

What Can You Do with a Biology Degree?

Plant Propagator Ornithologist Microbial Ethologist Game Manager Marine Engineer Water Engineer Acarologist
Parasitologist Industrial Hygienist Consultant Apiculturist Curator Surgeon Embryologist Allergist
Entomologist Animal Breeder Technician Aquaculturist Crime Park Naturalist Science Writer Morphologist Materials Engineer
Ichthyologist Chiropractor Chemotaxonomist Nutritionist Lab Agricultural Natural Resources Manager Algologist Validation Technician
Paleoecologist Forest Pathologist Mammalogist Technician Economist Biological Zoologist Aquarium Immunologist
Virologist Cytopathologist Palynologist Data Collector Brewmaster Quality Sales Representative Cloning
Bioinformaticist Sociobiologist Marine Life Technician Meat and Poultry Assurance Park Ranger Medical Records Librarian
Statistician Audiologist Forester Food Inspector Manager Osteopath Manager of Quality Ophthalmologist
Criminologist Economic Botanist Veterinary Technician Agronomist Clinical Technician Food & Drug Inspector
R & D Biochemist Genetic Counselor Physician's Assistant Dairy Manager Anesthetist Animal Husbandry Aquatic Biologist
Viticultivist Research Technician Enologist Media Technician Ecologist Laboratory Manager
Taxidermist Biostatistician Veterinarian Cell Physiologist Forensic Pathologist Emergency Environmental Technologist
Physician Weed Scientist Mycologist Biological Photographer Technician Medical Histologist
Occupational Therapist Genome Data Curator Histologic Technician Sewage Plant Operator
MOLECULAR ECOLOGIST Fossil Fuel Extractor Population Geneticist Marine Biologist Quality Control Technician
Developmental Biologist Horticulturist Pest Control Dietitian Environmental Physiologist Communication Media Specialist — Radio-TV
Dental Hygienist Medical Illustrator Specialist Animal Pathologist Sanitarian Forest Products Technologist
Vegetable Scientist Botanist Fisheries Optometrist Oral Surgeon Public Relations Respiratory Therapist Peace Paramedic Zoo Director
Validation Technician Cell Biologist Plant Pest Industrial Waste Specialist Corps Science Librarian Editor
Phlebotomist Anesthesiologist Control Inspector Naturalist Wildlife Forensics Worker Licensed Meteorologist Regulatory Affairs
Radiologic Technologist Recreation Manager Wildlife Conservation and Hospital Nurse Research Associate Pharmacologist
Medical Entomologist Biological Engineer and Management Specialist Administrator Greenhouse Dental Assistant Insect Quarantine Inspector
Natural Sciences Research Curator Phytopathologist Forest Economist Manager Environmental Planner Endocrinologist Water Limnologist
FERMENTATION SCIENTIST Chemical Technician **Aquatic Biologist** Quality Controller
Field Biologist Office Manager Biomedical Proteomics
Floral for Family Dentistry Engineer Watershed Manager
Designer Ecologist Technician Biophysicist
Toxicologist Certified Laboratory Assistant X-ray Technician Cyto geneticist
Staff Scientist Pathologist Fish Culturist Technician Biometician
Bioanalyst Nursery Owner Home Economist Registered Medical Technologist
Landscape Architect Laboratory Technician Nature Center
Museum Educational Staff Member Plant Protozoologist Director
Agricultural Biotechnologist Pediatrician Animal Nutritionist Physical Therapist
Paleontologist
Chiropractor
Protein Physiologist
Purification Specialist
Plant Physiologist

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Biology is the study of living things—what they are, how they work, how they interact, and how they change over time. A B.S. degree in Biology provides an excellent foundation from which to pursue graduate or professional study or post-graduate employment.

What do students in Biology study?

Once you have completed the foundation courses, you can explore a diversity of topics in the biological sciences. These topics include such areas as cell and molecular biology, microbiology, genetics, physiology, evolution, plant biology, and ecology. Any of these areas can be studied in depth in over 70 courses covering such subjects as biochemistry, vertebrate anatomy, immunology, ornithology, wetland ecology, mammalogy, developmental biology, botany, and animal behavior. Furthermore, the department emphasizes hands-on research experiences as a critical component of the undergraduate curriculum.

What have our students done with their Biology degrees?

You will find our recent graduates in medical, pharmacy, dental, and allied health schools across the country. Many are teaching in universities or high schools, or work as environmental educators in public or private interpretive programs. Others are pursuing research careers at universities, research institutions, or in industry. Several graduates are employed as field or laboratory biologists for federal, state, and local governmental agencies. Still others work in biomedical businesses and law, regulation, or policy.

What other opportunities does the Department of Biological Sciences offer?

- Involvement in specialized research and teaching activities through the Integrated Microscopy Center, Meeman Biological Station, Ecological Research Center, W. Harry Feinstone Center for Genomic Research, and Gulf Coast Marine Laboratory
- One-on-one mentoring while participating in active biological research programs that can lead to professional publications and presentations.
- Participation in extended field studies inside and outside the United States
- Exposure to national and international research and researchers through the department's weekly seminar series

General Education Classes

Communication Classes:

English Composition I – ENGL 1010
English Comp/Analysis – ENGL 1020
Oral Communication – COMM 2381

Literature choose between:

Literary Heritage – ENGL 2201
Literary Heritage: African-American - ENGL 2202

Humanities choose two:

Intro to Art – ART 1030
World Art I – ARTH 2010
World Art II – ARTH 2020
Intro to Theatre – THEA 1030
Intro to Dance – DANC 1151
Intro to Film – COMM 1851
Music Appreciation – MUS 1030
Music in America – MUS 1040
Mythology – CLAS 2481
Religions of Abraham – JDST 2850
Intro to Philosophy – PHIL 1101
Intro to Ethics – PHIL 1102
Ancient Political Thought – POLS 1101
Modern Political Thought – POLS 1102
Intro to Religion – RLGN 1100
Hebrew/Greek Legacy – UNIV 3580
Faith, Reason, Imagination – UNIV 3581

Social/Behavioral Science choose two:

Biological Anthropology/Prehistory – ANTH 1100
Cultural Anthropology – ANTH 1200
Family in Global Perspective – CDFS 2101
Intro to Macroeconomics – ECON 2010
Intro to Microeconomics – ECON 2020
Survey of World Regions – ESCI 1301
Intro to Cultural Geography – ESCI 1401
Personal Finance Management - FIR 1220
Intro to International Studies - INTL 1101
Survey of Mass Communication – JOUR 1700
Wellness Concepts Practices - HLSC 2100
American Government – POLS 1030
Comparative Politics – POLS 1301
International Relations – POLS 1501
General Psychology – PSYC 1030
Deviance/Role History – PSYC 3510
Population Health & Society - PUBH 2181
Intro to Sociology – SOCI 1010
Sociology of Globalization - SOCI 2100
Gender and Society – UNIV 2304
Intro to Women/Gender Studies - WMST 2100

History choose two:

World Civilization I – HIST 1110
World Civilization II – HIST 1120
U.S. History to 1877 – HIST 2010
U.S. History since 1877 – HIST 2020
American Communities - ANTH 3282
History of Tennessee - HIST 2030
American Ideas and Culture - HIST 3863
African American History - HIST 3881
History of Women - HIST 4851
Constitutional Law - POLS 4212
American Political Thought - POLS 4405
Racial/Ethnic Minorities - SOCI 3422

Major Support Classes & Mathematics Requirement

Science Ethics choose one:

Science/Technology/ Human Values - PHIL 3512
Biomedical Ethics - PHIL 3514
Climate Chg, Ethics & Environ - PHIL 3515
Ethics of AI & Big Data - PHIL 3806

Skills Courses choose two:

Medical Terminology - CLAS 3021
CS1: Intro Comp Science - COMP 1900
Intro to Python Programming - COMP 4001
Technical and Profess Writing - ENGL 3601
Remote Sensing/Environment - ESCI 4511
Geographic Info Science - ESCI 4515
Professional Writing and Healthcare - HCL 3050
Statistics for Health Sciences - HLSC 4400
Epidemiology - HLSC 4530
Intro to Applied Statistics - MATH 4611
Research and Statistics I - PSYC 3010
Research and Statistics II - PSYC 3020

*** Two classes of a foreign language can
be done in place of the skills.**

Mathematics

Elementary Calculus – MATH 1830
Calculus I – MATH 1910

Upper Division Social Science choose one:

Human Paleontology - 3111
Anthropology of Global Health - 3500
Evolution and Human Health - ANTH 4111
Cultural/Environment/Justice - ANTH 4220
Health/Culture/Environmental Justice - ANTH 4510
Medical Anthropology - ANTH 4511
Culture, Society, and Mental Health - ANTH 4521
Alcohol/Drugs/Culture - ANTH 4531
Nutritional Anthropology - ANTH 4541
Culture/Sex/Childbirth - ANTH 4551
Race and Health Disparities - ANTH 4571
Urbanization/Environment - ECON 4230
Health Care Economics - ECON 4740
Urbanization/Environment - ESCI 4201
Environmental Hazards - ESCI 4251
Global Environmental Change - ESCI 4252
Environmental Law/Policy/Regulation - POLS 4200
Global Environmental Politics - POLS 4512
Intro to Social Determinants of Health - PUBH 3130
Child Psychology - PSYC 3103
Physiological Psychology - PSYC 3306
Animal Behavior - PSYC 3307
Human Sexuality - PSYC 3506
Alcohol/Drugs/Behavior - PSYC 3507
Health Psychology - PSYC 3512
Legal/Forensic Psychology - PSYC 3520
Mind/Brain/Intelligence - PSYC 4305
Social Inequality - SOCI 3401
Sociology of Gender - SOCI 3432
Racial Inequality - SOCI 4420
Sociology of Aging - SOCI 4541
Medical Sociology - SOCI 4851

Chemistry/Physics/Biology Requirements

Chemistry (all have labs)

General Chemistry I – CHEM 1110/1111

General Chemistry II – CHEM 1120/1121

General Organic Chemistry I – CHEM 3311/3301

General Organic Chemistry II – CHEM 3312/3302

* If you want a Chemistry minor, you only need one more class; Biochemistry BIOL 4511

General Physics

General Physics I – PHYS 2010/2011

General Physics II – PHYS 2020/2021

Physics Scientists/Engineers I – PHYS 2110/2111*

Physics Scientists/Engineers II – PHYS 2120/2121*

*Requires Math 1910

Biology Core Classes (Must take all of these in order)

General Biology I – BIOL 1110/1111 (*Requires completion of CHEM 1110/1111*)

General Biology II – BIOL 1120/1121

Cell Biology – BIOL 3130

Genetics – BIOL 3072/3073

Evolution – BIOL 4100

Biology Upper Division Electives

Students need 18 extra credits of upper division (3000 or 4000 level) biology classes for their major, one class must be an Organismal Diversity course and one course must have a lab.

Any of the following will count for the Organismal Diversity Requirement; BIOL 3050 Ecology, BIOL 3200 General Botany, BIOL 3500/3505 Micro I Fund. Aspect and Lab, BIOL 3620 Comparative Anatomy of Vertebrates, BIOL 4245 Plant Systematics/Evolution, BIOL 4375 Molecular Biology of Parasites, BIOL 4640 Ornithology, BIOL 4644 Ichthyology, BIOL 4740 Mammalogy, BIOL 4744 Herpetology, BIOL 4900 Entomology

Any of the organismal classes will count for the lab requirement as well as other classes that have a lab associated with the lecture.

The rest of the 18 credits can be whatever biology classes you want. This is where you can tailor your classes towards your interests. (Pre-professional school requirements, Ecology, Zoology, Genetics, human biology, etc..)

COURSES CURRENTLY OFFERED

BIOL 1010. Introduction to Biology I
BIOL 1011. Introduction to Biology I Laboratory
BIOL 1020. Introduction to Biology II
BIOL 1021. Introduction to Biology II Laboratory
BIOL 1110. General Biology I
BIOL 1111. General Biology I Laboratory
BIOL 1120. General Biology II
BIOL 1121. General Biology II Laboratory
BIOL 1230. Microbiology
BIOL 1231. Microbiology Laboratory
BIOL 2010. Anatomy and Physiology I
BIOL 2011. Anatomy and Physiology I Laboratory
BIOL 2020. Anatomy and Physiology II
BIOL 2021. Anatomy and Physiology II Laboratory
BIOL 3020. Physiological Aspects of Animal Behavior
BIOL 3030. Animal Physiology & Lab
BIOL 3050. Ecology & Lab
BIOL 3072. Genetics
BIOL 3073. Genetics Laboratory
BIOL 3130. Cell Biology
BIOL 3200. General Botany & Lab
BIOL 3500. Microbiology I: Fundamental Aspects
BIOL 3505. General Microbiology Laboratory
BIOL 3550. Microbiology II: Medical and Applied Aspects
BIOL 3620. Comparative Anatomy of Vertebrates & Lab
BIOL 3730. Vertebrate Physiology & Lab
BIOL 4000. Research I
BIOL 4001. Research II
BIOL 4004. Readings in Modern Biology
BIOL 4005. Learning Assistants
BIOL 4054-6054. Wetland Ecology & Lab
BIOL 4055-6055. Ecological and Environmental Issues
BIOL 4065-6065. Biodiversity
BIOL 4071-6071. Human Genetics
BIOL 4090-99-6090-99. Special Topics in Biology
BIOL 4100-6100. Evolution
BIOL 4110. Science of Medicine
BIOL 4150-6150. Developmental Biology
BIOL 4245-6245. Plant Systematics and Evolution & Lab

BIOL 4320. Biology of Stem Cells
BIOL 4375-6375. Molecular Biology of Parasites and Their Vectors & Lab
BIOL 4380-6380. Vertebrate Histology
BIOL 4445-6445. Immunology
BIOL 4450-6450. Microbial Ecology
BIOL 4470-6470. Molecular Biology of the Gene
BIOL 4480-6480. Cellular and Molecular Pharmacology
BIOL 4490-6490. Intro to Genomics/Bioinformatics
BIOL 4501-6501. Virology
BIOL 4503-6503. Laboratory Techniques in Biochemistry
BIOL 4511-6511. Biochemistry I
BIOL 4512-6512. Biochemistry II
BIOL 4570. Practicum In Biology
BIOL 4604-6604. Animal Behavior & Lab
BIOL 4630-6630. General Endocrinology
BIOL 4635-6635. Neurobiology
BIOL 4640-6640. Ornithology & Lab
BIOL 4651-6651. Field Techniques of Vertebrate Zoology
BIOL 4730-6730. Urban-Wildlife Ecology and Management.
BIOL 4740-6740. Mammalogy & Lab
BIOL 4744-6744. Herpetology & Lab
BIOL 4900-6900. Entomology & Lab

Common Minors for Biology Majors

Chemistry minor: 20 hours total

- CHEM 1110/1111 – General Chemistry I with lab – required for BIOL major
- CHEM 1120/1121 – General Chemistry II with lab – required for BIOL major
- CHEM 3310/3301 – Foundations of Organic Chemistry with lab – required for BIOL major • CHEM 3511/3501 – Foundations of Bioorganic Chemistry with lab – required for BIOL major
- 4 more Upper Division hours in CHEM: ○ BIOL 3073 (Genetics Lab) will count as ONE of the 4 credits needed ○ BIOL 4511 – Biochemistry Lecture – 3 credits

Healthcare and Society minor: 18 hours total

- PSYC 1030 – General Psychology – counts in Social/Behavioral Science Gen Ed/need for

MCAT

OR

- SOCI 1010 – Intro to Sociology – counts in Social/Behavioral Science Gen Ed/need for MCAT
- PHIL 3514 – Biomedical Ethics – counts in BIOL major
- COMM 3012 – Health Communications

Choose **ONE** class from Health and Wellness:

- EDPR 2111 – Development Across Lifespan
- HLSC 2100 – Wellness Concepts Practice
- NUTR 2202 – Nutrition (online course)
- HLSC 2200 – Introduction to Public Health/Health Studies

Choose **ONE** class from Cultural Competency (this class may also count as the Upper Division Social Science required for BIOL major):

- ANTH 4521 – Culture, Society and Mental Health
- ANTH 4571 – Race and Health Disparities
- ECON 4740 – Healthcare Economics
- SOCI 3401 – Social Inequality
- SOCI 3422 – Racial/Ethnic Minorities
- SOCI 3432 – Sociology of Gender
- SOCI 4420 – Racial Inequality
- SOCI 4442 – Sociology of Poverty

Choose **ONE** class from Social and Psychological Foundations (this class may also count as the Upper Division Social Science required for BIOL major):

- ANTH 4531 – Alcohol/Drugs/Culture
- PSYC 3102 – Abnormal Psychology
- PSYC 3306 – Physiological Psychology
- PSYC 3506 – Human Sexuality
- PSYC 3507 – Alcohol/Drugs/Behavior
- PSYC 3512 – Health Psychology
- SOCI 4541 – Sociology of Aging
- SOCI 4851 – Medical Sociology
- SOCI 4852 – Sociology of Mental Illness

Psychology minor: 20 hours total

- PSYC 1030 – General Psychology
- PSYC 3010 – Research and Statistics I
- PSYC 3020 – Research and Statistics II
- 9 hours of ANY upper division psychology classes (3 classes)

PSYC 3010 and 3020 can count as both of your skills classes for the biology major

1 class from your upper division psychology classes may count into our upper division social science requirement for the biology major

Public Health minor: 18 hours total

Choose **ONE** Lower Division Core Course:

- PUBH 1180 – Population Health and Society
- HLSC 2200 – Introduction to Public Health and Health Sciences

Choose **THREE** Upper Division Core Courses:

- PUBH 3120 – Environmental Health I: Basics and Methods
- PUBH 3130 – Introduction to Social Determinants of Health (counts as UD Soc Sci for BIOL major)
- PUBH 3150 – Analytic and Research Methods in Public Health
- PUBH 3180 – Public Health Principles and Practice
- PUBH 3710 – Public Health Systems and Policy I

Choose **TWO** Elective Courses (some of these classes may also count as the Upper Division Social Science required for BIOL major)

- ANTH 4511 – Medical Anthropology
- ANTH 4571 – Race and Health Disparities
- COMM 3012 – Health Communication
- COMM 4015 – Health Literacy
- ESCI 4241 – Biogeography/GIS Analyses/Ecology
- HLSC 4200 – Cultural Competence in Health
- PHIL 3514 – Biomedical Ethics – counts as Science Ethics for BIOL major
- PUBH 3102 – Epidemics: From Plague to Ebola
- SOCI 4442 – Sociology of Poverty
- SOCI 4541 – Sociology of Aging

Sociology minor: 18 hours total

- SOCI 1010
- 15 hours of upper division sociology classes (5 classes) ⑦ 1 class may count into our upper division social science requirement for the biology major

Foreign Language minor: 18 hours total

The following languages have the option to be declared as a minor:

- Chinese
- French
- German
- Italian
- Japanese
- Russian (joint program with Rhodes College for Upper Division Russian courses)
- Spanish

If you have a background in one of the languages above, you can potentially test out of lower language levels; contact the Department of World Languages and Literature to find out more!

For each language, you must complete the following:

- Language at the 1020, 2010 and 2020 levels (or their equivalents through placement testing)
- 9 hours (3 courses) of Upper Division courses in your chosen language

Note: If you are starting from the beginning of a language, you **MUST** take the 1010 course for that language unless you place out of it. The 1010 language courses do **NOT** count towards the minor.

Note: If you place into the intermediate language classes (2010 or 2020, or a higher level), you can apply for retroactive credit for those courses through the department, or you can take additional upper division language courses to reach 18 hours for completion of the minor.

Note: If you are completing a BA degree in addition to your BS in Biology, you are required to complete a language through the 2020 level.

There are other languages that **CANNOT** be declared as a minor, but courses are offered at the 1010, 1020, 2010 and 2020 levels

- Arabic
- Korean
- Latin