

DIVISION OF MATHEMATICAL AND PHYSICAL SCIENCES

COLLEGE OF LETTERS AND SCIENCE

Applied Mathematics • Applied Physics • Chemistry • Computer Science
Geology • Mathematical and Scientific Computation • Mathematics
Natural Sciences • Physics • Statistics • Undeclared—Physical Sciences

The mathematical and physical sciences focus on the application of theory and experimental data to the solution of real-world problems in areas from environmental restoration to the design of spacecraft. As the one language in which absolute meaning can be expressed, mathematics is an important means of communication in every science; and applications of mathematics are important in statistical analysis, chemistry, astronomy and astrophysics.

MATHEMATICAL AND PHYSICAL SCIENCES MAJORS

Applied Mathematics

As any scientific field develops, such as engineering, physics, economics, biology or statistics, more sophisticated mathematical models are needed to formulate and solve basic problems. Applied mathematics students learn how to use mathematics to answer questions that are integral to the advancement of knowledge in any of these scientific fields. They then focus their studies on how math relates to topics in a specific science of their choice.

Questions? Contact an adviser at studentservices@math.ucdavis.edu, math.ucdavis.edu.

Applied Physics

This major is intended for the student who desires a thorough introduction to a particular concentration in applied physics (e.g., computational, materials science, chemical physics) but who also wants a solid foundation in fundamental physics. The applied orientation of this program will be an asset for the student who plans to enter the job market upon completing the Bachelor of Science degree. It will also enable the student interested in advanced work to immediately begin graduate studies.

Questions? Contact an adviser at 225 Physics/Geology Bldg., (530) 752-4092, physics.ucdavis.edu.

Chemistry

From the twitch of a muscle fiber to the silent explosion of a supernova, every happening in the universe is linked at an atomic level by the principles of chemistry. Chemists work in laboratories, on oil rigs, at wilderness research stations and in classrooms. Our Department of

Chemistry gives you the flexibility to choose a Bachelor of Science degree (with more rigorous scientific preparation) or Bachelor of Arts degree (ideal for professional school preparation or for students considering teaching).

Questions? Contact an adviser at 108 Chemistry Bldg., (530) 752-0503, www.chem.ucdavis.edu.

Computer Science

As the trend toward globalization connects people in every part of the world economically, culturally and politically, digital networks and systems are increasingly responsible for processing and delivering the massive amounts of information that keep communication flowing. Computer scientists design, maintain and improve upon these vital information systems. As a computer science major, you will focus on designing systems for application in science, industry and management. The emphasis in this program is on software, although you will master essential concepts of hardware as well.

Questions? Contact an adviser at 2063 Kemper Hall, (530) 752-7004, ugradinfo@cs.ucdavis.edu, cs.ucdavis.edu.

Geology

Geology is the study of the Earth, and in particular of the history, the structure, the evolution of life and the processes that have molded the Earth and its inhabitants. With the advent of the space age, the concerns of geologists have expanded to include the solid planets of the solar system. Geology has both academic and applied aspects, and the program at UC Davis addresses both

perspectives. Academic concerns include the study of the history of life, the Earth and other planets, and of the processes that drive historical evolution. Applied concerns involve the interactions between humans and the Earth, and include such areas as mineral resources, earthquake research and preparedness, ground water quality analysis and land use planning.

Questions? Contact an adviser at 174 Physics/Geology Bldg., (530) 752-0350, geology.ucdavis.edu.

Mathematical and Scientific Computation

This major is the ideal choice for students who are interested in the interplay between mathematical theory and modern computational tools for applications. Students will attain an advanced knowledge of computer science (e.g., programming). Moreover, they will gain a solid foundation in mathematics that will enable them to model or analyze complicated systems or problems (e.g., earthquakes, economic models, biological systems). The major has two emphases. The computational and mathematical biology emphasis is geared for students interested in using mathematics to model biological systems (e.g., how proteins cluster, how population grows, how species and ecosystems interact and evolve). Students interested in other sciences, pure mathematics (e.g. using computers to discover new mathematical knowledge), or engineering should choose the computation and mathematics emphasis.

Questions? Contact an adviser at studentservices@math.ucdavis.edu, math.ucdavis.edu.

Mathematics

Mathematics is much more than simple arithmetic and equations; it is the study of abstract structures, space, change and the interrelations of these concepts. Mathematics is the one language in which the meaning of each symbol can be defined precisely; it can be used to describe scientific concepts and processes exactly. Mathematicians work to address some of science and society's most pressing questions. Their work bridges the gaps between scientific disciplines and provides a framework for considering problems in their purest, most theoretical form.

Questions? Contact an adviser at 564 Kerr Hall, (530) 752-8130, math.ucdavis.edu.

Natural Sciences

The need for well-trained science teachers is growing in California and many other states. The major in natural sciences is designed specifically to help students get the broad-based training they need to enter the education field. But majors will find their options expanded, not limited by this program: knowledge of many different areas of science can lead to a rewarding career in many different professions. Drawing from the latest research in biology, geology, chemistry and physics, students will

learn to appreciate the way these sciences integrate to help explain phenomena of the natural world.

Questions? Contact an adviser at 174 Physics/Geology Bldg., (530) 752-9100, naturalsciences@ucdavis.edu, naturalsciences.geology.ucdavis.edu.

Physics

From subatomic particles to galaxies with billions of stars, physics studies what the universe is made of and how it works. As a physics major at UC Davis, you will learn about our present understanding of the universe and also have the opportunity to join with our faculty in the research programs that push forward the frontier of knowledge. This research ranges from the very smallest distances associated with elementary particle physics through nanophysics and superconductivity and on to the structure and evolution of the entire universe.

Questions? Contact an adviser at 225 Physics/Geology Bldg., (530) 754-4092, physics.ucdavis.edu.

Statistics

Statisticians seek to survey representative samples of individuals in order to make inferences about entire populations. Whether estimating the extent of a pest infestation in an agricultural crop or

predicting the outcome of a presidential election, statisticians use scientific methods to make useful generalizations. As a statistics major at UC Davis, you'll have the chance to apply your knowledge to fields in the biological, agricultural or computer sciences.

Questions? Contact an adviser at 380 Kerr Hall, (530) 752-2361, stat.ucdavis.edu.

Undeclared—Physical Sciences

If you'll be entering UC Davis as a freshman and you're undecided on your major, consider the College of Letters and Science's undeclared—physical sciences option. You'll benefit from professional guidance as you investigate possible majors and develop new personal strengths. Visit the Counseling Center for personal interest assessment testing, or use the Internship and Career Center's computerized career assessment tools to help you find majors that align with your interests.

Questions? Contact an adviser at 200 Social Science & Humanities Bldg., (530) 752-0392, advising.ucdavis.edu.

Want to hear from students and faculty in these majors? Visit admissions.ucdavis.edu/majors.