	Engineering Fundamentals I	4
ENVE 20 Introduction to Environmental		WRI 1 College Reading and Composition	4
Science and Technology	4		
Service Learning	1	Service Learning	1
Semester Units	**16**	**Semester Units**	**16**

SEMESTER 5		SEMESTER 6	
Engineering Fundamental 2	4	ENVE 100 Environmental Chemistry	4
ENVE 110 Hydrology and Climate	4	Engineering Fundamental 3	4
MATH 126 Applied Mathematical Methods II	3	MATH 127 Applied Mathematical Methods III	3
General Education Elective	4	ENVE Elective w/Lab	4
Service Learning	1	Service Learning	1
Semester Units	**16**	**Semester Units**	**16**

SEMESTER 7		SEMESTER 8	
ENVE 130 Meteorology and Air Pollution	4	ENVE Elective w/Design	3
ENVE Elective w/Design	3	Technical Elective	3
ENVE Elective w/Lab	4	Technical Elective, Service Learning or Research	3
General Education Elective	4	Free Elective	4
Service Learning	1	Field Methods	1
		ENGR 191 Professional Seminar	1
Semester Units	**16**	**Semester Units**	**15**
		Total Program Units	**124**

SAMPLE PLAN OF STUDY FOR ENVIRONMENTAL ENGINEERING DEGREE – ENVIRONMENTAL HYDROLOGY TRACK

SEMESTER 1		SEMESTER 2	
CORE 1 The World at Home	4	CORE 2 The World at Home	4
CSE 20 Introduction to Computing I	2	CSE 21 Introduction to Computing II	2
BIS 1 Contemporary Biology	4	CHEM 2 General Chemistry	4
ICP 1 Integrated Calculus and Physics I	4	ICP 2 Integrated Calculus and Physics II	4
		ENGR 90x Freshman Seminar or Service Learning	1
Semester Units	**14**	**Semester Units**	**15**

SEMESTER 3		SEMESTER 4	
MATH 10 Probability and Statistics	3	ENGR 55 Engineering Economic Analysis	4
CHEM 8 Organic Chemistry	4	MATH 25 Applied Mathematical Methods I	3
General Education Elective	4	ENGR 52 Computer Modeling and Analysis	4
ENVE 20 Introduction to Environmental Science and Technology	4	WRI 1 College Reading and Composition	4
Service Learning	1	Service Learning	1
Semester Units	**16**	**Semester Units**	**16**

SEMESTER 5		SEMESTER 6	
ENGR 120 Fluid Mechanics	4	ENVE 100 Environmental Chemistry	4
ENVE 110 Hydrology and Climate	4	ENGR 180 Spatial Analysis and Modeling	4
MATH 126 Applied Mathematical Methods II	3	MATH 127 Applied Mathematical Methods III	3
General Education Elective	4	ENVE 112 Subsurface Hydrology	4
Service Learning	1	Service Learning	1
Semester Units	**16**	**Semester Units**	**16**

SEMESTER 7		SEMESTER 8	
ENVE 130 Meteorology and Air Pollution	4	ESS 105 Watershed Biogeochemistry	3
ENVE 140 Water Resources Planning and Management	3	ENVE 114 Mountain Hydrology of the Western U.S.	3
ENVE 152 Remote Sensing of the Environment	3	Field Methods, Service Learning or Research	3
General Education Elective	4	Free Elective	4
Service Learning	1	Field Methods	2
		ENGR 191 Professional Seminar	1
Semester Units	**15**	**Semester Units**	**16**
		Total Track Units	**124**

SAMPLE PLAN OF STUDY FOR ENVIRONMENTAL ENGINEERING DEGREE – ENVIRONMENTAL QUALITY TRACK

SEMESTER 1		SEMESTER 2	
CORE 1 The World at Home	4	CORE 2 The World at Home	4
CSE 20 Introduction to Computing I	2	CSE 21 Introduction to Computing II	2
BIS 1 Contemporary Biology	4	CHEM 2 General Chemistry	4
ICP 1 Integrated Calculus and Physics I	4	ICP 2 Integrated Calculus and Physics II	4
		ENGR 90x Freshman Seminar or Service Learning	1
Semester Units	**14**	**Semester Units**	**15**

SEMESTER 3		SEMESTER 4	
MATH 10 Probability and Statistics	3	ENGR 55 Engineering Economic Analysis	4
CHEM 8 Organic Chemistry	4	MATH 25 Applied Mathematical Methods I	3
General Education Elective	4	ENGR 50 Statics and Dynamics	4
ENVE 20 Introduction to Environmental Science and Technology	4	WRI 1 College Reading and Composition	4
Service Learning	1	Service Learning	1
Semester Units	**16**	**Semester Units**	**16**

SEMESTER 5		SEMESTER 6	
ENGR 120 Fluid Mechanics	4	ENVE 100 Environmental Chemistry	4
ENVE 110 Hydrology and Climate	4	ENGR 180 Spatial Analysis and Modeling	4
MATH 126 Applied Mathematical Methods II	3	MATH 127 Applied Mathematical Methods III	3
General Education Elective	4	ENVE Elective w/Lab	4
Service Learning	1	Service Learning	1
Semester Units	**16**	**Semester Units**	**16**

SEMESTER 7		SEMESTER 8	
ENVE 130 Meteorology and Air Pollution	4	ENVE Elective w/Design	3
ENVE Elective w/Design	3	Technical Elective	3
ENVE Elective w/Lab	4	Technical Elective, Service Learning or Research	3
General Education Elective	4	Free Elective	4
Service Learning	1	Field Methods	1
		ENGR 191 Professional Seminar	1
Semester Units	**16**	**Semester Units**	**15**
		Total Program Units	**124**

SAMPLE PLAN OF STUDY FOR ENVIRONMENTAL ENGINEERING DEGREE – ENVIRONMENTAL SUSTAINABILITY TRACK

SEMESTER 1		SEMESTER 2	
CORE 1 The World at Home	4	CORE 2 The World at Home	4
CSE 20 Introduction to Computing I	2	CSE 21 Introduction to Computing II	2
BIS 1 Contemporary Biology	4	CHEM 2 General Chemistry	4
ICP 1 Integrated Calculus and Physics I	4	ICP 2 Integrated Calculus and Physics II	4
		ENGR 90x Freshman Seminar or Service Learning	1
Semester Units	**14**	**Semester Units**	**15**

SEMESTER 3		SEMESTER 4	
MATH 10 Probability and Statistics	3	ENGR 55 Engineering Economic Analysis	4
CHEM 8 Organic Chemistry	4	MATH 25 Applied Mathematical Methods I	3
General Education Elective	4	ENGR 130 Thermodynamics	4
ENVE 20 Introduction to Environmental Science and Technology	4	WRI 1 College Reading and Composition	4
Service Learning	1	Service Learning	1
Semester Units	**16**	**Semester Units**	**16**

SEMESTER 5		SEMESTER 6	
ENGR 120 Fluid Mechanics	4	ENVE 100 Environmental Chemistry	4
ENVE 110 Hydrology and Climate	4	ENGR 180 Spatial Analysis and Modeling	4
MATH 126 Applied Mathematical Methods II	3	MATH 127 Applied Mathematical Methods III	3
General Education Elective	4	ENGR 135 Heat Transfer	4
Service Learning	1	Service Learning	1
Semester Units	**16**	**Semester Units**	**16**

SEMESTER 7		SEMESTER 8	
ENVE 130 Meteorology and Air Pollution	4	ENVE 118 Global Change	4
ENVE 140 Water Resources Planning and Management	3	ENVE 162 Modeling and Design of Energy Systems	3
ENVE 160 Sustainable Energy	4	Field Methods, Service Learning or Research	2
General Education Elective	4	Free Elective	4
Service Learning	1	Field Methods	1
		ENGR 191 Professional Seminar	1
Semester Units	**16**	**Semester Units**	**15**
		Total Program Units	**124**

Engineering professor Roger Bales, at the top of the Greenland Ice Sheet, checks on measurement programs and facilities at the Greenland Summit Environmental Observatory, where he has been carrying out research since the early 1990s.

BIOENGINEERING PROGRAM

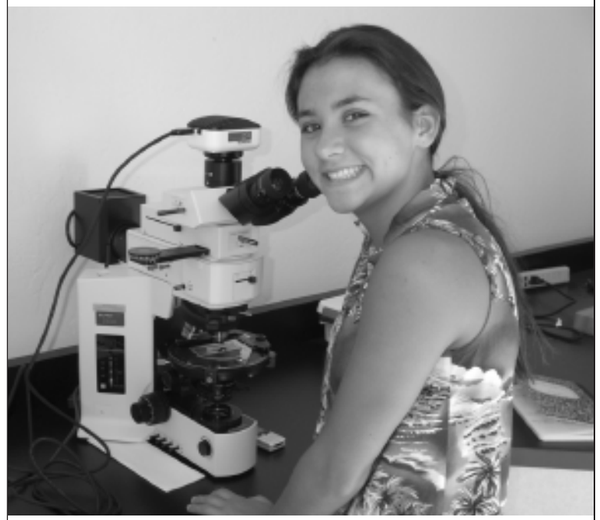
Bioengineering is a highly interdisciplinary field in which the techniques, devices, materials and resourcefulness of engineers are used to address problems in biology and healthcare; and lessons from biology are used to inspire design and inform progress in engineering. During the past 40 years, this synergy between biology and engineering has led to a wide range of implantable materials, diagnostic devices, sensors and molecular characterization techniques, and it has produced tools that greatly expedited the sequencing of the human genome. With these practical innovations has come a rapidly increasing need for personnel with the necessary hybrid skills to capitalize on them, and so undergraduate bioengineering programs have proliferated alongside the continued growth of bioengineering research.

Most recently, convergence between engineering and biology at the **nanoscale** level – the level of biological molecules, molecular aggregates and cellular processes – has begun to offer new, rich areas of study and commercialization. Examples of the devices, processes, interactions and materials that are of interest in this interdisciplinary context include:

- Computers inspired by biological analogs that are smaller and/or faster and/or process information more efficiently than today's computers; use of individual molecules as switches and data storage media; methods for manipulating the molecules from which such "hardware" is produced
- Food-related innovations, for example smart packaging that can sense the internal and external environment and provide a signal (such as a color change) that alerts users to undesirable storage conditions, product spoiling or product tampering
- Adaptive materials that can change their properties (shape, transparency, strength, flexibility) in response to changes in their environment and self-healing materials
- Interactions between nanoparticles and biological tissue
- Tailored interfaces between biomolecules and artificial substrates
- Self-assembly of materials, structures and devices
- De novo design of proteins and other functional polymers inspired by nature
- Skin-care products and medications containing nanoparticulates that can penetrate into or through skin
- Sensors and "bots" that can replace defective physiological counterparts in humans and animals; implants and prosthetics constructed from nanocomposites that closely resemble natural tissue; and biosensors, which can be designed to nanodimensions, mounted on a single chip, and used in remote diagnoses
- Fine-scale ceramic particles for use as precursors for tough monolithic ceramic artifacts (e.g. ceramic turbine blades and car engines) based on ceramic nanoprecipitates produced by bacteria

The undergraduate major in Bioengineering is designed to provide students with both breadth and depth in the exciting and rapidly expanding field of ***nanobioengineering***. The nanobioengineering track reflects the fact that synergy between the "nano" and "bio" themes in engineering and science is here to stay. The name also highlights an initial focus on things molecular, supramolecular, cellular and material, which will allow the program to draw efficiently on the talents of the biologists, chemists, physicists and other UC Merced faculty in basic engineering and science programs.

UC Merced Bioengineering graduates will find employment in diverse fields encompassing healthcare delivery, medical device technology, interdisciplinary research, patent consultancy, materials science, education, food biotechnology, personal care products industries and government agencies. Bioengineers are attractive to employers because, through studying and graduating in this type of especially creative intellectual environment, they have clearly demonstrated an ability to bridge traditional divides between disciplines, communicate flexibly with different intellectual constituencies and thrive in a context where knowledge is being created especially rapidly.



Merced High School student Amber Zielinski works on a summer materials science project at UC Merced.

REQUIREMENTS FOR THE BIOENGINEERING (BIOE) MAJOR
The **additional** requirements that must be met to receive the B.S. in Bioengineering at UC Merced:

Engineering Fundamentals (16 units, as specified):

Lower Division Requirements

- Introduction to Materials (ENGR 45) . . . . . .4 units
- Computer Modeling and Analysis (ENGR 52) . . . . . .4 units
- Engineering Economic Analysis (ENGR 55) . . . . . .4 units

Upper Division Requirements

- Thermodynamics (ENGR 130) . . . . . .4 units

Bioengineering Core (27 units): The bioengineering core consists of 7 courses (1 lower division and 6 upper division) designed to give all students a common foundation of core knowledge specific to the discipline.

Lower Division Courses

- Introduction to Bioengineering (BIOE 30) . . . . . .4 units

Upper Division Courses

- Physiology for Engineers (BIOE 100) . . . . . .4 units
- Modeling Nanoscale Processes in Biology (BIOE 101) . . . . . .3 units
- Biosensors (BIOE 102) . . . . . .4 units
- Molecular Machinery of Life (BIS 100) . . . . . .4 units
- Molecular Biology (BIS 102) . . . . . .4 units
- Biophysics (BIS 104) . . . . . .4 units

Technical Electives: Technical electives should be selected in a manner that is complementary to, yet integrated with, your major area of study, and should be determined through close interaction with your major area advisor. For the initial track in Nanobioengineering, these electives should be chosen from among the following:

- Self-Assembling Molecular Systems (BIOE 110) . . . . . .3 units
- Biomembranes (BIOE 111) . . . . . .3 units
- Biomolecule-Substrate Interactions (BIOE 112) . . . . . .3 units
- Bioinstrumentation (BIOE 113) . . . . . .4 units
- Research credit taken during the senior year . . . . . .1-5 units

Additional degree requirements (11-14 units):

- Principles of Organic Chemistry (CHEM 8) . . . . . .4 units
- Service Learning (ENGR 97 or ENGR 197) . . . . . .7-10 units

Engineering professor Tom Harmon continues his research into the fate of environmental contaminants using new sensor technology that is revolutionizing the way scientific data is gathered.

PARTNERSHIP WITH LAWRENCE LIVERMORE NATIONAL LABORATORY

In 2000, UC Merced and Lawrence Livermore National Laboratory signed an agreement to collaborate on mutual goals for research and education. Livermore has a history of creating science and engineering teams to work on areas such as environmental sciences, advanced computing and biotechnology. This integration will strengthen UC Merced research and teaching programs in natural sciences and engineering. Livermore also has years of service in engaging students and K-12 teachers in hands-on science education. UC Merced has partnered with Livermore and UC Davis in sponsoring the Edward Teller Education Center, which supports professional development for teachers.

SAMPLE PLAN OF STUDY FOR BIOENGINEERING DEGREE – NANOBIOENGINEERING TRACK

SEMESTER 1		SEMESTER 2	
CORE 1 The World at Home	4	CORE 2 The World at Home	4
CSE 20 Introduction to Computing I	2	CSE 21 Introduction to Computing II	2
BIS 1 Contemporary Biology	4	CHEM 2 General Chemistry	4
ICP 1 Integrated Calculus and Physics I	4	ICP 2 Integrated Calculus and Physics II	4
Service Learning	1	IGR 90x Freshman Seminar or Service Learning	1
Semester Units	**15**	**Semester Units**	**15**

SEMESTER 3		SEMESTER 4	
MATH 10 Probability and Statistics	3	ENGR 45 Introduction to Materials	4
CHEM 8 Organic Chemistry	4	MATH 25 Applied Mathematical Methods I	3
General Education Elective	4	ENGR 52 Computer Modeling and Analysis	4
BIO 30 Introduction to Bioengineering	4	WRI 1 College Reading and Composition	4
Service Learning	1	Service Learning	1
Semester Units	**16**	**Semester Units**	**16**

SEMESTER 5		SEMESTER 6	
ENGR 130 Thermodynamics	4	ENGR 55 Engineering Economic Analysis	4
BIS 100 Molecular Machinery of Life	4	BIS 102 Molecular Biology	4
MATH 126 Applied Mathematical Methods II	3	MATH 127 Applied Mathematical Methods III	3
General Education Elective	4	BIS 104 Biophysics	4
Service Learning	1	Service Learning	1
Semester Units	**16**	**Semester Units**	**16**

SEMESTER 7		SEMESTER 8	
BIOE 100 Physiology for Engineers	4	BIOE 110 Self-Assembling Molecular Systems	3
BIOE 101 Modeling Nanoscale Processes in Biology	3	BIOE 111 Biomembranes	3
BIOE 102 Biosensors	4	BIOE 112 Biomolecule-Substrate Interactions	3
General Education Elective	4	Free Elective	4
Service Learning	1	ENGR 191 Professional Seminar	1
Semester Units	**16**	**Semester Units**	**14**
		Total Program Units	**124**

The most incomprehensible thing about the world is that it is comprehensible.
–Albert Einstein (1879–1955)

The mission of the School of Natural Sciences is to share the joy of discovery of our natural world, to provide a stimulating environment that enables our students to better understand the scientific foundation of the world in which we live and to develop the skills of the next generation of leaders to meet the scientific challenges of the 21st century. Science, technology and innovation are the keys to future prosperity and quality of life.

SCIENCE IS ABOUT DISCOVERY

The scientist does not study nature because it is useful; he studies it because he delights in it, and he delights in it because it is beautiful. If nature were not beautiful, it would not be worth knowing, and if nature were not worth knowing, life would not be worth living.

–Jules Henri Poincaré (1854–1912)

Mathematics, physics, biology, chemistry and Earth systems science are the links to making discoveries about the natural world, the impact of human activities on that world and the impact of that world on human health. The academic programs in the School of Natural Sciences are designed to help students learn fundamental scientific principles in the context of the real world.

SCIENCE IS ABOUT CREATIVITY, INNOVATION AND TECHNOLOGY

Discovery consists in seeing what everyone else has seen and thinking what no one else has thought.

–Albert Szent-Gyorgi (1893–1986)

Answering questions requires creativity and innovation – creativity to think about a problem in a different way; to design the strategy to, for example, discover the gene(s) responsible for asthma, cancer or cardiovascular disease; to generate ideas for new technologies. Students in the School of Natural Sciences will receive the foundational learning to create innovative technologies to solve problems and implement solutions.

SCIENCE IS ABOUT STEWARDSHIP OF OUR NATURAL RESOURCES

A thing is right if it intends to preserve the integrity, stability and beauty of the biotic community.

–Aldo Leopold (1887–1948)

Understanding and prediction must precede protection. Students in the School of Natural Sciences will fully understand the complex interactions between the physical and biological world and the consequences of society's actions on the Earth and its biota. With this understanding, they will be well positioned to manage and preserve our resources for future generations.

SCIENCE IS ABOUT UNDERSTANDING THE HUMAN CONDITION

Louis Pasteur's theory of germs is ridiculous fiction.

–Pierre Pachet, 1872

The understanding of science has improved and will continue to improve. Health and disease, prevention and treatment rely on understanding complex systems. Students in natural sciences at UC Merced will be at the forefront of state-of-the-art research and technology to unravel biological complexity. They will be the world's future scientists, healers and policy makers.

LETTER OF WELCOME FROM THE DEAN

Dear Prospective Science Students,

The entire UC Merced Natural Sciences faculty invites you to join one of the greatest adventures of all time – discovering how our universe works and applying this knowledge to improving human well-being. You live in an age of immense challenges and equally immense opportunities. Each year brings new crises in human health, energy production and natural resources, yet each year also brings stunning new scientific and technical advances that were unimaginable just a few years earlier. Entering the School of Natural Sciences is the first step towards joining the worldwide team of men and women working to develop and apply new scientific knowledge.

A degree in the sciences opens the door to a vast array of exciting careers. Graduates from the UC Merced School of Natural Sciences will have the practical skills to enter the high-tech job market directly as well as the in-depth knowledge needed to succeed in professional schools or graduate programs. We have created a range of multidisciplinary majors in some of the most exciting and innovative areas of science: biological sciences, Earth systems sciences and human biology. In addition, we are planning new degree programs in chemistry/biochemistry, new energy and applied math/physics.

I personally welcome you to the exciting world of science and invite you to visit me or any of our faculty members to talk about the many opportunities for you in the School of Natural Sciences.

Maria Pallavicini, Dean
School of Natural Sciences

SCHOOL OF NATURAL SCIENCE REQUIREMENTS

All students in the School of Natural Science, regardless of major, are expected to meet the minimum requirements for the B.S. and B.A. degrees. The School of Natural Science degree requirements are:

At least 120 but not more than 136 semester units to include the following:

- At least 46 general education semester units; 30 units are specified.
- At least 60 semester units of upper division courses.

General Education Requirements (46 units): Students in the School of Natural Sciences are required to complete the following list of general education courses.

Math/Science Preparatory Curricula:

- Probability and Statistics (MATH 10) . . . . . .3 units
- Integrated Calculus and Physics (ICP 1 and ICP 2) . . . . . .8 units
- Introduction to Computing I (CSE 20) . . . . . .2 units
- General Chemistry (CHEM 2) . . . . . .4 units

Non-Science General Education:

- The World at Home (CORE 1 and CORE 2) . . . . . .8 units
- College Reading and Composition (WRI 1) . . . . . .4 units
- Lower Division General Education elective . . . . . .4 units
- Upper Division General Education electives (with one course emphasizing written or oral communication) . . . . . .12 units
- Freshman Seminar . . . . . .1 unit

Students in Natural Sciences will have a freshman year that lays the foundation for further study in the majors. Students will have the opportunity to explore the different UC Merced majors during that year through freshman seminars, research experiences and informal contact with faculty and graduate students. Two of the freshman courses are common for all UC Merced students: CORE 1 and 2, The World at Home. These lay the foundation in skills and ideals articulated in the UC Merced Guiding Principles for General Education (see General Education section of this catalog). These include decision making, communication, ethics, responsibility, leadership, teamwork, aesthetic understanding, creativity and an appreciation of diverse perspectives in both the global and community contexts.
Major area upper division courses and emphasis track requirements are unique to each major. These are presented in the following section on majors.

Dean Maria Pallavicini and Natural Sciences Professor Michael Colvin work with summer computational biology students Keishia Sheffield (2nd from l.) and Merced College student Felicia Macias (on far r.).

THE MAJORS

BIOLOGICAL SCIENCES PROGRAM

The biological sciences address many of the most important and fundamental questions about our world: What is life? How does our brain produce our ideas and emotions? What are the limits to human life and physical capabilities? How do we feed the world's growing population? How can we ensure that our children won't have to worry about disease? Moreover, there has never been a more exciting and important time to study biology. From the mapping of the genome to understanding the molecular basis of human disease to predicting the effects of global climate change on ecosystems, the biological sciences are at the forefront of finding answers to some of society's most vexing problems.

The undergraduate major in Biological Sciences is an excellent first step toward exciting careers in biology and the health sciences. This program teaches biology as a multidisciplinary science, reflecting the increasing role of chemistry, physics, mathematics, computer science and advanced technologies in the life sciences. The core of the Biological Sciences major is a series of six courses that provide a solid foundation in the key areas of modern life sciences: molecular, evolutionary and cellular biology, genetics and genomics, and computational biology. Students majoring in Biological Sciences will then choose an emphasis area that will provide in-depth lecture and laboratory courses on specific biological topics. UC Merced will open with four biological sciences emphasis areas: 1) molecular biology and biochemistry; 2) cell biology and development; 3) bioinformatics and computational biology; and 4) microbiology and immunology. Biological sciences majors also have the opportunity to apply for a master's degree program requiring an additional year of study.

The major in Biological Sciences will provide students with the skills and knowledge to pursue studies in graduate programs and professional schools in preparation for careers in basic and applied biological research, medicine, dentistry, veterinary medicine, nursing, pharmacy and other health-related fields. Graduates of this program will also be well prepared for positions in the biotechnology and pharmaceutical industries and in health care, as well as careers such as law, policy and administration, which increasingly involve the biological sciences. In addition, the breadth and rigor of this program will be an excellent preparation for graduates to teach science at the elementary or high school levels.

Molecular Biology and Biochemistry: This emphasis focuses on the molecular processes and underlying life, including macromolecular structure and function, enzyme catalysis, metabolism and gene regulation.

Cell Biology and Development: This emphasis focuses on the molecular interactions that govern cell function, life cycle and specialization, as well as the cellular interactions that mediate the development and function of multicellular organisms.

Bioinformatics and Computational Biology: This emphasis focuses on the mathematics and information science of modern biology, including DNA sequence analysis, models of metabolism and gene regulation, and the analysis of high throughput biological data.

Microbiology and Immunology: This emphasis focuses on understanding the biology of yeast, viruses and bacteria, as well as the mechanisms of microbial pathogenesis and host immune response.

In all emphasis areas, strong linkages will be made to the real-world value of this knowledge such as understanding human disease and prevention, including cancer, developmental disorders and the emerging threats from new infectious diseases and bioterrorism.

Transfer Students: Transfer students who wish to major in Biological Sciences should complete one year of calculus, one year of physics, one year of general chemistry, one to two semesters of organic chemistry, and two to three semesters of general biology. Students should check with the UC Merced Web site at http://admissions.ucmerced.edu/ and click on Transfer Admissionº for more information on how courses will transfer to UC Merced.

REQUIREMENTS FOR THE BIOLOGICAL SCIENCES (BIS) MAJOR

The **additional** requirements that must be met to receive the B.S. in Biological Science at UC Merced are:

Biological Sciences Requirements (59-64 units): The Biological Sciences major consists of 16 courses (4 lower division and 12 upper division) designed to give all students a common foundation of core knowledge specific to the discipline.

Lower Division Courses

- Contemporary Biology (BIS 1) . . . . . .4 units
- Principles of Organic Chemistry (CHEM 8) . . . . . .4 units
- Principles of Physical Chemistry (CHEM 10) . . . . . .4 units
- Mathematical Biology (MATH 30) . . . . . .4 units

Upper Division – Core Courses

- Molecular Machinery of Life (BIS 100) . . . . . .4 units
- The Cell (BIS 110) . . . . . .4 units
- Evolution of Biological Diversity (BIS 140) . . . . . .4 units
- Genes and Genomes (BIS 141) . . . . . .4 units
- Introduction to Scientific Modeling (BIS 180) . . . . . .4 units
- Survey of Computational Biology (BIS 181) . . . . . .4 units

Additional Upper Division Courses

- Research Seminar (BIS 190) . . . . . .1 unit
- Independent Lab Research (BIS 195) . . . . . .2-6 units
- One non-biology Science or Engineering course . . . . . .3-4 units

Emphasis Track

- One course with lab from emphasis track . . . . . .5 units
- Two additional courses from emphasis track . . . . . .8 units

Emphasis Track courses should be chosen from the following list:

Molecular Biology

- Biochemistry (BIS 101) * . . . . . .4 units
- Molecular Biology (BIS 102) * . . . . . .4 units
- Enzymology (BIS 105) * . . . . . .4 units
- Signal Transduction and Growth Control (BIS 112) . . . .4 units

**One must be taken with lab component*

Cell Biology and Development

- Cells, Tissues and Organs (BIS 111) . . . . . .4 units
- Signal Transduction and Growth Control (BIS 112) . . . . .4 units
- Embryos, Genes and Development (BIS 150) . . . . . .4 units
- Comparative Physiology (BIS 160) * . . . . . .4 units
- Neurobiology (BIS 170) * . . . . . .4 units

**One must be taken with lab component*

Bioinformatics and Computational Biology

- Biophysics (BIS 104) and Laboratory (BIS 104L) * . . . . . .5 units
- Comparative Genomics (BIS 142) . . . . . .4 units
- Biostatistics (BIS 175) . . . . . .4 units
- Bioinformatics (BIS 182) . . . . . .4 units
- Algorithm Design and Analysis (CSE 100) . . . . . .4 units
- Database Systems (CSE 111) . . . . . .4 units

**Required for emphasis*

Microbiology and Immunology

- General Microbiology (BIS 120) * . . . . . .4 units
- Microbial Pathogenesis (BIS 122) . . . . . .4 units
- Human Parasitology (BIS 123) . . . . . .4 units
- Emerging Public Health Threats (BIS 125) . . . . . .4 units
- Molecular Immunology (BIS 151) * . . . . . .4 units
- Cancer Genetics and Tumor Biology (BIS 152) . . . . . .4 units

**One must be taken with lab component*

SAMPLE PLAN OF STUDY FOR BIOLOGICAL SCIENCES DEGREE

SEMESTER 1		SEMESTER 2	
BIS 1 Contemporary Biology	4	ICP 1 Integrated Calculus and Physics I	4
CHEM 2 General Chemistry	4	CHEM 8 Principles of Organic Chemistry	4
CORE 1 The World at Home	4	CORE 2 The World at Home	4
CSE 20 Introduction to Computing I	2	BIS 90x Freshman Seminar	1
Semester Units	**14**	**Semester Units**	**13**

SEMESTER 3		SEMESTER 4	
BIS 100 Molecular Machinery of Life	4	BIS 110 The Cell	4
CHEM 10 Principles of Physical Chemistry	4	MATH 10 Probability and Statistics	3
ICP 2 Integrated Calculus and Physics II	4	MATH 30 Mathematical Biology	4
WRI 1 College Reading and Composition	4	General Education Elective	4
Semester Units	**16**	**Semester Units**	**15**

SEMESTER 5		SEMESTER 6	
BIS 140 Evolution of Biological Diversity	4	BIS 141 Genes and Genomes	4
BIS 181 Introduction to Scientific Modeling	4	Bioscience Emphasis	4
General Education Elective		General Education Elective	4
(with emphasis on communication)	4	Free Elective	4
Free Elective	4	BIS 195 Research Projects in Biological Sciences*	1
Semester Units	**16**	**Semester Units**	**17**

SEMESTER 7		SEMESTER 8	
Bioscience Emphasis (with lab)	5	Bioscience Emphasis	4
BIS 181 Survey of Computational Biology	4	Science/Math/English Elective	3
General Education Elective	4	General Education Elective	4
BIS 195 Research Projects in Biological Sciences	2	BIS 195 Research Projects in Biological Sciences	2
		BIS 190 Research Seminar	1
Semester Units	**15**	**Semester Units**	**14**
		Total Program Units	**120**

** In the first semester of Research Projects in Biological Sciences we recommend that the students attend presentations of faculty research and rotate through several labs.*

EARTH SYSTEMS SCIENCE PROGRAM

The undergraduate major in Earth Systems Science is designed to provide students with 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. Emphasis is given to the interactions between biological systems and Earth processes. Core courses within the major provide students with a firm foundation in the fundamentals of chemistry, biology, hydrology, ecology and Earth sciences, while emphasis areas allow students the flexibility to pursue disciplinary areas in more depth. This major emphasizes a highly interdisciplinary approach to Earth Systems Science, incorporating field studies, laboratory experiments and computations. Complementary course work in the social sciences exposes students to the political, economic and societal implications of human interactions with the environment.

Graduates of this major will have a strong background in the theory and application of Earth Systems Science. They will be well prepared for either graduate studies or jobs in the areas of environmental conservation, ecosystem and natural resource management and science, and many aspects of agricultural sciences. Additionally, Earth Systems Science is an excellent foundation for professional careers in law, policy and administration that increasingly involve the environmental sciences.

The location of UC Merced 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. Additionally, the UC Merced Sierra Nevada Research Institute provides a rich milieu of faculty expertise, research seminars and other activities, and provides opportunities for undergraduate internships.

A hallmark of the Earth Systems Science major is its breadth and flexibility. Lower division course work emphasizes foundation courses in physical, chemical and biological sciences and mathematics, with a choice of a lower division elective science course. A freshman seminar is designed to expose students to current topics, research and career opportunities in Earth Systems early in the program. Upper division requirements consist of four core courses that provide students with a balance of key physical, chemical and biological concepts in Earth Systems, including a field-intensive course that integrates these principles in practical applications and exercises. In the upper division, students select an emphasis area that allows exploration of a particular topical area in more depth. Selection of three courses from within an emphasis area allows students to tailor their program to their individual interests. An upper division seminar highlights the latest research in interdisciplinary Earth Systems topics. General education course work in communications, economics, ethics and public policy prepares majors to apply their quantitative science skills in the job market or in further studies at the graduate level. Students are encouraged to participate in research, internship and service learning activities with faculty as part of their undergraduate studies.

Transfer Students: Transfer students who wish to major in Earth Systems Science should complete one year of calculus, one year of physics, one year of general chemistry, one to two semesters of organic chemistry and two to three semesters of general biology. Students should check with the UC Merced admissions staff for more information on how courses will transfer to UC Merced.

REQUIREMENTS FOR THE EARTH SYSTEMS SCIENCE (ESS) MAJOR

The **additional** requirements that must be met to receive the B.S. in Earth Systems Science at UC Merced are:

Earth Systems Science Requirements (46-49 units): The Earth Systems Science program consists of 13 courses (6 lower division and 7 upper division) designed to give all students a common foundation of core knowledge specific to the discipline.

Lower Division Courses

- Introduction to Earth Systems Science (ESS 1), Introduction to Biological Earth Systems (ESS 5) or Contemporary Biology (BIS 1) . . . . . .4 units
- Fundamentals of Earth Processes (ESS 20) . . . . . .4 units
- Principles of Organic Chemistry (CHEM 8) . . . . . .4 units

One additional science or engineering course from the following list (other courses by approval):

- Introduction to Ecosystem Science (ESS 25) . . . . . .4 units
- Principles of Physical Chemistry (CHEM 10) . . . . . .4 units
- Introduction to Environmental Science and Technology (ENVE 20) . . . . . .4 units
- Applied Mathematical Methods (MATH 25) . . . . . .3 units
- Introduction to Computing II (CSE 21) . . . . . .2 units

Upper Division – Core Courses

- Environmental Chemistry (ESS 100) . . . . . .4 units
- Hydrology and Climate (ESS 110) . . . . . .4 units
- Geomicrobiology (ESS 120) . . . . . .4 units
- Field Methods in Earth Systems (ESS 180) . . . . . .4 units

Emphasis Track

- Three courses from emphasis track . . . . . .9-12 units

Emphasis Track course should be chosen from the following list (other courses by approval)

Geochemistry and Biogeochemistry

- Chemistry and Mineralogy of Soils (ESS 102) . . . . . .3 units
- Geochemistry of Earth Systems (ESS 103) . . . . . .3 units
- Organic Geochemistry (ESS 104) . . . . . .3 units
- Watershed Biogeochemistry (ESS 105) . . . . . .3 units
- Microbial Ecology (ESS 125) . . . . . .4 units
- Environmental Microbiology (ENVE 121) . . . . . .4 units

Hydrologic and Climate Sciences

- Watershed Biogeochemistry (ESS 105) . . . . . .3 units
- Ecology and Ecosystems (ESS 124) . . . . . .4 units
- Subsurface Hydrology (ENVE 112) . . . . . .4 units
- Mountain Hydrology of the Western U.S. (ENVE 114) . . .4 units
- Global Change (ENVE 118) . . . . . .4 units
- Meteorology and Air Pollution (ENVE 130) . . . . . .4 units
- Contaminant Fate and Transport (ENVE 170) . . . . . .3 units

Ecosystem Science

- Watershed Biogeochemistry (ESS 105) . . . . . .3 units
- Ecology and Ecosystems (ESS 124) . . . . . .4 units
- Microbial Ecology (ESS 125) . . . . . .4 units
- Environmental Genomics (ESS 126) . . . . . .4 units
- Environmental Microbiology (ENVE 121) . . . . . .4 units
- Remote Sensing of the Environment (ENVE 152) . . . . . .3 units
- Evolution of Biological Diversity (BIS 140) . . . . . .4 units

Additional Degree Requirements (18-27 units)

- Intermediate Microeconomic Theory (ECON 100) . . . . . .4 units
- Undergraduate Seminar (ESS 190) . . . . . .1 unit
- Course emphasizing policy and ethics . . . . . .3-4 units
- Three elective courses in Natural Sciences or Engineering . . . . . .9-12 units
- Research and/or Service Learning (ENGR 97 or ENGR 197) . . . . . .1-6 units

Student researchers use mass spectrometry in Dean Maria Pallavicini's laboratory to identify proteins in breast cancer cells.

PARTNERSHIP WITH KINGS CANYON, SEQUOIA AND YOSEMITE NATIONAL PARKS

On June 17, 2004, UC Merced signed a second five-year partnership agreement for education and research with Sequoia/Kings Canyon and Yosemite National Parks. In cooperation with schools in the San Joaquin Valley, the partnership has been sponsoring summer environmental education programs for high school students. With the dedication of the Sierra Nevada Research Institute Yosemite Field Station (picture below), the partnership has kicked off a new phase of research collaboration that will advance scientific and cultural understanding, meet regional needs, and enrich university and public education. An affiliated research station in Sequoia/Kings Canyon is also planned.

The research station at Wawona in Yosemite National Park is a valuable resource for field reseach.

SAMPLE PLAN OF STUDY FOR EARTH SYSTEMS SCIENCE DEGREE

SEMESTER 1		SEMESTER 2	
Lower Division Science Course	4	ICP 2 Integrated Calculus and Physics II	4
ICP 1 Integrated Calculus and Physics I	4	CHEM 2 General Chemistry	4
CORE 1 The World at Home	4	CORE 2 The World at Home	4
CSE 20 Introduction to Computing I	2	CSE 21 Introduction to Computing II	2
		ESS 90x Freshman Seminar	1
Semester Units	**14**	**Semester Units**	**15**

SEMESTER 3		SEMESTER 4	
Free Elective	4	ESS 20 Fundamentals of Earth Processes	4
CHEM 8 Principles of Organic Chemistry	4	MATH 25 Applied Mathematical Methods	3
MATH 10 Probability and Statistics	3	Lower Division Science Course	4
WRI 1 College Reading and Composition	4	General Education Elective	4
Semester Units	**15**	**Semester Units**	**15**

SEMESTER 5		SEMESTER 6	
ESS 110 Hydrology and Climate	4	ESS 120 Geomicrobiology	4
ESS 180 Field Methods in Earth Systems	4	ESS 100 Environmental Chemistry	4
General Education Elective		Course emphasizing policy and ethics	4
(with emphasis on communication)	4	Free Elective	3
Free Elective	4	Service Learning	1
Semester Units	**16**	**Semester Units**	**16**

SEMESTER 7		SEMESTER 8	
ESS Emphasis	4	ESS Emphasis	4
ESS Emphasis	3	Free Elective or Research	3
ECON 100 Intermediate Microeconomic Theory	4	General Education Elective	4
Free Elective	4	General Education Elective	4
ESS 190 Undergraduate Seminar	1	Service Learning	1
Semester Units	**16**	**Semester Units**	**16**
		Total Program Units	**123**

HUMAN BIOLOGY PROGRAM

The Human Biology major will provide students with a rich education in the scientific and humanist disciplines that underlie modern health sciences. This major is an excellent preparation for entrance into health-related professional careers including medicine, dentistry, pharmacy, genetic counseling, health education, public health, clinical psychology, epidemiology, environmental health sciences and health administration, among others. The Human Biology major will also provide a strong foundation for careers in science and biomedical research.

The undergraduate Human Biology major is a highly interdisciplinary and broad-based program that integrates biology, social sciences and humanities. This major builds upon the powerful convergence linking genomics and molecular biology to our understanding and treatment of human health and disease. The breadth of the program gives students interested in health professions a well-rounded appreciation of cultural and psychological influences on patient health, as well as a strong foundation in the physical and life sciences.

Students considering a Human Biology major will meet with an advisor and choose a curriculum based upon his/her interests and requirements for graduate or professional school goals. The undergraduate major in Human Biology currently offers two emphasis tracks: Natural Sciences and Social Sciences. Both emphasis areas build on a strong foundation in biology and require the courses needed for medical schools and other biomedical professional schools. The natural science emphasis includes more upper division courses in biology, whereas the social science emphasis includes more courses in social science, particularly psychology. Both programs allow a significant flexibility in choosing courses.

Undergraduate Major in Human Biology Research Requirement: As a capstone to the Human Biology program and to integrate the background students will have obtained in their first five semesters of separate courses in natural science and social science, all Human Biology majors will participate in a research project that links biology and the social sciences. This will involve having their independent laboratory research courses jointly mentored by biology and social science faculty members. In the spring semester of their junior year, students will attend presentations of faculty research. The students will then meet in groups with a biologist and social scientist to plan their senior-year research project. The final student research seminar will also be a joint NS/SS course. Examples of research areas would be in epidemiology (sociology and biology) or neurobiology (psychology/cognitive science and biology).

Transfer Students: Transfer students who wish to major in Human Biology should complete one year of calculus, one year of physics, one year of general chemistry, one to two semesters of organic chemistry, and two to three semesters of general biology. Students should check with the UC Merced admissions staff for more information on how courses will transfer to UC Merced.

REQUIREMENTS FOR THE HUMAN BIOLOGY (HBIO) MAJOR

The **additional** requirements that must be met to receive the B.A. in Human Biology at UC Merced are:

Human Biology Requirements (46-51 units): The Human Biology major consists of 13 courses (6 lower division and 7 upper division) designed to give all students a common foundation of core knowledge specific to the discipline.

Lower Division Courses

- Contemporary Biology (BIS 1) . . . . . .4 units
- Principles of Organic Chemistry (CHEM 8) . . . . . .4 units
- Principles of Physical Chemistry (CHEM 10) . . . . . .4 units
- Mathematical Biology (MATH 30) . . . . . .4 units
- Introduction to Psychology (PSY 1) . . . . . .4 units
- Introduction to Sociology (SOC 1) . . . . . .4 units

Upper Division Courses

- Molecular Machinery of Life (BIS 100) . . . . . .4 units
- The Cell (BIS 110) . . . . . .4 units
- Evolution of Biological Diversity (BIS 140) . . . . . .4 units
- Genes and Genomes (BIS 141) . . . . . .4 units
- Research Seminar (BIS 190) . . . . . .1 unit
- Human Biology Lab Research (HBIO 195) . . . . . .2-6 units
- One non-biology Science or Engineering course . . . . . .3-4 units

Emphasis Track:

There are two emphasis tracks: Natural Sciences and Social Sciences.

Natural Sciences (24-26 units):

- Three Natural Sciences electives . . . . . .12-14 units
- Three electives from the School of Social Sciences, Humanities and the Arts . . . . . .12 units

Social Sciences (28-30 units):

- Three Natural Sciences track electives, one of which must have a lab . . . . . .12-14 units
- Four Psychology/Cognitive Sciences electives . . . . . .16 units

Natural Sciences Emphasis Track courses should be chosen from the following list:

- Organic Synthesis and Mechanisms (CHEM 100) + Organic Chemistry Laboratory (CHEM 100L) . . . . . .5 units
- Molecular Machinery of Life (BIS 100) . . . . . .4 units
- Molecular Biology (BIS 102) . . . . . .4 units
- Biophysics (BIS 104) + Biophysics Laboratory (BIS 104L) . . .5 units
- Enzymology (BIS 105) . . . . . .4 units
- Cells, Tissues and Organs (BIS 111) . . . . . .4 units
- Signal Transduction and Growth Control (BIS 112) . . . . . .4 units
- General Microbiology (BIS 120) . . . . . .4 units
- Microbial Pathogenesis (BIS 122) . . . . . .4 units
- Human Parasitology (BIS 123) . . . . . .4 units
- Emerging Public Health Threats (BIS 125) . . . . . .4 units
- Comparative Genomics (BIS 142) . . . . . .4 units
- Embryos, Genes and Development (BIS 150) . . . . . .4 units
- Molecular Immunology (BIS 151) . . . . . .4 units
- Cancer Genetics and Tumor Biology (BIS 152) . . . . . .4 units
- Comparative Physiology (BIS 160) . . . . . .4 units
- Human Physiology (BIS 161) . . . . . .4 units
- Neurobiology (BIS 170) . . . . . .4 units
- Biostatistics (BIS 175) . . . . . .4 units
- Introduction to Scientific Modeling (BIS 180) . . . . . .4 units

Psychology and Cognitive Science Emphasis Track courses should be chosen from the following list:

- Physiological Psychology (PSY 120) . . . . . .4 units
- Cognitive Psychology (PSY 121) . . . . . .4 units
- Developmental Psychology (PSY 130) . . . . . .4 units
- Personality (PSY 132) . . . . . .4 units
- Abnormal Psychology (PSY 133) . . . . . .4 units
- Clinical Psychology (PSY 140) . . . . . .4 units
- Human Sexuality (PSY 145) . . . . . .4 units
- Alcohol, Drugs and Behavior (PSY 146) . . . . . .4 units
- Introduction to Cognitive Science (COGS 1) . . . . . .4 units
- Mind, Brain and Computation (COGS 101) . . . . . .4 units
- Introduction to Neural Networks in Cognitive Science (COGS 103) . . . . . .4 units

San Joaquin Valley teachers conduct hydrologic measurements on the Merced River, during a UC Merced summer science program for area educators.

SAMPLE PLAN OF STUDY FOR HUMAN BIOLOGY DEGREE – NATURAL SCIENCE EMPHASIS

SEMESTER 1		SEMESTER 2	
BIS 1 Contemporary Biology	4	ICP I Integrated Calculus and Physics I	4
CHEM 2 General Chemistry	4	CHEM 8 Principles of Organic Chemistry *	4
CORE 1 The World at Home	4	CORE 2 The World at Home	4
CSE 20 Introduction to Computing I	2	PSY 1 Introduction to Psychology	4
Freshman Seminar	1		
Semester Units	**15**	**Semester Units**	**16**

SEMESTER 3		SEMESTER 4	
BIS 100 Molecular Machinery of Life	4	BIS 110 The Cell	4
CHEM 10 Principles of Physical Chemistry	4	MATH 10 Probability and Statistics	3
ICP 2 Integrated Calculus and Physics II	4	MATH 30 Mathematical Biology	4
WRI 1 College Reading and Composition	4	SOC 1 Introduction to Sociology	4
Semester Units	**16**	**Semester Units**	**15**

SEMESTER 5		SEMESTER 6	
BIS 140 Evolution of Biological Diversity	4	BIS 141 Genes and Genomes	4
SHA Elective	4	SHA Elective	4
General Education Elective (with emphasis on communication)	4	General Education Elective	4
NS Elective	4	HBIO 195 Independent Laboratory Research #	2
Semester Units	**16**	**Semester Units**	**14**

SEMESTER 7		SEMESTER 8	
NS Elective	4	NS Elective w/Lab	5
SHA Elective	4	Non-science or engineering course	3
General Education Elective	4	General Education Elective	4
Free Elective	4	HBIO 195 Independent Laboratory Research	1
HBIO 195 Independent Laboratory Research	1	BIS 190 Research Seminar	1
Semester Units	**17**	**Semester Units**	**14**
		Total Program Units	**123**

 # In the first semester of Independent Laboratory Research, we recommend that students attend presentations of the faculties of Natural Sciences and Social Sciences who will participate in human biology research training.

** Students interested in medical school should take a second semester of organic chemistry.*

SAMPLE PLAN OF STUDY FOR HUMAN BIOLOGY DEGREE – SOCIAL SCIENCE EMPHASIS

SEMESTER 1		SEMESTER 2	
BIS 1 Contemporary Biology	4	ICP 1 Integrated Calculus and Physics I	4
CHEM 2 General Chemistry	4	CHEM 8 Principles of Organic Chemistry *	4
CORE 1 The World at Home	4	CORE 2 The World at Home	4
CSE 20 Introduction to Computing I	2	PSY 1 Introduction to Psychology	4
Freshman Seminar	1		
Semester Units	**15**	**Semester Units**	**16**

SEMESTER 3		SEMESTER 4	
BIS 100 Molecular Machinery of Life	4	BIS 110 The Cell	4
CHEM 10 Principles of Physical Chemistry	4	MATH 10 Probability and Statistics	3
ICP 2 Integrated Calculus and Physics II	4	MATH 30 Mathematical Biology	4
WRI 1 College Reading and Composition	4	SOC 1 Introduction to Sociology	4
Semester Units	**16**	**Semester Units**	**15**

SEMESTER 5		SEMESTER 6	
BIS 140 Evolution of Biological Diversity	4	BIS 141 Genes and Genomes	4
PSY or COGS Elective	4	PSY or COGS Elective	4
General Education Elective		PSY or COGS Elective	4
(with emphasis on communication)	4	HBIO 195 Independent Laboratory Research #	2
NS Elective	4		
Semester Units	**16**	**Semester Units**	**14**

SEMESTER 7		SEMESTER 8	
NS Elective	4	NS Elective w/Lab	5
PSY or COGS Elective	4	Non-science or engineering course	3
General Education Elective	4	General Education Elective	4
General Education Elective	4	HBIO 195 Independent Laboratory Research	1
HBIO 195 Independent Laboratory Research	1	BIS 190 Research Seminar	1
Semester Units	**17**	**Semester Units**	**14**
		Total Program Units	**123**

 # In the first semester of Independent Laboratory Research, we recommend that students attend presentations of the faculties of Natural Sciences and Social Sciences who will participate in human biology research training.

** Students interested in medical school should take a second semester of organic chemistry.*

The educational mission of the School of Social Sciences, Humanities and Arts is to create a rich learning environment for looking at human nature through the lenses of our many disciplines, broadly divided into the humanities, social sciences and arts. As a new campus, UC Merced has the special opportunity to offer an environment that draws from these disciplinary research traditions, but is not limited by their boundaries. Consider these two examples:

Imagine the question: "What is a metaphor?"
Poets and novelists use metaphor to evoke vivid images in their readers. Scientists rely on metaphor to make leaps in discovery and theory. Teachers use metaphor to explain logarithmic functions, quasars and other relatively abstract phenomena. Politicians employ metaphor to frame issues and influence public policy. We all use metaphor in our daily conversations and writing, and often we are not even aware of it. Our interdisciplinary programs will allow students to explore the meaning, use and power of metaphors across several disciplines, including psychology, cognitive science, literature, art, history, philosophy and public policy. What does metaphor say about everyday thought? How does it influence society?

Imagine the question: "What is social change?"
Throughout human history, people have created new societies, regimes and systems of belief. Social change can be studied at a global scale over thousands of years, yet California's Central Valley is also a laboratory for understanding these issues. Agricultural fields that replaced meadow land only a hundred years ago are being converted to housing and industry. Explosive population growth is fundamentally transforming the local economy, while at the same time pressuring the capacity of public infrastructure and social services. In order to understand changes like these, students need to step away from thinking of economics and business, history, sociology, government, biology and geography as a set of simple, separate disciplines. Instead, students need to learn to integrate key ideas and interdisciplinary tools to understand all the dimensions of a given issue. How can a diverse society use these insights to make better decisions?

The School of Social Sciences, Humanities and Arts offers undergraduate and graduate programs that allow flexible courses of study and opportunities for research at the intersections where the interesting questions lie. Students will have the opportunity to follow personal paths of discovery in an interdisciplinary curriculum, while at the same time gaining depth and expertise in methodological domains such as social statistics, historiography, GIS, economics, cultural analysis and cognitive science.

THE SCHOOL OF SOCIAL SCIENCES, HUMANITIES AND ARTS WILL OFFER THE FOLLOWING MAJORS IN 2005-06:

- Social, Behavioral and Cognitive Sciences
- World Cultures and History
- Management

LETTER OF WELCOME FROM THE DEAN

Dear Prospective Student:

I would like to extend an invitation to study in the School of Social Sciences, Humanities and Arts at UC Merced. Our professors are specialists in many disciplines, including economics, history, linguistics, literature, psychology, philosophy, sociology, statistics and the creative arts. They are among the very best scholars in the world, and have joined the UC Merced founding faculty to create exciting new programs that appeal to our leaders of the future.

As you know from reading the newspapers and simply observing your surroundings, the world is a complex place. In our school, you will encounter many different approaches to our understanding of human nature, and you will be prepared for a lifetime of learning in an ever-changing world. The areas covered in our school will prepare you for future careers in many fields, including business, law, media, psychology, social work and government. In a world of rapid changes, an important educational goal is for you to learn how to learn. The tools of the social sciences, humanities and arts are at your disposal.

We are also excited about the unique learning environment that will be created by the opening of the first research university of the 21st century. The entire world is looking at UC Merced in anticipation of what we can achieve – even Governor Schwarzenegger mentioned us in his last State of the State speech as the world tuned in to listen.

We will start as a small learning environment in the first few years, where you as students will get to know amazing world-class faculty members on a first-name basis. This is an undoubtedly rare opportunity to have the advantages of a research university and the intimacy of a small college. Besides, you will be making history with us and learning with us as we grow. One of our founding faculty members, History Professor Gregg Herken, was in the first graduating class at UC Santa Cruz, and that is something he carries around with him as a unique and valuable experience. We invite you to be part of UC Merced's founding experience!

Kenji Hakuta, Dean
School of Social Sciences, Humanities and Arts

I studied psychology, English, drama, history and sociology. The more I understand about people and their relationships and the more I understand about how human actions shaped the course of history, the better I am able to evaluate the issues and options that I face every day. The insights and wisdom that come from studying humanities and the social sciences have made my life richer, and prepared me for the challenges of my career in public service.

Carol Whiteside, President of the Great Valley Center, and former Mayor of the City of Modesto

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THE MAJORS

SOCIAL, BEHAVIORAL AND COGNITIVE SCIENCES PROGRAM

The undergraduate major in Social, Behavioral and Cognitive Sciences will offer broad preparation that cuts across economics, psychology, political science, sociology and anthropology. Introductory course work will lay the basis for understanding the major questions and methodologies across the social, behavioral and cognitive sciences, including a common core of statistical and experimental methods courses. Upper division courses and projects will allow students to synthesize their cross-discipline learning and experiences.

Within this broad framework, two emphases will be developed within the initial program: Psychology and Economics. Students will select one of these emphases and will receive a notation on their transcript and diploma. Other emphases will be developed as the faculty and program enrollments grow.

The Psychology emphasis will provide broad preparation in psychology as a field and in the research methodologies of psychology. Special emphases will include human development (biological and cognitive) and social psychology. Cross-school programs will emphasize the intersections of psychology with the biological sciences through programs in human biology. Emphases in human development and social psychology will include multicultural perspectives. Psychology emphasis students will have opportunities to work with faculty on research. While most Social, Behavioral and Cognitive Science majors will receive the B.A., some Psychology emphasis students may chooose a B.S. option, with more intense preparatory course work in the natural sciences.

Built on a basis of strong theoretical and statistical training, the Economics emphasis will give students a solid grounding in economic theory and quantitative methods. The economics emphasis will provide students with an understanding of how incentives and institutions shape society. Special emphases will include labor economics, public economics, environmental economics, political economy, public policy and quantitative methods. Opportunities to do research with faculty members will also be available.

Depending upon their emphasis within social, behavioral and cognitive sciences, students will be well prepared for advanced study in law, management, public administration, urban and regional planning, and medicine; or for admission into graduate school in one of the social science emphasis fields. Career paths include business; social services agencies; federal, state and local government service; non-governmental organizations and non-profit agencies; community development; and counseling and training programs.

REQUIREMENTS FOR THE SOCIAL, BEHAVIORAL AND COGNITIVE SCIENCES (SBCS) MAJOR

General Education Requirements: UC Merced requires a minimum of 45 units in general education courses. The following is a summary of general education requirements for the Social, Behavioral and Cognitive Sciences major:

Lower Division General Education Requirements

- College One Core Courses, The World at Home (CORE 1 and 2) . . . . . .8 units
- College Reading and Composition (WRI 1) . . . . . .4 units
- Science/Engineering introductory course with laboratory, field or studio component . . . . . .4 units
- Second Science/Engineering course . . . . . .4 units
- Quantitative Analysis course . . . . . .4 units
- Humanities/Arts introductory course . . . . . .4 units
- Introductory SBCS course outside emphasis track . . . . . .4 units

Upper Division General Education Requirements

- Four upper division courses outside area of emphasis track . . . . . .16 units

Social, Behavioral and Cognitive Sciences Course Requirements: The Social, Behavioral and Cognitive Sciences major requires 44 units (some of which simultaneously fill general education requirements). Courses in the major emphasis must be taken for a letter grade and specifically may not be taken on a pass/no pass basis unless the course is only offered on a pass/no pass basis.

Required courses include:

Lower Division Major Requirements (12 units):

- Introduction to the Social, Behavioral and Cognitive Sciences. . . . . .8 units
  Two courses chosen from:
  - Introduction to Cognitive Science (COGS 1)
  - Introduction to Economics (ECON 1)
  - Introduction to Psychology (PSY 1)
  - Introduction to Political Science (POL 1)
  - Introduction to Sociology (SOC 1)
- Quantitative Methods . . . . . .4 units
  One course chosen from:
  - Psychology emphasis – Analysis of Psychological Data (PSY 10)
  - Economics emphasis – Analysis of Economic Data (ECON 10)
    (Counts toward the General Education Quantitative Requirement.)

Upper Division Major Requirements (32 units)

Economics emphasis:

- Intermediate Microeconomic Theory (ECON 100) . . . . . .4 units
- Intermediate Macroeconomic Theory (ECON 101) . . . . . .4 units
- Econometrics (ECON 130) . . . . . .4 units
- Five additional upper division Economics courses . . . . . .20 units

Psychology emphasis:

- Research Methods in Psychology (PSY 105) . . . . . .4 units
- Psychological Perspectives on Cultural, Racial and Ethnic Diversity (PSY 150) . . . . . .4 units
- One upper division Psychology emphasis course from each of the following three groups: . . . . . .12 units
  - Group A (Cognition, Brain and Behavior): PSY 120, 121, or any upper division COGS course
  - Group B (Social-Personality, Development): PSY 130, 131, 132, 133
  - Group C (Applied Psychology): PSY 140, 141, 145, 146, SBCS 140, SBCS 145
- At least three additional upper division courses in Psychology or Cognitive Science. . . . . .12 units

Transfer Students: Transfer students who wish to major in Social, Behavioral and Cognitive Sciences should complete the Intersegmental General Education Transfer Curriculum (IGETC) at their community college. In addition, students should complete at least two UC-transferable introductory courses, one each selected from psychology and economics, and two lower division natural science or engineering courses, at least one of which has a lab, field or studio component. Students interested in the Economics emphasis should also take a two-course UC transferable sequence in calculus.

SAMPLE PLAN OF STUDY FOR SBCS DEGREE – ECONOMICS EMPHASIS

SEMESTER 1		SEMESTER 2	
CORE 1 The World at Home	4	CORE 2 The World at Home	4
ECON I Introduction to Economics	4	MATH 21 Calculus of a Single Variable I	4
WRI 1 College Reading and Composition	4	Nat Sci/Engin w/Lab/Field Work/Studio	4
Elective	4	Elective	4
Semester Units	**16**	**Semester Units**	**16**

SEMESTER 3		SEMESTER 4	
SBCS Introductory course outside Economics	4	Humanities/Arts Introductory course	4
Natural Science/Engineering course	4	MATH 22 Calculus of a Single Variable II	4
ECON 10 Analysis of Economic Data	4	Elective	4
Elective	4	Elective	4
Semester Units	**16**	**Semester Units**	**16**

SEMESTER 5		SEMESTER 6	
ECON 100 Intermediate Microeconomic Theory	4	ECON 101 Intermediate Macroeconomic Theory	4
Upper Division ECON course	4	Upper Division ECON course	4
Upper Division course outside Economics	4	Upper Division course outside Economics	4
Elective	4	Elective	4
Semester Units	**16**	**Semester Units**	**16**

SEMESTER 7		SEMESTER 8	
ECON 130 Econometrics	4	Upper Division ECON course	4
Upper Division ECON course	4	Upper Division ECON course	4
Upper Division course outside Economics	4	Upper Division course outside Economics	4
Elective	4	Elective	4
Semester Units	**16**	**Semester Units**	**16**
		Total Program Units	**128**

SAMPLE PLAN OF STUDY FOR SBCS DEGREE – PSYCHOLOGY EMPHASIS

SEMESTER 1		SEMESTER 2	
CORE 1 The World at Home	4	CORE 2 The World at Home	4
PSY 1 Introduction to Psychology	4	PSY 10 Analysis of Psychological Data	4
WRI 1 College Reading and Composition	4	Nat Sci/Engin w/Lab/Field Work/Studio	4
Elective	4	Elective	4
Semester Units	**16**	**Semester Units**	**16**

SEMESTER 3		SEMESTER 4	
SBCS Introductory course outside Psychology	4	PSY 105 Research Methods in Psychology	4
Natural Science/Engineering course	4	Humanities/Arts Introductory course	4
PSY 150 Psychological Perspectives on		Electives	4
Cultural, Racial and Ethnic Diversity	4	Electives	4
Elective	4		
Semester Units	**16**	**Semester Units**	**16**

SEMESTER 5		SEMESTER 6	
PSY Group A course	4	PSY Group B course	4
Upper Division course in Psych/Cog Science	4	Upper Division course in Psych/Cog Science	4
Upper Division course outside Psych/Cog Science	4	Upper Division course outside Psych/Cog Science	4
Elective	4	Elective	4
Semester Units	**16**	**Semester Units**	**16**

SEMESTER 7		SEMESTER 8	
PSY Group C course	4	Upper Division course in Psych/Cog Science	4
Upper Division course outside Psych/Cog Science	4	Upper Division course outside Psych/Cog Science	4
Elective	4	Elective	4
Elective	4	Elective	4
Semester Units	**16**	**Semester Units**	**16**
		Total Program Units	**128**

WORLD CULTURES AND HISTORY PROGRAM

The undergraduate major in World Cultures and History will invite students to study questions of society and culture in a comparative context. It will address such questions as: What constitutes a society and a culture, and how are they formed? How and why do societies and cultures sometimes come into conflict? What happens at the crossroads of culture – for example, California and the San Joaquin Valley – when people from many different backgrounds come into contact?

These questions can best be understood through the prism of the humanities, arts and social sciences. Thus, this major will bring together a variety of disciplines previously thought of as dissimilar, including anthropology, history and political science, language and literature, music and performance studies, philosophy and religious studies, and area and ethnic studies.

In UC Merced's opening years, the World Cultures and History major will particularly examine the interaction of nations and cultures from both a literary and an historical perspective. Within both these fields, lively scholarly debates on the subject of culture abound. This major will appeal to students who are interested in learning the methods and tools of history, literature and allied fields to understand how societies and cultures have developed and continue to evolve. A special feature of this major will give students the opportunity to apply their classroom learning to relevant and contemporary research problems outside the classroom, where students may contribute to expanding public knowledge and awareness of cultural issues.

Two emphases will be developed within the initial program: History and Literature. Students will select one of these emphases and receive a notation to that effect on their transcript and diploma. Other emphases will be developed as the faculty and program enrollments grow.

The History emphasis will prepare students to understand and use the methods by which historians examine society and culture, through historical research and writing. Students will learn to locate, evaluate and interpret evidence, and then use that evidence to construct an argument or develop a thesis, using both historical case studies and comparative studies. Students will explore history as a field, including the examination in depth of issues concerning world, national or state, and local history. Initially, the History emphasis will focus on world history, the history of California and the American West, environmental history, the history of immigration and migration, and the history of science and technology.

The Literature emphasis will prepare students in the multiple perspectives from which literature as a product of culture is read. Students will learn how to interpret texts by applying different critical methods and hone their own interpretive skills through analysis and writing. Students will have the opportunity to study a literary tradition in depth and to compare the literatures of different societies and cultures. Students will use this study to build written, oral and other communication skills. They will develop the ability to create well-crafted analyses for specialists in their field, as well as to interpret the results of their research and analyses for a non-specialist public.

During their undergraduate careers, World Cultures and History majors will have a variety of opportunities to apply what they are learning. Possibilities include undergraduate research with an individual faculty member; community or regional internships in a variety of cross-cultural settings; and enrichment experiences through the World Cultures Institute. The rich and diverse historical experiences and cultural heritages of California and the San Joaquin Valley offer an excellent living laboratory for this research.

A unique part of the World Cultures and History major will be a public research project that enables students to use their research and communication skills either individually or as part of a team to educate and inform the public. Students might work, for example, on researching and writing an interpretative account linking the environmental and human histories of nearby Yosemite or Sequoia National Park; or on representations through the arts of a San Joaquin Valley cultural group at a local museum; or on an aspect of irrigation history and water policy for a public agency in the region. The final product might be in the form of an interpretive Web site that combines written and oral texts with visual material, an interpretive text for the public, or a written and oral report to a sponsoring agency. Extensive writing will be a keystone of the World Cultures and History, and a requirement of any public research project.

World Cultures and History majors may also elect to study overseas through the University of California Education Abroad Program (EAP) or participate in the University of California programs in Washington, D.C. (UCDC) or Sacramento. To fulfill the public research project requirement, the EAP, UCDC or Sacramento experience would need to be planned under UC Merced faculty supervision and lead to completion of a final written report addressed to a well-defined public audience. (EAP students may prepare this report in English or in the language of the EAP country.)

Students will also complete a two-semester senior proseminar in which they will explore connections among the world cultures and history courses they have completed and write a senior thesis. The proseminar will require students to demonstrate their skills in communicating effectively both orally and in writing with an audience in their emphasis field. Semester one will focus on directed research in preparation for writing a senior thesis and semester two will be devoted to completing the thesis.

World Cultures and History students will be well prepared to enter advanced study programs in law, education, journalism, diplomacy, library science and management, as well as graduate study in their field of emphasis. Career opportunities will be found in academe, business, publishing, public service, non-governmental organizations and at museums and archives. Public as well as private agencies seeking employees with strong cross-cultural communication skills and understanding should find graduates from this program especially appealing.

REQUIREMENTS FOR THE WORLD CULTURES AND HISTORY (WCH) MAJOR

General Education Requirements: UC Merced requires a minimum of 45 units in general education courses. The following is a summary of general education requirements for World Cultures and History majors:

Lower Division General Education Requirements

- College One Core courses, The World at Home (CORE 1 and 2).....8 units
- College Reading and Composition (WRI 1).....4 units
- Social, Behavioral and Cognitive Sciences Introductory course .....4 units
- Two Natural Sciences or Engineering Introductory courses.....8 units *(One with lab/field work/studio)*
- Quantitative Reasoning course (mathematics, statistics or logic).....4 units
- Two years of college-level courses in a language other than English *(can be satisfied through alternative means such as proficiency testing, prior course work, etc.)*.....up to 16 units
- Two introductory World Cultures and History courses selected from the student's non-emphasis area .....8 units

Upper Division General Education Requirements:

- Four upper division courses outside area of emphasis.....16 units

World Cultures and History Course Requirements: Students in the World Cultures and History major must complete at least 36 units in World Cultures and History courses, of which 8 will be from lower division courses in the student's area of emphasis, 1-3 will be a senior public research project, and 6 will be a senior proseminar. Courses in the major emphasis must be taken for a letter grade, and specifically may not be taken on a pass/no pass basis unless the course is only offered on a pass/no pass basis. World Cultures and History includes courses in history, literature, anthropology, languages (initially, Spanish) and philosophy. Students must demonstrate proficiency in a language other than English equivalent to two college years in that language.

Required courses include:

Lower Division Major Requirements (8 units): A two-semester lower division introductory sequence in the student's intended area of emphasis:

History emphasis (one of the following combinations):

- Introduction to World History (HIST 10) and World History, 1850-2000 (HIST 11)
- The Forging of the United States, 1650-1900 (HIST 16) and Twentieth Century America (HIST 17)

Literature emphasis (one of the following combinations):

- Introduction to World Culture and Literature I and II (LIT 20 and LIT 21)
- Introduction to American Literature I and II (LIT 30 and LIT 31)
- Introduction to British Literature I and II (LIT 40 and LIT 41)
- Introduction to Hispanic Literature I and II (LIT 50 and LIT 51)

Upper Division Major Requirements (26-36 units):

History Emphasis:

- The Historian's Craft (HIST 100) *(must be taken in junior year)*.....3 units

At least three upper division history emphasis courses chosen from the following six areas:

- Topics in World History (HIST 130).....4 units
- Topics in National History (HIST 131).....4 units
- Topics in Regional or State History (HIST 132).....4 units
- Topics in the History of Migration and Immigration (HIST 133).....4 units
- Topics in History of Science and Technology (HIST 134) 4 units
- Topics in Environmental History (HIST 135) .....4 units
- History electives .....4-12 units

Additional requirements:

- World Cultures and History Proseminar: Research (WCH 190) . . . . . 3 units
- World Cultures and History Proseminar: Senior Thesis (WCH 191). . . . . 3 units
- Public Research Project in World Cultures and History (WCH 192) . . . . . 1-3 units

Literature emphasis:

- Engaging Texts: Introduction to Critical Practice (must be taken in junior year) (LIT 100) . . . . . 3 units

At least three upper division Literature emphasis courses from the following seven areas:

- Topics in World Literature (LIT 110) . . . . . 4 units
- Topics in Literature of Difference (LIT 120). . . . . 4 units
- Topics in Literary Genres (LIT 125) . . . . . 4 units
- Topics in American Literature (LIT 130) . . . . . 4 units
- Topics in British Literature (LIT 140) . . . . . 4 units
- Topics in Hispanic Literature (LIT 150) . . . . . 4 units
- Great Writers (LIT 165) . . . . . 4 units

Additional requirements:

- Topics in Languages and Linguistics (LIT 170) . . . . . 4 units
- Literature Electives . . . . . 4-12 units
- World Cultures and History Proseminar: Research (WCH 190) . . . . . 3 units
- World Cultures and History Proseminar: Senior Thesis (WCH 191). . . . . 3 units
- Public Research Project in World Cultures and History (WCH 192) . . . . . 1-3 units

Transfer Students: Transfer students who wish to major in World Cultures and History should complete the Intersegmental General Education Transfer Curriculum (IGETC) at their community college. In addition, students should complete at least two full-year UC-transferable introductory course sequences, one sequence selected from history and one from literature.

SAMPLE PLAN OF STUDY FOR WCH DEGREE – HISTORY EMPHASIS

SEMESTER 1		SEMESTER 2	
CORE 1 The World at Home	4	CORE 2 The World at Home	4
Nat Sci/Engin course w/Lab/Field Work/Studio	4	SBCS Elective	4
WRI 1 College Reading and Composition	4	Quantitative Reasoning course	4
Introductory History Sequence	4	Introductory History Sequence	4
		Freshman Seminar	1
Semester Units	**16**	**Semester Units**	**17**

SEMESTER 3		SEMESTER 4	
Introductory Literature Sequence	4	Introductory Literature Sequence	4
SBCS Introductory course	4	SBCS Introductory course	4
Natural Science or Engineering course	4	Elective	4
Elective	4	Elective	4
Semester Units	**16**	**Semester Units**	**16**

Note: freshman and/or sophmore year may include advanced foreign language study

SEMESTER 5		SEMESTER 6	
HIST 100 The Historian's Craft	3	History Topics course	4
History Elective	4	History Elective	4
Elective	4	WCH 192 Public Research Project	3
Upper Division course outside History	4	Upper Division course outside History	4
Semester Units	**15**	**Semester Units**	**15**

SEMESTER 7		SEMESTER 8	
WCH 190 Proseminar in World Cultures and History: Research	3	WCH 191 Proseminar in World Cultures and History: Senior Thesis	3
History Topics course	4	History Topics course	4
History Elective	4	History Elective	4
Upper Division course outside History	4	Upper Division course outside History	4
Semester Units	**15**	**Semester Units**	**15**
		Total Program Units	**125**

SAMPLE PLAN OF STUDY FOR WCH DEGREE – LITERATURE EMPHASIS

SEMESTER 1		SEMESTER 2	
CORE 1 The World at Home	4	CORE 2 The World at Home	4
Introductory Literature Sequence	4	Introductory Literature Sequence	4
Nat Sci/Engin course w/Lab/Field Work/Studio	4	Quantitative Reasoning course	4
WRI 1 College Reading and Composition	4	Elective	4
		Freshman Seminar	1
Semester Units	**16**	**Semester Units**	**17**

SEMESTER 3		SEMESTER 4	
Introductory History Sequence	4	Introductory History Sequence	4
SBCS Introductory course	4	Natural Science or Engineering course	4
Elective	4	Elective	4
Elective	4	Elective	4
Semester Units	**16**	**Semester Units**	**16**

Note: freshman and/or sophmore year may include advanced foreign language study

SEMESTER 5		SEMESTER 6	
LIT 100 Engaging Texts: Intro to Critical Practice	3	Literature Topics course	4
Literature Elective	4	Literature Elective	4
Literature Topics course	4	WCH 192 Public Research Project	3
Upper Division course outside Literature	4	Upper Division course outside Literature	4
Semester Units	**15**	**Semester Units**	**15**

SEMESTER 7		SEMESTER 8	
WCH 190 Proseminar in World Cultures and History: Research	3	WCH 191 Proseminar in World Cultures and History: Senior Thesis	3
Literature Topics course	4	Literature Elective	4
Literature Elective	4	Literature Elective	4
Upper Division course outside Literature	4	Upper Division course outside Literature	4
Semester Units	**15**	**Semester Units**	**15**
		Total Program Units	**125**

MANAGEMENT PROGRAM

The Management program responds to the growing need of California industry, especially in the Central Valley. UC Merced's management education is interdisciplinary and consists of a blend of courses from the fields of economics, management theory, social sciences and engineering. Real-life management problems don't fit neatly into subject areas. Today's managers and economists tackle issues that involve a number of management functions, so solutions need to account for all the areas involved. The UC Merced approach is a step away from thinking of management and economics as a set of simple, separate disciplines. Instead, students will learn to integrate key ideas from across subject areas to understand all the dimensions of a given issue. Creativity, innovation and entrepreneurship will be emphasized.

The Management major at UC Merced represents a unique, hands-on approach to management development and economics, positioning courses at the leading edge of dynamic business performance. The practical and project-based approach reflects the principle that learning is more rewarding when put into practice. Expertise can be taught, yet skills development demands live employment in the real world of work. The major is based on the premise that organizations of different kinds – for-profit, non-profit and governmental – require employees who are trained in a holistic approach to decision making, work well in teams and projects, are comfortable in many cultures, are well-rounded in sciences and humanities, and have learned the art of self-directed learning.

Using a multidisciplinary approach, the Management major prepares students for a variety of management-related careers. The curriculum includes a foundation in economics, organization, business, finance, accounting, communication, statistics and management theory. UC Merced's Management program also emphasizes the historical and cultural dimensions of economics and management. It focuses on analysis and problem solving across a wide spectrum of management activities. The theoretical underpinning for the undergraduate program comes from economics and management science disciplines that use tools and techniques based on applied mathematics and statistics to solve problems in virtually all areas of business and government. Management students will develop skills to build quantitative models of complex operations and use those models to facilitate decision making.

The Management major includes two emphases:

Business Economics and Management
This emphasis combines a breadth of education in social sciences, humanities and arts with specifics of professional education in business administration and economics.

Public Policy and Management
Students who choose this emphasis will be trained in the formation, implementation and evaluation of solutions to policy problems. There is a growing need for professionals who can solve problems that result from economic and technological change.

Students who graduate with a major in management will be able to:

- Analyze information, solve problems and make decisions from a holistic, multidisciplinary perspective
- Apply theories and concepts in management and related fields (economics, accounting, statistics, finance, marketing, human resource management, strategic planning and business law) to various management situations
- Use effective written and oral communication consistent with the management and professional environment
- Apply appropriate information technology to analyze problems, develop business research, report key data and recommend management strategies and actions
- Evaluate ethical, social, cultural and political issues as they relate to the organization, operations, human resources and business ventures.

Transfer Students: This major is available only for entering freshmen during the 2005-2006 academic year.

REQUIREMENTS FOR THE MANAGEMENT (MGMT) MAJOR

General Education Requirements
UC Merced requires a minimum of 45 units in general education courses. The following is a summary of general education requirements for the Management major:

Lower Division General Education Requirements

- College One Core Courses, The World at Home (CORE 1 and 2) . . . . . 8 units
- College Reading and Composition (WRI 1) . . . . . 4 units
- Science/Engineering Introductory course with laboratory, field or studio component. . . . . 4 units
- Second Science/Engineering course . . . . . 4 units
- Quantitative Analysis course *(ECON 10 will satisfy this requirement)* . . . . . 4 units
- Introductory World Cultures and History course . . . . . 4 units
- Introductory Social, Behavioral and Cognitive Sciences course *(PSY 1 will satisfy this requirement)* . . . . . 4 units

Upper Division General Education Requirements

- Four upper division courses outside area of emphasis . . 16 units

Business Economics and Management (B.A.)

The Business Economics and Management emphasis provides students with the analytical tools to operate successfully in a modern, volatile business environment. While the core management courses provide a rigorous foundation in strategy, marketing, organizations, finance, accounting and law, course requirements also draw from economics, psychology, social science and engineering.

Students who complete this program leave well trained in the management of resources of all kinds. They will have a working knowledge of how to manage risks, control information flows and allocate tasks. They will have gained some experience of interaction in real business environments, and they will understand the principles behind business interactions, which will allow them to handle new situations in order to become effective managers well into the future.

A defined core of 66 units is required. The required Business Economics and Management core courses are:

Lower Division Core Courses (24 units):

- Case Study Seminar on Business and Management (MGMT 2) . . . . . .2 units
- Introduction to Finance and Accounting I and II (MGMT 25 and 26) . . . . . .6 units
- Introduction to Economics (ECON1) . . . . . .4 units
- Analysis of Economic Data (ECON 10) . . . . . .4 units
- Introduction to Psychology (PSY 1) . . . . . .4 units
- Introduction to Computing I and II (CSE 20 and 21) . . .4 units

Upper Division Core Courses (42 units):

- Intermediate Microeconomic Theory (ECON 100) . . . . . .4 units
- Intermediate Macroeconomic Theory (ECON 101) . . . . . .4 units
- Econometrics (ECON 130) . . . . . .4 units
- Industrial and Organizational Psychology (PSY 141) . . . . .4 units
- Case Studies in Decision Making in History # . . . . . .4 units
- Financial Management # . . . . . .4 units
- Introduction to Decision Science # . . . . . .4 units
- Financial Accounting # . . . . . .4 units
- Management Accounting # . . . . . .4 units
- Strategic Management # . . . . . .3 units
- Marketing # . . . . . .3 units

 # See http://ssha.ucmerced.edu/ (click on the Majors link) for specific course numbers and descriptions

Additional emphasis requirements: Business Economics and Management track students are required to take at least 12 units (lower and upper division) but no more than 20 units of elective management courses that should be selected to provide depth in a specific management area, which can be accounting, finance, strategy, marketing, operations, decision science or information management.

PUBLIC POLICY MANAGEMENT (B.A.)

The Public Policy Management emphasis provides an interdisciplinary education that prepares students for leadership in public organizations. The program educates managers who can apply the knowledge and tools of the social and natural sciences to help achieve societal goals. Students are exposed to a broad spectrum of courses, from political science to biology. Communication skills and conceptual skills are emphasized. The program focuses on issues of today and emerging problems of tomorrow. The approach is learning-by-doing and interdisciplinary, centering on solving real-world problems. Scientific breakthroughs in fields such as biosciences, technology and especially information technology bring about major economic and societal changes. Governments, government business enterprises and non-profit organizations increasingly demand professionals trained in policy making and management who have a sound understanding of these fields.

A defined core of 60 semester units is required. The required Public Policy Management core courses are:

Lower Division Core Courses (24 units):

- Case Study Seminar on Business and Management (MGMT 2) . . . . . .2 units
- Introduction to Finance and Accounting I and II (MGMT 25 and 26) . . . . . .6 units
- Introduction to Economics (ECON1) . . . . . .4 units
- Analysis of Economic Data (ECON 10) . . . . . .4 units
- Introduction to Psychology (PSY 1) . . . . . .4 units
- Introduction to Computing I and II (CSE 20 and 21) . . .4 units

Upper Division Core Courses (36 units):

- Intermediate Microeconomic Theory (ECON 100) . . . . . .4 units
- Intermediate Macroeconomic Theory (ECON 101) . . . . . .4 units
- Econometrics (ECON 130) . . . . . .4 units
- Public Economics (ECON 151) . . . . . .4 units
- Law and Economics (ECON 152) . . . . . .4 units
- Political Economics (ECON 155) . . . . . .4 units
- Financial Accounting # . . . . . .4 units
- Financial Management # . . . . . .4 units
- Systems Thinking and Problem Solving # . . . . . .4 units

Students who want a concentration in public policy management of health care also must complete 8 units in:

- Health Economics (ECON 145) . . . . . .4 units
- Economics of the Environment (ECON 120) . . . . . .4 units

 # See http://ssha.ucmerced.edu/ (click on the Majors link) for specific course numbers and descriptions

Additional emphasis requirements: Public Policy Management emphasis students are required to take at least 12 units (lower and upper division), but no more than 20 units, of elective management courses that should be selected to provide depth in a specific management area, which can be accounting, finance, strategy, marketing, operations, decision science or information management.

Psychology professor Will Shadish's door is always open to students.

SAMPLE PLAN OF STUDY FOR MANAGEMENT DEGREE – BUSINESS ECONOMICS AND MANAGEMENT TRACK

SEMESTER 1		SEMESTER 2	
CORE 1 The World at Home	4	CORE 2 The World at Home	4
ECON 1 Introduction to Economics	4	ECON 10 Analysis of Economic Data	4
WRI 1 College Reading and Composition	4	Nat Sci/Engin w/Lab/Field Work/Studio	4
WCH Introductory course	4	PSY 1 Introduction to Psychology	4
		Freshman Seminar	1
Semester Units	**16**	**Semester Units**	**17**

SEMESTER 3		SEMESTER 4	
Elective	4	Elective	4
Natural Science/Engineering course	4	Elective	4
MGMT 2 Case study Seminar on Business and Management	1	MGMT 2 Case Study Seminar on Business and Management.	1
MGMT 25 Introduction to Finance and Accounting I.	3	MGMT 26 Introduction to Finance and Accounting II	3
CSE 20 Introduction to Computing I	2	CSE 21 Introduction to Computing II	2
Semester Units	**14**	**Semester Units**	**14**

SEMESTER 5		SEMESTER 6	
ECON 100 Intermediate Microeconomic Theory.	4	ECON 101 Intermediate Macroeconomic Theory	4
Financial Accounting.	4	Financial Management.	4
Upper Division course outside Management	4	Upper Division course outside Management	4
Introduction to Decision Science	4	Management Accounting	4
Semester Units	**16**	**Semester Units**	**16**

SEMESTER 7		SEMESTER 8	
ECON 130 Econometrics	4	Case Studies in Decision Making in History	4
PSY 141 Industrial and Organizational Psychology	4	Marketing	3
Upper Division course outside Management	4	Upper Division course outside Management	4
Strategic Management	3	Elective	4
Semester Units	**15**	**Semester Units**	**15**
		Total Program Units	**123**

SAMPLE PLAN OF STUDY FOR MANAGEMENT DEGREE – PUBLIC POLICY MANAGEMENT TRACK

SEMESTER 1		SEMESTER 2	
CORE 1 The World at Home	4	CORE 2 The World at Home	4
ECON 1 Introduction to Economics	4	ECON 10 Analysis of Economic Data	4
WRI 1 College Reading and Composition	4	Nat Sci/Engin w/Lab/Field Work/Studio	4
Elective	4	PSY 1 Introduction to Computing II	4
		Freshman Seminar	1
Semester Units	**16**	**Semester Units**	**17**

SEMESTER 3		SEMESTER 4	
Elective	4	WCH Introductory course	4
Natural Science/Engineering course	4	Elective	4
MGMT 2 Case Study Seminar on Business and Management	1	MGMT 2 Case Study Seminar on Business and Management	1
MGMT 25 Introduction to Finance and Accounting I	3	MGMT 26 Introduction to Finance and Accounting II	3
CSE 20 Introduction to Computing I	2	CSE 21 Introduction to Computing II	2
Semester Units	**14**	**Semester Units**	**14**

SEMESTER 5		SEMESTER 6	
ECON 100 Intermediate Microeconomic Theory	4	ECON 101 Intermediate Macroeconomic Theory	4
ECON 151 Public Economics	4	Financial Management	4
Upper Division course outside Management	4	Upper Division course outside Management	4
Financial Accounting	4	Systems Thinking and Problem Solving	4
Semester Units	**16**	**Semester Units**	**16**

SEMESTER 7		SEMESTER 8	
ECON 130 Econometrics	4	Case Studies in Decision-Making in History	4
PSY 141 Industrial and Organizational Psychology	4	ECON 155 Political Economics	4
Upper Division course outside Management	4	Upper Division course outside Management	4
ECON 152 Law and Economics	4	Elective	4
Semester Units	**16**	**Semester Units**	**16**
		Total Program Units	**125**

WELCOME FROM THE DEAN

Graduate education is an experience in learning the process of discovery. Be it in the laboratory, the field, a museum or library, students will learn how to identify, investigate and analyze major problems of importance to society. As a natural laboratory for research of international significance, California's San Joaquin Valley is defined by the diversity of its people and the proximity of the Sierra Nevada mountains. These elements offer a critical venue for a broad palette of studies that span the gamut from the humanities and social sciences to the natural and engineering sciences.

The University of California, Merced is building both a world-class faculty and world-class partnerships with Yosemite and Sequoia/Kings Canyon National Parks and with Lawrence Livermore National Laboratory. These provide abundant opportunities for graduate students to interact with a broad range of internationally acclaimed scientists and policy makers while also providing access to some of the world's most powerful research instrumentation.

I hope you will explore UC Merced for your graduate education. As the 10th and newest campus of the University of California, we can offer our founding graduate students the matchless experience of being there at the beginning. You will have a profound impact on the campus spirit, culture and traditions that will become the hallmarks of the San Joaquin Valley's first UC campus.

Graduate education is about adventure and exploration; so too is the development of a new campus. The entrepreneurial spirit that drives the best graduate students is identical to that needed for the creation of a new campus. The faculty and the Graduate Division look forward to providing our students an educational experience that will be the stepping stone to a truly exceptional career.

Keith Alley, Dean
Graduate Studies

SOLVING SOCIETY'S CHALLENGES

Society's most intractable problems are broad based and multifaceted. Viable solutions to these problems require a scope of multidisciplinary approaches that can benefit the people of California and the world beyond. UC Merced is committed to offering graduate students an opportunity to work on many of society's most pressing and important problems. The research interests of our faculty reach across the spectrum of modern science and scholarship. Research interests among UC Merced's initial faculty include:

- History of the Cold War and nuclear armament
- Immigration, health services, border controls, patterns of immigrant naturalization and implications for policy of migration patterns
- Ethnic diversity and political participation
- Psychology of bilingualism and second language learning
- Experimental and quasi-experimental design, meta-analytic methods, program evaluation and effects of psychotherapy
- U.S. economic history and political economy
- Digital cultural atlases for history and heritage preservation
- Space, mapping and power in pre-industrial Eurasia
- Spanish language literature of the Americas and Spain
- Transport of organic and inorganic contaminants in natural systems
- Structural and functional characteristics of biomaterials
- Design of environmental sensors for contaminant transport
- Computational biology, genomics and proteomics
- Philosophical issues in neuroscience and cognitive science
- Nanotechnology and solar energy

Given UC Merced's plans for substantial growth during its early years, this list will expand rapidly. The current list of UC Merced faculty can be found online at http://www.ucmerced.edu/faculty/facultylist.asp

While the scope of graduate education at UC Merced will be national and international, the campus location also offers unique research avenues. From the cultural diversity of the San Joaquin Valley to the ecological diversity of the Sierra and the coastal mountains, the interior of California offers an abundance of unique living, learning and research opportunities. The interdependence of the Valley and the surrounding mountains provides a natural laboratory for creating environmental sustainability in the presence of an expanding and diverse population base.

UC Merced will offer an individually tailored graduate program with emphases in six areas. These include Quantitative and Systems Biology; Molecular Science and Engineering; Environmental Systems; Social, Behavioral and Cognitive Sciences; World Cultures and History; and Computer and Information Systems. Each of these is highly interdisciplinary in approach and designed to facilitate interactions between faculty and students from a broad scope of traditional academic disciplines. The graduate group structure for overseeing each of these emphases is composed of faculty from multiple schools. This is intended to offer graduate students the flexibility to address major societal problems using the tools of a wide variety of disciplines.

PREPARING FOR AN ADVANCED DEGREE

Admission to a graduate program at UC Merced requires a bachelor's degree, or its equivalent, that is comparable to a degree from the University of California both in the level of scholarly achievement and in the distribution of academic subject matter. Although applications for graduate study will be evaluated primarily on scholarly achievement, UC Merced will utilize the totality of a prospective student's qualifications, including research, work experience, recommendations and other creative accomplishments, to render a decision. To be eligible for admission to the UC Merced Graduate Division you must have a minimum B average in your undergraduate course work. In addition to your undergraduate transcripts and an application, you will need to submit Graduate Record Examination (GRE) scores, letters of recommendation and, for certain programs, examples of your own written work that can be evaluated by the graduate admissions committee. Information regarding the GRE is available online at www.ets.org or at (609) 771-7670.

APPLYING FOR ADMISSION

An applicant can be considered for only one program area during a term. Applications to UC Merced can be accessed electronically at http://graduatedivision.ucmerced.edu/. If this is not possible, request an application from Graduate Division, University of California, Merced, P.O. Box 2039, Merced, CA 95344. Applications are accepted for the Fall semester only. Prospective students are encouraged to begin the admissions process as early as possible in the prior academic year. International applicants should consult the UC Merced Graduate Division Web site listed above for details regarding application and admission. Residents of the United States must have all application materials at UC Merced by February 1. In order for an application to be fully considered, a non-refundable application fee of $60 must be paid. Checks should be made payable to UC Regents and mailed to the Graduate Division Office.

INTERNATIONAL STUDENTS

Students with credentials from universities outside the United States should begin the application process well in advance of the deadline date. Official copies or certified copies of all transcripts in English and in the original language are required.

Applicants whose native language or language of instruction is not English must show evidence of having recently taken the Test Of English as a Foreign Language (TOEFL) or the International English Language Testing Service (IELTS) examination. UC Merced requires a minimum score of 550 on the paper test or 213 on the computer-based TOEFL test or a score of at least 7 on the IELETS. Information on the TOEFL is available online at www.toefl.org and IELETS information at www.ielets.org. These requirements are waived for applicants who have received an advanced degree from a U.S. institution or from a country where English is the language of instruction.

International applicants must certify that they have sufficient funds to cover fees, tuition and living expenses for the first year of their study at UC Merced. A Foreign Applicant Questionnaire for the purpose of verifying the amount and source of funds available for graduate study will be forwarded upon acceptance into graduate study. Financial verification must be provided before visa forms can be issued.

UC Merced is actively pursuing SEVIS certification from the Department of Homeland Security. Please consult the Web site at http://graduatedivision.ucmerced.edu/ for the most current information on our ability to accept applications from international students.

ADMISSIONS AND REGISTRATION

A formal notice from the dean of the Graduate Division is the official proof of admission to graduate study at UC Merced. Successful applicants will be notified as soon as possible after the program faculty has made its recommendations to the dean of the Graduate Division. Accepted students will be asked to verify their intention to register by filling out and returning a Statement of Intention to Register. Return of this form will reserve your slot in the program. Should you choose not to accept the offer of admission, we ask that you also notify us by completing the Declination of Admission section so that we can offer the place to another applicant.

Individuals must register each semester to retain graduate student status. Registration provides the necessary access to courses, facilities and faculty. Students holding nonimmigrant visas must register for each semester covered by their visa.

PROGRAMS OF STUDY

UC Merced will offer the Master of Science (M.S.), Master of Arts (M.A.) and Doctor of Philosophy (Ph.D.) degrees. New students will be assigned a faculty advisor and committee who will assist them in developing a curriculum to meet the requirements. Although considerable flexibility to meet individual needs exists, requirements usually include a core of required material that a student must master.

The M.S. and M.A. degrees are either Plan I or Plan II programs. Plan I requires a minimum of 20 semester units of upper division and graduate courses plus completion of a thesis. Plan II requires at least 24 semester units of upper division and graduate courses, followed by a comprehensive examination administered by the faculty.

Students pursuing M.S. or M.A. Plan I degrees will begin their thesis research at the end of the first year. Although they may continue to take additional graduate seminars or independent study, the majority of the second year will involve thesis research and writing. The thesis committee must approve the scope of the thesis and provide guidance during the process of developing the thesis. Approval of the thesis must be unanimous for the award of the master's degree.

The Ph.D. degree is designed to prepare students for creative activity and original research. A doctoral degree is awarded in recognition of a student's knowledge of a broad field of learning and for distinguished accomplishment in that field through an original contribution of significant knowledge. The dissertation must demonstrate a high level of critical ability, imagination and synthesis. In contrast to the master's degrees, there are no University unit requirements for the doctorate. However, students must complete at least four semesters of academic residence at UC Merced and successfully complete the course requirements before they are allowed to take the Qualifying Examination.

All students pursuing the Ph.D. degree must pass a Qualifying Examination before admission to candidacy. Students are expected to pass the Qualifying Examination before the beginning of their third year of graduate study unless they successfully petition the Graduate Council to take it at a specific later date. The intent of this examination is to ascertain the breadth of a student's comprehension of fundamental facts and principles that apply in their major field of study. It will also determine the student's ability to think critically about the theoretical and practical aspects of the field.

Students will be advance to candidacy when they have done the following:

- Successfully completed the Qualifying Exam,
- Maintained a minimum grade point average of 3.0,
- Received incomplete grades in no more than two courses, and
- Fulfilled any language requirement associated with their program.

Once a student is advances to candidacy it is imperative that he/she begin his/her dissertation studies promptly.

Founding graduate programs will be built around an interdisciplinary, graduate group model that melds faculty expertise and scholarly approaches that transcend normal disciplinary boundaries. Information about each of the areas of study can be found on the Graduate Division Web site at http://graduatedivision.ucmerced.edu. At opening we are planning to offer individual graduate instruction with an emphasis in the following areas of concentration:

QUANTITATIVE AND SYSTEMS BIOLOGY

The life sciences are undergoing a vast and fundamental metamorphosis from a discipline based on qualitative observation and description into a quantitative science based on comprehensive datasets and predictive models. The Quantitative and Systems Biology Graduate Group at UC Merced offers individualized, research-based courses of study leading to M.S. and Ph.D. degrees. Research projects are available on topics ranging from intercellular signaling to computational molecular biology, and course work will provide a background in the tools of modern biology, including computational biology, genomics and advanced instrumentation. The graduate group will offer opportunities for students interested in multidisciplinary projects at the interface among biology, computer science and bioengineering.

Initial faculty members participating in the Quantitative and Systems Biology graduate emphasis include:

- **KEITH ALLEY,** Professor of Natural Sciences
- **MICHAEL E. COLVIN,** Professor of Natural Sciences
- **HENRY FORMAN,** Professor of Natural Sciences
- **JESSICA GREEN,** Assistant Professor of Natural Sciences
- **VALERIE LEPPERT,** Assistant Professor of Engineering
- **PEGGY O'DAY,** Associate Professor of Natural Sciences
- **DAVID OJCIUS,** Professor of Natural Sciences
- **RUDY ORTIZ,** Assistant Professor of Natural Sciences
- **MARIA PALLAVICINI,** Professor of Natural Sciences
- **WILL SHADISH,** Professor of Social Sciences, Humanities and Arts
- **SAMUEL TRAINA,** Professor of Natural Sciences
- **CHRISTOPHER VINEY,** Professor of Engineering

ENVIRONMENTAL SYSTEMS

The Environmental Systems Graduate Group offers individualized, research-based courses of study leading to the M.S. and Ph.D. It strives to equip students with the knowledge and skills to improve the scientific understanding of Earth as an integrated system of atmosphere, hydrosphere, lithosphere and biosphere. This understanding is gained through the systematic study of the biological, chemical and physical processes. Courses are designed to provide the scientific principles underlying the function and sustainability of natural and engineered ecosystems. The program places the principles of natural science and engineering in the context of pollution prevention, treatment and ecosystem restoration as well as integrating physical, chemical and biological cycles in environmental systems. Environmental Systems Graduate Group members are affiliated with the Schools of Natural Science and Engineering.

Programs of study emphasize laboratory, field and modeling studies of the natural and engineered environments from the perspective of biological, chemical and physical processes. In addition to research efforts at UC Merced, Environmental Systems faculty members are collaborating on interdisciplinary research topics with other University of California investigators as well as with scientists at Lawrence Livermore National Laboratory, Lawrence Berkeley National Laboratory, the National Park Service at Yosemite and Sequoia/Kings Canyon, the U.S. Geological Survey and others. Updated information can be found on the Graduate Division Web site at http://graduatedivision.ucmerced.edu/.

Initial faculty members participating in the Environmental Systems graduate emphasis include:

- **ROGER BALES,** Professor of Engineering
- **MARTHA CONKLIN,** Professor of Engineering
- **JESSICA GREEN,** Assistant Professor of Natural Sciences
- **THOMAS HARMON,** Associate Professor of Engineering
- **VALERIE LEPPERT,** Assistant Professor of Engineering
- **PEGGY O'DAY,** Associate Professor of Natural Sciences
- **SAMUEL TRAINA,** Professor of Natural Sciences
- **ROLAND WINSTON,** Professor of Engineering and Natural Sciences
- **JEFF WRIGHT,** Professor of Engineering

MOLECULAR SCIENCE AND ENGINEERING

The optical, electrical, magnetic and mechanical properties of materials, as well as their biological activity and chemical reactivity, are consequences of the fundamental properties of their constituent molecules and the manner in which those molecules are assembled and interact. Research in the Molecular Science and Engineering Graduate Group is directed toward understanding the physical and chemical behavior of individual molecules, nano- and meso-scale molecular assemblies, and macroscopic materials, and utilizing this knowledge to design new molecules and materials for applications including biology and medicine, energy conversion, optics, information storage and transmittal, and structural materials. Activities of the graduate group include chemical synthesis; characterization through a broad range of optical, spectroscopic, microscopic, diffraction, thermal and imaging methods; kinetic studies; and computer simulations and modeling. Research in this graduate group spans the traditional disciplines of chemistry and physics through materials science and engineering.

The Molecular Science and Engineering Graduate Group program at UC Merced offers individualized, research-based courses of study leading to the Ph.D. degree. While the M.S. degree is also offered, admission will usually be granted only to students who intend to pursue the Ph.D. Interdisciplinary projects are highly encouraged, as are interactions with faculty members or senior scientists outside UC Merced as collaborators, graduate committee members or co-advisors. We invite applications from a wide variety of undergraduate majors including chemistry; physics; biochemistry; molecular biology; materials science; computer science; and biomedical, chemical, materials, mechanical, electrical and environmental engineering.

Initial faculty members participating in the Molecular Science and Engineering graduate emphasis include:

- MICHAEL E. COLVIN, Professor of Natural Sciences
- ANNE MYERS KELLEY, Professor of Natural Sciences
- DAVID F. KELLEY, Professor of Natural Sciences
- VALERIE LEPPERT, Assistant Professor of Engineering
- CHRISTOPHER VINEY, Professor of Engineering

UC Merced Literature and Spanish faculty member Cristián Ricci (right) in 2003 spends time with fellow graduate students in the Sierra Nevada.

SOCIAL, BEHAVIORAL AND COGNITIVE SCIENCES

Planning is currently in progress to create a graduate group in Social, Behavioral and Cognitive Sciences which will offer individualized, research-based courses of study leading to M.S. and Ph.D. degrees in Social, Behavioral and Cognitive Sciences, beginning in the Fall 2005. Social, Behavioral and Cognitive Sciences graduate training is likely to focus initially on the areas represented by current faculty – economics and experimental psychology – with the additional potential for interdisciplinary graduate training in Cognitive Science or other areas. In subsequent years, additional faculty and graduate emphases in sociology, political science, public policy or anthropology may be added.

Building a strong faculty will help make UC Merced a pre-eminent institution and ensure our students receive the best possible education.

David Ashley,
Executive Vice Chancellor and Provost

Students interested in graduate education in Social, Behavioral and Cognitive Sciences for Fall 2005 should check the UC Merced Graduate Division Web site at http://graduatedivision.ucmerced.edu/ beginning in November 2004. That site will be updated periodically with more specific information about graduate programs in Social, Behavioral and Cognitive Sciences.

Initial faculty members participating in the Social, Behavioral and Cognitive Sciences graduate emphasis include:

- KENJI HAKUTA, Professor of Social Sciences, Humanities and Arts
- SHAWN KANTOR, Professor of Social Sciences, Humanities and Arts
- TEENIE MATLOCK, Assistant Professor of Social Sciences, Humanities and Arts
- BELINDA REYES, Assistant Professor of Social Sciences, Humanities and Arts
- WILLIAM SHADISH, Professor of Social Sciences, Humanities and Arts
- CAROL TOMLINSON-KEASEY, Professor of Social Sciences, Humanities and Arts
- J. ARTHUR WOODWARD, Professor of Social Sciences, Humanities and Arts
- JEFFREY YOSHIMI, Assistant Professor of Social Sciences, Humanities and Arts

WORLD CULTURES AND HISTORY

It is anticipated that this program will be available in Fall 2006. A graduate group in World Cultures is being formed to offer individualized, research-based courses of study leading to M.A. and Ph.D. degrees. The program will use the rich cultural and historical heritage of California, the San Joaquin Valley and the Sierra Nevada as a starting point for understanding world cultures in their historical, political and cultural contexts, and the effects of immigration and migration on society and cultural change. Students will understand and use the methods by which historians, artists, philosophers, literary scholars and other humanists and social scientists examine societies and cultures. Initially, the program will focus upon environmental history, the history of science and technology, migration/immigration, and related topics dealing with world, regional, state and local social and cultural history. The program will include a special focus on the uses of technology to visualize and understand culture and data. Since proximity to the Sierra Nevada and the other splendid natural features of California has significantly influenced literature and the development of the arts in the state, students will also benefit from the intersections of interest between the World Cultures Institute and the Sierra Nevada Research Institute, particularly in the area of the cultural understanding of wilderness and the environment. Since the construction of the faculty for the World Cultures graduate group is currently ongoing, please consult the Graduate Division Web site at http://graduate division.ucmerced.edu/ for additional information on the group's faculty and their research interests.

COMPUTER AND INFORMATION SYSTEMS

It is anticipated that this program will be available in Fall 2006. A Graduate Group in Computer and Information Systems is being formed to offer individualized, research-based courses of study leading to M.A. and Ph.D. degrees. The program will serve as a focal point for research by students who desire to make contributions to fields such as digital information processing and informatics, networking and distributed computation, database design and development, high-performance simulation and modeling, parallel and distributed systems, algorithm design and testing, image processing and analysis, and software engineering. The group will focus on research on the theory and foundations of computing, system software and computer system and networks design, with applications across the full spectrum of science and engineering. Computer and information systems are highly cross-disciplinary and will involve faculty within all three initial Schools at UC Merced. The faculty who are being recruited to UC Merced will determine initial curricular emphases within this broad framework for Computer and Information Systems, with additional disciplinary areas to be developed as faculty are added.

Graduate education in Computer and Information Systems will be characterized by multi-investigator, multi-disciplinary effort. It is also expected that there will be research collaborations between students and faculty members affiliated with the graduate group, and scientists at the Lawrence Livermore National Laboratory, particularly with respect to the use of specialized computational equipment. Since the construction of the Computer and Information Systems Graduate Group is currently ongoing, please consult the graduate division Web site at http://graduatedivision.ucmerced.edu/ for additional information on the group's faculty and their research interests.

The Assyrian culture is one of many represented in the San Joaquin Valley.

GRADUATE STUDENT RESEARCH POSITIONS AND TEACHING ASSISTANTSHIPS

For information on graduate student research positions or teaching assistantships, please see the Graduate Student Financial Support section of this catalog.

IMPORTANT CONTACT INFORMATION

Graduate Division
http://graduatedivision.ucmerced.edu/
Dean: Keith Alley
kalley@ucmerced.edu
(209) 724-4341
P.O. Box 2039
Merced, CA 95344

Financial Aid
finaid@ucmerced.edu
Financial Aid Advisor: Heather Nardello
(209) 724-4384
P.O. Box 2039
Merced, Ca 95344

Free Application for Federal Student Aid (FAFSA):
www.fafsa.ed.gov

Graduate Record Exam (GRE):
www.ets.org

Test of English as a Foreign Language (TOEFL):
www.toefl.org

International English Language Testing Service (IELETS):
www.ielets.org

GOVERNANCE OF GRADUATE EDUCATION

Graduate study is administered by the Graduate Council, an elected committee of the Academic Senate, and by the dean of the Graduate Division. The Coordinating Committee on Graduate Affairs is a systemwide body that assures coordination between the campuses and develops general policies that govern graduate education throughout the University of California.

FINANCIAL SUPPORT

The Office of Financial Aid and Scholarships coordinates all forms of financial support and administers need-based financial aid programs for graduate students. We are here to help students understand the financial aid opportunities as well as the criteria utilized in determining eligibility for the various financial aid programs available at UC Merced.

Several forms of financial support will be available to facilitate the pursuit of a graduate education at UC Merced. Most forms of support are granted for merit, while others are granted for financial need or for a combination of merit and need. In large part, the Graduate Division provides financial support for graduate students, and we work closely with that office to coordinate all forms of student support.

TYPES OF AID

Financial support is available at UC Merced in the form of graduate student research positions, teaching assistantships, fellowships and loans. All students, regardless of income, are encouraged to apply.

Graduate Student Research (GSR) Positions

Research positions afford excellent opportunities to gain invaluable experience in areas of importance to your graduate education and to receive financial support at the same time. Information and application materials for GSR positions are available from the Graduate Division.

Teaching Assistantships (TA)

Graduate students working toward advanced degrees are given duties in undergraduate courses that may include conducting discussion or laboratory sections, grading students' work and providing students with individual help in the subject. Teaching assistants are chosen for excellent scholarship and promise as teachers. They serve apprenticeships under active tutelage and supervision of regular faculty members. Teaching assistants are engaged in learning how to teach, working closely with faculty mentors. A limited number of teaching assistantships are available each year. On the recommendation of the academic deans, the Graduate Division makes appointments to teaching assistantships.

Fellowships

Fellowships are awarded primarily on the basis of scholarship and the promise of outstanding academic and professional achievement. Consideration is given to the extent and quality of previous undergraduate and graduate work, evidence of ability in research or other creative accomplishment, evidence of intellectual capacity and promise of productive scholarship. Financial need or the availability of other sources of support in your graduate program is not relevant to the evaluation of academic merit, but may be an additional criterion for some fellowships. Students must establish eligibility for need-based fellowships by filing a Free Application for Federal Student Aid (FAFSA). For faster and more accurate filing, students can fill out the FAFSA online at http://www.fafsa.ed.gov.

Loans

Financial aid awards that require repayment, loans offer the opportunity to defer the cost of your educational expenses by borrowing now and repaying later. Some loan programs are based on financial need, but there are loan programs available to all students regardless of income. Loan programs available through UC Merced are federally funded, providing long-term, low-interest loans.

Federal Subsidized Stafford Loans: These loans are awarded to students with financial need. This loan is "subsidized" in that the federal government pays the interest while the student is in school and during the grace period (the first six months after leaving school or dropping to less than half-time enrollment status).

Federal Unsubsidized Stafford Loans: Not based on financial need, these loans are available to all eligible students, regardless of income. This loan is "unsubsidized" in that the student is responsible for paying all interest due. There is no federal interest subsidy for the loan. Interest accrues immediately upon disbursement. Borrowers may elect to pay accrued interest on a monthly or quarterly basis or have it added back to the principal balance in a process called capitalization.

HOW TO APPLY

To be considered for fellowships and loans: Graduate applicants who are US citizens, permanent residents or immigrants are required to file a "Free Application for Federal Student Aid" (FAFSA). Although the FAFSA can be filed at any time, it is strongly suggested that you file by the priority processing date of March 2. However, if the March 2 deadline has passed, you may still submit this form. We process some forms of financial aid throughout the year. For faster and more accurate processing, you may fill out this form online at http://www.fafsa.ed.gov. This form is used to determine financial need only. Financial need is a component of the eligibility criteria for many forms of financial support. If you need assistance with your application, please contact the Office of Financial Aid and Scholarships.

To be considered for graduate student research or teaching assistant positions: Graduate students who are interested in obtaining a graduate student research position or a teaching assistant position should contact the Graduate Studies Division as soon as possible.

FOR ADDITIONAL INFORMATION:

Please refer to the Money Matters Web site at http://graduatedivision.ucmerced.edu for additional information and assistance.

"As the first new University of California campus in almost 40 years, UC Merced is in a position to integrate emerging technologies that enhance education, research, communications and outreach from the very start as we uphold the University's long tradition of excellence."

Carol Tomlinson-Keasey, Chancellor of UC Merced

Research is the pioneering work of the intellect, an adventure at the frontiers of knowledge in which faculty engage both their undergraduate and graduate students. It reflects mankind's indomitable spirit of optimism that we can and must do better. Every human pursuit benefits from the ongoing process of evaluation and discovery. As the first research university to be built in the 21st century, UC Merced is positioned for new approaches to research in support of the educational mission. As the 10th campus of the University of California, UC Merced joins in the University's unparalleled history of accomplishment. That history also sets the high standards that UC Merced must live up to.

As an undergraduate student at UC Merced, you will find faculty research enriching your education and your ability to analyze and critique information objectively. Exposure to research approaches will help you to begin to define solutions to the weighty problems with which humankind will wrestle during your lifetime. A highlight of your first year will be a freshman seminar in which a faculty member will introduce you to his or her current explorations. In addition, your undergraduate courses will be continually enriched and invigorated by faculty discoveries, which reflect an ever-evolving curriculum. You will also have formal opportunities to participate in ongoing faculty projects, joining graduate students and postdoctoral fellows in labs, field work and other research settings.

As a graduate student you will plumb the depths of some of the world's most challenging problems through your research and scholarly work. Graduate students work with faculty as apprentice scholars, building the skills needed to create and communicate discoveries in their field. The distinguishing feature of UC Merced's graduate programs is their interdisciplinary nature, which provides a breadth of knowledge that helps put studies into a wider context. You will join a community of scholars and set your course for a career. Part of your research experience will include working closely with your faculty mentor and advisory committee as you build professional expertise and prepare for future.

To foster discovery that brings faculty insights from many disciplines together, UC Merced is structuring many of its research and graduate educational activities around research institutes composed of faculty from multiple schools. At the outset two initial research organizations have been established to catalyze interdisciplinary research and scholarship: The Sierra Nevada Research Institute and the World Cultures Institute.

THE SIERRA NEVADA RESEARCH INSTITUTE (SNRI)

The mission of the Sierra Nevada Research Institute is to discover and disseminate new knowledge that contributes to sustaining natural resources and promoting social well being in the San Joaquin Valley and Sierra Nevada regions of California. These regions are legendary for their scenic beauty, vast natural resources, physical and biological diversity, and cultural heritage. The San Joaquin Valley and the Sierra Nevada lead the nation in agricultural production and in several natural resource and recreation industries. However, rapid population growth; competition for natural resources; air, water and soil pollution; and competing land uses pose serious threats to the sustainability of these regions. Solving these problems requires the combined perspectives of a number of disciplines and multidisciplinary research efforts at the interface of traditional disciplines.

The mission of the Sierra Nevada Research Institute is accomplished through:

- Collaborative, multidisciplinary, fundamental research conducted by faculty, students, staff and affiliated scientists in natural science, engineering and social sciences
- Strong interactions with related research units within the UC system and close collaborative relations with scientists and managers at National Laboratories; local, state and federal agencies; and the National Park Service
- Extensive sharing of Sierra Nevada Research Institute data and information with public and private stakeholders

The Sierra Nevada Research Institute is organized around an Earth Systems Science model. This model combines the earth sciences (soils, geology, water and atmospheric sciences) with biological sciences (ecology and molecular biology) as well as environmental science, environmental engineering and social science in integrated studies of complex problems at the systems level. Through these balanced research efforts, the Sierra Nevada Research Institute serves as a source of objective scientific information as California faces the growing challenge of sustaining the integrity and quality of its human and natural resources into the future.

Through the Sierra Nevada Research Institute our students and faculty will have access to a variety of biological field stations in the Sierra Nevada, located in Yosemite, Sequoia and Kings Canyon National Parks. In addition, the Virginia Smith Trust Reserve adjacent to the UC Merced campus provides additional sites for research.

UC Merced Chancellor joins National Park Service officials at the Sierra Nevada Research Institute's Wawona Station groundbreaking ceremony.

THE WORLD CULTURES INSTITUTE

Merced and the San Joaquin Valley are historically and today a crossroads for rich mixes of peoples from throughout the world. For millennia before the arrival of Europeans, Native Americans developed an interdependent relationship with the Valley, foothills and mountain ecosystems. Today, the Valley is also part of a dynamic global economy, calling for a broad and deep understanding of many cultures and traditions. As a rapidly growing agricultural region, the Valley is a place for understanding the ways in which different cultures think about stewardship of the environment.

California's location and immigrant heritage have situated it within the Pacific Rim region as one of the greatest centers of trade, commerce and cultural exchange the world has ever known. The Pacific Region is defined by mobility and migration that have resulted in new cultural practices and knowledge. The region is an unparalleled arena for the study of the changes rung in by sophisticated technologies and of the cultural effects of those changes.

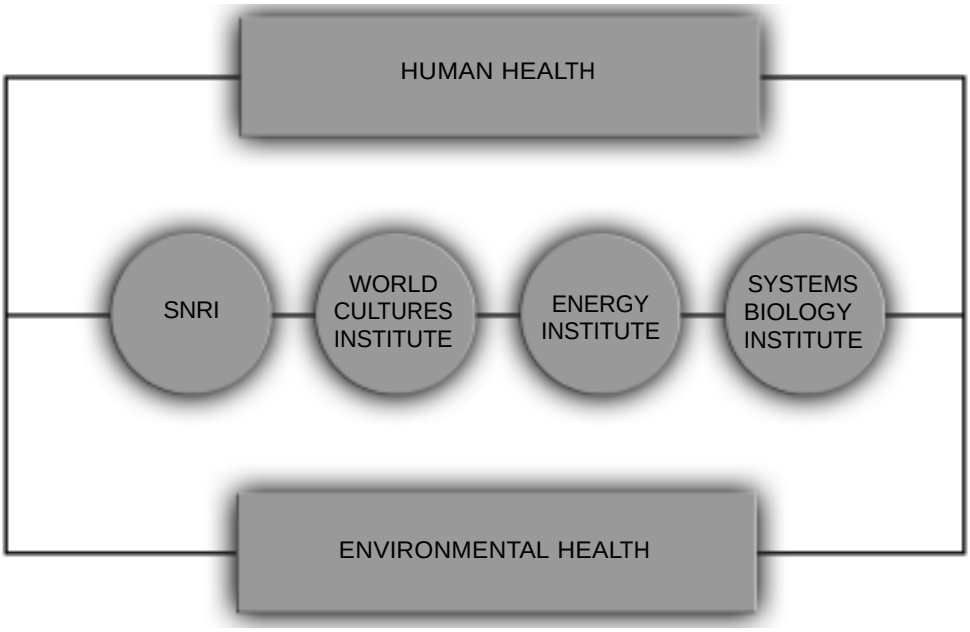
People have come from around the world to make the San Joaquin Valley, California and the United States what they are today. The World Cultures Institute will be a place to understand better what has shaped and is shaping our modern cultural identities.
As the World Cultures Institute grows, its faculty and staff will address several themes:

- Migration and displacement
- Histories and cultures of California, and particularly in the San Joaquin Valley
- Local, regional and national identities and boundaries, and their crossings
- Economics, religion, the arts and ethnic identity in the formation of the individual and society
- Nature and culture; and the relation of wilderness to the manmade landscape, with the role of technological invention in affecting both
- Agriculture and society
- Evolving and competing images (artistic, literary, cinematic, architectural) of California

Students are invited to participate in research with historians, anthropologists, artists, political scientists and policy specialists, economists, scholars of literature and languages, and others – even scientists. Internships with a cultural resources emphasis are anticipated with museums, arts centers, historical societies, community groups, libraries, public education organizations and National Parks.

FUTURE INSTITUTES

As UC Merced's faculty grows and common research interests emerge across disciplines, additional institutes will be organized to support cross-cutting research. At present, an Energy Institute and a Systems Biology Institute are under discussion. UC Merced researchers are envisioning a new approach for work across institutes that would expand and reinforce research conducted to address a single problem. The following presents a model for this strategy that is also currently being discussed at UC Merced.



Undergraduate Courses
Lower Division Courses

Courses numbered 1–99 are designed primarily for freshmen and sophomores but are open to all students for lower division credit.

Upper Division Courses

Courses numbered 100–199 are open to all students who have met the necessary prerequisites as indicated in the catalog course description. Preparation should generally include completion of one lower division course in the given subject or completion of two years of college work.

Graduate Courses
Courses numbered 200–299 are open to graduate students. Undergraduate students who have completed at least 12 units of upper division work basic to the subject matter of the course may enroll with the approval of the instructor in charge of the course.

Prerequisites
Prerequisites for courses should be followed carefully; the responsibility for meeting these requirements rests on the student. If you can demonstrate that your preparation is equivalent to that specified by the prerequisites, the instructor may waive these requirements for you. The instructor also may request that a student who has not completed the prerequisites be dropped from the course.

ANTHROPOLOGY
Lower Division Courses

ANTH 1: Cultural Anthropology [4]
Introduction to human culture and cultural diversity, including the methods by which anthropology seeks to understand human culture.

ANTH 2: Physical Anthropology [4]
Introduction to human evolution, primate evolution, fossil man and evolution of the mind.

ANTH 90X: Freshman Seminar [1]
Examination of a topic in Anthropology.

ANTH 95: Lower Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

ANTH 98: Lower Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

ANTH 99: Lower Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

BIOENGINEERING
Lower Division Courses

BIOE 30: Introduction to Bioengineering [4]
Presents students with an overview of the creative synergies between engineering and life sciences that define the scope of Bioengineering. Examples of successful Bioengineering endeavors (devices, materials, processes, models) will be provided. Discussion of current frontiers and future direction of Bioengineering, with an emphasis on information technology and nanotechnology. *Prerequisites: ICP 2, BIS 1, CHEM 8 (may be taken concurrently)*

BIOE 90X: Freshman Seminar [1]
Examination of a topic in Bioengineering.

BIOE 95: Lower Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

BIOE 98: Lower Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

BIOE 99: Lower Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

Upper Division Courses

BIOE 100: Physiology for Engineers [4]
Using the conceptual, analytical, modeling and design tools of engineering to achieve quantitative insights into physiological systems. Transport mechanisms, energy transduction, feedback and feed forward control, optimization and materials selection principles in the context of cells, tissues and organs. How muscles, nerves and biological fluids interact to allow you to read this course description. *Prerequisites: MATH 25 (or equivalent), BIS 104, CHEM 2, ENGR 45*

BIOE 101: MODELING NANOSCALE PROCESSES IN BIOLOGY [3]
Advanced mathematical modeling, simulation and data analysis applied to biological problems at the molecular level, probabilistic models. Scope and limitations of these techniques. Molecular conformations and folding, protein structure, molecular interactions, binding sites, formation of aggregates and complexes, phase changes, membrane transport, physiological control systems in cells. *Prerequisites: MATH 127, BIS 104*

BIOE 102: Biosensors [4]
Design of natural and artificial devices for characterizing the physical and chemical environment inside and outside living cells. Detection of metabolites, toxins, pathogens and cancers. Molecular and nanoparticle probes. Immunosensors. Nucleic acid sensors and DNA chips. Enzyme-based biosensors. Organism and whole cell-based biosensors. Natural and synthetic receptors for biosensors. Remote diagnosis. *Prerequisites: BIS 102, BIS 104*

BIOE 110: Self-Assembling Molecular Systems [3]
Preparation, characterization and applications of supramolecular structures. Factors that promote controlled molecular assembly at interfaces and in 3-D. Hydrophobic bonding and the role of water. Liquid crystalline phases. In vivo and in vitro examples of self assembly. Biomimetic materials: the quest for adaptive responses to changes in environment, and self-healing. "Green" processing routes via biotechnology. Limitations of biomimetic materials. *Prerequisites: ICP 2 (or equivalent), BIS 102*

BIOE 111: Biomembranes [3]
The molecular and physical chemistry of membranes formed from natural and synthetic amphiphiles. Relationships between surfactant molecular structures, chemical and physical environment, and membrane assembly. Solubility of proteins in biomembranes. Pore formation and structure. Transport through biomembranes. Biomembranes as catalysts and reaction vessels. Characterization of membrane structure and properties. *Prerequisites: ICP 2 (or equivalent), BIS 102*

BIOE 112: Biomolecule-Substrate Interactions [3]
Cell receptor biology in the context of cell interactions with materials. Biomolecule adsorption to solid materials. Relevance to catalysis, adhesion, and responses to implanted biomaterials. Interactions between nanoparticles and biological tissue. Coagulation and thrombosis, infection, acute inflammation, chronic inflammation and the foreign body response, immune and tumorgenic mechanisms. Surface and interface characterization methods. *Prerequisites: ICP 2 (or equivalent), BIS 102*

BIOE 113: Bioinstrumentation [4]
Signals and interactions that are useful in characterizing biomolecules and small-scale biological structures. Principles of 2-D and 3-D image formation. Resolution limits of imaging and non-imaging characterization techniques. Integration of mechanical, sensor and control technologies into devices that can perform diagnoses and repairs at cellular and subcellular length scales. *Prerequisites: ICP2 (or equivalent), BIS 102*

BIOLOGICAL SCIENCES

Lower Division Courses

BIS 1: Contemporary Biology [4]
Introduction to the major concepts in biology including origin of life, evolution, DNA, genes and genomes, principles and patterns of inheritance, genotype to phenotype, gene environment and disease relationships, biotechnology, ecosystem structure and function, nutrient cycles and pollution, biodiversity, earth systems.

BIS 2: Introduction to Molecular Biology [4]
Introduction to the molecules and molecular processes underlying life. Overview of molecular biology and its impact on society, industry and modern medicine.

BIS 3: To Know Ourselves: Molecular Basis of Health and Disease [4]
Introduction to the molecular basis of a number of human diseases and molecular-based therapies for disease treatment.

BIS 50: Human Development [4]
Male and female reproductive systems, hormonal control of egg-sperm interactions, fertilization, venereal disease, embryonic development, fetal physiology.

BIS 51: Cancer and Aging [4]
Introduction to the biology of cancer and aging, including discussions of the biological and molecular basis of aging and cancer, novel and conventional cancer treatments, cancer prevention and prospects for new approaches to increase longevity and health.

BIS 60: Nutrition [4]
Introduction to nutrition science that integrates basic concepts of nutrients, human physiology, microbiology, biochemistry and the psychology of wellness.

BIS 90X: Freshman Seminar [1]
Examination of a topic in the biological sciences.

BIS 95: Lower Division Undergraduate Research [1-6]
Supervised research. *Permission of instructor required.*

BIS 98: Lower Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

BIS 99: Lower Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

Upper Division Courses

BIS 100: Molecular Machinery of Life [4]
Introduction to the chemical processes underlying life, covering the structure and properties of biological macromolecules, metabolism, regulation and energy transduction. *Prerequisites: BIS 1, CHEM 8, ICP 1 or equivalent. Cross-listed with CHEM 110.*

BIS 101: Biochemistry [4]
Advanced course on enzyme mechanisms and regulation. *Prerequisites: BIS 100 or CHEM 110. Cross-listed with CHEM 111.*

BIS 101 L: Biochemistry Laboratory [1]
Laboratory experiments demonstrating and reinforcing topics covered in BIS 101. *Prerequisites: BIS 101 or CHEM 111 must be taken concurrently. Cross-listed with CHEM 111L.*

BIS 102: Molecular Biology [4]
Advanced course on the mechanisms of nucleic acid replication, transcription and translation as well as gene regulation and expression. *Prerequisite: BIS 100*

BIS 102 L: Molecular Biology Laboratory [1]
Laboratory experiments demonstrating and reinforcing topics covered in BIS 102. *Prerequisites: BIS 102 must be taken concurrently.*

BIS 104: Biophysics [4]
An introduction to the physical processes underlying biological phenomena. Topics to be covered include transport and diffusion, biochemical reaction kinetics and thermodynamics, molecular motors, cell motion and cellular electrophysiology. *Prerequisites: BIS 100, CHEM 10 or ENGR130 and consent of instructor.*

BIS 104 L: Biophysics Laboratory [1]
Laboratory experiments demonstrating and reinforcing topics covered in BIS 104. *Prerequisite: BIS 104 must be taken concurrently.*

BIS 105: Enzymology [4]
Advanced course on enzyme mechanisms and regulation. *Prerequisite: CHEM 10, BIS 100*

BIS 105 L: Enzymology Laboratory [1]
Laboratory experiments demonstrating and reinforcing topics covered in BIS 105. *Prerequisite: BIS 105 must be taken concurrently.*

BIS 110: The Cell [4]
Introduction to the structure and function of bacterial, plant and animal cells, with an emphasis on universal cellular systems, including regulation of subcellular organization; control of cellular processes by internal and external signaling; and energy capture, storage and usage. *Prerequisites: BIS 1, CHEM 8, ICP 1 or equivalent, BIS 100.*

BIS 111: Cells, Tissues and Organs [4]
Introduction to principles of cell structure and the organization of cells into tissues, organs and organ systems. Both the cellular and extracellular components of the primary tissues and their compilation into the major organic systems will be covered. Emphasis on understanding the link between cellular architectures and organ function. *Prerequisites: BIS 110*

BIS 112: Signal Transduction and Growth Control [4]
Signal transduction in mammalian cells with emphasis on molecular and genetic regulation of these processes and their role in cell function. *Prerequisites: BIS 110*

BIS 120: General Microbiology [4]
Molecular basis for diversity in bacteria and archae. Significance of molecular diversity in microbial biology; genetic, physiologic and structure-function relationships that underlie the remarkable ability of these organisms to adapt to the environment. *Prerequisites: BIS 110*

BIS 120 L: General Microbiology Laboratory [1]
Laboratory experiments demonstrating and reinforcing topics covered in BIS 120. *Prerequisites: BIS 120 must be taken concurrently.*

BIS 122: Microbial Pathogenesis [4]
Genetic and biochemical features of infectious agents, including identification and characterization of pathogens and the epidemiology of infectious diseases. *Prerequisite: BIS 120*

BIS 123: Human Parasitology [4]
Introduction to protozoan, worm and insect parasitism in animals and humans, and resultant diseases. Emphasis will be on epidemiology, diagnosis and immunology of parasitic infections. *Prerequisite: BIS 120*

BIS 125: Emerging Public Health Threats [4]
Multidisciplinary course that covers the historical, sociological, medical and biological issues underlying new public health threats and the scientific and policy-based approaches to responding to these new threats. *Prerequisite: BIS 120*

BIS 130: Plant Biology [4]
An introduction to the biology of plant life, including plant cell physiology, plant growth and development, and plant evolution and adaptation. *Prerequisites: BIS 110*

BIS 140: Evolution of Biological Diversity [4]
Genetics with an emphasis on the genetic basis for diversity of life. Includes concepts of inheritance, mutation, recombination, species, populations, adaptation, evolution and phylogeny. *Prerequisites: BIS 110*

BIS 141: Genes and Genomes [4]
Comprehensive introduction to the language of genes and genomes, including genotype to phenotype relationships, gene regulation of development and disease, sources of phenotypic variation and organization of genomes across the domains of life. *Prerequisite: BIS 140*

BIS 142: Comparative Genomics [4]
Introduction to the concepts behind comparative genomics and a detailed overview of the many tools and data bases used in comparative genomics. Specific topics include comparative approaches to the identification of genes and regulator regions in DNA sequences, the use of phylogenetic analyses to understand gene function and evolution, and methods for analysis of the organization and evolution of large genomes. *Prerequisite: BIS 141*

BIS 150: Embryos, Genes and Development [4]
Principles of developmental biology as revealed through analysis of invertebrate and vertebrate systems. Animal models will be used to examine the molecular and cellular mechanisms that influence cell fate. Cell signaling will be studied in the context of embryonic pattern formation and the development of body plans and organ systems. *Prerequisite: BIS 110*

BIS 151: Molecular Immunology [4]
Emphasis on development and function of hematopoietic and immune systems and their roles in responding to environmental change, maintenance of health, and disease pathogenesis. *Prerequisite: BIS 110*

BIS 151 L: Molecular Immunology Laboratory [1]
Laboratory experiments demonstrating and reinforcing topics covered in BIS 151. *Prerequisite: BIS 151 must be taken concurrently.*

BIS 152: Cancer Genetics and Tumor Biology [4]
Topics include viral and hormonal carcinogenesis, molecular aberrations in cancer, tumor development, epigenetics and cancer, tumor immunology, oncogenes. *Prerequisite: BIS 110*

BIS 160: Comparative Physiology [4]
Covers the function of the major organ systems by studying species-specific adaptations across the vertebrate subphylum. Emphasis on physiological adaptations to environmental challenges. Locomotion, reproduction, cardiovascular, renal and pulmonary function will serve as the models for assessing the cellular basis for physiologic adaptation across the spectrum of vertebrates. *Prerequisite: BIS 110*

BIS 160 L: Comparative Physiology Laboratory [1]
Laboratory experiments demonstrating and reinforcing topics covered in BIS 160. *Prerequisite: BIS 160 must be taken concurrently.*

BIS 161: Human Physiology [4]
The mechanisms underlying function of major human organs. Emphasis includes cells and membranes; cardiovascular, renal and gastrointestinal physiology; metabolism; endocrinology; and reproduction. *Prerequisite: BIS 110*

BIS 170: Neurobiology [4]
Examination of the general operations of the central and peripheral nervous system. Cellular neuroscience, including the molecular basis of excitability, synaptic transmission and neuronal signal transduction, as well as the organization and operations of the major neural systems associated with sensation, locomotion and higher brain function. *Prerequisite: BIS 110*

BIS 170 L: Neurobiology Laboratory [1]
Laboratory experiments demonstrating and reinforcing topics covered in BIS 170. *Prerequisite: BIS 170 must be taken concurrently.*

BIS 175: Biostatistics [4]
Advances in statistical techniques to investigate experimental data generated in molecular, cellular and evolutionary biology, and health sciences research. *Prerequisites: MATH 10, ICP 2 or MATH 22*

BIS 180: Introduction to Scientific Modeling [4]
Introduction to basic modeling and data-analysis skills for life science students through hands-on computational laboratories. Focus on the use of computational tools in the analysis of biological data to formulate hypotheses and develop models. Data reduction, model fitting and data visualization; standard software packages; and programming languages. *Prerequisite: BIS 1*

BIS 181: Survey of Computational Biology [4]
Introduction to the principles and application of computational simulations and modeling in biology, ranging from bioinformatics to computational cell biology. Genome sequence analysis and annotation, phylogenic analysis, protein structure prediction, molecular modeling, and docking and simulations of metabolic and regulatory networks. *Prerequisite: BIS 180*

BIS 182: Bioinformatics [4]
Detailed introduction to the tools, algorithms and data bases used in the field of bioinformatics. Sequence assembly and alignment algorithms, gene finding, protein structure prediction, analysis of gene expression data, and methods for genome analysis. Heavily based on hands-on computer laboratories. *Prerequisite: BIS 181*

BIS 185: Biomedical Ethics [3]
Ethical issues associated with contemporary biology and the complex relationships among medicine, science, and society. Genetic engineering, cloning and stem cell research. *Prerequisite: BIS 1 or BIS 3*

BIS 190: Research Seminar [1]
Student-led presentations of current topics in biological sciences, including independent research presentations. *Prerequisite: Upper division standing and consent of instructor.*

BIS 195: Research Projects in Biological Sciences [1 -6]
Group or individual research projects in the biological sciences under the direction of a BIS faculty member. *Prerequisite: Upper division standing and consent of instructor.*

BIS 198: Directed Group Study in Biological Sciences [1 - 6]
Group directed study in the biological sciences under the guidance of a BIS faculty member. *Prerequisite: Upper division standing and consent of instructor.* P/NP grading only.

BIS 199: Directed Independent Study in Biological Sciences [1 - 5]
Independent study in the biological sciences under the direction of a BIS faculty member. *Prerequisite: Upper division standing and consent of instructor.* P/NP grading only.

CHEMISTRY

Lower Division Courses

CHEM 1: Introductory Chemistry [4]
Introduction to the concepts of chemistry for students who lack adequate preparation for CHEM 2. Covers atoms, molecules and stoichiometry; periodic properties of the elements; types of chemical reactions; writing and balancing chemical equations; relating mass and molar quantities.

CHEM 2: General Chemistry [4]
Atoms, molecules and stoichiometry; periodic properties; chemical equations; concepts of chemical bonding; Lewis structures; bond energies; atomic and molecular orbitals; solutions and measures of concentration; acid-base and solubility equilibria; thermochemistry; oxidation-reduction and electrochemistry; main group descriptive chemistry. Laboratories emphasize "green chemistry" concepts, using environmentally benign reagents and minimizing waste. *Prerequisite: Passing score on chemistry placement exam*

CHEM 8: Principles of Organic Chemistry [4]
Molecular shapes and charge distributions; resonance; electron delocalization; organic structures, nomenclature, and isomerism; stereochemistry; optical activity; organic reactions; combinatorial synthesis; spin and NMR spectroscopy; intermolecular forces; amino acids, nucleotides, carbohydrates, and fatty acids; biopolymers; 3D structure of biomolecules. Laboratories emphasize "green chemistry" concepts, using environmentally benign reagents and minimizing waste. *Prerequisite: CHEM 2*

CHEM 10: Principles of Physical Chemistry [4]
Gas properties; entropy; free energy; chemical kinetics – rate laws, temperature dependence, catalysis, enzymes; diffusion and transport; nuclear chemistry; quantum mechanics; molecule-radiation interactions; electronic and vibrational spectroscopy; coordination compounds; solids and liquids; salts, metals, and semiconductors; mass spectrometry; diffraction. Laboratories emphasize "green chemistry" concepts, using environmentally benign reagents and minimizing waste. *Prerequisite: CHEM 2*

CHEM 90X: Freshman Seminar [1]
Examination of a topic in chemistry.

CHEM 95: Lower Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

CHEM 98: Lower Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

CHEM 99: Lower Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

Upper Division Courses

CHEM 100: Organic Synthesis and Mechanism [3]
Reactions, syntheses, purification and characterization of all the major classes of organic compounds. Includes reaction mechanisms, multistep syntheses and combinatorial methods. *Prerequisites: CHEM 8, CHEM 10*

CHEM 100 L: Advanced Organic/Inorganic Laboratory [2]
Laboratory experiments in synthetic methods and chemical and spectroscopic characterization of organic and inorganic compounds. Emphasis on microscale techniques. *Prerequisite: CHEM 100 [may be taken concurrently]*

CHEM 110: Biochemistry I [4]
Introduction to the chemical processes underlying life, covering the structure and properties of biological macromolecules, metabolism, regulation and energy transduction. *Prerequisites: CHEM 8, BIS 1, ICP 1 or equivalent. Cross-listed with BIS 100.*

CHEM 111: Biochemistry II [4]
Advanced course on enzyme mechanisms and regulation. *Prerequisite: CHEM 110 or BIS 100. Cross-listed with BIS 101.*

CHEM 111L: Biochemistry Lab [1]
Laboratory experiments demonstrating and reinforcing topics covered in CHEM 111. *Prerequisite: CHEM 111 or BIS 101 [must be taken concurrently]. Cross-listed with BIS 101L.*

CHEM 112: Quantum Chemistry and Spectroscopy [3]
Theory and practical application of molecular quantum mechanics. Schrödinger equation and matrix representations of quantum mechanics; simple exactly solvable model problems; calculation of observable properties; vibrational and electronic wave functions; approximation methods; quantum mechanics of spectroscopy. *Prerequisites: CHEM 10, MATH 25, PHYS 9 or equivalent*

CHEM 113: Chemical Thermodynamics and Kinetics [3]
Statistical mechanics, thermodynamics and chemical kinetics, taught from a perspective that develops the behavior of bulk matter from molecular properties. *Prerequisite: CHEM 112*

CHEM 114L: Physical Chemistry and Instrumental Analysis Laboratory [2]
Laboratory experiments in spectroscopy, electrochemistry, separations and kinetics, including biochemical and biophysical applications. *Prerequisite: CHEM 115 [may be taken concurrently]*

CHEM 115: Instrumental Analysis and Bioanalytical Chemistry [3]
Spectroscopic, electrochemical and separation methods of chemical analysis including bioanalytical techniques. *Prerequisite: CHEM 8, CHEM 10*

CHEM 120: Inorganic Chemistry [3]
Descriptive inorganic chemistry, reactivity, inorganic spectroscopy, group theory and crystallography. *Prerequisites: CHEM 8, CHEM 10*

CHEM 130: Organic Spectroscopy and Computation [3]
Modern methods and tools employed for the determination of organic molecular structure including NMR [1D and 2D FT], IR, and UV spectroscopy. Applications of quantum mechanical concepts and methods to understand and predict organic structures and reactivities. Computational modeling methods, including force field and quantum mechanical computer calculations. *Prerequisite: CHEM 100*

CHEM 131: Molecular Spectroscopy [3]
Time-dependent quantum mechanics; interaction of radiation with matter; electronic spectra of atoms and molecules; vibrational, rotational, and Raman spectra; magnetic resonance spectroscopy; X-ray, neutron and electron diffraction. *Prerequisite: CHEM 112*

CHEM 133: Biophysical Chemistry [3]
Biochemical kinetics, solution thermodynamics of biochemical systems, multiple equilibria, hydrodynamics, energy levels, spectroscopy, and bonding. Three-dimensional structure of proteins, forces that stabilize protein structures, protein folding, prediction of protein structure from sequence. Three-dimensional structure of DNA and RNA, sequence-specific recognition of DNA and RNA, RNA-catalyzed processes. *Prerequisites: CHEM 111 or BIS 101, CHEM 113*

CHEM 140: Nanoscale Materials Chemistry [3]
An introduction to the properties of matter on size scales intermediate between atoms or molecules and bulk matter, with emphasis on metallic and semiconductor nanoparticles. Synthesis, characterization, physical and chemical properties, and applications of these materials. *Prerequisites: CHEM 100, 113, 120 [all may be taken concurrently]*

CHEM 145: Applied and Biomolecular Spectroscopy [3]
Application and interpretation of spectroscopic methods to problems in chemical structure and analysis with a particular emphasis on biomolecules. Topics include UV/visible absorption, fluorescence, infrared absorption, Raman scattering, nuclear magnetic resonance, electron spin resonance, circular dichroism, mass spectrometry, microspectroscopic and single-molecule techniques. *Prerequisite: CHEM 115*

CHEM 190: Advanced Topics in Chemistry [3]
In-depth treatment of a timely, advanced topic in chemistry as selected by the faculty. More than one section covering different topics may be offered. *Prerequisite: Consent of instructor*

CHEM 195: Upper Division Undergraduate Research [1-4]
Supervised research. *Permission of instructor required.*

CHEM 198: Upper Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

CHEM 199: Upper Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

COGNITIVE SCIENCE

Lower Division Courses

COGS 1: Introduction to Cognitive Science [4]
An introduction to the interdisciplinary field of cognitive science. Basic issues related to cognition, including perception, memory, language, learning, problem solving, spatial cognition, attention, mental imagery, consciousness, brain damage, development and artificial intelligence, are considered from the perspectives of psychology, philosophy, computer science and neuroscience.

COGS 5: Introduction to Language and Linguistics [4]
An introduction to the scientific study of language. Topics include phonology, phonetics, syntax, semantics, pragmatics, sociolinguistics, psycholinguistics, historical linguistics, language acquisition and natural discourse.

COGS 90X: Freshman Seminar [1]
Examination of a topic in the cognitive sciences.

COGS 95: Lower Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

COGS 98: Lower Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

COGS 99: Lower Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

Upper Division Courses

COGS 101: Mind, Brain and Computation [4]
A course that further explores the issues covered in COGS 1, but with greater emphasis on computation, brain structure, neurological deficits, and the connection between mind and brain. *Prerequisite: COGS 1*

COGS 102: Introduction to Cognitive Modeling [4]
An introduction to the use of computer programs in modeling and cognitive phenomena. Some proficiency in a high-level programming language [C, Java, Lisp, etc.] will be assumed. Symbolic artificial intelligence, neural networks, genetic algorithms and computer graphics. *Prerequisites: COGS 1, one course in computer programming*

COGS 103: Introduction to Neural Networks in Cognitive Science [4]
Introduction to the use of neural networks in the study of cognitive phenomena. Perception, attention, language, memory and biologically realistic model neurons. *Prerequisite: COGS 102*

COGS 110: Philosophy of Cognitive Science [4]
Consideration of philosophical and foundational issues in cognitive science, including the Turing Test, the Chinese Room argument, the nature of cognitive architecture, animal cognition, connectionism vs. symbolic artificial intelligence and the possibility of thinking machines. *Prerequisites: PHIL 1, COGS 1 or consent of instructor. Cross-listed with PHIL 110.*

COGS 150: Language, Cognition and Interaction [4]
Examines the interactive nature of language. Discussion focuses on the extent to which perception, memory and other non-linguistic processes interact with language and the way people use language to interact in everyday situations. Conversational language, gesture, speech disfluencies, figurative language, spatial language, child-parent interaction, speech recognition and human-computer processing. The course integrates research from psychology, linguistics, sociolinguistics and human-computer interaction. Research project required. *Prerequisites: COGS 1, COGS 5*

COGS 155: Language Acquisition [4]
A comprehensive survey of the theories, methods, and findings on first and second language acquisition. *Prerequisites: COGS 1, COGS 5*

COGS 180: Topics in Cognitive Science [4]
A variety of topics in cognitive science are offered. *Prerequisite: COGS 1*

COGS 195: Upper Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

COGS 198: Upper Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

COGS 199: Upper Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

COLLEGE ONE CORE COURSES

Lower Division Courses

CORE 1: The World at Home – Planning for the Future in a Complex World I [4]
CORE 2: The World at Home – Planning for the Future in a Complex World II [4]
This course provides a foundation for UC Merced's general education program and has a strong emphasis on writing, quantitative reasoning, critical thinking and understanding events in their historical and cultural contexts. The inaugural theme will be a study of how individuals and societies can make the best choices in preparing for an uncertain future. The unifying theme in these modules will be the contemporary San Joaquin Valley, which will act as a common reference point highlighting the regional implications of global events or the global consequences of seemingly local choices. A wide range of interdisciplinary perspectives from the humanities, social sciences, sciences and engineering will be brought to bear on the course topics.

COMPUTER SCIENCE AND ENGINEERING

Lower Division Courses

CSE 1: Programming I [3]
Fundamentals of computer programming, including basic algorithms, programming styles, program validation, and debugging. Major compound data types including arrays, queues, tuples, stacks, binary trees and linked lists.

CSE 2: Programming II [3]
Intermediate computer programming, including concepts of recursion, functional and object-oriented programming. Classes and objects, abstraction, inheritance, operator overloading and data localization. *Prerequisite: CSE 1*

CSE 20: Introduction to Computing I [2]
Introduction to the basic tools for using computers to enhance personal productivity. Course will emphasize techniques for effectively using and customizing computing environments, including scripting and programming.

CSE 21: Introduction to Computing II [2]
Covers computational techniques for gathering, organizing and presenting data. Basics of client/server systems, databases, and networking. *Prerequisite: CSE 20.*

CSE 30: Introduction to Computer Science and Engineering I [3]
Overview of the diverse field of computer science and engineering. In-depth analysis of several key inventions in the field that have been instrumental in advancing CSE and driving worldwide technical growth.

CSE 31: Introduction to Computer Science and Engineering II [3]
Overview of the diverse field of computer science and engineering. In-depth analysis of several key inventions in the field that have been instrumental in advancing CSE and driving worldwide technical growth. *Prerequisite: CSE 30.*

CSE 90X: Freshman Seminar [1]
Examination of a topic in computer science and engineering.

CSE 95: Lower Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

CSE 98: Lower Division Directed Group Study [1-5]
Permission of instructor required. P /NP grading only.

CSE 99: Lower Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

Upper Division Courses

CSE 100: Algorithm Design and Analysis [4]
Introduction to the design and analysis of computer algorithms. Theoretical models of computation, concepts of algorithm complexity, computability and NP-completeness. Major algorithms and data structures for searching, sorting, parsing and memory management. *Prerequisite: CSE 2*

CSE 111: Database Systems [4]
Principles of database design and operation. Major types of databases, including flat-file, hierarchical, relational and object-oriented. Database-querying languages, database security and special issues related to the www-based database systems. *Prerequisite: CSE 100*

CSE 120: Software Engineering [4]
Modern engineering techniques for developing reliable, efficient, reusable and maintainable computer software. Primary software design models, including functional, structured and object-oriented programming. Software validation, revision control, project management and documentation. *Prerequisite: CSE 100*

CSE 140: Computer Architecture [4]
Fundamental concepts of digital computer design, including instruction sets, memory systems and registers, logic and mathematics units, and off-cpu communication and control. Diversity of contemporary computer designs. *Prerequisite: CSE 2*

CSE 150: Introduction to Operating Systems [4]
Concepts of computer operating systems including memory management, file systems, multitasking, performance analysis and security. *Prerequisite: CSE 2*

CSE 160: Networking [4]
Design concepts and implementation features of computer networks. Network robustness, scalability, addressing, routing and security. Several contemporary networking protocols will be analyzed. *Prerequisite: CSE 150*

CSE 195: Upper Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

CSE 198: Upper Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

CSE 199: Upper Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

EARTH SYSTEMS SCIENCE

Lower Division Courses

ESS 1: Introduction to Earth Systems Science [4]
An introduction to basic principles of earth systems for non-science majors and prospective majors. A multidisciplinary approach that draws from geology, chemistry, physics and biology to understand how the earth functions as a complex system, and the role and impact of human beings on Earth systems.

ESS 5: Introduction to Biological Earth Systems [4]
An introduction to basic principles of coupled biological and earth systems for non-science majors and prospective majors. An interdisciplinary approach that combines concepts from biology and earth science to understand how the Earth functions as a biological incubator, the origin and evolution of molecular life, the rise of complex biological and ecological earth systems, human impacts and the sustainable Earth.

ESS 20: Fundamentals of Earth Processes [4]
Fundamentals of Earth science with focus on terrestrial, marine and atmospheric systems through time; surface geological processes (plate tectonics, lithosphere cycling, weathering, erosion, sedimentation, landscape and soil formation); material and heat transport in atmosphere-ocean-lithosphere systems; paleoclimatic and paleoenvironmental dynamics and their relation to tectonic processes. *Prerequisites: ESS 1 or ESS 5 or BIS 1;CSE 21; ICP 1 or equivalent*

ESS 25: Introduction to Ecosystem Science [4]
Fundamentals of ecosystem science; organization, function and development of ecological systems; energy and mass flow; biogeochemical cycling; biodiversity; population dynamics; and sustainability. *Prerequisites: ESS 1 or ESS 5 or BIS 1; ICP 1 or equivalent*

ESS 90X: Freshman Seminar [1]
Examination of a topic in earth systems science.

ESS 95: Lower Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

ESS 98: Lower Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

ESS 99: Lower Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

Upper Division Courses

ESS 100: Environmental Chemistry [4]
Chemical principles of Earth and environmental systems focusing on environmental processes in water, soil and air. Emphasis on acid-base chemistry, aqueous speciation, mineral and gas solubility, oxidation and reduction, and isotopes. *Prerequisites: CHEM 8, ICP 2. Cross-listed with ENVE 100*

ESS 102: Chemistry and Mineralogy of Soils [3]
Thermodynamics and kinetics of chemical process in soil systems. Topics include the formation and identification of common minerals, adsorption/desorption, precipitation/dissolution and electrochemical reactions in soils. *Prerequisite: ENVE/ESS 100*

ESS 103: Geochemistry of Earth Systems [3]
Quantitative analysis of Earth systems using principles of thermodynamics, kinetics and isotope geochemistry; solution-mineral equilibrium and phase relations; equilibrium and reactive transport approaches to modeling geochemical processes at ambient and elevated temperatures. *Prerequisite: ENVE/ESS 100*

ESS 104: Organic Geochemistry [3]
Focus on organic chemical reactions in soils and sedimentary environments. Formation and weathering of natural organic matter and reactions of natural organic matter with pollutants. *Prerequisite: ENVE/ESS 100*

ESS 105: Watershed Biogeochemistry [3]
Movement, storage and transformations involving water, nutrients and solutes in natural and human impacted watersheds; biological and chemical processes; modeling of biogeochemical processes. Interactions of watersheds with lakes and streams. *Prerequisites: ENVE/ESS 100, ENVE/ESS 110*

ESS 106: Spectroscopic and Microscopic Methods [3]
Application of advanced spectroscopic and microscopic methods to the study of Earth materials, aqueous systems and aqueous-solid interfaces. *Prerequisite: ENVE/ESS 100*

ESS 108: Surface and Colloid Chemistry of Earth Materials [3]
Surface, colloid and interfacial chemistry related to soil, environmental and microbial applications; properties, energetics and reactivity of surfaces and interfaces of Earth materials; the role of mineral surfaces in promoting and catalyzing chemical phenomena at phase boundaries. *Prerequisite: ENVE/ESS 100*

ESS 110: Hydrology and Climate [4]
Basics of the hydrological cycle and the global climate system. Fundamentals of surface water hydrology, hydrometeorology, evaporation, precipitation, statistical and probabilistic methods, unit hydrograph and flood routing. *Prerequisite: ENVE 20 or ESS 20. Cross-listed with ENVE 110*

ESS 120: Geomicrobiology [4]
Fundamentals of microbiology related to earth systems, including biogeochemical cycling, microbial metabolism and biodiversity, soil food webs, and genomics. *Prerequisites: CHEM 8, ICP 2*

ESS 124: Ecology and Ecosystems [4]
Ecology and ecological principles; organization, dynamics and mathematical models of population and communities; biodiversity; environmental scaling; and spatial analysis. *Prerequisite: ESS 20 or ESS 25*

ESS 125: Microbial Ecology [4]
Advanced course in microbiological systems and techniques. *Prerequisite: ESS 120*

ESS 126: Environmental Genomics [4]
Introduction to the principles and methods of genomics as applied to the understanding of ecosystems. Population genetics, adaptation to environmental change and genomic analysis of environmental microbial communities; experimental and computational methods relevant to environmental genomics. *Prerequisite: BIS 141 or ESS 120*

ESS 128: Ecological Modeling [3]
Advanced course on modeling population dynamics and the flow of energy and matter in ecosystems. *Prerequisite: ESS 124*

ESS 180: Field Methods in Earth Systems [4]
Field techniques in chemistry, hydrology, geology, ecology and microbiology, emphasizing principles of measurement, observation and interpretation; integration of diverse data sets. *Prerequisites: CHEM 8, ICP 2*

ESS 190: Undergraduate Seminar [1]
Weekly seminar of current topics in earth and environmental systems. *Prerequisite: Upper division standing.*

ESS 195: Upper Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

ESS 198: Upper Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

ESS 199: Upper Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

ECONOMICS

Lower Division Courses

ECON 1: Introduction to Economics [4]
Introduction to economics principles and methods, including microeconomics (operation of the economy at the individual and firm level) and macroeconomics (nature and functions of the national economy in a global context).

ECON 10: Analysis of Economic Data [4]
Introduction to observation, estimation and hypothesis testing in economics; use of linear regression models. *Prerequisite: ECON 1*

ECON 11: History of Economic Thought [4]
A survey of the theories of major economists from Adam Smith to Keynes. *Prerequisite: ECON 1*

ECON 90X: Freshman Seminar [1]
Examination of a topic in economics.

ECON 95: Lower Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

ECON 98: Lower Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

ECON 99: Lower Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

Upper Division Courses

ECON 100: Intermediate Microeconomic Theory [4]
Price determination and resource distribution theory under conditions of perfect and imperfect competition. General equilibrium and welfare economics. *Prerequisites: ECON 1, MATH 21 or equivalent, or consent of instructor*

ECON 101: Intermediate Macroeconomic Theory [4]
Analysis of output, employment, interest rates and the price level. Effects of these on changes in monetary and fiscal variables. *Prerequisites: ECON 1, MATH 21 or equivalent or consent of instructor*

ECON 111: American Economic History [4]
A survey of trends in the American economy; emphasis on factors explaining economic growth and on the changing distribution of the gains and losses associated with growth. *Prerequisite: ECON 100*

ECON 115: Economics of Industrial Organization [4]
The organization and structure of industrial production in the United States economy. *Prerequisite: ECON 100*

ECON 120: Economics of the Environment [4]
Analysis of public policy measures that pertain to human environments. *Prerequisite: ECON 100*

ECON 130: Econometrics [4]
Introduction of problems of observation, estimation and hypotheses testing in economics through the study of the theory and application of linear regression models, critical evaluation of selected examples of empirical research, and exercises in applied economics. *Prerequisites: ECON 10, MATH 21 or equivalent*

ECON 140: Labor Economics [4]
Analysis of the economic forces that shape labor markets, institutions and performance in the United States and other countries, with special attention to trade unions, legal regulations and social conventions. *Prerequisite: ECON 100*

ECON 145: Health Economics [4]
An economic analysis of policies and institutions in the U.S. health care sector: supply and demand for health services, conceptual and policy issues relating to health insurance, and economic analysis of efficient regulatory policies toward the health care sector. *Prerequisite: ECON 100*

ECON 150: Economic Development [4]
Problems of underdevelopment and poverty, policy issues and development strategy. *Prerequisite: ECON 100*

ECON 151: Public Economics [4]
Influence of governmental revenue and expenditure decisions on economic performance. Issues such as public goods and externalities, as well as specific expenditure and taxation programs. *Prerequisite: ECON 100*

ECON 152: Law and Economics [4]
Economic analysis of legal rules and institutions, including property, contract and tort law. Also, issues surrounding crime and punishment. *Prerequisite: ECON 100*

ECON 155: Political Economics [4]
Tools of political economics: Preferences and institutions, electoral competition, agency, partisan politics. Redistributive politics: general interest politics, special interest politics. Comparative politics: electoral rules, separation of powers, political regimes. Dynamic politics: fiscal policy, growth. *Prerequisite: ECON 100*

ECON 160: International Microeconomics [4]
International trade theory: Impact of trade on the domestic and world economies; public policy toward external trade. *Prerequisite: ECON 100*

ECON 161: International Macroeconomics [4]
Macroeconomic theory of an open economy. Balance of payments adjustment mechanism, international monetary economics issues, international financial institutions and their policies. *Prerequisite: ECON 101*

ECON 190: Topics in Economics [4]
Intensive treatment of a special topic or problem in economics. May be repeated for credit in different subject area. *Prerequisites: ECON 1, junior or senior standing, major in SBCS in the economics track or consent of instructor*

ECON 191: Fieldwork in Economics [1-3]
Supervised field studies in economics. *Prerequisites: ECON 1; junior or senior standing; major in SBS in the economics track or consent of instructor*

ECON 195: Upper Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

ECON 198: Upper Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

ECON 199: Upper Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

ENGINEERING

Lower Division Courses

ENGR 45: Introduction to Materials [4]
Relationships of the structure, processing, properties and performance of materials. Application of physical and chemical principles in the context of engineering materials: atomic bonding, crystal structure, defects, thermodynamics and kinetics. *Prerequisites: ICP 1, CHEM 2 or consent of instructor.*

ENGR 50: Statics and Dynamics [4]
Fundamental concepts of mechanics, including statics, dynamics and kinetics of particles and rigid bodies. *Prerequisite: ICP 2*

ENGR 51: Strength of Materials [4]
Stresses and strain in solids with symmetric and asymmetric loads. Stresses in pressure vessels and rotating shafts. Strength and failure, plastic deformation, fatigue and elastic instability. *Prerequisite: ICP 2*

ENGR 52: Computer Modeling and Analysis [4]
Basic tools needed for the design and analysis of engineering systems, including data collection, basic algorithm design, implementation and testing, and systems simulation. *Prerequisites: CSE 1, MATH 10*

ENGR 53: Materials and the Environment [4]
Impact of materials mining, processing, synthesis, use and disposal on the environment, including cost-benefit analyses of environmentally "friendly" vs. "unfriendly" materials. Energy properties, cost, durability, disposal and other considerations in materials selection. Materials challenges in fuel cell, battery, solar and water filtration applications. Environmental costs and benefits of emerging nanotechnologies. *Prerequisites: ICP 1, CHEM 2 or consent of instructor.*

ENGR 55: Engineering Economic Analysis [4]
Microeconomic principles and methods. Time value of money, interest and equivalence, analysis of economic alternatives, depreciation, inflation and taxes, estimates of demand, cost and risk, decision theory. *Prerequisite: MATH 10*

ENGR 90X: Freshman Seminar [1]
Examination of a topic in engineering.

ENGR 95: Lower Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

ENGR 97: Service Learning: Engineering Projects in Community Service [1-3]
Multi-disciplinary teams of freshman through senior students work with community organizations to design, build and implement engineering-based solutions for real-world problems. Students gain insight into the design and development process. Students are encouraged to participate for two or more semesters at the lower division [ENGR 97] and upper division [ENGR 197] levels. *Prerequisite: Completion of first freshman semester. Permission of instructor required.*

ENGR 98: Lower Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

ENGR 99: Lower Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

Upper Division Courses

ENGR 120: Fluid Mechanics [4]
Introduction to and application of principles of mechanics to flow of compressible and incompressible fluids. *Prerequisite: ICP 2*

ENGR 130: Thermodynamics [4]
Fundamentals of equilibrium, temperature, energy and entropy. Equations of state and thermodynamic properties, with engineering applications. *Prerequisites: ICP 2 , CHEM 2*

ENGR 135: Heat Transfer [4]
Study of conduction, convection and radiation heat transfer, with applications to engineering problems. *Prerequisite: ENGR 130*

ENGR 140: Introduction to Object Oriented Programming [4]
Object and database principles, including data models, access control, database systems architecture, functional data manipulation, database organizational design, indexing and performance analysis. *Prerequisites: CSE 1, MATH 10*

ENGR 160: Discrete Math and Computer Modeling [4]
Combinatorics, graph theory, cryptography, discrete optimization, mathematical programming, coding theory, information theory, game theory, principles of computer science, including algorithms, complexity and performance modeling. *Prerequisites: CSE 1, ICP 2*

ENGR 170: Introduction to Electron Microscopy [3]
Principles and techniques of electron microscopy used in the study of materials. Emphasis upon practical applications. *Prerequisites: ICP 2 or PHYS 9, introductory level knowledge of crystallography. Concurrent enrollment in ENGR 170 L is strongly encouraged*

ENGR 170L: Introduction to Electron Microscopy – Laboratory [1]
Laboratory for principles and techniques of electron microscopy used in the study of materials. *Prerequisites: ICP 2 or PHYS 9, introductory level knowledge of crystallography. Concurrent enrollment in ENGR 170 is strongly encouraged.*

ENGR 180: Spatial Analysis and Modeling [4]
Principles of geographic information systems [GIS]; applications of GIS to environmental, water and resource management issues; problem solving with GIS. Other topics include spatial analysis interpolation techniques and model integration. *Prerequisites: CSE 21, MATH 10*

ENGR 191: Professional Seminar [1]
Presentation and discussion of professional engineering practices. Professional ethics and the roles and responsibilities of public institutions and private organizations pertaining to engineering. *Prerequisite: Permission of instructor required.*

ENGR 197: Service Learning: Engineering Projects in Community Service [1]
Multi-disciplinary teams of freshman through senior students work with community organizations to design, build, and implement engineering-based solutions for real-world problems. Students gain insight into the design and development process. Students are encouraged to participate for two or more semesters at the lower division [ENGR 97] and upper division [ENGR 197] levels. *Prerequisite: Permission of instructor required.*

ENGR 198: Upper Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only

ENGR 199: Upper Division Individual Study [1-5]
Permission of instructor required. P/NP grading only

Graduate Courses

ENGR 270: Introduction to Electron Microscopy [3]
Principles and techniques of electron microscopy used in the study of materials. Emphasis upon practical applications. Graduate requirements include additional assignments, quiz problems and a project. *Prerequisites: ICP 2 or PHYS 9, introductory-level knowledge of crystallography. Concurrent enrollment in ENGR 270L is strongly encouraged. Cross-listed with ENGR 170.*

ENGR 270L: Introduction to Electron Microscopy Laboratory [1]
Laboratory for principles and techniques of electron microscopy used in the study of materials. Graduate requirements include additional laboratory reports and a research project. *Prerequisites: ICP 2 or PHYS 9, introductory-level knowledge of crystallography. Concurrent enrollment in ENGR 270 is strongly encouraged. Cross-listed with ENGR 170L.*

ENGR 295: Graduate Research [1-6]
Supervised research in engineering. *Prerequisites: Graduate standing and consent instructor.* S/U only.

ENGR 298: Directed Group Study [1-6]
Group project under faculty supervision. *Prerequisites: Graduate standing and consent instructor.* S/U only.

ENGR 299: Directed Independent Study [1-6]
Independent project under faculty supervision. *Prerequisites: Graduate standing and consent instructor.* S/U only.

ENVIRONMENTAL ENGINEERING

Lower Division Courses

ENVE 10: Environment in Crisis [4]
Human effects on Earth's ecosystems, air and waters. Social and technological solutions to interacting pressures from environmental pollution, biodiversity loss, water pollution, climate warming and feeding Earth's population. Science and policy topics appropriate for students majoring in fields other than science or engineering. Not open to majors for credit.

ENVE 20: Introduction to Environmental Science and Technology [4]
Introduction to historical and current issues in the diverse field of environmental engineering. Principles of mass and energy balance. In-depth analysis of several key innovations from the field that have been instrumental in advancing the field. Design project. *Prerequisites: CSE 21; MATH 10 [may be taken concurrently]; CHEM 2; ICP 1 or equivalent*

ENVE 90X: Freshman Seminar [1]
Examination of a topic in environmental engineering.

ENVE 95: Lower Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

ENVE 98: Lower Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

ENVE 99: Lower Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

Upper Division Courses

ENVE 100: Environmental Chemistry [4]
Chemical principles of Earth and environmental systems focusing on environmental processes in water, soil and air. Emphasis on acid-base chemistry, aqueous speciation, mineral and gas solubility, oxidation and reduction, and isotopes. *Prerequisites: CHEM 8, ICP 2. Cross-listed with ESS 100.*

ENVE 110: Hydrology and Climate [4]
Basics of the hydrological cycle and the global climate system. Fundamentals of surface water hydrology, hydrometeorology, evaporation, precipitation, statistical and probabilistic methods, unit hydrograph and flood routing.
Prerequisite: ENVE 20 or ESS 20. Cross-listed with ESS 110.

ENVE 112: Subsurface Hydrology [4]
Hydrologic and geologic factors controlling the occurrence and use of groundwater on regional and local scales. Physical, mathematical, geologic and engineering concepts fundamental to subsurface hydrologic processes.
Introduction to groundwater flow and transport modeling, with emphasis on model construction and simulation. *Prerequisite: ENVE 110*

ENVE 114: Mountain Hydrology of the Western United States [4]
Principles of snow formation, occurrence and measurement; components of evapotranspiration; runoff generation; groundwater recharge processes; water resource assessments; and resource management. Focus on California and the southwestern U.S. Design project.
Prerequisite: ENVE/ESS 100

ENVE 118: Global Change [4]
Detection of, adaptation to and mitigation of global climate change. Climate-change science, sources, sinks and atmospheric cycling of greenhouse gases. Societal context for implementing engineered responses. Assessment of options for responding to the threat of climate change. *Prerequisite: CHEM 2*

ENVE 121: Environmental Microbiology [4]
Fundamentals of environmental microbiology: physiology, biochemistry, metabolism, growth energetics and kinetics, ecology, pathogenicity, and genetics, with application to both engineered and natural environmental systems. Specific applications to water, wastewater and the environmental fate of pollutants.
Prerequisites: BIS 1, ENVE 20

ENVE 130: Meteorology and Air Pollution [4]
Basic physics and thermodynamics of the atmosphere; fundamentals of atmospheric sciences important to environmental problems; chemistry and physics of atmospheric pollutants; visibility; air quality modeling; emissions; air pollution control strategies. *Prerequisite: ENVE/ESS 20*

ENVE 140: Water Resources Planning and Management [3]
Basic concepts of and issues in water resources management, water resources planning, institutional and policy processes. Quantitative analytical methods in water resources planning and management; introduction to systems analysis, multi-objective planning and risk assessment. Design project. *Prerequisites: ENVE 20, ENGR 55*

ENVE 152: Remote Sensing of the Environment [3]
Fundamentals of electromagnetic remote sensing, concepts of information extraction, and applications pertinent to environmental engineering and Earth systems science. Emphasis on water and other resource management topics. *Prerequisite: ENVE 20 or ESS 20*

ENVE 160: Sustainable Energy [4]
Current systems for energy supply and use. Renewable energy resources, transport, storage and transformation technologies. Technological opportunities for improving end-use energy efficiency. Recovery, sequestration and disposal of greenhouse gases from fossil-fuel combustion. *Prerequisite: ENVE/ESS 20*

ENVE 162: Modeling and Design of Energy Systems [3]
Concepts and applications of solar thermal processes; applications of solar collectors for water heating; active and passive building heating and cooling; fundamentals and design of wind energy systems; economics of solar energy. *Prerequisites: ENGR 135, ENGR 160, ENVE 160*

ENVE 170: Contaminant Fate and Transport [3]
Properties and behavior of organic and metal contaminants in soils, groundwater, surface waters and air. Emphasis on phase transfer and transport for organic compounds; complexation and surface processes for metals. Modeling of environmentally important compounds, photochemical reactions, natural organic matter, sorption phenomena.
Prerequisite: ENVE 100

ENVE 176: Water and Wastewater Treatment [3]
Water treatment, use, reclamation and reuse. Introduction to modeling and designing treatment systems; both conventional and advanced technology. Use of mass balances for system evaluation and design. Design project.
Prerequisites: ENVE 20, ENVE 100, ENGR 120

ENVE 181: Field Methods in Snow Hydrology [1-3]
Properties and measurement of snow. Principles of snow metamorphism and melting. Field workshops. *Prerequisite: ENVE/ESS 110*

ENVE 182: Field Methods in Surface Hydrology [1-3]
Measurement and interpretation of data; stream gauging, hydrography and limnology exercises; evaporation studies; micrometeorological instruments and methods; discharge measurement; flood plain mapping; preparation of hydrologic reports. Field workshops.
Prerequisite: ENVE/ ESS 110

ENVE 183: Field Methods in Subsurface Hydrology [1-3]
Introduction to fundamental field instruments used for vadose zone and subsurface field investigations. Analysis of groundwater wells and of a (hypothetical) contaminated site. Field workshops. *Prerequisite: ENVE 112.*

ENVE 184: Field Methods in Environmental Chemistry [1-3]
Introduction to the fundamental field instruments used for environmental chemistry field investigations. Air, water and soil sample collection and preservation procedures. Particle separation and analysis, ion selective electrodes, colorimetric assays for nutrients and metallic species, extraction of organic species. Experimental design, measurements and interpretation of data. *Prerequisite: ENVE/ESS 100*

ENVE 191: Professional Seminar [1]
Presentation and discussion of professional environmental and water resources engineering practices. Professional ethics and the roles and responsibilities of public institutions and private organizations pertaining to environmental engineering. *Prerequisite: Permission of instructor required.*

ENVE 195: Upper Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

ENVE 198: Upper Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

ENVE 199: Upper Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

ENVIRONMENTAL SYSTEMS

Graduate Courses

ES 202: Chemistry and Mineralogy of Soils [3]
Thermodynamics and kinetics of chemical process in soil systems. Formation and identification of common minerals, adsorption/desorption, precipitation/dissolution, electrochemical reactions in soils. Graduate requirements include individual additional exercises and preparation of a research paper. *Prerequisite: Graduate standing.* S/U option.

ES 203: Geochemistry of Earth Systems [3]
Quantitative analysis of Earth systems using principles of thermodynamics, kinetics and isotope geochemistry; solution-mineral equilibrium and phase relations; equilibrium and reactive transport approaches to modeling geochemical processes at ambient and elevated temperatures. Graduate requirements include individual student projects. *Prerequisite: Graduate standing.* S/U option.

ES 204: Organic Geochemistry [3]
Focus on organic chemical reactions in soils and sedimentary environments. Formation and weathering of natural organic matter and reactions of natural organic matter with pollutants. Graduate requirements include individual additional exercises and preparation of a research paper. *Prerequisite: Graduate standing.* S/U option.

ES 205: Watershed Biogeochemistry [3]
Movement, storage and transformations involving water, nutrients and solutes in natural and human impacted watersheds; biological and chemical processes; modeling of biogeochemical processes. Interactions of watersheds with lakes and streams. Graduate requirements include more in-depth investigation of one or more topics and preparation of paper.
Prerequisite: Graduate standing. S/U option.

ES 206: Spectroscopic and Microscopic Methods [3]
Application of advanced spectroscopic and microscopic methods to the study of earth materials, aqueous systems and aqueous-solid interfaces. Graduate requirements include individual additional exercises and preparation of a research paper. *Prerequisite: Graduate standing.* S/U option.

ES 208: Surface and Colloid Chemistry of Earth Materials [3]
Surface, colloid and interfacial chemistry related to soil, environmental and microbial applications; properties, energetics and reactivity of surfaces and interfaces of earth materials; the role of mineral surfaces in-promoting and catalyzing chemical phenomena at phase boundaries. Graduate requirements include individual additional exercises and preparation of a research paper. *Prerequisite: Graduate standing.* S/U option.

ES 212: Subsurface Hydrology [4]
Hydrologic and geologic factors controlling the occurrence and use of groundwater on regional and local scales. Physical, mathematical, geologic and engineering concepts fundamental to subsurface hydrologic processes.
Introduction to groundwater flow and transport modeling, with emphasis on model construction and simulation. Graduate requirements include completion of advanced analysis in problem sets, completion of a term paper or project, and development of project management skills in the course design project.
Prerequisite: Graduate standing. S/U option.

ES 214: Mountain Hydrology of the Western U.S. [4]
Principles of snow formation, occurrence, and measurement; components of evapotranspiration; runoff generation; groundwater recharge processes; water resource assessments; and resource management. Focus on California and the southwestern U.S. Design project.
Graduate requirements include more in-depth investigation of one or more topics and preparation of paper. *Prerequisite: Graduate standing.* S/U option.

ES 218: Global Change [4]
Detection of, adaptation to and mitigation of global climate change. Climate-change science, sources, sinks and atmospheric cycling of greenhouse gases. Societal context for implementing engineered responses. Assessment of options for responding to the threat of climate change. Graduate requirements include preparation of a detailed case analysis. *Prerequisite: Graduate standing.* S/U option.

ES 221: Environmental Microbiology [4]
Fundamentals of environmental microbiology: physiology, biochemistry, metabolism, growth energetics and kinetics, ecology, pathogenicity and genetics, with application to both engineered and natural environmental systems. Specific applications to water, wastewater and the environmental fate of pollutants. Graduate requirements include additional projects.
Prerequisite: Graduate standing. S/U option.

ES 225: Microbial Ecology [4]
Advanced course in microbiological systems and techniques. Graduate requirements include additional exercises and preparation of a research paper. *Prerequisite: Graduate standing.* S/U option.

ES 226: Environmental Genomics [4]
Introduction to the principles and methods of genomics as applied to the understanding of ecosystems. Population genetics, adaptation to environmental change, genomic analysis of environmental microbial communities; experimental and computational methods relevant to environmental genomics. Graduate requirements include additional exercises and preparation of a research paper. *Prerequisite: Graduate standing.* S/U option.

ES 228: Ecological Modeling [3]
Advanced course on modeling population dynamics and the flow of energy and matter in ecosystems. Graduate requirements include additional exercises and preparation of a research paper. *Prerequisite: Graduate standing.* S/U option.

ES 235: Heat Transfer [4]
Study of conduction, convection and radiation heat transfer, with applications to engineering problems. Graduate requirements include in-depth investigation of one or more topics and preparation of paper. *Prerequisite: Graduate standing.* S/U option.

ES 240: Water Resources Planning and Management [3]
Basic concepts of and issues in water resources management, water resources planning, institutional and policy processes. Quantitative analytical methods in water resources planning and management; introduction to systems analysis, multi-objective planning and risk assessment. Design project. Graduate requirements include preparation of a detailed case analysis. *Prerequisite: Graduate standing.* S/U option.

ES 252: Remote Sensing of the Environment [3]

Fundamentals of electromagnetic remote sensing, concepts of information extraction and applications pertinent to environmental engineering and Earth systems science. Emphasis on water and other resource management topics. Graduate requirements include in-depth investigation of one or more remote sensing applications and preparation of a paper.
Prerequisite: Graduate standing. S/U option.

ES 260: Sustainable Energy [4]
Current systems for energy supply and use. Renewable energy resources, transport, storage and transformation technologies. Technological opportunities for improving end-use energy efficiency. Recovery, sequestration and disposal of greenhouse gases from fossil-fuel combustion. Graduate requirements include preparation of a detailed case analysis. *Prerequisite: Graduate standing.* S/U option.

ES 262: Modeling and Design of Energy Systems [3]
Concepts and applications of solar thermal processes; applications of solar collectors for water heating; active and passive building heating and cooling; fundamentals and design of wind energy systems; economics of solar energy. Graduate-level requirements include preparation of a detailed case analysis. *Prerequisite: Graduate standing.* S/U option.

ES 270: Contaminant Fate and Transport [3]
Properties and behavior of organic and metal contaminants, in soils, groundwater, surface waters and air. Emphasis on phase transfer and transport for organic compounds; complexation and surface processes for metals. Modeling of environmentally important compounds, photochemical reactions, natural organic matter, sorption phenomena. Graduate-level requirements include preparation of a detailed case analysis. *Prerequisite: Graduate Standing.* S/U option.

ES 291: Environmental Systems Seminar [1-3]
Seminar on advanced engineering and science topics, environmental systems research, and relevant case studies. *Prerequisite: Graduate standing.* S/U only.

ES 295: Graduate Research [1-6]
Supervised research in environmental systems. *Prerequisites: Graduate standing and consent instructor.* S/U only.

ES 298: Directed Group Study [1-6]
Group project under faculty supervision. *Prerequisites: Graduate standing and consent instructor.* S/U only.

ES 299: Directed Independent Study [1-6]
Independent project under faculty supervision. *Prerequisites: Graduate standing and consent instructor.* S/U only.

HISTORY

Lower Division Courses

HIST 10: Introduction to World History [4]
World history from the 14th century to the mid-1800s. Growth of human populations, rise of nation states and impact of industrialization upon the natural world.

HIST 11: World History, 1850-2000 [4]
World history from the mid-19th century to the close of the 20th century. Colonization, rise and fall of empire, globalization. *Prerequisite: HIST 10*

HIST 16: The Forging of the United States, 1650-1900 [4]
The history of the United States from colonial roots to the beginnings of great-power status. Revolution, Industrial Age, impact and aftermath of the Civil War.

HIST 17: Twentieth-Century America [4]
Cultural, social, and political history of the United States from 1900 to the Clinton presidency. The U.S. in two world wars, the Great Depression, the Cold War at home and abroad. *Prerequisite: HIST 16*

HIST 20: History of the American West, 1500-1849 [4]
Focus on the age of discovery, the idea of the frontier and the impact of westward expansion upon the indigenous people of the West.

HIST 21: History of the American West, 1850-2000 [4]
Major topics will include the settlement, exploitation and promise of the West, from Gold Rush-era California to the present day. *Prerequisite: HIST 20*

HIST 90X: Freshman Seminar [1]
Examination of a topic in history.

HIST 95: Lower Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

HIST 98: Lower Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

HIST 99: Lower Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

Upper Division Courses

HIST 100: The Historian's Craft [3]
The techniques of research and writing used by historians from Thucydides to the so-called revisionists of today's "culture wars." Focus on historians both inside and outside the academy, their methods and their audiences. *Prerequisite: Junior standing in the major. Required of all History Emphasis students.*

HIST 130: Topics in World History [4]
In-depth study of a particular topic in world history. Possible topics include the impact of industrialization on the natural world, the age of exploration and discovery, colonization, the advent of the era of economic globalization. *Prerequisites: HIST 10 and 11 or the equivalent of a two-semester lower division World History survey; and HIST 100 [may be taken concurrently]; or permission of the instructor.* May be repeated for credit up to three times with different topics.

HIST 131: Topics in National History [4]
In-depth study of a particular topic in the history of a nation. Possible topics include the social, cultural, economic or political history of that nation. *Prerequisites: HIST 10 and 11 or HIST 16 and 17, or the equivalent of a two-semester lower division history survey; and HIST 100 [may be taken concurrently]; or permission of the instructor.* May be repeated for credit up to three times with different topics.

HIST 132: Topics in Regional and State History [4]
In-depth study of a particular topic in the history of a region or state. Possible topics include the social, cultural, economic or political history of that region or state. *Prerequisites: HIST 10 and 11 or HIST 16 and 17, or the equivalent of a two-semester lower division history survey; and WCH 100 [may be taken concurrently]; or permission of the instructor.* May be repeated for credit up to three times with different topics.

HIST 133: Topics in the History of Migration and Immigration [4]
In-depth study of a particular topic in the history of migration and/or immigration. Possible topics include the origins and history of America's culturally diverse population with a focus on the experiences of European, Native, African, Chicano/Latino and Asian Americans. *Prerequisites: HIST 10 and 11 or HIST 16 and 17, or the equivalent of a two-semester lower division history survey; and WCH 100 [may be taken concurrently]; or permission of the instructor.* May be repeated for credit up to three times with different topics.

HIST 134: Topics in the History of Science and Technology [4]
In-depth study of a particular topic in the history of science and/or technology. Possible topics include the impact of invention, the nature of scientific/technological revolutions, the role of technology in economic development, "nuclear" America. *Prerequisites: HIST 10 and 11 or HIST 16 and 17, or the equivalent of a two-semester lower division History survey; and HIST 100 [may be taken concurrently]; or permission of the instructor.* May be repeated for credit up to three times with different topics.

HIST 135: Topics in Environmental History [4]
In-depth study of a particular topic in environmental history. Possible topics include the impact of industrialization upon the natural world, the changing notion of "wilderness," the role of national parks, California's "water wars." *Prerequisites: HIST 10 and 11 or HIST 16 and 17, or the equivalent of a two-semester lower division history survey; and HIST 100 [may be taken concurrently]; or permission of the instructor.* May be repeated for credit up to three times with different topics.

HIST 150: The Cold War, 1941-1991 [4]
The political, cultural and intellectual history of America's confrontation with Communism at home and abroad, from U.S. entry into the second world war to the collapse of the Soviet Union. *Prerequisites: HIST 16 and 17 or the equivalent of a two-semester lower division American History survey; and HIST 100 [may be taken concurrently]; or permission of the instructor.*

HIST 195: Upper Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required*.

HIST 198: Upper Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

HIST 199: Upper Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

HUMAN BIOLOGY

Upper Division Courses

HBIO 190: Research Seminar [1]
Student-led presentations of current topics in human biology, including independent research presentations. *Prerequisites: Upper division standing and consent of instructor.*

HBIO 195: Research Projects in Human Biology [1 -5]
Group or individual research projects in human biology under the direction of a BIS faculty member and a faculty member from the School of Social Sciences, Humanities and Arts. *Prerequisites: Upper division standing and consent of instructor.*

HBIO 198: Directed Group Study in Human Biology [1 - 6]
Group directed study in human biology under the direction of a BIS faculty member and a faculty member from the School of Social Sciences, Humanities and Arts. *Prerequisites: Upper division standing and consent of instructor*. P/NP grading only.

HBIO 199: Directed Independent Study in Human Biology [1 - 5]
Independent study in human biology under the direction of a BIS faculty member and a faculty member from the School of Social Sciences, Humanities and Arts. *Prerequisites: Upper division standing and consent of instructor.* P/NP grading only.

INTEGRATED CALCULUS AND PHYSICS

Lower Division Courses

ICP 1: Integrated Calculus and Physics I [4]
Introduction to classical and contemporary physics and calculus for students in science and engineering. Mathematics (differential and integral calculus, geometry) is learned in the context of solving physical problems. Elementary functions such as the exponential and natural logarithm, rates of change, derivatives, infinite sequences and series, first-order ordinary differential equations. Experiments and computer exercises are integrated into the course content. *Prerequisite: Pass calculus placement exam*

ICP 2: Integrated Calculus and Physics II [4]
Continuation of introduction to classical and contemporary physics and calculus for students in science and engineering. Calculus of several variables, parametric equations, polar coordinates, algebra and geometry of vectors and matrices, partial derivatives, multiple integrals, and introduction to the theorems of Green, Gauss, and Stokes. Experiments and computer exercises are integrated into the course content. *Prerequisite: ICP 1*

LITERATURE

Lower Division Courses

LIT 20: Introduction to World Culture and Literature I [4]
Introduction to the connections between language, literature and culture over time and across national traditions through a variety of literary genres. Master works of world literature in their cultural contexts, through comparative analysis.

LIT 21: Introduction to World Culture and Literature II [4]
Introduction to the connections between language, literature and culture over time and across national traditions through a variety of literary genres. Master works of world literature in their cultural contexts, through comparative analysis. *Prerequisite: LIT 20*

LIT 30: Introduction to American Literature I [4]
Survey of the history and major works of literature of the United States from colonial times to the present, with a special emphasis on the range of American cultural traditions in a comparative context.

LIT 31: Introduction to American Literature II [4]
Survey of the history and major works of literature of the United States from colonial times to the present, with a special emphasis on the range of American cultural traditions in a comparative context. *Prerequisite: LIT 30*

LIT 40: Introduction to British Literature I [4]
Survey of the history and major works of the literature of the British Isles from the Middle Ages to the present.

LIT 41: Introduction to British Literature II [4]
Survey of the history and major works of the literature of the British Isles from the Middle Ages to the present. *Prerequisite: LIT 40*

LIT 50: Introduction to Hispanic Literature I [4]
Survey of the history and major works of Peninsular, Latin American and Latino literatures.

LIT 51: Introduction to Hispanic Literature II [4]
Survey of the history and major works of Peninsular, Latin American and Latino literatures. *Prerequisite: LIT 50*

LIT 90X: Freshman Seminar [1]
Examination of a topic in literature.

LIT 95: Lower Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

LIT 98: Lower Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

LIT 99: Lower Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

Upper Division Courses

LIT 100: Engaging Texts: Introduction to Critical Practice [3]
An introduction to issues and approaches in literary theory and criticism, with an emphasis on applications of methods to selected literary texts. *Prerequisite: Junior standing in the major. Required of all Literature Emphasis students.*

LIT 110: Topics in World Literature [4]
Topics may include literature of one country or region of the world or comparisons of multiple literatures. *Prerequisites: LIT 20 and 21 or the equivalent of a two-semester lower division Literature survey; and LIT 100 [may be taken concurrently]; or permission of the instructor.* May be repeated for credit up to three times with different topics.

LIT 120: Topics in the Literature of Difference [4]
In-depth study of a literature of difference. Possible topics include African-American literature, Asian-American literature, Chicano/Chicana literature, Native American literature, women's literature. P*rerequisites: LIT 20 and 21, LIT 30 and 31, LIT 40 and 41, or LIT 50 and 51 or the equivalent of a two-semester lower division Literature survey; and LIT 100 [may be taken concurrently]; or permission of the instructor.* May be repeated for credit up to three times with different topics.

LIT 125: Topics in Literary Genres [4]
In-depth study of representative literary works in a single genre, including novel, poetry and drama. *Prerequisites: LIT 20 and 21, LIT 30 and 31, LIT 40 and 41, or LIT 50 and 51 or the equivalent of a two-semester lower division Literature survey; and LIT 100 [may be taken concurrently]; or permission of the instructor.* May be repeated for credit up to three times with different topics.

LIT 130: Topics in American Literature [4]
In-depth study of a period, theme, et al. in American literature. *Prerequisites: LIT 20 and 21, LIT 30 and 31, LIT 40 and 41, or LIT 50 and 51 or the equivalent of a two-semester lower division Literature survey; and LIT 100 [may be taken concurrently]; or permission of the instructor.* May be repeated for credit up to three times with different topics.

LIT 140: Topics in British Literature [4]
In-depth study of a period, theme, et al. in British literature. *Prerequisites: LIT 20 and 21, LIT 30 and 31, LIT 40 and 41, or LIT 50 and 51 or the equivalent of a two-semester lower division Literature survey; and LIT 100 [may be taken concurrently]; or permission of the instructor.* May be repeated for credit up to three times with different topics.

LIT 145: Plays and Poetry of Shakespeare [4]
Introduction to and analysis of Shakespeare's major plays and poetry. *Prerequisites: LIT 20 and 21, LIT 30 and 31, LIT 40 and 41, or LIT 50 and 51 or the equivalent of a two-semester lower division Literature survey; and LIT 100 [may be taken concurrently]; or permission of the instructor.*

LIT 150: Topics in Hispanic Literature [4]
In-depth study of Spanish literature of a single country, one or more countries in a comparative context, a period, et al. *Prerequisites: LIT 20 and 21, LIT 30 and 31, LIT 40 and 41, or LIT 50 and 51 or the equivalent of a two-semester lower division Literature survey; and LIT 100 [may be taken concurrently]; or permission of the instructor.* May be repeated for credit up to three times with different topics.

LIT 165: Great Writers [4]
In-depth examination of the works of a single writer, read in the original language of that writer. *Prerequisites: LIT 20 and 21, LIT 30 and 31, LIT 40 and 41, or LIT 50 and 51 or the equivalent of a two-semester lower division Literature survey; and LIT 100 [may be taken concurrently]; or permission of the instructor.* May be repeated for credit up to three times with different topics.

LIT 170: Topics in Language and Linguistics [4]
Topics may include linguistic theories, history of the English language. *Prerequisites: LIT 20 and 21, LIT 30 and 31, LIT 40 and 41, or LIT 50 and 51 or the equivalent of a two-semester lower division Literature survey; and LIT 100 [may be taken concurrently]; or permission of the instructor.* May be repeated for credit up to three times with different topics.

LIT 195: Upper Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

LIT 198:Upper Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

LIT 199: Upper Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

MANAGEMENT

Lower Division Courses

MGMT 2: Case Study Seminar on Business and Management [1]
This seminar course surveys the field of business management. Invited speakers from local companies and public organizations will cover the business environment, human relations, technology in business, ethical behavior, global and economic forces, organization, quality, products and services, functional management, and current issues and developments. *Prerequisite: ECON 1*

MGMT 25: Introduction to Finance and Accounting I [3]
A broad introduction to finance and accounting. Students will be equipped to draw up and interpret accounts and introduced to some key ideas of finance and auditing. The student will learn fundamental accounting concepts and how to apply them; record accounting entries, prepare accounts for different business entities and understand the differences between them and basic principles of auditing. *Prerequisite: ECON 1*

MGMT 26: Introduction to Finance and Accounting II [3]
Continuation of MGMT 25. The course also covers the basic principles of capital project evaluation, working capital management, and taxation. Students must enroll in this course in the semester following the one during which MGMT 25 is taken. *Prerequisite: MGMT 25.*

MGMT 90X: Freshman Seminar [1]
Examination of a topic in management.

MGMT 95: Lower Division Undergraduate Research [1-5]
Supervised research.*Permission of instructor required.*

MGMT 98: Lower Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

MGMT 99: Lower Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

Upper Division Courses

See Web site for descriptions of upper division Management courses.

MATHEMATICS

Lower Division Courses

MATH 1: Pre-Calculus [4]
This course is intended to prepare students for MATH 21. Techniques and methods in algebra, geometry and trigonometry with applications in social and physical science.

MATH 10: Probability and Statistics [3]
Introduction to the use of statistics for engineering and natural sciences, including probability, the central limit theorem, elementary data analysis, maximum likelihood estimation, least squares, hypothesis testing and selection of test procedures. Modeling and analysis of science and engineering problems under uncertainty, applications of probability and statistical concepts and methods.

MATH 15: Quantitative Literacy and Reasoning [4]
Probability and statistics, data analysis and display, mathematical reasoning to solve problems in social and physical science.

MATH 21: Calculus of a Single Variable I [4]
An introduction to differential and integral calculus of functions of one variable. Elementary functions such as the exponential and natural logarithm, rates of change and the derivative with applications to social and physical science. *Prerequisite: Pass calculus placement examination*

MATH 22: Calculus of a Single Variable II [4]
A continuation of MATH 21. Analytical and numerical techniques of integration with applications, infinite sequences and series, first-order ordinary differential equations. *Prerequisite: MATH 21*

MATH 23: Multi-Variable Calculus [4]
Calculus of several variables. Parametric equations and polar coordinates, algebra and geometry of vectors and matrices, partial derivatives, multiple integrals and introduction to the theorems of Green, Gauss, and Stokes. *Prerequisite: MATH 22*

MATH 25: Applied Mathematical Methods I [3]
Linear ordinary differential equations and basic linear algebra. Linear systems, matrix determinants, linear transformations, eigenvalue problems, stability, phase plane analysis and nonlinear systems, numerical methods. *Prerequisite: ICP 2 or MATH 22*

MATH 30: Mathematical Biology [4]
Calculus and physics fundamentals synthesized and extended to solve problems in biology and medicine. Population models, predator-prey and competition systems, epidemic models with applications to sexually transmitted diseases, dynamic diseases, enzyme kinetics, biological oscillators and switches. *Prerequisite: ICP 2 or MATH 22*

MATH 90X: Freshman Seminar [1]
Examination of a topic in mathematics

MATH 95: Lower Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

MATH 98: Lower Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

MATH 99: Lower Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

Upper Division Courses

MATH 126: Applied Mathematical Methods II [3]
Analytical methods for engineering and applied science. Advanced linear algebra, linear vector spaces, linear transformations, singular value decomposition, advanced differential equations, power series methods near regular and singular points, the theory of Sturm-Liouville, and numerical methods. *Prerequisite: MATH 25*

MATH 127: Applied Mathematical Methods III [3]
A continuation of Applied Mathematical Methods II. Introduction to partial differential equations, separation of variables, Laplace and Fourier transform methods, Green's functions, the Cauchy integral formula, power series, Laurent series, residue calculus, conformal mapping, Riemann surfaces and applications. *Prerequisite: MATH 126*

MATH 133: Numerical Methods [3]
Numerical methods for computational mathematics. Round-off error, truncation error, numerical linear algebra, approximation and interpolation, numerical quadrature and the solution of ordinary differential equations. *Prerequisites: MATH 23 or MATH 25*

MATH 140: Mathematical Methods for Optimization [3]
Linear programming and a selection of topics from among the following: matrix games, integer programming, semidefinite programming, nonlinear programming, convex analysis and geometry, polyhedral geometry, the calculus of variations and control theory. *Prerequisites: MATH 23 or MATH 25*

MATH 195: Upper Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

MATH 198: Upper Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

MATH 199: Upper Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

MOLECULAR SCIENCE AND ENGINEERING

Graduate Courses

MSE 212: Molecular and Solid State Quantum Chemistry [3]
Theory and practical application of molecular quantum mechanics. Schrödinger equation and matrix representations of quantum mechanics; simple exactly solvable model problems; calculation of observable properties; vibrational and electronic wave functions; approximation methods; quantum mechanics of spectroscopy. Graduate requirements include computer laboratory and a computational project. *Prerequisites: Graduate standing; CHEM 10, MATH 25, PHYS 9 or equivalent.*

MSE 213: Chemical Thermodynamics and Kinetics [3]
Statistical mechanics, thermodynamics and chemical kinetics taught from a perspective that develops the behavior of bulk matter from molecular properties. Modern experimental and theoretical methods in kinetics. Graduate requirements include a computer laboratory and a computational project. *Prerequisites: Graduate standing; CHEM 112 or MSE 212 or equivalent.*

MSE 231: Molecular Spectroscopy [3]
Time-dependent quantum mechanics; interaction of radiation with matter; electronic spectra of atoms and molecules; vibrational, rotational and Raman spectra; magnetic resonance spectroscopy; X-ray, neutron and electron diffraction. Modern experimental and theoretical methods in spectroscopy. Graduate requirements include a term paper critically evaluating a recent technique in spectroscopy.
Prerequisites: Graduate standing; CHEM 112 or MSE 212 or equivalent cross-listed with CHEM 131.

MSE 250: Material Characterization Techniques [3]
Introduction to techniques appropriate to the characterization of materials at molecular and larger scales, including spectroscopies, light scattering, thermal analysis, diffraction and microscopies. Designed to guide participants in the selection of techniques best suited to addressing particular questions about the structure, shape and arrangement of molecules. *Prerequisite: Graduate standing.*

MSE 251: Microstructures, Processing, and Properties of Materials [3]
Relationships between material properties and their molecular and higher-level organization; control of these properties by the environment to which the material is subjected during processing. *Prerequisite: Graduate standing.*

MSE 290: Current Topics in Molecular Science and Engineering [3]
Exploration of current research directions, problems and techniques in molecular and materials chemistry, physics and engineering. Course format emphasizes student-led presentation, analysis and discussion of reading assignments from the current and recent scientific literature. Topics will be determined by the instructor and will change each semester.
Prerequisite: Graduate standing in Molecular Science and Engineering group.

MSE 295: Graduate Research [1-6]
Supervised research. *Prerequisites: Graduate standing and consent of instructor.* S/U only.

MSE 298: Directed Group Study [1-6]
Group project under faculty supervision.
Prerequisites: Graduate standing and consent of instructor. S/U only.

MSE 299: Directed Independent Study [1-6]
Independent project under faculty supervision.
Prerequisites: Graduate standing and consent of instructor. S/U only.

PHILOSOPHY

Lower Division Courses

PHIL 1: Introduction to Philosophy [4]
An introduction to the main areas of philosophy using classic and contemporary sources. Consideration of central and enduring problems in philosophy, such as skepticism about the external world, the mind-body problem and the nature of morality.

PHIL 5: Logic and Critical Reasoning [4]
Introduction to formal and informal logic. Topics include argumentation analysis, fallacies, soundness vs. validity, inductive vs. deductive reasoning, truth tables, proof techniques in statement and predicate logic, and the probability calculus.

PHIL 9: Phenomenology and Existentialism [4]
Consideration of central themes in phenomenology and existentialism and their philosophical origins in 19th century philosophy. Readings from such figures as Nietzsche, Husserl, Sartre, Freud, Merleau-Ponty and Heidegger.

PHIL 90X: Freshman Seminar [1]
Examination of a topic in philosophy.

PHIL 95: Lower Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required*.

PHIL 98: Lower Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

PHIL 99: Lower Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

Upper Division Courses

PHIL 103: Philosophy of the Mind [4]
Selected topics in the philosophy of mind, including the relation between mind and body, the self, personal identity, consciousness, the unconscious, materialism, functionalism, behaviorism, determinism and free will, and nature of psychological knowledge.
Prerequisites: One course in philosophy or consent of instructor.

PHIL 110: Philosophy of Cognitive Science [4]
Consideration of philosophical and foundational issues in cognitive science, including the Turing Test, the Chinese Room argument, the nature of cognitive architecture animal cognition, connectionism vs. symbolic artificial intelligence, and the possibility of thinking machines.
Prerequisites: PHIL 1, COGS 1 or consent of instructor. Cross-listed with COGS 110.

PHIL 111: Philosophy of Neuroscience [4]
Questions at the intersection of philosophy and neuroscience. Relevance of recent research in neuroscience to epistemology and metaphysics. Specific topics include the mind-body problem, free will, consciousness, religion and the nature of the self. *Prerequisites: One course in philosophy or consent of instructor.*

PHIL 150: Topics in Phenomenology [4]
Study of the foundations of phenomenology in Husserl and its background in Bolzano, Frege, Brentano, Meinong, Kant and Descartes. Topics include phenomenological method, theory of intentionality, meaning, perception, evidence, ego, other minds, intersubjectivity and the life-world, as well as application of phenomenological methods to themes in natural science, social science, art and literature. *Prerequisites: One course in philosophy or consent of instructor. May be repeated twice for credit with different topics.*

PHIL195: Upper Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

PHIL 198: Upper Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

PHIL 199: Upper Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

PHYSICS

Lower Division Courses

PHYS 8: Introductory Physics I [4]
Introduction to classical and contemporary physics. Intended for students with preparation in calculus and algebra. Introduction to forces, kinetics, equilibria, fluids, waves and heat. Experiments and computer exercises integrated into course content. *Prerequisite: MATH 22 or equivalent*

PHYS 9: Introductory Physics II [4]
Continuation of introduction to classical and contemporary physics. Introduction to electricity, magnetism, electromagnetic waves, optics and modern physics. Experiments and computer exercises integrated into course content.
Prerequisite: PHYS 8

PHYS 10: Physics of the Cosmos [4]
Introduction to physics and astronomy for non-science and engineering majors. The scientific method, brief history of science and astronomy, matter and energy in the universe, the solar system, stars and the Milky Way, cosmology.

PHYS 90X: Freshman Seminar [1]
Examination of a topic in physics.

PHYS 95: Lower Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

PHYS 98: Lower Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

PHYS 99: Lower Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

Upper Division Courses

PHYS 105: Analytic Mechanics [3]
Newtonian mechanics; motion of particles in one, two and three dimensions; central force motion; moving coordinate systems; mechanics of continuous media; oscillations; normal modes; Lagrange's equations; Hamiltonian method; and rigid body dynamics.
Prerequisites: MATH 25 [may be taken concurrently], PHYS 9 or equivalent

PHYS 108: Modern Optics [3]
Geometrical optics, radiative transfer, partial coherence, lasers, quantum optics.
Prerequisite: PHYS 111

PHYS 110: Electromagnetics I [3]
Charges and currents; electric and magnetic fields; dielectric, conducting and magnetic media; special relativity; Maxwell's equations.
Prerequisites: MATH 25 [may be taken concurrently], PHYS 9 or equivalent

PHYS 111: Electromagnetics II [3]
Wave propagation in media, radiation and scattering; Fourier optics; interference and diffraction; ray optics and applications.
Prerequisites: PHYS 110

PHYS 112: Introduction to Statistical and Thermal Physics [3]
Basic concepts of statistical mechanics, microscopic basis of thermodynamics and applications to macroscopic systems, condensed states, phase transformations, quantum distributions, elementary kinetic theory of transport processes, fluctuation phenomena.
Prerequisites: MATH 25 [may be taken concurrently], PHYS 9 or equivalent

PHYS 129: Particle Physics [3]
Tools of particle and nuclear physics.
Properties, classification and interaction of particles including the quark-gluon constituents of hadrons. High-energy phenomena analyzed by quantum mechanical methods. Quantum number determination of resonances, hadron structure functions, introductory electro-weak theory with Dirac matrices, Standard Model (overview), grand unified theories. *Prerequisite: PHYS 136*

PHYS 136: Quantum Mechanics I [3]
Introduction to the methods of quantum mechanics. Schrödinger's equation, Heisenberg uncertainty principle, quantum numbers, harmonic oscillator. *Prerequisites: PHYS 105, PHYS 110, PHYS 111 [may be taken concurrently]*

PHYS 137: Quantum Mechanics II [3]
The hydrogen atom, scattering and applications to atomic physics, molecular physics, condensed matter physics, nuclear physics and elementary particle physics. *Prerequisites: PHYS 136*

PHYS 138: Modern Atomic Physics [3]
The description and calculation of the properties of atomic energy levels based on the central field approximation. Modern experimental methods in atomic physics and some of the important physics obtained from them. Examples include magnetic resonance, lasers and masers, ion and neutral atom traps, optical pumping and beam foil spectroscopy.
Prerequisite: PHYS 137

PHYS 141: Condensed Matter Physics [3]
Classification of solids and their bonding; electromagnetic, elastic and particle waves in periodic lattices; thermal, magnetic and dielectric properties of solids; energy bands of metals and semiconductors; superconductivity; magnetism; ferroelectricity; magnetic resonances.
Prerequisite: PHYS 137

PHYS 150: Energy Sources [3]
Fossil energy resources, nuclear energy, solar energy and other renewable energy sources (wind, hydro, geothermal.) *Prerequisite: ICP 2 or equivalent*

PHYS 151: Solar Energy [3]
The solar energy resource, modeling and simulation, thermal collectors, photovoltaics, solar energy systems, special applications (solar lasers, material processing). *Prerequisite: ICP 2 or equivalent*

PHYS 161: Astrophysics and Cosmology [3]
Elements of general relativity. Physics of pulsars, cosmic rays, black holes. The cosmological distance scale, elementary cosmological models, properties of galaxies and quasars. The mass density and age of the universe. Evidence for dark matter and concepts of the early universe and of galaxy formation. Reflections on astrophysics as a probe of the extrema of physics. *Prerequisites: MATH 22 and PHYS 9 or equivalent*

PHYS 195: Upper Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

PHYS 198: Upper Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

PHYS 199: Upper Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

POLITICAL SCIENCE

Lower Division Courses

POLI 1: Introduction to Political Science [4]
A general introduction to the American political system (the Constitution, political culture, parties, elections, and the executive, legislative and judicial branches) and to comparative politics (application of political analysis to a variety of international political systems).

POLI 90X: Freshman Seminar [1]
Examination of a topic in political science.

POLI 95: Lower Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

POLI 98: Lower Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

POLI 99: Lower Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

Upper Division Courses

POLI 190: Topics in Political Science [4]
Intensive treatment of a special topic or problem in political science. May be repeated for credit. *Prerequisite: junior or senior standing in SBCS major or consent of instructor.*

POLI 195: Upper Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

POLI 198: Upper Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

POLI 199: Upper Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

PSYCHOLOGY

Lower Division Courses

PSY 1: Introduction to Psychology [4]
Introduction to psychology as a science of behavior, including history, research methods, biological bases of behavior, cognition, personality, social behavior, psychological disorders, techniques of therapy and applied science.

PSY 10: Analysis of Psychological Data [4]
Design and analysis of psychological research including experimental design, correlational research, and descriptive and inferential statistics. Students in the psychology emphasis must take this course before taking any upper division psychology courses. *Prerequisite: PSY 1*

PSY 90X: Freshman Seminar [1]
Examination of a topic in psychology.

PSY 95: Lower Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

PSY 98: Lower Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

PSY 99: Lower Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

Upper Division Courses

PSY 105: Research Methods in Psychology [4]
Survey of common methodological approaches in psychological research. *Prerequisite: PSY 10*

PSY 110: History of Psychology. [4]
Development of the scientific study of human and animal behavior, both in specific subject areas and in general. *Prerequisite: PSY 1*

PSY 120: Physiological Psychology [4]
Relationship of brain structure and function to behavior, motivation, emotion, language and learning in humans and other animals. Review of research methods used in physiological psychology and neuroscience. *Prerequisite: PSY 1.*

PSY 121: Cognitive Psychology [4]
Introduction to human information processing, mental representation and transformation, imagery, attention, memory, language processing, concept formation, problem solving and computer simulation. *Prerequisite: PSY 1.*

PSY 130: Developmental Psychology [4]
Ontogenetic account of human behavior from conception through adolescence with focus on motor skills, mental abilities, motivation and social interaction. *Prerequisite: PSY 1.*

PSY 131: Social Psychology [4]
Behavior of the individual in social situations, surveying problems of social cognition, social interaction, group tensions, norm development, attitudes, values, public opinion, status. *Prerequisite: PSY 1.*

PSY 132: Personality [4]
Theories of Freud, Erikson and other major contemporary approaches to personality. *Prerequisite: PSY 1.*

PSY 133: Abnormal Psychology [4]
Descriptive and functional account of behavioral disorders, with primary consideration given to neurotic and psychotic behavior. *Prerequisite: PSY 1.*

PSY 140: Clinical Psychology [4]
Major theoretical approaches to clinical psychology, including psychoanalysis, existentialism, humanism, systems theory and behavioral approaches. A review of what clinical psychologists do, including assessment methods, professional roles, and approaches to treatment. *Prerequisite: PSY 1*

PSY 141: Industrial and Organizational Psychology [4]
Survey of interrelationships among psychological processes, interpersonal dynamics, and organizational forms. Topics include motivation, communication, decision making, leadership, personnel selection and training, stress and conflict, career development, organizational development and organization-community relations. *Prerequisite: PSY 1*

PSY 145: Human Sexuality [4]
Survey of existing knowledge of human sexual behavior; physiological, anatomical, psychological and cultural components; normative sexual functioning. Such topics as sexual deviation, sexual dysfunctions and types of treatment are also considered. *Prerequisite: PSY 1*

PSY 146: Alcohol, Drugs and Behavior [4]
Survey of major drugs of abuse, their mode of action and their behavioral effects, both acute and chronic; etiology and maintenance of drug abuse; review of prominent strategies for prevention, intervention and treatment. *Prerequisite: PSY 1*

PSY 150: Psychological Perspectives on Cultural, Racial and Ethnic Diversity [4]
Issues that bear upon race, ethnicity and culture, such as the cultural specificity of psychological theories, cultural influences on child development, ethnic identity, psychological issues in immigration, ethnic and racial prejudice, and assessment and interventions with culturally diverse and ethnic minority populations. *Prerequisite: PSY 1*

PSY 190: Topics in Psychology [4]
Intensive treatment of a special topic or problem of psychological interest. May be repeated for credit in different subject area. *Prerequisites: PSY 1; junior or senior standing; major in SBCS in the psychology emphasis or consent of instructor.*

PSY 191: Fieldwork in Psychology [1-3]
Supervised experience off and on campus, in community and institutional settings. *Prerequisites: PSY 1; junior or senior standing; major in SBCS in the psychology emphasis or consent of instructor.*

PSY 195: Upper Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

PSY 198: Upper Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

PSY 199: Upper Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

QUANTITATIVE AND SYSTEMS BIOLOGY

Graduate Courses

QSB 212: Advanced Signal Transduction and Growth Control [4]
Signal transduction in mammalian cells with emphasis on molecular and genetic regulation of these processes and their role in cell function. Graduate requirement includes an advanced discussion section involving research methodology and data interpretation led by the instructor. *Prerequisites: BIS 100, BIS 110 or equivalent, or consent of instructor.*

QSB 241: Advanced Genomic Biology [4]
Comprehensive introduction to the language of genes and genomes, including genotype to phenotype relationships, gene regulation of development and disease, sources of phenotypic variation and organization of genomes across the domains of life. Graduate requirements include advanced discussion section led by instructor and genome informatics project. *Prerequisites: Graduate standing and consent of instructor.*

QSB 281: Advanced Computational Biology [4]
Introduction to the principles and application of computational simulations and modeling in biology, ranging from bioinformatics to computational cell biology. Genome sequence analysis and annotation, phylogenic analysis, protein structure prediction, molecular modeling, docking and simulations of metabolic and regulatory networks. Graduate requirements include advanced discussion section led by instructor and computational biology project. *Prerequisites: Graduate standing and consent of instructor.*

QSB 290: Current Topics in Quantitative and Systems Biology [3]
Discussion, reading and study that expose students to current research directions in the field; student-led presentation, analysis and discussion of reading assignments from the scientific literature. *Prerequisite: Graduate standing.* S/U grading only.

QSB 295: Graduate Research [1-6]
Supervised research. *Prerequisites: Graduate standing and consent of instructor.* S/U grading only.

QSB 298: Directed Group Study [1-6]
Group project under faculty supervision. *Prerequisites: Graduate standing and consent of instructor.* S/U grading only.

QSB 299: Directed Independent Study [1-6]
Independent project under faculty supervision. *Prerequisites: Graduate standing and consent of instructor.* S/U grading only.

SOCIAL, BEHAVIORAL AND COGNITIVE SCIENCE

Lower Division Courses

SBCS 90X: Freshman Seminar [1]
Examination of a topic in the social, behavioral, and cognitive sciences.

SBCS 95: Lower Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

SBCS 98: Lower Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

SBCS 99: Lower Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

Upper Division Courses

SBCS 140: Psychology and Economics [4]
A review of psychological and economic research on departures from perfect rationality, self-interest and other classical assumptions of economics. The implications of these new findings for classical economics will be explored. *Prerequisites: PSY 1, ECON 1*

SBCS 145: Second Language Learning and Bilingualism [4]
Issues in second language acquisition, including processing of linguistic information by bilinguals (perception, recall, translation), structure of bilingual discourse, child bilingualism, language maintenance or shift, with particular focus on the North American context. *Prerequisite: PSY 1*

SBCS 192: Integrative Topics [4]
Special topics that integrate theory or research from more than one discipline in the social and behavioral sciences. *Prerequisites: PSY 1, ECON 1, SOC 1 or POLI 1; permission of the instructor.* May be repeated for credit with a different topic.

SBCS 195: Upper Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

SBCS 198: Upper Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

SBCS 199: Upper Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

SOCIOLOGY

Lower Division Courses

SOC 1: Introduction to Sociology [4]
The study of groups, culture, collective behavior, classes and caste, community and ecology, role, status and personality.

SOC 90X: Freshman Seminar [1]
Examination of a topic in sociology.

SOC 95: Lower Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

SOC 98: Lower Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

SOC 99: Lower Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

Upper Division Courses

SOC 190: Topics in Sociology [4]
Intensive treatment of a special topic or problem in sociology. May be repeated for credit in different subject area. *Prerequisites: SOC 1; junior or senior standing; major in SBCS or consent of instructor.*

SOC 195: Upper Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

SOC 198: Upper Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

SOC 199: Upper Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

SPANISH

Lower Division Courses

SPAN 1: Elementary Spanish I [4]
Introduction to speaking, reading, writing and understanding Spanish. Classes conducted in Spanish.

SPAN 2: Elementary Spanish II [4]
Introduction to speaking, reading, writing and understanding Spanish. Classes conducted in Spanish. *Prerequisites: SPAN 1 or appropriate score on Spanish placement exam.*

SPAN 3: Intermediate Spanish I [4]
Review of Spanish grammar with emphasis on building speaking and writing skills and on readings to build cultural understanding. Classes conducted in Spanish. *Prerequisites: SPAN 2 or appropriate score on Spanish placement exam.*

SPAN 4: Intermediate Spanish II [4]
Review of Spanish grammar with emphasis on building speaking and writing skills and on readings to build cultural understanding. Classes conducted in Spanish. *Prerequisites: SPAN 3 or appropriate score on Spanish placement exam.*

SPAN 10: Spanish for Heritage Speakers I [4]
For native speakers with limited experience in grammar and composition. Emphasis on formal language study and writing. Classes conducted in Spanish. *Prerequisites: native speaker proficiency, appropriate score on Spanish placement exam.*

SPAN 11: Spanish for Heritage Speakers II [4]
For native speakers with limited experience in grammar and composition. Emphasis on formal language study and writing. Classes conducted in Spanish. *Prerequisites: SPAN 10 or appropriate score on Spanish placement exam.*

SPAN 90X: Freshman Seminar [1]
Examination of a topic in Spanish.

SPAN 95: Lower Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

SPAN 98: Lower Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

SPAN 99: Lower Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

Upper Division Courses

SPAN 100: Advanced Spanish I [4]
Emphasis on composition and conversation to expand oral and written proficiency. Introduction to literary and other cultural texts. Focus on conversation. Classes conducted in Spanish. *Prerequisites: SPAN 4 or equivalent or appropriate score on Spanish placement exam.*

SPAN 101: Advanced Spanish II [4]
Emphasis on composition and conversation to expand oral and written proficiency. Introduction to literary and other cultural texts. Focus on composition. Classes conducted in Spanish. *Prerequisites: SPAN 100 or equivalent or appropriate score on Spanish placement exam.*

SPAN 195: Upper Division Undergraduate Research [1-5]
Supervised research. *Permission of instructor required.*

SPAN 198: Upper Division Directed Group Study [1-5]
Permission of instructor required. P/NP grading only.

SPAN 199: Upper Division Individual Study [1-5]
Permission of instructor required. P/NP grading only.

WORLD CULTURES AND HISTORY

Upper Division Courses

WCH 100: Topics in Area Studies [4]
In-depth study of the history and cultural, political and economic systems of a region. *Prerequisites: Completion of lower division requirements for either World Cultures and History or Social, Behavioral and Cognitive Sciences, or permission of instructor.* May be repeated for credit up to three times with different topics.

WCH 190: World Cultures and History Proseminar: Research [3]
Capstone course for majors. Students conduct research under faculty supervision to culminate in a senior thesis. Required of all World Cultures and History majors. *Prerequisite: senior standing in WCH major.*

WCH 191: World Cultures and History Proseminar: Senior Thesis [3]
Capstone course for majors. Completion of a senior thesis; extensive writing required. Required of all World Cultures and History majors. *Prerequisites: WCH 190 and senior standing in WCH major.*

WCH 192: Public Research Project in World Cultures and History [1-3]
Directed individual or group project designed around need of an external agency for research and public communication on an issue of vital public interest. End product may be in the form of a written report, interpretive text for the public, Web site, et al. Extensive writing will be required. Required of all World Cultures and History majors. Students may petition to complete this requirement through alternative activities, subject to review and approval by the dean.

WCH 198: Upper Division Directed Group Study [2-4]
Directed group study and research under the direction of WCH faculty. Open to students who have completed at least 12 upper division units in WCH. *Prerequisites: Permission of instructor and school required.* May be repeated with different topics up to three times.

WCH 199: Upper Division Individual Study [1-4]
Directed individual study and research, under the direction of WCH faculty, in area not normally covered in the WCH curriculum. Open to students who have completed at least 12 upper division units in WCH. *Permission of instructor and School required.*

WRITING

Lower Division Courses

WRI 1: College Reading and Composition [4]
Development of college-level skills in effective use of language, analysis and argumentation, organization, and strategies for creation, revision and editing.

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Greg Kramp
Director – Human Resources

Kent Kuo
Registrar and Associate CIO for Student Services

Dorothy Labbok
Controller

Jan Mendenhall
Director – Development and University Relations

Karen Merritt
Director – Academic Planning

Brandy Ramos Nikaido
Director (interim) – UC Merced Centers

Ric Notini
Manager – Environmental and Permitting

Valery Oehler
Director – Residence and Student Life

Diana M. Ralls
Director – Financial Aid and Scholarships

Encarnación Ruíz
Director – Admissions and Relations with Schools & Colleges

Pauline Sahakian
Director – UC Merced Writing Project

Larry Salinas
Director – Governmental Relations

Nancy Tanaka
Executive Director – Academic Affairs

Thomas Welton
Director – Dining and Retail Services

John O. White
Director – Capital Planning

FOUNDING FACULTY

Faculty recruitment is well under way at UC Merced, where many of the world's most outstanding scholars are already hard at work laying an academic foundation of excellence. By opening day, UC Merced will have 60 of these highly respected educators and cutting-edge researchers on board. As members of the founding faculty, these professors are charged with responsibilities that extend beyond teaching and research to include recruitment of additional faculty members and planning of academic programs. The following list includes founding faculty members whose appointments were finalized prior to the publication of this catalog.

KEITH E. ALLEY,
Vice Chancellor of Research/Dean of Graduate Studies and Professor, School of Natural Sciences
B.S., D.D.S., M.S., Ph.D., University of Illinois
Developmental neuroscience focusing on cellular mechanisms that assure scaling of neuronal populations with the targets they innervate, neuromuscular maturation and plasticity

DAVID B. ASHLEY,
Executive Vice Chancellor/Provost, Professor and holder of the Shaffer-George Chair in Engineering
B.S., M.S., Massachusetts Institution of Technology; M.S., Ph.D., Stanford University
Development and implementation of risk analysis techniques appropriate for project management and construction-engineering decisions. Determination of factors leading to construction project success, predictive models of project performance, assessment of project change consequential effects, project scope modeling and definition, conceptual estimating, innovative project financing approaches

ROGER C. BALES,
Professor, School of Engineering
B.S., Purdue University; M.S., University of California, Berkeley; M.S., Ph.D., California Institute of Technology
Hydrology, snow and ice, hydrochemistry, climate impacts on water resources, climate changes over polar ice sheets

MICHAEL E. COLVIN,
Professor, School of Natural Sciences
S.B. (2), Massachusetts Institute of Technology; Ph.D., University of California, Berkeley
Computational and systems biology, biotechnology, computational chemistry

MARTHA H. CONKLIN,
Professor, School of Engineering
B.A., Mount Holyoke College; M.S., Ph.D., California Institute of Technology
Biogeochemistry, metal cycling, surface water/shallow groundwater interactions, organic chemical distribution in soil and groundwater; chemical processes in snow, K-12 environmental education

HENRY JAY FORMAN,
Professor, School of Natural Sciences
B.A., Queens College of the City; Ph.D., Columbia University
Signal transduction, antioxidants and redox signaling, lung disease

JESSICA LEE GREEN,
Assistant Professor, School of Natural Sciences
B.S., University of California, Los Angeles; M.S., Ph.D., University of California, Berkeley
Community ecology, scaling and spatial phenomena in ecology, theoretical ecology, conservation biology, microbial diversity

KENJI HAKUTA,
Dean, School of Social Sciences, Humanities and Arts, and Professor, School of Social Sciences, Humanities and Arts
B.A., Ph.D., Harvard University
Psychology of bilingualism and second language learning, child development, psycholinguistics, education policy, equal educational access for minority students

THOMAS C. HARMON,
Associate Professor, School of Engineering
B.S., The John Hopkins University; M.S., Ph.D., Stanford University
Contaminant transport in aquatic systems, soil and groundwater remediation, development and use of environmental sensors

GREGG HERKEN,
Professor, School of Social Sciences, Humanities and Arts
B.A., University of California, Santa Cruz; Ph.D., Princeton University
History, American diplomatic history, nuclear history, history of the Cold War

SHAWN E. KANTOR,
Professor, School of Social Sciences, Humanities and Arts
B.A., University of Rochester; M.S., Ph.D., California Institute of Technology
Political economy, law and economics, U.S. economic history, economic development, public economics

ANNE MYERS KELLEY,
Professor, School of Natural Sciences
B.S., University of California, Riverside; Ph.D., University of California, Berkeley
Resonance Raman spectroscopy and microscopy, molecular photochemistry and photophysics, organic materials for nonlinear optics, modeling of spectroscopic data

DAVID F. KELLEY,
Professor, School of Natural Sciences
B.S., Whitworth College; Ph.D., University of Washington, Seattle
Spectroscopy and dynamics of semiconductor nanoparticles, ultrafast spectroscopy of excited states and reactive intermediates, solvation effects on proton and electron transfer reactions, vibrational dynamics of gas phase molecules

ARNOLD D. KIM,
Assistant Professor, School of Natural Sciences
B.S., Northwestern University; M.S., Ph.D., University of Washington
Wave propagation in random media, light propagation in tissues, wireless communications, scientific computing, asymptotic and perturbation methods

VALERIE J. LEPPERT,
Assistant Professor, School of Engineering
B.A. (2), California State University, Sonoma; Ph.D., Northwestern University
Electron microscopy, nanomaterials for application in technology and the environment

MANUEL M. MARTIN-RODRIGUEZ,
Professor, School of Social Sciences, Humanities and Arts
Licenciatura, Universidad de Sevilla (Spain), M.A., University of Houston, Ph.D., University of California, Santa Barbara
Cross-disciplinary perspectives from cultural, ethnic and film studies, including identity formation, globalization and transnationalism, border studies, textual recovery, intra-cultural difference, the Hispanic context of Chicano/Chicana literature, popular culture and the mass media

TEENIE MATLOCK,
Assistant Professor, School of Social Sciences, Humanities and Arts
B.A., M.A., California State University, Fresno; Ph.D., University of California, Santa Cruz
Cognitive science, psycholinguistics, spatial cognition, metaphor, semantics, gesture

MATTHEW MEYER,
Assistant Professor, School of Natural Sciences
B.S., University of Kansas, M.S., University of Wisconsin, Ph.D., Texas A&M University
Research on using temperature-dependent isotope effects as a probe for enzyme dynamics in soybean lipoxygenase-1

KEVIN A. MITCHELL,
Assistant Professor, School of Natural Sciences
B.S., Carnegie Mellon University; M.A., Ph.D., University of California, Berkeley
Nonlinear dynamics and classical/quantum chaos with applications to atomic and molecular physics; semi-classical phase-space techniques; topological and geometric methods for low-dimensional systems; the geometric/Berry phase and gauge theory

RUTH MOSTERN,
Assistant Professor, School of Social Sciences, Humanities and Arts
B.S., Georgetown University, M.A., Ph.D., University of California, Berkeley
Geography and state power in Middle Period China; georeferencing and digital mapping of historical and cultural phenomena

PEGGY A. O'DAY,
Associate Professor, School of Natural Sciences
B.S., University of California, Davis; M.S., Cornell University; Ph.D., Stanford University
Aqueous, surface and environmental geochemistry; biogeochemistry and transport of inorganic contaminants in natural systems; geochemical applications of spectroscopy and microscopy; chemistry in hydrothermal systems

DAVID M. OJCIUS,
Professor, School of Natural Sciences
B.A., Ph.D., University of California, Berkeley
Infection by intracellular pathogens, particularly Chlamydia trachomatis; interaction between infected cells and the immune system; mechanisms of cell death; innate immunity

RUDY MARTIN ORTIZ,
Assistant Professor, School of Natural Sciences
B.A., M.Sc., Texas A & M University; Ph.D., University of California, Santa Cruz
Endocrine physiology; physiological adaptations in water and electrolyte homeostasis and fat metabolism during extreme conditions such as prolonged fasting and altered gravitational load

MARIA G. PALLAVICINI,
Dean, School of Natural Sciences, and Professor, School of Natural Sciences
B.S., University of California, Berkeley; Ph.D., University of Utah
Stem cell biology; genomic and proteomic abnormalities in cancer, particularly leukemia and breast cancer; relationships between genetic damage induced by chemical exposure and cancer development

DUNYA RAMICOVA,
Professor, School of Social Sciences, Humanities and Arts
B.F.A., Goodman School of Drama, M.F.A., Yale University School of Drama
Costume design for theatre, opera, ballet, dance, film and television; history of costume design; history of clothing and fashion; drawing; watercolor painting

BELINDA I. REYES,
Assistant Professor, School of Social Sciences, Humanities and Arts
B.S., University of Illinois, Urbana-Champaign; Ph.D., University of California, Berkeley
Demography, immigration, immigration policy, immigrant adaptation, race and ethnicity, urban economics, and social and economic progress of race/ethnic minorities

CRISTIÁN H. RICCI,
Assistant Professor, School of Social Sciences, Humanities and Arts
B.A., California State University, Los Angeles; M.A., Ph.D., University of California, Santa Barbara
19th-and 20th-century Spanish literature, 19th-and 20th-century Spanish-American literature, Portuguese literature, Golden Age and Colonial literature.

WILLIAM R. SHADISH,
Professor, School of Social Sciences, Humanities and Arts
B.A., Santa Clara University; M.S., Ph.D., Purdue University
Clinical psychology, experimental and quasi-experimental design, meta-analysis, program evaluation, psychology of science

CAROL TOMLINSON-KEASEY,
Chancellor and Professor, School of Social Sciences, Humanities and Arts
B.A., Pennsylvania State University; M.S., Iowa State University; Ph.D., University of California, Berkeley
Developmental psychology, development of cognitive potential

SAMUEL J. TRAINA,
Director, Sierra Nevada Research Institute, and Professor, School of Natural Sciences
B.S., Ph.D., University of California, Berkeley
Surface, colloidal and complexation chemistry in soils, sediments and natural waters; remediation of contaminated soils and sediments

CHRISTOPHER VINEY,
Professor, School of Engineering
B.A., Ph.D., Cambridge University
Biomolecular materials (design of materials synthesis, assembly, processing and physical optimization strategies based on examples from nature), physical science and engineering of polymers and liquid crystals (structure-property-processing relationships)

ROLAND WINSTON,
Professor, Schools of Engineering and Natural Sciences
B.S., M.S., Ph.D., University of Chicago
Solar power and renewable energy, elementary particle physics, non-imaging optics

J. ARTHUR WOODWARD,
Professor, School of Social Sciences, Humanities and Arts
B.S., Wake Forest University;
M.A., Ph.D., Texas Christian University
Experimental design, statistical genetics, applied statistics and psychometrics

JEFF R. WRIGHT,
Dean, School of Engineering, and Professor, School of Engineering
B.A., B.S.E., M.S.E., University of Washington;
Ph.D., The John Hopkins University
Water resources and environmental management; design and implementation of computer-based spatial decision support systems for civil infrastructure, transportation, water resources; land resources engineering and management

JEFFREY YOSHIMI,
Assistant Professor, School of Social Sciences, Humanities and Arts
B.A., University of California Berkeley;
M.A., Ph.D., University of California, Irvine
Philosophy of mind, philosophy of cognitive science, phenomenology (especially Husserl) and neural networks

ADJUNCT PROFESSORS AND PROFESSIONAL RESEARCHERS

JINAH CHOI,
Assistant Researcher, School of Natural Sciences
B.S., University of California, Los Angeles;
Ph.D., University of Southern California
Hepatitis C virus (HCV) and the mechanism of synthesis and functions of novel HCV proteins that are produced by programmed translational frameshifting, as well as how HCV replication might be regulated by endogenous and exogenous agents including ribavirin, cytokines, alcohol, and reactive oxygen species

PHILIP B. DUFFY,
Associate Adjunct Professor, School of Natural Sciences
A.B., Harvard University;
M.S., Ph.D., Stanford University
Global climate change; climate modeling; detection of anthropogenic climate change; societal impacts of climate change

ALEKSANDR NOY,
Associate Adjunct Professor, School of Natural Sciences
B.A., Moscow State University,
M.S., Ph.D., Harvard University
Nanosynthesis and single-molecule imaging and measurements

WILLEM J.M. Van BREUGEL,
Adjunct Professor, School of Natural Sciences
Ingeniur degree, Eindhoven University;
Doctoraal degree, Ph.D., Leiden University
Distant massive galaxies, the effects of their central super-massive black holes on the galaxy-formation process, and the formation and evolution of the largest structures known in the Universe: clusters of galaxies

ANTHONY W.H. Van BUUREN,
Associate Adjunct Professor, School of Natural Sciences
B.Sc., Simon Fraser University,
M.Sc., Ph.D., University of British Columbia
Synthesis and electronic structure of nanomaterials

ENDOWED CHAIRS

Endowed chairs and professorships are critical to the successful development of the University of California, Merced. Hiring the very finest scholars ensures that UC Merced will continue the University of California's tradition of excellence in teaching and research, and endowments are pivotal in attracting educators and researchers of the highest quality.

At the time of publication, UC Merced is fortunate to have received commitments for 15 chairs in disciplines ranging from the sciences to the arts.

THE ENDOWED CHAIRS AT UC MERCED

E.W. AND DOROTHY BIZZINI
Chair in Biological Sciences

COATS FAMILY
Chair in the Arts

TONY COELHO
Chair in Public Policy

COUNTY BANK
Chair in Economics

EMMETT, BERNICE AND CARLSTON CUNNINGHAM
Chair in Cognitive Development

TED AND JAN FALASCO
Chair in Earth Sciences and Geology

RENO FERRERO FAMILY
Chair in Electrical Engineering

VINCENT HILLYER
Chair in Early Literature

JOE AND MARGARET JOSEPHINE
Chair in Biological Sciences

ART AND FAFA KAMANGAR
Chair in Biological Sciences

THE MCCLATCHY COMPANY
Chair in Communications

JOHN AND LUCIA MYERS
Chair for the Sierra Nevada Research Institute

PRESIDENTIAL CHAIR

KEITH AND ELINOR SHAFFER AND BETTYLOU GEORGE
Chair in Engineering

THONDAPU FAMILY
Chair in Bioengineering

ACCREDITATION

The University of California, Merced is in the eligibility stage seeking regional accreditation by the Accrediting Commission for Senior Colleges and Universites of the Western Association of Schools and Colleges, 985 Atlantic Avenue, Suite 100, Alameda, CA 94501.

UNIVERSITY POLICY ON NONDISCRIMINATION, SEXUAL HARASSMENT, STUDENT RECORDS AND PRIVACY

Nondiscrimination: The University of California, in accordance with applicable federal and state laws and University policy, does not discriminate on the basis of race, color, national origin, religion, sex, disability, age, medical condition (cancer-related), ancestry, marital status, citizenship, sexual orientation, or status as a Vietnam-era veteran or special disabled veteran. The University also prohibits sexual harassment. This nondiscrimination policy covers admission, access and treatment in University programs and activities.

Inquiries regarding the University's student-related nondiscrimination policies may be directed to Student Judicial Affairs.

Sexual Harassment: Sexual harassment of all persons who participate in University programs and activities is prohibited by law and by University regulation (Policy 380-12). Sexual harassment is unacceptable and will not be condoned on the UC Merced campus.

Disclosures from Student Records: In accordance with the Federal Family Educational Rights and Privacy Act of 1974 and campus procedures implementing the University of California Policies Applying to the Disclosure of Information from Student Records, students at the UC Merced campus of the University have the following rights:

- The right to inspect and review their own student records within 45 days of the date the University receives a written request for access.
- Students should submit their requests in writing to the University registrar, dean, or other appropriate campus official for the office having custody of the requested records. The request must identify the record(s) they wish to inspect and review. The campus official will make arrangements for access and notify the student of the time and place where the records may be inspected. If the records are not maintained by the official receiving the request, that official shall advise the student of the correct official and redirect the request.
- The right to request the amendment of their own student records if a student believes the records are inaccurate or misleading.

  Students should submit a written request to amend a record that they believe is inaccurate or misleading to the campus official responsible for the record, clearly identifying the portion of the record they want changed, and specifying why it is believed to be inaccurate or misleading. If the University determines that the record should not be amended as requested by the student, the University will notify the student of the decision and advise him/her of the right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to the student when notified of the right to a hearing.
- The right to consent to disclosures of personally identifiable information contained in their student records, except to the extent that law and policy authorize disclosure without consent.

  One exception permitting disclosure without consent is disclosure to campus officials having a legitimate educational interest in the records. A campus official is any individual designated by the campus to perform an assigned function on behalf of the campus. Legitimate educational interest means a demonstrated need to know by officials who act in a student's educational interest. A campus official has a "legitimate educational interest" in a record if the official is performing a task (1) specified in his or her job description; (2) specifically related to the official's participation in the student's education; (3) specifically related to the discipline of a student; or (4) specifically related to providing a service or benefit associated with a student or student's family, such as health care, counseling, job placement or financial aid.

  Another exception permitting disclosure without consent is Public Information, defined as information contained in a student record that would not generally be considered harmful or an invasion of privacy if disclosed, unless the student has notified the Office of the Registrar that such information is to be treated as confidential with respect to him/herself. UC Merced has designated as public the following categories of information regarding students: the student's name, address(es) and telephone number(s) (local and/or permanent addresses, including e-mail addresses); major field of study; dates of attendance; number of course units in which enrolled; degrees and honors received; most recent previous educational institution attended; participation in officially recognized activities, including intercollegiate athletics; and the name, weight and height of participants on intercollegiate athletic teams.

  Parental/guardian information is confidential. It is used by the University only for notification of events, ceremonies, awards, and development or in case of an emergency involving the student.
- The right to file a complaint with the U.S. Department of Education concerning alleged failures by UC Merced to comply with the requirements of the Federal Educational Rights and Privacy Act, addressed to the Family Policy Compliance Office, U.S. Department of Education, 400 Maryland Avenue, SW., Washington, D.C. 20202-4605

Questions about these rights should be referred to the Registrar at UC Merced.

Students may request in writing by the tenth day of instruction that their addresses, including e-mail address, and telephone listings or all personally identifiable information from their records not be regarded as public information. Students who desire to withhold their addresses and telephone listings may so indicate on the Student Address Form included with registration materials. If a student does not indicate that he or she wishes to keep his or her address and telephone number confidential, then the information may be released as a matter of public record and will be included in a campus student directory. The decision to withhold address and phone number or all information can be reversed by filing a form with the Office of the Registrar.

Students who desire to withhold all information from the category of public information must file a form in the Office of the Registrar. Students availing themselves of this right should understand what the consequences of

such action might be. For example, if all information is designated non-public information, the campus cannot make public any Honors received by the student and cannot include the student's name and degree earned in the campus commencement program without the student's written consent. Similarly, if all information is designated non-public information, the student's status as a student or any degrees earned cannot be verified for potential employers without the student's written consent.

Privacy Act: A student's Social Security number is used to verify personal identity in the UC Merced Student Records System. In accordance with the Federal Privacy Act of 1974, students are hereby notified that disclosure of their social security number is mandatory. This recordkeeping system was established prior to January 1, 1975 pursuant to the authority of The Regents of the University of California under Art. IX, Sec. 9, of the California Constitution.

REGISTER TO VOTE

The 1998 reauthorization of the federal Higher Education Act includes a requirement that higher education institutions make a "good faith effort" to make mail voter registration forms available to all enrolled students. This federal legislation supports the campus' long-standing goals of engendering leadership and citizenship among the student body. UC Merced provides students with several options for registering to vote. Voter registration forms are available at the Office of the Registrar.

CALIFORNIA RESIDENCY AND NONRESIDENT TUITION FEE

Tuition Fee for Nonresident Students

If you have not been living in California with intent to make it your permanent home for more than one year immediately before the residence determination date for each semester in which you propose to attend the University, you must pay a nonresident tuition fee in addition to all other fees. The residence determination date is the day instruction begins at the University of California, Merced.

Law Governing Residence

The rules regarding legal residence for tuition purposes at the University of California are governed by the California Education Code and implemented by the Standing Orders of The Regents of the University of California. Under these rules, adult citizens or certain classes of aliens can establish residence for tuition purposes. There are also particular rules that apply to the residence classification of minors (see below).

Who is a California Resident?

If you are an adult who is not an alien present in the U.S. in a nonimmigrant status which precludes you from establishing domicile in the U.S. (e.g., a B, F, H2, H3, or J visa) and you want to be classified as a resident for tuition purposes, you must have established your continuous presence in California more than one year immediately preceding the residence determination date for the semester during which you propose to attend the University, and you must have given up any previous residence. You must also present objective evidence that you intend to make California your permanent home. Evidence of intent must be dated one year before the term for which you seek resident classification. If these steps are delayed, the one-year durational period will be extended until you have demonstrated both continuous presence and intent for one full year. Physical presence within the state solely for educational purposes does not constitute the establishment of California residence under state law, regardless of the length of your stay. Your residence cannot be derived from your spouse nor, since you are an adult, from your parents.

Establishing Intent to Become a California Resident

Indications of your intent to make California your permanent residence can include registering to vote and voting in California elections; designating California as your permanent address on all school and employment records, including military records if you are in the military service; obtaining a California driver's license or, if you never had a driver's license from any state, a California Identification Card; obtaining California vehicle registration; paying California income taxes as a resident, including taxes on income earned outside California from the date you establish residence; establishing a California residence in which you keep your permanent belongings; licensing for professional practice in California; and the absence of these indications in other states during any period for which you claim California residence. Documentary evidence is required. All relevant indications will be considered in determining your classification. Your intent will be questioned if you return to your prior state of residence when the University is not in session.

Financial Independence Requirement

Effective Fall 1993, if your parents are not residents of California or if you were not previously enrolled in a regular session at any University of California campus, you will be required to be financially independent in order to be a resident for tuition purposes. If you are an adult student and your parents are not California residents, you must demonstrate financial independence, along with physical presence and intent, when seeking resident classification for tuition purposes. You are considered "financially independent" if one or more of the following applies: (1) you are at least 24 years of age by December 31 of the year you request residence classification; (2) you are a veteran of the U.S. Armed Forces; (3) you are a ward of the court or both of your parents are deceased; (4) you have legal dependents other than a spouse; (5) you are married or you are a graduate or professional student and you were not/will not be claimed as an income tax deduction by your parents or any other individual for the tax year preceding the term for which you are requesting resident classification; or (6) you are a single undergraduate student who was not claimed as an income tax deduction by your parents or any other individual for the two tax years immediately preceding the term for which you are requesting resident classification, and you can demonstrate self-sufficiency for those years and the current year. Note: Graduate students who are graduate student instructors, teaching or research assistants, or teaching associates employed at 49% time or more (or awarded the equivalent in University-administered funds, e.g., grants, stipends, fellowships) in the term for which resident classification is sought are exempt from the financial independence requirement.

General Rules Applying to Minors

If you are an unmarried minor (under age 18), the residence of the parent with whom you live is considered your residence. If you have a parent living, you cannot change your residence by your own act, by the appointment of a legal guardian, or by the relinquishment of a parent's right of control. If you live with neither parent, your residence is that of the parent with whom you last lived. Unless you are a minor alien present in the U.S. under the terms of a nonimmigrant status that precludes you from establishing domicile in the U.S., you may establish your own residence when both your parents are deceased and a legal guardian has not been appointed. If you derive California residence from a parent, that residence must satisfy the one-year durational requirement.

Specific Rules Applying to Minors

1. Divorced/Separated Parents

If you want to derive California resident status from a California resident parent, you must move to California to live with that parent before your 18th birthday and establish the requisite intent and remain in California until school begins. Otherwise, you will be treated like any other adult coming to California to establish your legal residence.

2. Parent of Minor Moves from California

If you are a minor U.S. citizen or eligible alien whose parent was a resident of California but who left the state within one year of the residence determination date, you are entitled to resident classification if you remain in California after your parent departs, enroll in a California public postsecondary institution within one year of your parent's departure, and, once enrolled, attend continuously until you turn 18.

3. Self-Support

If you are a U.S. citizen or eligible alien and are either a minor or age 18 and can prove that you lived in California for the entire year immediately before the residence determination date, that you have been self-supporting for that year, and that you intend to make California your permanent home, you may be eligible for resident status.

4. Two-Year Care and Control

If you are a U.S. citizen or eligible alien and you lived continuously for at least two years before the residence determination date with an adult who was not your parent but was responsible for your care and control, and who, during the one year immediately preceding the residence determination date was a resident of California, you are entitled to resident status. This exception continues until you become 18 and have resided in the state long enough to become a resident, as long as you continuously attend an educational institution.

Exemptions from Nonresident Tuition (Proof of Eligibility is Required)

1. Member of the Military

If you are a member of the U.S. military stationed in California on active duty, unless you are assigned for educational purposes to a state-supported institution of higher education, you may be exempt from the nonresident tuition fee until you have lived in California long enough to become a resident. You must provide the residence deputy on campus with a statement from your commanding or personnel officer stating that your assignment to active duty in California is not for educational purposes. The letter must include the dates of your assignment to the state. (See also: Military Waiver of Nonresident Tuition.)

2. Spouse or Other Dependents of Military Personnel

You are exempt from payment of the nonresident tuition fee if you are a spouse or a natural or adopted child or stepchild who is a dependent of a member of the U.S. military stationed in California on active duty. The exemption is available until you have lived in California long enough to become a resident. You must petition for a waiver of the nonresident tuition fee each semester you are eligible. If you are enrolled in an educational institution and the member of the military is transferred on military orders to a place outside California where he or she continues to serve in the armed forces, or the member of the military retires from active duty immediately after having served in California on active duty, you may retain this exemption under the conditions listed above. (See also: Military Waiver of Nonresident Tuition.)

3. Child or Spouse of Faculty Member

To the extent funds are available, if you are an unmarried dependent child under age 21 or the spouse of a member of the University faculty who is a member of the Academic Senate, you may be eligible for a waiver of the nonresident tuition fee. Confirmation of the faculty member's membership on the Academic Senate must be secured each semester before this waiver is granted.

4. Child or Spouse of University Employee

If you are an unmarried dependent child or the spouse of a full-time University employee whose assignment is outside California (e.g., Los Alamos National Laboratory or the University of California Washington, DC, Center), you may be eligible for a waiver of the nonresident tuition. The employment status of your parent or spouse with the University must be ascertained each semester.

5. Child of Deceased Public Law Enforcement or Fire Suppression Employee

If you are the child of a deceased public law enforcement or fire suppression employee who was a California resident and was killed in the course of fire suppression or law enforcement duties, you may be entitled to a waiver of the nonresident tuition fee.

6. Dependent Child of a California Resident Parent

If you have not been an adult resident of California for more than one year and you are a dependent child of a California resident parent who has been a resident for more than one year immediately before the residence determination date, you may be entitled to a waiver of the nonresident tuition fee until you have resided in California for the minimum time necessary to become a resident as long as you maintain continuous attendance at an educational institution.

7. Native American Graduates of a BIA High School

If you are a graduate of a California high school operated by the Federal Bureau of Indian Affairs, you may be eligible for an exemption from the nonresident fee.

8. Employee of a California Public School District

Any person holding a valid credential authorizing service in the public schools of the state of California who is employed by a school district in a full-time certificate position may be eligible for a nonresident tuition waiver.

9. Student Athlete in Training at U.S. Olympic Training Center, Chula Vista

Any amateur student athlete in training at the United States Olympic Training Center in Chula Vista may be eligible for a waiver of the nonresident tuition until he or she has resided in the state the minimum time necessary to become a resident.

10. Graduate of a California High School

You may be entitled to an exemption from nonresident tuition if you attended high school in California for three (3) or more years and graduated from a California high school (or attained the equivalent). You are not eligible for this exemption if you are a nonimmigrant alien.

Temporary Absences
If you are a nonresident student who is in the process of establishing California residency for tuition purposes and you leave California during nonacademic periods (for example, to return to your former or parent's home state), your presence in California will be presumed to be solely for educational purposes, and only convincing evidence to the contrary will rebut this presumption. Students who are in the state solely for educational purposes will NOT be classified as residents for tuition purposes, regardless of the length of stay.

If you are a student who has been classified as a resident for tuition purposes and you leave the state temporarily, your absence could result in the loss of your California residence. Again, only strong evidence will rebut the presumption that you are/were in California solely for educational purposes. The burden of proof will be on you to verify that you did nothing inconsistent with your claim of a continuing California residence during your entire absence.

If you are a minor student, your residence is determined by the residence of the parent(s) with whom you live or last lived. You would not lose that residence unless you perform acts inconsistent with a claim of permanent California residence.

Some steps that you (or your parent(s) if you are a minor student) should take to retain resident status for tuition purposes are:

Satisfy California resident income tax obligations. It should be noted that individuals claiming permanent California residence are liable for payment of income taxes on their TOTAL income, including income earned outside the state (abroad or in another state).

Continue to use a California permanent address ON ALL RECORDS (educational, employment, military, etc.).

Attend an out-of-state public institution as a non-resident for the entire period of enrollment there.

Retain your California voter's registration and vote by absentee ballot.

Maintain a California driver's license and vehicle registration. If it is necessary to change your license or registration while temporarily residing in another state, the license MUST be changed back to California within 10 days of the date of return to the state and the vehicle registration must be changed within 20 days of the date of return.

Return to California during your vacation periods.

Petitioning for Resident Classification (for continuing students)
If you are a continuing student who is classified as a nonresident for tuition purposes and you believe you will be eligible for resident status, you must file a petition with the University Registrar. The deadline to file the petition is the last working day before the first day of instruction for the term for which you are seeking resident status.

Time Limitation on Providing Documentation
If additional documentation is required for a residence classification but is not readily accessible, you will be allowed until the end of the applicable semester to provide it.

Incorrect Classification
If you were incorrectly classified as a resident, you are subject to reclassification and to payment of all nonresident tuition fees not paid. If you concealed information or furnished false information and were classified incorrectly as a result, you are also subject to University discipline. Resident students who become nonresidents must immediately notify the campus residence deputy.

Inquiries and Appeals
Inquiries regarding residence requirements, determination, and/or recognized exceptions should be directed to the University Registrar at UC Merced or the Legal Analyst-Residence Matters, 1111 Franklin Street, 8th Floor, Oakland, CA 94607-5200. No other University personnel are authorized to supply information relative to residence requirements for tuition purposes.

Any student, following a final decision on residence classification, may appeal in writing to the legal analyst within 45 days of notification of the residence deputy's final decision.

Privacy Notice
All information requested on the Statement of Legal Residence form is required by the authority of Standing Order 110.2 (a)-(d) of the Regents of the University of California for determining whether you are a legal resident for tuition purposes. Registration cannot be processed without this information. The Office of the University Registrar maintains the requested information. You have the right to inspect university records containing the residence information requested on the form.

DISABILITY SERVICES

UC Merced's Office of Disability Services provides services to students with disabilities who are eligible for reasonable accomodations under Section 504 of the Rehabilitation Act, the Americans with Disabilities Act or state law. For further information on the Office of Disability Services, please contact (209) 724-4482.

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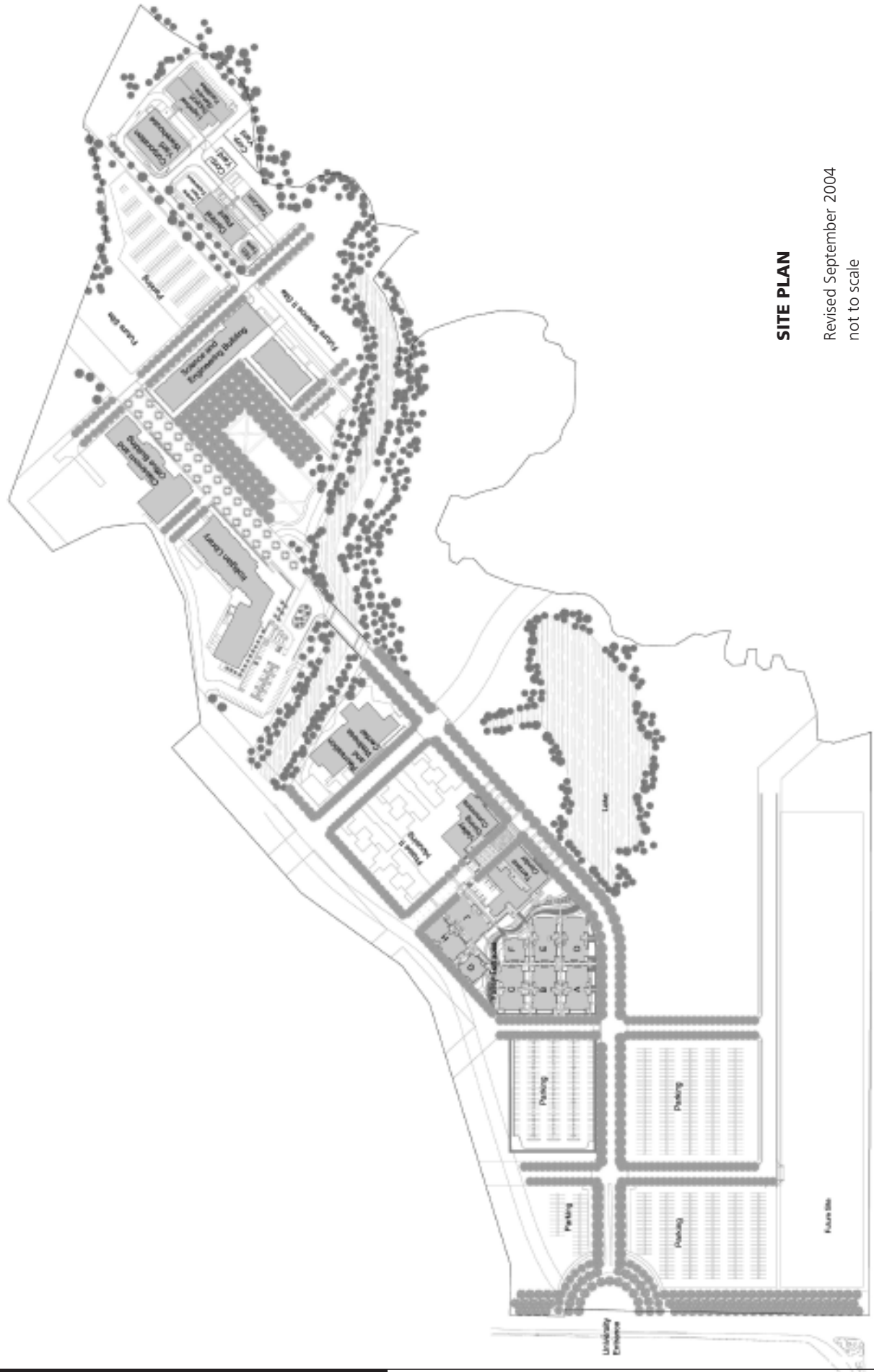

SITE PLAN

Revised September 2004
not to scale

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