

# BIOLOGY

## Bachelor of Science

The Bachelor of Science in Biology program guides students in the study of the structure, function, growth, development, reproduction, origin, evolution, and distribution of living organisms. Students gain a strong foundation of knowledge in the biological sciences and develop their scientific skills needed to succeed in careers or post-graduate study. Guided by expert faculty, students can choose from a variety of authentic hands-on learning experiences including undergraduate research, service-learning, internships, human dissection, or working with our turtle assurance colony. Students can also practice leadership skills and engage in extracurricular biology through involvement in our award-winning biological honors society or other registered student clubs. Students in this program select one of three concentrations; General Biology, Environmental Sciences, and Pre-Health Sciences as described further below.

**General Biology:** This concentration provides students the opportunity to study a broad range of subjects across the biological sciences. This track is designed to allow flexibility in preparing students for a multitude of biological roles. Students can design a course of study that will prepare them for work in private sectors, government agencies, or for continued graduate education.

**Environmental Sciences:** This concentration integrates the biological, chemical, and physical sciences providing students with a strong foundation in how earth's systems function and ways our environmental and human health can be protected. Many environmental scientists work for local, state, or federal governments conducting research or monitoring and advising on policy, non-governmental organizations, or in academia.

**Pre-Health Sciences:** This concentration provides students with a strong foundation in a variety of the clinical sciences required for entry into and success in post-graduate professional programs and degrees including medicine, physician assistant, physical therapy, occupational therapy, dentistry, pharmacy, biomedical engineering, veterinary medicine, and advanced research degrees in these fields.

**Recommended minors:** Chemistry, Geography, Business for Non-Business Majors, or Psychology

This degree prepares students for a variety of career opportunities ranging from applied or basic laboratory research and field studies in state and federal organizations and industry to education in public and private school systems. Furthermore, the degree provides the ideal preparation for entry into professional school and graduate programs including medical school, dental school, and veterinary school, or advanced studies in the Biological Sciences.

## Program Course Requirements

Click here to view Core IMPACTS General Education Curriculum requirements (<http://catalog.daltonstate.edu/programs/coreimpacts/>).

### Program Advice (can share with CORE curriculum):

BIOL 1107K	Principles of Biology I (Required)	4
BIOL 1108K	Principles of Biology II (Required)	4
MATH 1113	Precalculus Mathematics (Required)	3
MATH 1401	Elementary Statistics (Required)	3

Click here to view Core IMPACTS General Education Curriculum requirements (<http://catalog.daltonstate.edu/programs/coreimpacts/>).

### Core IMPACTS General Education Curriculum requirements 42

NOTE: Core IMPACTS courses can also satisfy requirements in your Program of Study. Please review the requirements for your major to prevent taking extra courses. The USG Core IMPACTS curriculum is designed to ensure that students acquire essential knowledge in foundational academic areas and develop career-ready competencies. There are seven Core IMPACTS areas. Students at all USG institutions must meet the Core IMPACTS requirements in all specified areas.

#### Field of Study: Major Related

BIOL 2270	Ethical Issues in Science	2
CHEM 1211K	Principles of Chemistry I	4
CHEM 1212K	Principles of Chemistry II	4
PHYS 1111K	Introductory Physics I	4
PHYS 1112K	Introductory Physics II	4

#### Required Upper Level Courses (32-33)

BIOL 3000	Research Methods in Biology	3
BIOL 3100	Careers & Prof. Dev in Biology	1
BIOL 3200K	Cellular Biology	4
BIOL 3400K	Genetics	4
BIOL 3500K	Ecology	4
BIOL 4000	Senior Seminar	2
BIOL 4250	Evolution	3
or BIOL 4251	Human Evolution	
CHEM 3211K	Organic Chemistry I	4
CHEM 3212K	Organic Chemistry II	4
MATH 3050	Biological Statistics	3
or MATH 2253	Calculus and Analytic Geom I	

#### Choose one Concentration: \*\*/\*\*\*\*/\*\*\*\*

NOTE: Concentration must be declared through the Registrar's Office.

#### General Biology Concentration:

BIOL Upper Level Electives	22
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Choose at least 14 credit hours from the courses below.

BIOL 3340K	General Microbiology ****
BIOL 3510K	Plant Biology ****
BIOL 3520K	Invertebrate Zoology
BIOL 3530K	Freshwater Ecology
BIOL 3550	Conservation Biology
BIOL 3600K	Ornithology
BIOL 3650K	Herpetology
BIOL 3660K	Entomology
BIOL 3700	Field Biology Techniques
BIOL 3850	Neuroscience
BIOL 4100	Immunology
BIOL 4200	Pathology
BIOL 4251	Human Evolution
BIOL 4275	Bioremediation
BIOL 4300	Epidemiology
BIOL 4360K	Comparative Vertebrate A & P
BIOL 4410K	Molecular Biology

BIOL 4500K	Biotechnology
BIOL 4600	Ecotoxicology
BIOL 4700	Microscopy

If fewer than 22 hours are selected from the list above, select the remaining hours from the courses below.

BIOL 3150	Science and Society
BIOL 3900	Readings in Biology
BIOL 4800	Service Learning in Biology
BIOL 4860	Internship in Biology
BIOL 4900	Special Topics in Biology
BIOL 4960	Research in Biology
CHEM 3311K	Quantitative Analysis
CHEM 3312K	Instrumental Methods of Analysis
CHEM 3500	Biochemistry
CHEM 3700K	Environmental Chemistry
CHEM 4120	Drug Action and Drug Design
MATH 2253	Calculus and Analytic Geom I
MATH 3050	Biological Statistics

Free electives 6

Choose any classes that give transfer credit to fill these hours.

#### Environmental Biology Concentration:

BIOL Upper Level Environmental Electives 22

Choose at least 14 credit hours from the courses below.

BIOL 3340K	General Microbiology
BIOL 3510K	Plant Biology
BIOL 3520K	Invertebrate Zoology
BIOL 3530K	Freshwater Ecology
BIOL 3550	Conservation Biology
BIOL 3600K	Ornithology
BIOL 3650K	Herpetology
BIOL 3660K	Entomology
BIOL 3700	Field Biology Techniques
BIOL 4275	Bioremediation
BIOL 4500K	Biotechnology
BIOL 4600	Ecotoxicology
BIOL 4700	Microscopy

If fewer than 22 hours are selected from the list above, select the remaining hours from the courses below.

BIOL 3150	Science and Society
BIOL 3900	Readings in Biology **
BIOL 4800	Service Learning in Biology **
BIOL 4860	Internship in Biology
BIOL 4900	Special Topics in Biology ***
BIOL 4960	Research in Biology **
CHEM 3311K	Quantitative Analysis
CHEM 3312K	Instrumental Methods of Analysis
CHEM 3700K	Environmental Chemistry
MATH 2253	Calculus and Analytic Geom I
MATH 3050	Biological Statistics

Any SUST 3000-4000 course EXCEPT SUST 4000.

Free Electives 6

Choose any classes that give transfer credit to fill these hours.

#### Pre-Health Sciences Concentration:

BIOL Upper Level Pre-Health Electives 22

Choose at least 14 credit hours from the courses below.

BIOL 2251K	Anatomy and Physiology I
BIOL 2252K	Anatomy and Physiology II
BIOL 3340K	General Microbiology ****
BIOL 3660K	Entomology
BIOL 3850	Neuroscience
BIOL 4100	Immunology
BIOL 4200	Pathology
BIOL 4251	Human Evolution
BIOL 4300	Epidemiology
BIOL 4360K	Comparative Vertebrate A & P
BIOL 4410K	Molecular Biology
BIOL 4500K	Biotechnology
BIOL 4700	Microscopy
BIOL 4850K	Human Dissection

If fewer than 22 hours are selected from the list above, select the remaining hours from the courses below.

BIOL 3150	Science and Society
BIOL 3900	Readings in Biology **
BIOL 4800	Service Learning in Biology **
BIOL 4860	Internship in Biology
BIOL 4900	Special Topics in Biology ***
BIOL 4960	Research in Biology **
CHEM 3500	Biochemistry
CHEM 4120	Drug Action and Drug Design
MATH 2253	Calculus and Analytic Geom I
MATH 3050	Biological Statistics

Free Electives 6

Choose any classes that give transfer credit to fill these hours.

**Total Hours 120-121**

\*\* Students are limited to a maximum of eight credit hours in applied learning courses (BIOL 3900, CHEM 3900, BIOL 4800, CHEM 4800, BIOL 4860, CHEM 4860, BIOL 4960, and CHEM 4960). Students are limited to a maximum of four credit hours in any one of the four applied learning categories: readings (BIOL 3900 and CHEM 3900), service learning (BIOL 4800 and CHEM 4800), internships (BIOL 4860 and CHEM 4860), and research (BIOL 4960 and CHEM 4960).

\*\*\* BIOL 4900 (Special Topics in Biology) and CHEM 4900 (Special Topics in Chemistry) can be taken multiple times when topics have changed.

\*\*\*\* Students will not be able to count both BIOL 1203K & BIOL 3510K or BIOL 2260K & BIOL 3340K in Upper Level or General Elective areas. A student may take both classes in these pairs, but only one course will count in the Upper Level or General electives. The other course may count as a free elective.