

Admission Requirements For This Major

1. New freshmen admitted to USU in good standing qualify for admission to this major.
2. Transfer students from other institutions need a 2.25 transfer GPA and students transferring from other USU majors need a 2.25 total GPA for admission to this major in good standing.

The Program

The Department of Biology offers programs leading to a Bachelor of Science or Bachelor of Arts degree. Majors will complete a core of courses which provide an understanding of biological principles. Upper-division courses provide integration, in-depth study, and an opportunity for specialization within the different degree emphases. Additional coursework in chemistry, physics, statistics, and mathematics provides knowledge and analytical skills in these important related fields. Most biology degrees provide a foundation for graduate work. Biology majors can add a minor area of study, such as business or chemistry, to enhance their employment opportunities.

Career Opportunities

Four different emphases are available within the Biology degree. The **Biology** emphasis is the most flexible option. Electives may be selected in whatever subdiscipline the student wishes to emphasize (e.g., botany, ecology, zoology, entomology, microbiology etc.). The **Cellular/Molecular** and **Ecology/Biodiversity** emphases provide more directed training that is appropriate for research or other technical employment in academic institutions, government agencies, and the private sector. The **Environmental** emphasis prepares students in the biological and physical sciences as they relate to environmental problems and provides practical training for employment at the bachelor's degree level.

Biology Advising Center

The Department of Biology department head, the director of undergraduate studies, and advisors are available to provide all undergraduate majors with additional information regarding specific programs and career opportunities. The Biology Advising Center and the director of undergraduate studies are located in BNR 101. Additional information and an "Ask an Advisor" e-mail service are on the web at <http://www.biology.usu.edu/>

Undergraduate Degrees Offered Through This Department

Biology: Bachelor of Science (BS), Bachelor of Arts (BA)

Emphases: Biology
Cellular/Molecular
Ecology/Biodiversity
Environmental

Composite Teaching—Biological Science: BS, BA

Public Health: BS

Emphases: Industrial Hygiene
Environmental Health
Public Health Education

Graduate Degrees Offered Through This Department

Biology: MS and PhD

Ecology: MS and PhD

Toxicology: MS and PhD

Academic Advisement

All students should contact their academic advisor for assistance with course selection, program planning, and meeting graduation requirements. If students do not know who their advisor is, they should contact their department, college, or the Office of University Advising.

Graduation Requirements: BS and BA Degrees in Biology

Candidates for the **Bachelor of Science Degree** in the Department of Biology must meet all of the minimum requirements for the University, College of Science, and Department.

Candidates for the **Bachelor of Arts Degree** in the Department of Biology must meet all of the minimum requirements for the University, College of Science, and Department. In addition to the requirements listed on this sheet, a **BA Degree** candidate must receive foreign language training. For further information about the foreign language requirement for a BA degree, see the Utah State University *General Catalog*.

All candidates for BS and BA degrees should refer to the *General Catalog* for more detailed information and review this requirement sheet.

Minimum University Requirements*

Total credits	120
Grade point average (most majors require higher GPA)	2.00 GPA
Credits of C- or better	100
Credits of upper-division courses (#3000 or above)**	40
USU credits	30
(20 of which must be upper division, including 10 required by major)	
Completion of approved major program of study	See department
Credits in minor (if required by department)	12
Credits in American Institutions (ECON 1500; HIST 1700, 2700, or 2710; POLS 1100; or USU 1300).	3
University Studies requirements	See next page

*Colleges and departments may require more credits or a higher GPA. See requirements on this sheet.

**Students must accumulate a minimum of 40 upper-division credits by careful selection of courses. The minimum requirements for the major may not automatically meet this requirement.

Minimum College of Science Requirements

All College requirements are met by completing the Departmental degree requirements; no additional coursework is required.

Changes in Graduation/Catalog Requirements

Students who can complete a baccalaureate degree within seven years of enrollment at USU can qualify for graduation by meeting (1) the General Education/University Studies requirements in effect when they initially enrolled and (2) the major requirements in effect when they officially declared their major, even though there may have been changes in General Education/University Studies and major requirements since that time.

Students who have not completed the baccalaureate requirements within seven years of their initial enrollment at USU must have their General Education/University Studies and major requirements evaluated and approved by their department head and dean.

Undergraduate Course Expiration Policy

Coursework (including transfer credit) that is more than 10 years old and is required by the major may be disallowed by the student's department. Students will have an opportunity to revalidate coursework that is disallowed.

University Studies Requirements for Biology Major

Note: Approved University Studies courses and requirements are listed in the back section of each semester's *Schedule of Classes*.

General Education Requirements (30-34 credits)

Competency Requirements (9-10 credits)

Communications Literacy (CL1 and CL2) (6 credits)

ENGL 1010 (CL1) (3 credits) or satisfactory AP, CLEP, IBO, ACT, or SAT score

AND

ENGL 2010 (CL2) (3 credits) or satisfactory IBO score

Quantitative Literacy (QL) (3-4 credits)¹

MATH 1030 or 1050 or STAT 1040 (3-4 credits)

OR

One MATH or STAT course requiring MATH 1050 as a prerequisite

OR

Satisfactory AP, CLEP, IBO, ACT, or SAT score

Computer and Information Literacy (0 credits)

Passing grade on six computer and information literacy related examinations.

Breadth Requirements (18-20 credits)¹

Select at least one approved course from each of the following six categories: **American Institutions (BAI)**, **Creative Arts (BCA)**, **Humanities (BHU)**, **Life Sciences (BLS)**¹, **Physical Sciences (BPS)**¹, and **Social Sciences (BSS)**. At least two of the six breadth courses must be University Studies courses with a **USU prefix** (excluding USU 1000, 1010, 1100, 3330, 4900, and 6900). (CLEP or AP credit may be used.)

Exploration Requirement (3-4 credits)

Choose an additional class from one of the following General Education categories: QL, BAI, BCA, BHU, BLS, BPS, or BSS. CHEM 1220 (BPS), in conjunction with *either* PHYS 2120 (BPS) *or* PHYS 2220 (BPS/QL), will fulfill the Exploration Requirement for students in the Biology major.

Depth Education Requirements

Communications Intensive (CI) (2 courses)

BIOL 5250, along with another course having CI designation, will meet this requirement.

Quantitative Intensive (QI) (1 course)

STAT 3000 will meet this requirement.

Depth Course Requirements (4 credits minimum, including 2 credits minimum completed in each of two courses)

Complete at least 2 credits in approved 3000-level or above courses from each of the following two categories: **Humanities and Creative Arts (DHA)** and **Social Sciences (DSS)**.

¹Biology majors complete the Quantitative Literacy Competency with MATH 1210, complete the Physical Sciences Breadth Requirement with CHEM 1220, and complete the Life Sciences Breadth Requirement with BIOL 1620.

Required Coursework for Biology Major

To graduate, a candidate for any bachelor's degree offered by the Department of Biology must maintain a grade point average of 2.25 in all Department of Biology (BIOL or PUBH prefix) courses required for the major and a grade of C- or better in BIOL 1610 and 1620. The *Pass-Fail* option is not acceptable for any course required for the degree, but D grades are permitted within the restrictions of the 2.25 GPA.

Students may be asked to participate in an overall assessment exam covering important concepts in their major field of study.

Laboratory fees required for some Biology Department courses are used to purchase expendable laboratory items and other materials required for successful completion of laboratory assignments.

Note: Effective Summer Semester 2006, some course numbers changed, due to House Bill 320 (Common Course Numbering). Course numbers used *prior* to Summer Semester 2006 are shown in parentheses, following *formerly*.

Biology Emphasis

Required Biology Courses (21-22 credits) Credits

- BIOL 1610** Biology I (F). 4
(formerly **BIOL 1210**)
- BIOL 1620 (BLS)** Biology II (Sp). 4
(formerly **BIOL 1220**)
- BIOL 2220** General Ecology (F,Sp) 3
- BIOL 3060 (QI)** Principles of Genetics (F,Sp,Su). 4
(formerly **BIOL 3200**)
- BIOL 3300** General Microbiology (F,Sp) (4 cr)
- Or**
- BIOL 5210** Cell Biology (F) (3 cr) 3 or 4
- BIOL 5250 (CI)** Evolutionary Biology (F,Sp). 3

Field Course Requirement (2-3 credits)

Students must take one course from the following list:

- BIOL 2410** Plants and Fungi in the Field (Su). 2
- BIOL 3220 (QI)** Field Ecology (F) 2
- BIOL 4500** Applied Entomology (Sp). 3
- BIOL 5530** Insect Systematics and Evolution (F) 3
- BIOL 5550** Freshwater Invertebrates (Sp). 3
- BIOL 5560** Ornithology (Sp) 3
- BIOL 5570** Herpetology (Sp) 3

Physiology Course with Lab Requirement (4-5 credits)

Students must take one upper-division physiology course with an integrated or separate laboratory from the following list:

Courses with integrated laboratories: Credits

- BIOL 4400 (QI)** Plant Physiology (F). 4
- BIOL 5300 (QI)** Microbial Physiology (Sp). 4

Courses with separate lecture and lab; one of the following three lecture courses *and* BIOL 5610 must be taken to meet the requirement:

- BIOL 5100** Neurobiology (F) (3 cr) **or**
- BIOL 5600** Comparative Animal Physiology (Sp) (3 cr) **or**
- BIOL 5620** Medical Physiology (F) (3 cr). 3
- And**
- BIOL 5610 (QI)** Animal Physiology Laboratory (F,Sp) 2

Biology Electives (10 credits)

Students must select an additional 10 credits of 4000-level and above BIOL or PUBH prefix courses as electives. BIOL 3065 (Genetics Laboratory) may also be included toward these elective credits, even though it is a 3000-level course. A maximum of 4 credits from BIOL 4250 (1-2 credits), BIOL 4710 (1 credit), BIOL 5800 (1-3 credits), or seminar courses (1-2 credits) may be included among the 10 elective credits.

Required Physical Science Courses (26 credits) Credits

- CHEM 1210** Principles of Chemistry I (F,Sp). 4
- CHEM 1215** Chemical Principles Laboratory I (F,Sp) 1
(formerly **CHEM 1230**)
- CHEM 1220 (BPS)** Principles of Chemistry II (F,Sp,Su). 4
- CHEM 1225** Chemical Principles Laboratory II (F,Sp). 1
(formerly **CHEM 1240**)
- CHEM 2300** Principles of Organic Chemistry (F) 3
- CHEM 2315** Organic Chemistry Laboratory I (F). 1
(formerly **CHEM 2330**)
- CHEM 3700** Introductory Biochemistry (Sp) 3
- CHEM 3710** Introductory Biochemistry Laboratory (Sp). 1

- PHYS 2110** The Physics of Living Systems I (4 cr) **and**
- PHYS 2120 (BPS)** The Physics of Living Systems II (4 cr). 8
- Or**
- PHYS 2210 (QI)** General Physics—

Science and Engineering I (4 cr) **and**

- PHYS 2220 (BPS/QI)** General Physics—Science and
Engineering II (4 cr). 8

Mathematics and Statistics Requirement (7 credits)

- MATH 1210 (QL)** Calculus I (F,Sp,Su). 4
- STAT 3000 (QI)** Statistics for Scientists (F,Sp,Su) 3

Cellular/Molecular Emphasis

Required Biology Courses (30 credits)	Credits
<input type="checkbox"/> BIOL 1610 Biology I (F)	4
(formerly BIOL 1210)	
<input type="checkbox"/> BIOL 1620 (BLS) Biology II (Sp)	4
(formerly BIOL 1220)	
<input type="checkbox"/> BIOL 2220 General Ecology (F,Sp)	3
<input type="checkbox"/> BIOL 3060 (QI) Principles of Genetics (F,Sp,Su)	4
(formerly BIOL 3200)	
<input type="checkbox"/> BIOL 5190 Molecular Genetics (Sp)	3
<input type="checkbox"/> BIOL 5210 Cell Biology (F)	3
<input type="checkbox"/> BIOL 5230 Developmental Biology (Sp)	3
<input type="checkbox"/> BIOL 5250 (CI) Evolutionary Biology (F,Sp)	3

Choose one of the following Biotechnology courses:

<input type="checkbox"/> BIOL 5160 Methods in Biotechnology: Cell Culture (Sp)	3
<input type="checkbox"/> BIOL 5240 Methods in Biotechnology: Protein Purification Techniques (Sp)	3
<input type="checkbox"/> BIOL 5260 Methods in Biotechnology: Molecular Cloning (F)	3

Physiology Course with Lab Requirement (4-5 credits)

Students must take one upper-division physiology course with an integrated or separate laboratory from the following list:

Courses with integrated laboratories:	Credits
<input type="checkbox"/> BIOL 4400 (QI) Plant Physiology (F)	4
<input type="checkbox"/> BIOL 5300 (QI) Microbial Physiology (Sp)	4

Courses with separate lecture and lab; one of the following three lecture courses and BIOL 5610 must be taken to meet the requirement:

<input type="checkbox"/> BIOL 5100 Neurobiology (F) (3 cr) or	
<input type="checkbox"/> BIOL 5600 Comparative Animal Physiology (Sp) (3 cr) or	
<input type="checkbox"/> BIOL 5620 Medical Physiology (F) (3 cr)	3
And	
<input type="checkbox"/> BIOL 5610 (QI) Animal Physiology Laboratory (F,Sp)	2

Biology Electives (9 credits)

Students must select an additional 9 credits of 4000-level and above BIOL prefix courses as electives. BIOL 3065 (Genetics Laboratory) and BIOL 3300 (General Microbiology) may also be included toward these elective credits (even though they are 3000-level courses). A maximum of 4 credits from BIOL 4250 (1-2 credits), BIOL 4710 (1 credit), BIOL 5800 (1-3 credits), or seminar courses (1-2 credits) may be included among the 9 elective credits.

Required Physical Science Courses (36 credits)

Required Physical Science Courses (36 credits)	Credits
<input type="checkbox"/> CHEM 1210 Principles of Chemistry I (F,Sp)	4
<input type="checkbox"/> CHEM 1215 Chemical Principles Laboratory I (F,Sp)	1
(formerly CHEM 1230)	
<input type="checkbox"/> CHEM 1220 (BPS) Principles of Chemistry II (F,Sp,Su)	4
<input type="checkbox"/> CHEM 1225 Chemical Principles Laboratory II (F,Sp)	1
(formerly CHEM 1240)	
<input type="checkbox"/> CHEM 2310 Organic Chemistry I (F)	4
<input type="checkbox"/> CHEM 2315 Organic Chemistry Laboratory I (F)	1
(formerly CHEM 2330)	
<input type="checkbox"/> CHEM 2320 Organic Chemistry II (Sp)	4
<input type="checkbox"/> CHEM 2325 Organic Chemistry Laboratory II (Sp)	1
(formerly CHEM 2340)	
<input type="checkbox"/> CHEM 5700 General Biochemistry I (F)	3
<input type="checkbox"/> CHEM 5710 General Biochemistry II (Sp)	3
<input type="checkbox"/> CHEM 5720 General Biochemistry Laboratory (Sp)	2

<input type="checkbox"/> PHYS 2110 The Physics of Living Systems I (4 cr) and	
<input type="checkbox"/> PHYS 2120 (BPS) The Physics of Living Systems II (4 cr)	8
Or	
<input type="checkbox"/> PHYS 2210 (QI) General Physics—	
Science and Engineering I (4 cr) and	
<input type="checkbox"/> PHYS 2220 (BPS/QI) General Physics—Science and	
Engineering II (4 cr)	8

Mathematics and Statistics Requirement (7 credits)

<input type="checkbox"/> MATH 1210 (QL) Calculus I (F,Sp,Su)	4
<input type="checkbox"/> STAT 3000 (QI) Statistics for Scientists (F,Sp,Su)	3

Ecology/Biodiversity Emphasis

Required Biology Courses (24 credits)	Credits
<input type="checkbox"/> BIOL 1610 Biology I (F)	4
(formerly BIOL 1210)	
<input type="checkbox"/> BIOL 1620 (BLS) Biology II (Sp)	4
(formerly BIOL 1220)	
<input type="checkbox"/> BIOL 2220 General Ecology (F,Sp)	3
<input type="checkbox"/> BIOL 3060 (QI) Principles of Genetics (F,Sp,Su)	4
(formerly BIOL 3200)	
<input type="checkbox"/> BIOL 3220 (QI) Field Ecology (F)	2
<input type="checkbox"/> BIOL 3300 General Microbiology (F,Sp)	4
<input type="checkbox"/> BIOL 5250 (CI) Evolutionary Biology (F,Sp)	3

Physiology Course with Lab Requirement (4-5 credits)

Students must take one upper-division physiology course with an integrated or separate laboratory from the following list:

Courses with integrated laboratories:	Credits
<input type="checkbox"/> BIOL 4400 (QI) Plant Physiology (F)	4
<input type="checkbox"/> BIOL 5300 (QI) Microbial Physiology (Sp)	4

Courses with separate lecture and lab; one of the following three lecture courses and BIOL 5610 must be taken to meet the requirement:

<input type="checkbox"/> BIOL 5100 Neurobiology (F) (3 cr) or	
<input type="checkbox"/> BIOL 5600 Comparative Animal Physiology (Sp) (3 cr) or	
<input type="checkbox"/> BIOL 5620 Medical Physiology (F) (3 cr)	3
And	
<input type="checkbox"/> BIOL 5610 (QI) Animal Physiology Laboratory (F,Sp)	2

Clusters (8-10 credits)

Students must take one course from each of the following three clusters.

Plant Biology:	Credits
<input type="checkbox"/> BIOL 2410 Plants and Fungi in the Field (Su)	2
<input type="checkbox"/> BIOL 4420 Plant Taxonomy (Sp)	3

Animal Biology:	Credits
<input type="checkbox"/> BIOL 4500 Applied Entomology (Sp)	3
<input type="checkbox"/> BIOL 5530 Insect Systematics and Evolution (F)	3
<input type="checkbox"/> BIOL 5550 Freshwater Invertebrates (Sp)	3
<input type="checkbox"/> BIOL 5560 Ornithology (Sp)	3
<input type="checkbox"/> BIOL 5570 Herpetology (Sp)	3
<input type="checkbox"/> BIOL 5580 Mammalogy (F)	3

Ecology/Evolution:	Credits
<input type="checkbox"/> BIOL 4060 (CI) Exploring Animal Behavior (Sp)	3
<input type="checkbox"/> BIOL 5010 Biogeography (Sp)	3
<input type="checkbox"/> BIOL 5020 (QI) Modeling Biological Systems (F)	3
<input type="checkbox"/> BIOL 5380 Evolutionary Genetics (F)	4
<input type="checkbox"/> BIOL 5590 Animal Community Ecology (Sp) (Alt. Years)	4
<input type="checkbox"/> WILD 4600 Conservation Biology (Sp)	3

Electives (2-3 credits)

Students must take one additional course from this list or the clusters above or other upper-division courses approved by advisor.

	Credits
<input type="checkbox"/> BIOL 3065 Genetics Laboratory (F)	2
(formerly BIOL 4100)	
<input type="checkbox"/> BIOL 4410 Plant Structure (Sp)	3
<input type="checkbox"/> BIOL 5310 Soil Microbiology (F) (Alt. Years)	3
<input type="checkbox"/> BIOL 5800 Undergraduate Research (F,Sp,Su)	2-3

Required Physical Science Courses (34 credits)

<input type="checkbox"/> CHEM 1210 Principles of Chemistry I (F,Sp)	4
<input type="checkbox"/> CHEM 1215 Chemical Principles Laboratory I (F,Sp)	1
(formerly CHEM 1230)	
<input type="checkbox"/> CHEM 1220 (BPS) Principles of Chemistry II (F,Sp,Su)	4
<input type="checkbox"/> CHEM 1225 Chemical Principles Laboratory II (F,Sp)	1
(formerly CHEM 1240)	
<input type="checkbox"/> CHEM 2300 Principles of Organic Chemistry (F)	3
<input type="checkbox"/> CHEM 2315 Organic Chemistry Laboratory I (F)	1
(formerly CHEM 2330)	
<input type="checkbox"/> CHEM 3700 Introductory Biochemistry (Sp)	3
<input type="checkbox"/> CHEM 3710 Introductory Biochemistry Laboratory (Sp)	1

	Credits
<input type="checkbox"/> GEO 1110 (BPS) The Dynamic Earth: Physical Geology (F,Sp) 4 (formerly GEOL 1150)	
<input type="checkbox"/> SOIL 3000 Fundamentals of Soil Science (F,Sp) 4	
<input type="checkbox"/> PHYS 2110 The Physics of Living Systems I (4 cr) and	
<input type="checkbox"/> PHYS 2120 (BPS) The Physics of Living Systems II (4 cr) 8	
Or	
<input type="checkbox"/> PHYS 2210 (QI) General Physics— Science and Engineering I (4 cr) and	
<input type="checkbox"/> PHYS 2220 (BPS/QI) General Physics—Science and Engineering II (4 cr) 8	

Mathematics and Statistics Requirement (7 credits)

<input type="checkbox"/> MATH 1210 (QL) Calculus I (F,Sp,Su) 4	
<input type="checkbox"/> STAT 3000 (QI) Statistics for Scientists (F,Sp,Su) 3	

Environmental Emphasis

Required Biology Courses (24 credits)	Credits
<input type="checkbox"/> BIOL 1610 Biology I (F) 4 (formerly BIOL 1210)	
<input type="checkbox"/> BIOL 1620 (BLS) Biology II (Sp) 4 (formerly BIOL 1220)	
<input type="checkbox"/> BIOL 2220 General Ecology (F,Sp) 3	
<input type="checkbox"/> BIOL 3060 (QI) Principles of Genetics (F,Sp,Su) 4 (formerly BIOL 3200)	
<input type="checkbox"/> BIOL 3220 (QI) Field Ecology (F) 2	
<input type="checkbox"/> BIOL 3300 General Microbiology (F,Sp) 4	
<input type="checkbox"/> BIOL 5250 (CI) Evolutionary Biology (F,Sp) 3	

Plant Identification (2-3 credits)

Choose one of the following courses:

<input type="checkbox"/> BIOL 2410 Plants and Fungi in the Field (Su) 2	
<input type="checkbox"/> BIOL 4420 Plant Taxonomy (Sp) 3	

Physiology Course with Lab Requirement (4-5 credits)

Students must take one upper-division physiology course with an integrated or separate laboratory from the following list:

Courses with integrated laboratories:	Credits
<input type="checkbox"/> BIOL 4400 (QI) Plant Physiology (F) 4	
<input type="checkbox"/> BIOL 5300 (QI) Microbial Physiology (Sp) 4	

Courses with separate lecture and lab; one of the following three lecture courses and BIOL 5610 must be taken to meet the requirement:

<input type="checkbox"/> BIOL 5100 Neurobiology (F) (3 cr) or	
<input type="checkbox"/> BIOL 5600 Comparative Animal Physiology (Sp) (3 cr) or	
<input type="checkbox"/> BIOL 5620 Medical Physiology (F) (3 cr) 3	
And	
<input type="checkbox"/> BIOL 5610 (QI) Animal Physiology Laboratory (F,Sp) 2	

Biology Elective Courses (12 credits)

Students must take 12 credits from the following list or others approved by advisor. Up to 3 credits of BIOL 5800 may be included.

	Credits
<input type="checkbox"/> ADVS 5400 Environmental Toxicology (Sp) 3	
<input type="checkbox"/> BIOL 4430 Introduction to Plant Pathology (Sp) 4	
<input type="checkbox"/> BIOL 4500 Applied Entomology (Sp) 3	
<input type="checkbox"/> BIOL 5020 (QI) Modeling Biological Systems (F) 3	
<input type="checkbox"/> BIOL 5310 Soil Microbiology (F) (Alt. Years) 3	
<input type="checkbox"/> BIOL 5320 Soil Microbiology Laboratory (F) (Alt. Years) 2	
<input type="checkbox"/> BIOL 5800 Undergraduate Research (F,Sp,Su) 1-3	
<input type="checkbox"/> CEE/SOIL 5620 Aquatic Chemistry (F) 3	
<input type="checkbox"/> GEO 1110 (BPS) The Dynamic Earth: Physical Geology (F,Sp) 4 (formerly GEOL 1150)	
<input type="checkbox"/> PUBH/CEE 3610 Environmental Management (F) 3	
<input type="checkbox"/> SOIL 3000 Fundamentals of Soil Science (F,Sp) 4	

Required Physical Science Courses (36 credits)	Credits
<input type="checkbox"/> CHEM 1210 Principles of Chemistry I (F,Sp) 4	
<input type="checkbox"/> CHEM 1215 Chemical Principles Laboratory I (F,Sp) 1 (formerly CHEM 1230)	
<input type="checkbox"/> CHEM 1220 (BPS) Principles of Chemistry II (F,Sp,Su) 4	
<input type="checkbox"/> CHEM 1225 Chemical Principles Laboratory II (F,Sp) 1 (formerly CHEM 1240)	
<input type="checkbox"/> CHEM 2310 Organic Chemistry I (F) 4	
<input type="checkbox"/> CHEM 2315 Organic Chemistry Laboratory I (F) 1 (formerly CHEM 2330)	
<input type="checkbox"/> CHEM 2320 Organic Chemistry II (Sp) 4	
<input type="checkbox"/> CHEM 2325 Organic Chemistry Laboratory II (Sp) 1 (formerly CHEM 2340)	
<input type="checkbox"/> CHEM 3000 (QI) Quantitative Analysis (F) 3 (formerly CHEM 3600)	
<input type="checkbox"/> CHEM 3005 Quantitative Analysis Laboratory (F) 1 (formerly CHEM 3610)	
<input type="checkbox"/> CHEM 3700 Introductory Biochemistry (Sp) 3	
<input type="checkbox"/> CHEM 3710 Introductory Biochemistry Laboratory (Sp) 1	
<input type="checkbox"/> PHYS 2110 The Physics of Living Systems I (4 cr) and	
<input type="checkbox"/> PHYS 2120 (BPS) The Physics of Living Systems II (4 cr) 8	
Or	
<input type="checkbox"/> PHYS 2210 (QI) General Physics— Science and Engineering I (4 cr) and	
<input type="checkbox"/> PHYS 2220 (BPS/QI) General Physics—Science and Engineering II (4 cr) 8	

Mathematics and Statistics Requirement (7 credits)

<input type="checkbox"/> MATH 1210 (QL) Calculus I (F,Sp,Su) 4	
<input type="checkbox"/> STAT 3000 (QI) Statistics for Scientists (F,Sp,Su) 3	

Minor Requirements

Biology Minor: The biology minor requires completion of the following: BIOL 1610 and 1620 (both completed with a C- or better grade); and 12 credits chosen from any upper-division (3000-level) BIOL prefix elective credits. **Note:** Although BIOL/NR 2220 is a lower-division course, it may be counted toward the 12 elective credits. A minimum cumulative GPA of 2.25 is required for these courses.

BioMath Minor: This minor requires mathematics and quantitative biology courses beyond those required for the basic biology degrees. It is an excellent option for students considering graduate work. A minimum GPA of 2.25 is required for these courses, with a C- or better grade in *both* BIOL 1610 and 1620. Biology majors may take this minor through the Mathematics and Statistics Department. The requirements for this minor are described in the Utah State University *General Catalog*. For further information, contact the Biology Advising Center (BNR 101) or Dr. James Haefner (BNR 233).

Public Health Minor: The Public Health minor requires completion of the following: BIOL 1610 and 1620 (both completed with a C- or better grade); and 12 credits of upper-division (3000-level and above) Public Health elective courses. A minimum GPA of 2.25 is required for these courses.

Departmental Honors

Biology majors enrolled in the Honors Program (or those with at least a 3.5 GPA) may earn Departmental Honors by completing 9 credits of upper-division honors Biology coursework, BIOL 5800H, and a research-based Bachelor's Thesis. For further information, contact Dr. Kimberly A. Sullivan, BNR 313, (435) 797-3713, yejunco@biology.usu.edu.

Requirement Changes

Department of Biology majors will be responsible for meeting the requirements that were in effect when they entered the program. Majors should consult with their advisors on a regular basis to be aware of any changes in requirements.

Materials for Persons with Disabilities

This requirement sheet is available in digital format, recordings, or large print upon request to the USU Disability Resource Center.

For more information contact

Biology Department; Biology-Natural Resources 101; Utah State University; 5305 Old Main Hill; Logan UT 84322-5305; tel. (435) 797-3203; e-mail undergrad_info@biology.usu.edu; <http://www.biology.usu.edu/>