B.S., BIOLOGICAL SCIENCES WITHOUT CONCENTRATION

Minimum Requirements for Degree: 120 credits
Students must earn a C- grade or better in each course.

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<td><strong>General University Requirements</strong></td>
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<td>Complete the general university requirements. (<a href="http://catalog.uaf.edu/bachelors">http://catalog.uaf.edu/bachelors</a>)</td>
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<td>As part of the general education requirements, complete:</td>
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<td></td>
<td>MATH F230X Essential Calculus with Applications</td>
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<tr>
<td></td>
<td>or MATH F251X Calculus I</td>
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<tr>
<td></td>
<td>CHEM F105X General Chemistry I</td>
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<tr>
<td></td>
<td>and CHEM F106X General Chemistry II</td>
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<td><strong>B.S. Degree Requirements</strong></td>
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<td>Complete the B.S. degree requirements. (<a href="http://catalog.uaf.edu/bachelors/summary-of-bachelors-degree-reqs/#bachelorofsciencetext">http://catalog.uaf.edu/bachelors/summary-of-bachelors-degree-reqs/#bachelorofsciencetext</a>)</td>
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<td>As part of the B.S. degree requirements, complete:</td>
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<tr>
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<td>STAT F200X Elementary Statistics</td>
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<td></td>
<td>or STAT F300 Statistics</td>
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<td></td>
<td>BIOL F115X Fundamentals of Biology I</td>
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<td></td>
<td>BIOL F116X Fundamentals of Biology II</td>
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<td><strong>Program Requirements</strong></td>
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<td>BIOL F260</td>
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<tr>
<td>BIOL F360</td>
<td>Cell and Molecular Biology</td>
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<td>BIOL F371</td>
<td>Principles of Ecology</td>
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<td></td>
<td>Complete one of the following:</td>
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<tr>
<td></td>
<td>BIOL F111X and BIOL F112X Human Anatomy and Physiology I</td>
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<td>BIOL F310 Animal Physiology</td>
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<td>BIOL F342 Microbiology</td>
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<td></td>
<td>BIOL F434 Structure and Function of Vascular Plants</td>
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<td>BIOL F481 Principles of Evolution</td>
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<td>CHEM F321 Organic Chemistry I</td>
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<td>CHEM F325 Organic Chemistry II</td>
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<tr>
<td></td>
<td>or CHEM F351 General Biochemistry: Metabolism</td>
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<tr>
<td></td>
<td>PHYS F103X College Physics I</td>
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<td></td>
<td>or PHYS F211X General Physics I</td>
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<td></td>
<td>PHYS F104X College Physics II</td>
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<td></td>
<td>or PHYS F212X General Physics II</td>
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<tr>
<td></td>
<td>or CS F103 Introduction to Computer Programming</td>
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<td></td>
<td>or CS F201 Computer Science I</td>
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<td></td>
<td><strong>Electives</strong></td>
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<td></td>
<td>Organismal elective</td>
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<td>Complete one additional course from the following:</td>
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<td>List D</td>
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<tr>
<td></td>
<td>Biology electives</td>
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<td>Complete four additional courses at the 200 level or above, at least three of which must be from the following:</td>
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<tr>
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<td>Lists A, B, C, D, or E</td>
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<td>BIOL F400</td>
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<td>BIOL F441</td>
<td>Animal Behavior</td>
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<tr>
<td>BIOL F466</td>
<td>Advanced Cell and Molecular Laboratory</td>
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<tr>
<td>BIOL F472</td>
<td>Community Ecology</td>
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<tr>
<td>BIOL F473</td>
<td>Limnology</td>
<td></td>
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<tr>
<td>BIOL F491</td>
<td>The Human Microbiome</td>
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<tr>
<td></td>
<td>BIOL F397, BIOL F497, BIOL F490, URSA F388 or URSA F488 courses may be substituted by petition for a maximum of two required elective courses in biology (3-4 credits of independent study or research per substituted course). The subject area of the independent study or research will determine which biological subject areas the credits satisfy.</td>
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<td></td>
<td>2 Fulfills the baccalaureate capstone requirement.</td>
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<td></td>
<td>3 Students working individually with a faculty member may, for example, take BIOL F490, BIOL F497 or do so without course credits.</td>
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<tr>
<td></td>
<td>4 Capstone courses may be double counted as electives.</td>
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<td><strong>Note:</strong> A foreign language is encouraged by the department in meeting requirements of the general education requirements.</td>
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**Biology Elective Course Lists**
Courses that satisfy upper-division elective credit may require prerequisites.

**LIST A - CELL AND MOLECULAR BIOLOGY**

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<tr>
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<td>BIOL F342</td>
<td>Microbiology</td>
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<td>BIOL F360</td>
<td>Cell and Molecular Biology</td>
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<tr>
<td>BIOL F417</td>
<td>Neurobiology</td>
<td>3</td>
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<tr>
<td>BIOL F435</td>
<td>Introduction to Biology of Cancer</td>
<td>3</td>
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<tr>
<td>BIOL F460</td>
<td>Principles of Virology</td>
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<td>BIOL F462</td>
<td>Infectious Diseases</td>
<td>3</td>
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<tr>
<td>BIOL F465</td>
<td>Immunology</td>
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<td>BIOL F466</td>
<td>Advanced Cell and Molecular Laboratory</td>
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<td>BIOL F491</td>
<td>The Human Microbiome</td>
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<td>CHEM F325</td>
<td>Organic Chemistry II</td>
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<td>CHEM F450</td>
<td>Information Storage and Transfer: Molecules and Pathways</td>
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<td>CHEM F351</td>
<td>General Biochemistry: Metabolism</td>
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<tr>
<td>CHEM F470</td>
<td>Cellular and Molecular Neuroscience</td>
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<td>Neurochemistry</td>
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### LIST B - PHYSIOLOGY

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<td>Medical Physiology</td>
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<tr>
<td>BIOL F335</td>
<td>Principles of Epidemiology</td>
<td>3</td>
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<tr>
<td>BIOL F342</td>
<td>Microbiology</td>
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<td>BIOL F412</td>
<td>Exercise Physiology</td>
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<td>BIOL F417</td>
<td>Neurobiology</td>
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<td>BIOL F434</td>
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<td>Environmental Microbiology</td>
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### LIST C - ECOLOGY AND EVOLUTIONARY BIOLOGY

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<tr>
<td>BIOL F418</td>
<td>Biogeography</td>
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<td>BIOL F433</td>
<td>Conservation Genetics</td>
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<td>BIOL F441</td>
<td>Animal Behavior</td>
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<td>BIOL F457</td>
<td>Environmental Microbiology</td>
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<tr>
<td>BIOL F469</td>
<td>Landscape Ecology and Wildlife Habitat</td>
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<tr>
<td>BIOL F471</td>
<td>Population Ecology</td>
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<td>BIOL F472</td>
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<td>BIOL F476</td>
<td>Ecosystem Ecology</td>
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<td>BIOL F483</td>
<td>Stream Ecology</td>
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<td>BIOL F485</td>
<td>Global Change Biology</td>
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<td>BIOL F486</td>
<td>Vertebrate Paleontology</td>
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<tr>
<td>BIOL F487</td>
<td>Conceptual Issues in Evolutionary Biology</td>
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<td>BIOL F488</td>
<td>Arctic Vegetation Ecology: Geobotany</td>
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<td>BIOL F489</td>
<td>Vegetation Description and Analysis</td>
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<td>WLF F301</td>
<td>Design of Wildlife Studies</td>
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<td>WLF F421</td>
<td>Ecology and Management of Large Mammals</td>
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### LIST D - ORGANISMAL BIOLOGY

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<td>BIOL F305</td>
<td>Invertebrate Zoology</td>
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<td>BIOL F331</td>
<td>Systematic Botany</td>
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<td>BIOL F406</td>
<td>Entomology</td>
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<td>Biogeography</td>
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<td>Ornithology</td>
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### LIST E - BIOMEDICAL SCIENCE

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<td>Fundamentals of Pharmacology</td>
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<td>Biomedical and Research Ethics</td>
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<td>Principles of Virology</td>
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