

Choosing Your Major

Which major will help you reach your goals?

Rausser College of Natural Resources offers nine undergraduate majors in diverse areas of biological, physical, social, and ecological sciences that culminates 12 Bachelors of Science. The programs in Rausser College are interdisciplinary and take a problem-solving approach to sustaining the health of humans and the environment. Your major should reflect your interests and your career goals. Both may possibly change during your first years of college, and you may even decide to change your major as well.

Biological Sciences	You are interested in...
<p>Genetics & Plant Biology (GPB) combines traditional plant sciences (physiology, biology, anatomy) with more recent biological disciplines (genetics, molecular biology, biochemistry) to study the role of plants in the global environment. The discipline emphasizes the study of plants from the molecular/genetic levels to the organismal level, including applications to biotechnology.</p>	<ul style="list-style-type: none"> • plant-microbe interactions and the study of plant genetics, diversity, evolution, and bioenergy. • plant morphology, plant molecular genetics, plant cell biology, and the physiology and biochemistry of plants. • studying plants from the molecular genetic level up through the organismal levels, including applications to biotechnology. • environmentally sound ways to address human needs for plant products (e.g., the risks and benefits of genetically modified organisms).
<p>Microbial Biology (MB) is the study of microbes, which compose the largest majority of biomass on the planet. The major investigates interactions between microorganisms and the environment to determine the role microbes play in maintaining the health of our biosphere. This includes how microbes can help combat environmental pollutants, facilitate energy production, and influence the progress of medical research on infectious diseases.</p>	<ul style="list-style-type: none"> • studying biology at the micro level, focusing on microorganisms like bacteria, protozoa, and viruses. • learning how microbes affect the earth's biosphere, including how they help combat environmental pollutants, facilitate energy production, and influence biomedical research. • environmentally sound ways to address human needs for plant products (e.g., the risks and benefits of genetically modified organisms). • gaining skills needed to evaluate scientific information as a result of receiving training in statistics, computational biology, and genomics.
<p>Molecular Environmental Biology (MEB) introduces students to the organization and function of biological organisms at the molecular, cellular, organismal, and ecological levels. It teaches students how to apply biological principles to understand how organisms function in their environment. A classic pre-med, pre-veterinary or pre-health science major, the discipline offers an array of six areas of concentration within biology.</p>	<ul style="list-style-type: none"> • a broad exposure to biology, from the molecular to the ecological levels. • studying biology from an interdisciplinary approach, incorporating coursework from across campus. • studying our environment through the lens of molecular, cellular, organismal, and ecological biology, in an effort to understand issues like climate change, soil erosion, resource management, animal behavior, and human health. • a concentration area such as animal health and behavior, ecology, insect biology, microbiology, environmental and human health, or biodiversity.
<p>Nutritional Sciences & Toxicology (NST) has 3 specializations based in the biological and chemical sciences that explore how nutrients, phytochemicals, and toxicants influence human health.</p> <p>Physiology & Metabolism combines a foundation in natural sciences with advanced course work in nutrition and the study of nutrient utilization and food science.</p> <p>Dietetics emphasizes the application of nutritional knowledge through dietetic practice, and prepares students for a career as a Registered Dietitian.</p> <p>Toxicology focuses on the adverse effects of natural and synthetic chemicals on living organisms, and how these effects are modulated by genetic, physiological, and environmental factors.</p>	<ul style="list-style-type: none"> • exploring the biological and chemical sciences to study how nutrients and toxins affect human health and disease. • the delivery of nutrients from foods to cells and the function of nutrients in energy metabolism. • understanding how dietary patterns affect the function and health of humans. • a strong foundation in the biological and chemical sciences with specialized advanced coursework focusing on the hazardous and beneficial effects of natural and human-made toxic agents. • learning how organisms are affected by natural and synthetic agents such as pollutants, drugs, nutrients, and herbs. • solving problems of human health, safety, and the environment using molecular and computational methods. • preparation for graduate work and/or a career in forensic sciences, environmental protection, pharmacology, or pharmacy.

Choosing Your Major in Rausser College: Which major will help you reach your goals?

Social Sciences & Interdisciplinary Studies	You are interested in...
<p>Conservation & Resource Studies (CRS) students have the opportunity to develop their own interdisciplinary major in environmental studies. Drawing on course offerings from across campus, students work with faculty to create a program that incorporates social sciences, humanities, or sciences to address complex environmental problems.</p>	<ul style="list-style-type: none"> • studying the environment, but your interests are cross-disciplinary, with your interests spanning the biological sciences, physical sciences, social sciences, and/or humanities. • an individualized, interdisciplinary educational approach to understanding the structure and dynamic functions of complex environmental systems within our society and biosphere. • the environment and human welfare, and the interaction among natural resources, population, energy, technology, societal institutions and cultural values. • flexibility and the ability to work closely with faculty to design a degree specific to your interests.
<p>Environmental Economics & Policy (EEP) focuses on economics and the political institutions that affect the development and management of natural resources and the environment. It takes a problem-solving approach to issues involving renewable and fixed natural resources, and has a foundation in micro-economic theory and the economics of resources and the environment. The major also includes topics related to policy, domestic or international development, and law.</p>	<ul style="list-style-type: none"> • economics, policy, and law, and have strong quantitative skills. • learning how markets and cultures motivate natural resource and environmental policy. • a deeper understanding of international development, and the balancing of environmental use and protection. • preparation for business or law school, or graduate programs in agricultural and resource economics. • a career in environmental law, policy, economics, or environmental consulting.
<p>Society & Environment (S&E) acknowledges the close ties of social and environmental problems and introduces students to the main approaches and theory for environmental social sciences, including how social science tools can be applied to environmental problems, and how social science theories contribute to understanding environmental issues.</p>	<ul style="list-style-type: none"> • a major that focuses on the policies and politics surrounding environmental issues. • how social science tools can be applied to environmental problems, and how social science theories contribute to understanding environmental problems. • an interdisciplinary curriculum, allowing you to take courses from a variety of departments and disciplines across campus. • focusing your study in one of the three primary areas of concentration: US Environmental Policy & Management, Global Environmental Politics, or Justice & Sustainability.
Environmental Sciences	You are interested in...
<p>Environmental Sciences (ES) provides broad, comprehensive education in the fundamentals of biology, chemistry, math, physics, and social sciences. The discipline involves the study of interactions between human activities and biological and physical environments on all scales, from the local to global. The ES major culminates with a year-long senior research project. Berkeley's ES program has been ranked #1 globally by US News & World Reports.</p>	<ul style="list-style-type: none"> • an environmental major based in the biological, physical, and social sciences. • having the option of making choices about the focus and direction of your major. • taking classes from many different departments to gain a broad, interdisciplinary understanding of environmental issues and problems. • learning about the interactions between human activities and the environment. • working with faculty to conduct a senior thesis research project on the topic of your choice. • pursuing graduate studies or a career in: ecology, natural sciences, public health, health sciences, environmental policy, or law.
<p>Ecosystem Management and Forestry (EMF) focuses on the conservation and restoration of the earth's natural resources through hands-on study of the ecology, stewardship, and management of forest, woodland, and grassland ecosystems. The topics studied include wildlife and conservation biology, ecosystem restoration, rangeland management, water policy, fire science, environmental justice, and rural sociology. Students participate in an 8-week summer field program in the Sierra Nevada.</p>	<ul style="list-style-type: none"> • conserving and restoring earth's natural resources through hands-on, field-based studies. • the ecology, stewardship, and management of forest, woodland, and grassland ecosystems. • topics such as wildlife and conservation biology, forestry (including urban forestry), ecosystem restoration, and fire science. • participating in an eight-week summer field program in the Sierra Nevada studying ecology, forest, range and wildlife management, measurements, and forest operations and products. • having the option of pursuing a professional forestry certification with a well-defined career track, or the option of working in remote sensing or geographic information science.

To learn more about Rausser College majors, please visit <https://nature.berkeley.edu/advising/majors-minors>