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
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**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

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## 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 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: o BIOL 3073 (Genetics Lab) will count as ONE of the 4 credits needed o 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) 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