About the College of Science

The College of Science is one of the newest academic units on campus, having been established in January 2004. The college’s mission is to unite disciplines in the pure and applied physical sciences, earth sciences, life sciences and mathematics into a solid framework of education and research. From its inception, the college has made students its top priority, with close to 1,000 undergraduate majors and 400 graduate students currently enrolled.

The College of Science puts a high value on personal attention paid to its students, and emphasizes student-centered research experiences involving significant collaboration with professors. The college is committed to ensuring student success and equipping them with the necessary technical and critical thinking skills to be marketable for the workplace, and to be competitive for graduate schools. The college’s reach goes well beyond its majors and graduate students, with about 12,000 University of Nevada undergraduates who are annually enrolled in course offerings. Science has more than 40 different degree programs and options for undergraduate and graduate students.

Academic programs

Biology
Chemistry
Mathematics and Statistics
Atmospheric Sciences
Physics

Mackay School of Earth Sciences and Engineering (MSESE)

MSESE programs

Geography
Geology
Geophysics
Hydrogeology
Mining Engineering
Geological Engineering

The College of Science is a place where students can fully cultivate their scientific curiosities. Our college, which is the newest academic unit on the campus, plays an integral role within the University of Nevada, in our local community, and in our state when it comes to scientific and technological education, research, and outreach.

We emphasize student-centered research experiences involving significant collaborations with professors because we place a high value on personal attention that students receive here – whether they’re involved in a theoretical research discussion, in the lab or in the field. Our college is focused on creating optimal scientific learning and research for science majors and graduate students. At the same time, we ensure “science literacy” for our non-science majors to ensure they gain critical scientific knowledge and experience that will be valuable no matter what career they pursue. We are committed to ensuring student success and equipping them with the necessary technical and critical thinking skills to be marketable for the workplace and competitive for graduate schools.

A Message from the Dean

Reno, NV 89557 or calling us at (775) 784-4591. Or drop by and pay us a visit. The College of Science Dean’s Office is on the second floor of Ross Hall, Room 202.

We want to provide an experience that is directly tailored for you, so that you can explore the many degree, career or life possibilities that the College of Science has to offer.

I hope you will choose to embark on your academic career with us.

Sincerely,

Jeff Thompson
Interim Dean

Beautiful Lake Tahoe is only 45 minutes from the University of Nevada, Reno campus.
ACADEMIC PROGRAMS

Biology
www.unr.edu/biology

The Department of Biology in the College of Science provides a strong foundation either for a career in the biological sciences at graduation, or to further professional training in fields such as medicine, health sciences, conservation, wildlife biology, biotechnology or graduate school and research. The Biology Department offers programs with either an ecology/evolutionary or cell/molecular emphases. Both emphases give undergraduate students flexibility in preparing for a variety of career goals and also provide them with the opportunity to participate in active research projects.

Chemistry
www.chem.unr.edu

The Department of Chemistry offers three bachelor’s degree programs for students desiring to major in Chemistry. The first option is the Bachelor of Science degree with a field of concentration in Chemistry. The Professional Chemistry option and Environmental Chemistry option provide rigorous training in experimental and theoretical chemistry, and include undergraduate research and specialized courses chosen according to the student's interests. Students in the Chemistry programs have access to advanced scientific instruments in their advanced courses and in research. The Chemistry Club also provides a social atmosphere and professional interactions among Chemistry majors.

“Careers in the biological sciences are in high demand. The College of Science is proud to be a top producer of future biological scientists.”

~JAMES KELLER
Assistant Professor, Biology
National Science Foundation CAREER Award Winner, 2007
Andrei Derevianko, University physics professor was awarded the Fulbright grant to fly across the Pacific to work with a group of physicists at the University of New South Wales in Sydney, Australia. Derevianko will assist them in analyzing recent data on the supposed variation of fundamental constants of nature over time and space.

**Mathematics and Statistics**
www.unr.edu/cos/math

The Department of Mathematics and Statistics offers both Bachelor of Arts and a Bachelor of Science degree programs at the undergraduate level. Both degree programs have options for applied mathematics, discrete mathematics/operations research, statistics, or general study. The Bachelor of Arts degree provides a traditional liberal arts experience through a balanced course of study in the arts, humanities, foreign language, social and natural sciences. The Bachelor of Science degree provides a more intense experience in mathematics, computing and science.

Mathematics is the universal tool of virtually all types of science and engineering. It is one of the oldest and deepest areas of intellectual inquiry. It has two aspects, one concrete and applied, the other abstract and theoretical. The department provides not only the tools that are fundamental in the physical, biological and social sciences, in economics, and in business, but also an opportunity to pursue the theoretical aspects of math that are essential to its further development.

**Atmospheric Sciences**
www.physics.unr.edu

The Atmospheric Sciences program, within the Department of Physics, offers students opportunities to study many areas that explore our atmosphere’s physical characteristics, motions and processes, and how these influence all aspects of the environment and human life. Atmospheric sciences interpret and predict weather patterns, analyze climate trends, monitor air quality, work in a wide variety of agencies, laboratories and businesses and educational institutions. Professionals in the atmospheric sciences have the chance to apply their knowledge to important societal issues such as resource planning, environmental analysis, protection of health and property, improvement in water management and agricultural productivity, and energy conservation.

**Physics**
www.physics.unr.edu

The Department of Physics operates a large research enterprise and provides service education for the College of Science. The department is one of the leaders at the University in terms of external grant funding, and teaches more than 1,000 students from other disciplines every semester. Specialties in Physics include condensed matter, high energy, atomic, molecular, low temperature, and chemical physics.

Andrei Derevianko, University physics professor was awarded the Fulbright grant to fly across the Pacific to work with a group of physicists at the University of New South Wales in Sydney, Australia. Derevianko will assist them in analyzing recent data on the supposed variation of fundamental constants of nature over time and space.
The Mackay School of Earth Sciences and Engineering (MSESE) is part of the College of Science, yet it continues in the tradition of the Mackay School of Mines. Mackay has had a long and proud history at the University. It is internationally renowned for its academic programs in the earth, mineral and engineering sciences, and its diverse research activities. Mackay has garnered its favorable international reputation by providing the engineering and minerals industry with highly trained graduates conducting important research, and offering continuous public service to Nevada and the nation. Mackay seeks to provide a student-focused, student-friendly atmosphere with small class sizes, a low student to faculty ratio, and summer job and internship opportunities.

MSESE houses three academic departments: Geography, Geological Sciences and Engineering, and Mining Engineering, and offers undergraduate programs in Geology, Geography, Geophysics, Geological Engineering, Hydrogeology and Mining Engineering (with options in underground and quarry mining). The Nevada Seismological Laboratory and the Nevada Bureau of Mines and Geology are also part of MSESE.

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MSESE Educators inspire Excellence

Scott Mensing, chairman of the Department of Geography, achieved the final leg of a teaching “triple crown” in 2007 when he was named recipient of the Regents Teaching Award, an annual award presented by the Nevada System of Higher Education to the professor throughout the entire system with the most distinguished teaching record. The award came on the heels of awards Mensing earned in 2005 for the LeMay Award for Excellence in Teaching, signifying the top instructor in the College of Science, as well as the news in 2006 that he was named winner of the F. Donald Tibbitts Distinguished Teacher Award, which is the University’s highest teaching honor.

For his part, Mensing says he cares less about the awards than he does about making a meaningful connection with his students. He does this in a variety of different ways. For example, during a semester he’ll hold office hours in the library rather than in his office. “The library is the students’ turf, after all,” Mensing says.

The John Mackay statue (completed in 1908) is located on the north end of the university’s main quad and was created by Gutzon Borglum, who later carved Mount Rushmore.
The Geography program offers specializations in physical geography, cultural and historical geography, urban and regional planning, cartography and computer mapping, geographic information systems, climatology, biogeography, and the geography of natural resources.

The department offers both a Bachelor of Arts and Bachelor of Science degree programs, along with small class sizes and a low student to faculty ratio that makes learning more personal, with easy access to professors and peers. Geography's faculty have won many teaching awards and revels in working with interested and capable undergraduate students.

There are excellent work and study opportunities for students, both in the department and in the splendid facilities of the DeLaMare Library, only a three-minute walk away from Geography's home in the Mackay Science Building.

Geographers study the world and its inhabitants, embracing the earth in whole or in part. Geography is place and space, where things are located, why they are there, and how they got to be so.

**Geology**

Geology, part of the Department of Geological Sciences and Engineering in the Mackay School of Earth Sciences and Engineering, trains students in a wide variety of specialties, preparing students to enter many different fields. The Chicago Tribune has called the University's Geology program a “national leader.” Many of the courses are “field-based” and the summer field camp offers students extensive hands-on experience in various aspects of field geology. Students can become involved in grant-funded research and work with internationally recognized leaders in the field.

Geologists study the earth by gathering interpreting data to solve some of society’s most challenging problems. They use physics, chemistry, biology and geography to deal with the essentials of our daily lives. These include clean air and water, resources essential to civilization and preservation of critical ecosystems.

**Geophysics**

The Geophysics program, part of the Department of Geological Sciences and Engineering in the Mackay School of Earth Sciences and Engineering, offers undergraduate students opportunities to become involved in major research projects in the West. Geophysics is the study of earth and science. Besides studying earthquake hazards, the program offers opportunities to study geophysical exploration, remote sensing, paleomagnetism, and specialize in using Global Positioning Systems.
Hydrogeology
www.mines.unr.edu/geology/students_p/undergrad/html

The Hydrogeology program, part of the Department of Geological Sciences and Engineering in the Mackay School of Earth Sciences and Engineering, prepares undergraduate students for careers in a variety of settings. The emphasis is on worldwide issues such as coastal and marine environments (endangered species, biodiversity and habitats, distribution of habitats) and freshwater environments (surface water, glaciers, ice caps, groundwater, water and sanitation and inland fisheries). The Student Association for Water International Water Issues (SAWI) focuses on traveling to help developing countries where a great need exists for potable water supplies.

Hydrogeologists understand the hydrologic cycle, the role of water in the environment, pollutants remediation of surface and groundwater, and managing water resources. Graduates with a bachelor’s degree in hydrogeology have opportunities for professional employment with private firms and local, state and federal agencies involved in studying and understanding concerns and issues in hydrology, hydrogeology and environmental geology.

Mining Engineering
http://www.unr.edu/mines/mine-eng/

The Mining Engineering program, in the Mackay School of Earth Sciences and Engineering, is internationally known for training students to work in a variety of minerals-related industries around the world. The “quarry” track allows students to specialize and work in urban settings with sand and gravel operations, tunnelling, and other large construction projects. Our research laboratories include underground mine ventilation, robotics, and rock mechanics.

Geological Engineering
www.mines.unr.edu/geology/students_p/undergrad.html

Geological Engineering, within the Department of Geological Sciences and Engineering in the Mackay School of Earth Sciences and Engineering, is one of only 14 accredited programs in the United States. Faculty are involved in researching aerospace remote sensing, geostatistics and geomathematics, slope stability (on Earth and on Mars and Venus), and volcanic hazards. Students study the mechanics of landslides and snow avalanches, and the interaction with engineering structures. Field trips and a short summer field camp are essential parts of the curriculum.

Geological engineers are unique from other engineers because they engineer with natural materials (rock, soil, water and snow). Geological engineers assess and alleviate geologic hazards like landslides, earthquakes, floods and volcanic eruptions; design and build highways, foundations, tunnels and mines; save the environment from polluted groundwater and by safe siting of landfills; design urban sites for new development.
Davidson Mathematics and Science Center
to take College of Science to next level

One of the challenges associated with a large and complex academic unit like the College of Science is physical proximity. Or perhaps more accurately, teaching, classroom and research space.

“It’s an age-old dilemma,” says Jeff Thompson, interim dean of the College of Science and longtime Department of Physics faculty member. “We have so many students, so many faculty, and they are scattered across the campus. That is why our new Davidson Mathematics and Science Center is so critical to our future. It will definitely put the College of Science at an entirely new level.”

The 90,000-square-foot, $50 million building, which will begin construction in 2008, promises to become a hub for student learning through the establishment of a campus center for science and math instruction, as well as providing a significant enhancement of the University of Nevada’s research capabilities for undergraduate students and a centralized location for the College of Science, its students, departments, faculty and administration. When construction is completed in 2009, the building will represent the first new capital project for the natural sciences for the Nevada campus in nearly 40 years.

The building will be home to laboratories and classrooms and will, according to Thompson, “provide a collaborative environment where students and faculty will work and learn together in a modern science oriented setting. It’s going to be a place where students will learn in the best classrooms possible, from great faculty who will encourage participation of undergraduates not only in scholarship, but in undergraduate research – a definite competitive advantage for our university.”
**WISE Program**

*Women in Science & Engineering*

The College of Science’s Women in Science & Engineering (WISE) program is a living learning community for female students to build personal and professional networks so that they can pursue degree and professional opportunities in mathematics, engineering and the sciences.

WISE is intended to be an intensive first-year experience to introduce WISE members to mentoring and support systems within the University and beyond. Additionally, programs created specifically for WISE members provide a forum for members to explore educational, professional and leadership opportunities. It is for first-year women students majoring in science, mathematics or engineering.

WISE is currently housed in Argenta Hall on campus, the same residence hall where the Honors Residential Scholars Program is located. WISE members have enhanced access to associated faculty, academic advising, and study groups. Additionally, WISE members get to participate in all WISE sponsored social events.

To find out more about WISE, go to the program’s website at:  www.unr.edu/wise

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**McCall has ‘rock solid’ impact in Physics**

For more than a decade, Katherine McCall has performed so many different tasks – and done them so well – in the Department of Physics that she has earned a reputation as “rock solid” professor and researcher.

That’s a good thing, since McCall, in addition to her many administrative and teaching duties, got her start at the University in 1995 as a researcher in the area of rock physics, which studies the macroscopic physical behavior of inhomogeneous and porous materials like rocks. The work is often motivated by applications in seismology, geophysics, hydrology, and mining in the understanding of how rocks behave under stress.

In addition to her research, McCall, a 2003 Fulbright Scholar and Outstanding Young Alumnae award winner at her alma mater, Mount Holyoke College in Massachusetts, has proven to be one of the University’s finest teachers and administrators. She served as chairperson of Physics from 2004-2007 and has now embarked on another important path – that of director of the College of Science’s cutting-edge Women in Science and Engineering program (WISE). WISE brings together top female science, mathematics and engineering students in an on-campus living and learning environment.

McCall is enthusiastic about WISE’s potential. As an undergraduate at an all-women’s college at Mount Holyoke, she learned first-hand the benefits of strong peer support for young women interested in the sciences, mathematics or engineering.

“I entered in math and finished with math and physics,” she says. “I believe that physics would not have happened for me in a co-ed environment. I remember my first semester English class quite clearly. It was like a light bulb going on when I realized that I sat in a room of 20 highly intelligent, well-read, articulate people and all of them were women.”
It is STRONGLY recommended that you take the HIGHEST level of mathematics available (i.e. Pre-Calculus or Calculus), in addition to taking as many science courses offered such as Biology, Chemistry, and Physics.

The University of Nevada, Reno uses your best standardized test score (SAT or ACT) to initially determine placement into your 1st year English and Math courses. For placement into appropriate Math and English courses for programs in the College of Science, we recommend the following test scores:

- Minimum 28 on ACT Math or 630 SAT Math
- Minimum 21 on ACT English or 510 SAT Critical Reading

There are Math and English placement options available, if your standardized test scores do not meet the recommendations listed above.