

Biotechnology

UC DAVIS

DEPARTMENT OF PLANT SCIENCES

College of Agricultural and Environmental Sciences

Biotechnology harnesses cellular and biomolecular processes to develop technologies and products that help improve our lives and the health of our planet.



The Biotechnology Major prepares you for graduate or professional schools in molecular biology, genetics, biochemistry, medicine and plant and animal sciences.

Students will develop a strong background in general biological sciences, emphasizing basic concepts of genetics, molecular biology, cell biology, and recombinant DNA technology.

Skills you will develop

- Scientific ability
- Communication
- Presentation skills
- Technical expertise
- Critical thinking
- Teamwork

Possible employers

- Agricultural companies
- Food and beverage industries
- Health care, chemical, pharmaceutical and biochemical industries
- Environmental analysis and remediation industries

Options for course of study

Each track of study requires significant hands-on experience including a mandatory internship in a biotechnology company or research laboratory.

Animal Biotechnology emphasizes the basic concepts in animal molecular biology, genetics, physiology and biochemistry. These technologies are used for diagnostics, genome mapping and manipulations.

Bioinformatics teaches how to process and assess information that you gather in laboratory research, such as mapping genes, designing genes, and sequencing genomes.

Fermentation/Microbiology

focuses on microbial genetics, environmental microbiology, metabolism, molecular biology and recombinant DNA technology. Processes including industrial fermentation of enzymes, antibiotics, vitamins, wine and beer.

Plant Biotechnology explores the fundamental concepts of plant molecular biology and genetics. These technologies are used for crop improvement, including gene transfer and genome mapping.

*Cool courses
listed on backside*

Additional undergraduate majors offered in the Department of Plant Sciences

- Ecological Management & Restoration
- Environmental Horticulture & Urban Forestry
- International Agricultural Development
- Plant Sciences

Department of Plant Sciences Undergraduate Advising Office

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Explore your interest – take these cool classes

- **BIT 001** (4) – Introduction to Biotechnology (spring)
- **BIT 150** (4) – Applied Bioinformatics (fall)
- **BIT 160** (3) – Principles of Plant Biotechnology (winter)
- **BIT 161A** (6) – Genetics and Biotechnology Lab (winter, summer)
- **BIT 161B** (6) – Plant Genetics and Biotechnology Lab (spring)
- **BIT 171** (3) – Professionalism and Ethics in Genomics and Biotechnology (fall, winter, spring)
- **ECS 166** (4) – Scientific Data Management (fall)
- **FST 104** (4) – Food Microbiology (winter)
- **MCP 200L** (4) – Animal Cell Culture Lab (winter)
- **PLP 130** (3) – Fungal Biotechnology and Biochemistry (winter)
- **PLS 154** (4) – Introduction to Plant Breeding (winter)

Minors offered in the Department of Plant Sciences

- Agricultural Systems and Environment
- Environmental Horticulture
- International Agricultural Development
- Landscape Restoration
- Applied Computer and Information Systems

UC Davis has a number of nationally and internationally renowned programs and facilities that harness the tools of biotechnology to identify and meet global challenges. Below are a subset of the resources at UC Davis for research and investigation in the areas of health & nutrition, food security and the sustainable use of natural resources.

- California National Primate Research Center
- The Bioenergy Research Group
- Center for Biophotonics Science & Technology
- Center for Science & Innovation Studies
- The College of Agriculture and Environmental Sciences Genomics Facility
- Controlled Environment Facility
- The NCMHD Center for Excellence in Nutritional Genomics
- Rice Genome & Grasses Systems Biology Research – Ronald Laboratory
- Robert Mondavi Institute for Food and Wine Science
- Ralph M. Parsons Foundation Plant Transformation Facility
- Seed Biotechnology Center
- UC Davis Bio Technology Program
- UC Cancer Center
- UC Davis Energy Institute
- UC Genome Center
- UC Davis Office of Research – Innovation Access

For information on how to start your path into biotechnology, contact the undergraduate advising office at (530) 752-1715.