A grade of "C" or better in BIOL 105 or consent of Instructional Unit. Focuses on research to discover new antibiotics to help alleviate the current worldwide crisis of antibiotic-resistant bacteria including microbial cell structure, growth, genetics and antibiotic production, DNA sequencing, PCR, nanopore-based genome sequencing, and bioinformatic analysis. Lab work will focus on determining, analyzing and "mining" the genome sequence of antibiotic-producing bacteria isolated in BIOL 105, with the aim of discovering novel antibiotics. Strong emphasis on scientific inquiry including critical thinking, laboratory research methodology, and communication abilities. This course is intended for non-biology majors and fulfills the laboratory science distribution requirement. It is also required for WSU-Vancouver Environmental Science/Regional Planning majors. [NS, SE]

MAMMALS OF THE NORTHWEST
BIOL 140 3 Credits/Units
33 hours of lecture
Important mammals of the Pacific Northwest. Their identification, classification, life histories, ecology, current status, and management. [NS, SE]

BIRDS OF THE PACIFIC NORTHWEST
BIOL 141 3 Credits/Units
33 hours of lecture
Important Birds of the Pacific Northwest. Their identification, classification, life histories, ecology, current status, and management. [NS, SE]

FRESHWATER FISHES OF THE PACIFIC NORTHWEST
BIOL 142 3 Credits/Units
33 hours of lecture
Important fishes of the Pacific Northwest. Identification, classification, and basic biology of freshwater fishes of the Pacific Northwest. Introduction to fishery management concepts. Overview of factors affecting salmon in the Columbia River Basin. [NS, SE]

INTRODUCTION TO FORESTRY
BIOL 143 3 Credits/Units
33 hours of lecture
A forest management course including the structure and function of trees, soils, forest ecology, forest insects and diseases, timber management, fire management, and forest economy. Class will occasionally meet off campus and a Saturday field trip is required. [NS, SE]

REPTILES & AMPHIBIANS OF THE PACIFIC NW
BIOL 145 3 Credits/Units
33 hours of lecture
Introduction to the biology, ecology, evolution, and geographic distribution of Pacific Northwest reptiles and amphibians. [NS, SE]

MARINE BIOLOGY
BIOL 150 5 Credits/Units
33 hours of lecture / 44 hours of lab
The marine environment (physical and chemical properties), its plants, bacteria, animal life (vertebrates, invertebrates), ecosystems, fisheries and pollution. [NS, SE]

GENERAL BIOLOGY W/LAB
BIOL&160 4 Credits/Units
33 hours of lecture / 44 hours of lab
Introduction to the study of the cell, the basic component of all living organisms. Emphasis on cell chemistry, structure, metabolism, energetics, cell division and genetic principles. Intended for students seeking a two-year degree in the health occupations. Lab work is required. Successful completion fulfills pre-requisite for BIOL 241, BIOL 251, and BIOL 260. [GE, SE, NS] [PNP]

HUMAN BIOLOGY
BIOL 164 4 Credits/Units
44 hours of lecture
Concurrent enrollment in BIOL 165 recommended. The structure and function of the human body as it relates to homeostasis, health, disease and the environment. Concepts to be covered include human organization, processing, transporting, integration/coordination, reproduction, genetic, and evolution/ecology. Can be used as a science distribution requirement. Formerly BIOL 160. [NS, SE]
**Biology (BIOL)**

<table>
<thead>
<tr>
<th>HUMAN</th>
<th>BIOLOGY</th>
<th>LAB</th>
<th>CREDITS/UNITS</th>
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<tbody>
<tr>
<td>BIOL 165</td>
<td>1 Credit/Unit</td>
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| 22 hours of lab
Concurrent enrollment in, or completion of BIOL 164 required.
Laboratory study of the structure and function of the human body as it relates to homeostasis, health, disease, and the environment. Formerly BIOL 161. [NS, SE] |

**GENETICS**

<table>
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<tr>
<th>HUMAN</th>
<th>BIOL 167</th>
<th>3 Credits/Units</th>
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| 33 hours of lecture
Introduction to a variety of genetics topics, including nature versus, nurture, forensic sciences, patterns of inheritance, pedigree analysis, diseases, genetically modified organisms, gene therapy, cloning, and eugenics. Course will also focus on realized and/or potential impacts on society. Formerly BIOL 162. [NS, SE] [PNP] |

**LABORATORY**

<table>
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<tr>
<th>BIOL 168</th>
<th>2 Credits/Units</th>
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| 44 hours of lab
**Prerequisite:** A grade of "B-" or better in BIOL 100 or BIOL 164 or BIOL 167 or consent of Instructional Unit.
An introductory course that explores a variety of genetics topics through hands-on activities, simulations, presentation, and discussions. Activities may include DNA extraction, restriction enzyme digestions, electrophoresis, recombinant DNA, bacterial transformation, polymerase chain reaction (PCR) mutagenesis, genetically modified foods, antibiotics resistance, genetic crosses, genetic mapping, population genetics, and DNA databases. [NS, SE] |

**BIOETHICS**

<table>
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<tr>
<th>BIOL 180</th>
<th>3 Credits/Units</th>
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| 33 hours of lecture
Study of biological science and ethics. Ethical principles and theories are used in solving bioethical dilemmas. Concepts studied include genetic engineering, inherited disorders, cloning, physician assisted suicide, allocation of health resources, organ donation, and environmental ethics. Credit not allowed for both BIOL 180 and HUM 180. [GE, NS, SE] |

**COOPERATIVE WORK EXPERIENCE**

<table>
<thead>
<tr>
<th>BIOL 199</th>
<th>5 Credits/Units</th>
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| 165 hours of clinical
**Prerequisite:** Consent of Instructional Unit.
Supervised work experience in an approved job. Completion of specific learning objectives and employer evaluation. Completion of, or concurrent enrollment in, HDEV 195, 198, or 200 required. [GE] |

**FLOWERING PLANTS OF THE PACIFIC NORTHWEST**

<table>
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<tr>
<th>BIOL 224</th>
<th>5 Credits/Units</th>
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| 33 hours of lecture / 44 hours of lab
Identification and ecology of local wildflowers through the use of taxonomic keys, preparation of specimens and field trips to study native species in their habitats. For forestry, wildlife, recreation, botany and non-biology majors interested in learning to recognize local wildflowers. A Saturday field trip is required. [NS, SE] |

**HUMAN ANATOMY AND PHYSIOLOGY I**

<table>
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<tr>
<th>BIOL&amp;241</th>
<th>5 Credits/Units</th>
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| 33 hours of lecture / 44 hours of lab
Concurrent enrollment in BIOL& 241 L.
**Prerequisite:** A grade of "C" or better in BIOL 160 or department approval.
The first in a two-term sequence exploring the relationships between structure and function in the human body. The sequence is intended as a prerequisite for students planning to major in Nursing, Dental Hygiene or other allied health programs, or as life science credit for non-biology majors. Topics include homeostasis, terminology, histology, the integumentary, skeletal, articular, muscular, nervous, and endocrine systems. [NS, SE] |

**HUMAN ANATOMY AND PHYSIOLOGY II**

<table>
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<tr>
<th>BIOL&amp;242</th>
<th>5 Credits/Units</th>
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</table>
| 33 hours of lecture / 44 hours of lab
Concurrent enrollment in BIOL& 242 L.
**Prerequisite:** A grade of "C" or better in BIOL 241 or department approval.
The second in a two-term sequence exploring the relationships between structure and function in the human body. The sequence is intended as a prerequisite for students planning to major in Nursing, Dental Hygiene or other allied health programs, or as life science credit for non-biology majors. Topics include endocrine, cardiovascular, respiratory, digestive, uriniry, and reproductive systems and fluid and electrolyte balance. [NS, SE] |
HUMAN A & P I
BIOL&251  5 Credits/Units
33 hours of lecture / 44 hours of lab
Concurrent enrollment in BIOL& 251L.
Prerequisite: A grade of "C" or better in BIOL 100 or BIOL 160 or BIOL 164/165, or BIOL 221 or CHEM 121 or 141 or consent of Instructional Unit.
The first in a three-term sequence exploring the relationships between structure and function in the human body. The sequence is intended as a prerequisite for students planning to major in Nursing, Dental Hygiene or other allied health programs, or as life science credit for non-biology majors. Topics include homeostasis, terminology, cells, protein synthesis, DNA replication, histology, the integumentary, skeletal, articular, and muscular systems, and bone, muscle and membrane physiology. Formerly BIOL 231. Credit is not allowed for both BIOL 251 and BIOL 231. Formerly BIOL 231.

HUMAN A & P II
BIOL&252  5 Credits/Units
33 hours of lecture / 44 hours of lab
Concurrent enrollment in BIOL& 252L required.
Prerequisite: A grade of "C" or better in BIOL 251 or written consent of Instructional Unit.
The second in a three-term sequence exploring the relationships between structure and function in the human body. The sequence is intended as a prerequisite for students planning to major in Nursing, Dental Hygiene or other allied health programs, or as life science credit for non-biology majors. Topics include homeostasis, neural tissue, the spinal cord and spinal nerves, the brain and cranial nerves, integration of neural function, the special senses, the endocrine and reproductive systems, development and inheritance. Formerly BIOL 232. Credit is not allowed for both BIOL 252 and BIOL 232.

HUMAN A & P III
BIOL&253  5 Credits/Units
33 hours of lecture / 44 hours of lab
Concurrent enrollment in BIOL 011 for one credit and BIOL& 253L required.
Prerequisite: A grade of "C" or better in BIOL 252 or consent of Instructional Unit.
The third in a three-term sequence exploring the relationships between structure and function in the human body. The sequence is intended as a prerequisite for students planning to major in Nursing, Dental Hygiene or other allied health programs, or as life science credit for non-biology majors. Topics include homeostasis, the cardiovascular, lymphatic, digestive, respiratory and urinary systems, cellular metabolism, and fluid and electrolyte balance. Formerly BIOL 233. Credit is not allowed for both BIOL 253 and BIOL 233.

MICROBIOLOGY
BIOL&260  5 Credits/Units
33 hours of lecture / 44 hours of lab
Prerequisite: BIOL 160 or consent of instructor.
History of microbiology and a survey of organisms included in the study of microbiology with emphasis on bacteria. Physiology, morphology, genetics, growth and reproduction of bacteria. Experiments stress lab techniques and organisms that are a factor in clinic and hospital environments. Formerly BIOL 240.

HUMAN CADAVER DISSECTION
BIOL 275  6 Credits/Units
66 hours of lab
Dissection of the muscular, circulatory, nervous, digestive and reproductive systems.