

Applied Biology - Bachelor of Science

Biology is the study of all living organisms, from the microscopic to macroscopic. The biology faculty at the Regionals offer a wide range of courses that provide a solid background in two primary concentrations for the BS in Applied Biology: 1) Environmental Biology and 2) Human Biology & Health Sciences. Each concentration trains students in critical thinking, scientific inquiry, and the application of science to societal issues. The course of study for either concentration within Applied Biology will prepare students to formulate questions, make meaningful observations, analyze and interpret data, and arrive at conclusions. Development of these skills will enable students to recognize, address, and solve problems while gaining scientific literacy and a broad knowledge of biology. During their training as biologists students will learn how living organisms function, evolve, and interact with one another and their environment. Students majoring in Applied Biology may not major in Biology or Zoology.

Program Requirements

Environmental Biology Concentration

| Code | Title | Credit Hours |
|--|--|--------------|
| Required Courses | | |
| BIO 115 | Biological Concepts: Ecology, Evolution, Genetics, and Diversity | 4 |
| BIO 116 | Biological Concepts: Structure, Function, Cellular, and Molecular Biology | 4 |
| BIO 206 | Evolutionary Biology | 3 |
| BIO 209 | Fundamentals of Ecology | 3 |
| BIO 342 | Genetics | 3 |
| BSC 292 | Applied Biology Sophomore Seminar: Planning Your Future in Applied Biology (Seminar I) | 1 |
| BSC 492 | Applied Biology Senior Seminar: Becoming a Professional Biologist (Seminar II) | 1 |
| Select three of the following: | | 12 |
| BIO 205 | Dendrology | |
| BIO 311 | Vertebrate Zoology | |
| BIO 312 | Invertebrate Zoology | |
| BIO 314 | Plant Diversity | |
| BSC 313 | Microbial Diversity | |
| Professional Courses | | |
| Select two of the following: (1 required at the 400-level) | | 6-7 |
| BIO 306 | Basic Horticulture | |
| BIO 351 | Environmental Education: Focus on Natural History | |
| BIO 467 | Conservation Biology | |
| BSC 321 or BSC 340 | Research in Applied Biology ¹ Internship | |
| BSC 415 | Approaches to Problem Solving and Research in Applied Biology Capstone | |
| Related Hours | | |

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|------------------------|---|-----|
| CHM 141 or CHM 141R | College Chemistry College Chemistry | 3-4 |
| CHM 142 | College Chemistry | 3 |
| CHM 144 | College Chemistry Laboratory | 2 |
| CHM 145 | College Chemistry Laboratory | 2 |
| ECO 201 or POL 241 | Principles of Microeconomics American Political System | 3 |
| GLG 115L | Understanding the Earth | 1 |
| GLG 121 | Environmental Geology | 3 |
| GLG 244 or GLG 307 | Oceanography Water and Society | 3 |
| STA 261 or MTH 151 | Statistics Calculus I | 4 |

Earn 1 Tool 18-21

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| Applied Social Science Minor |
| Commerce Minor |
| Communication Studies Minor |
| Data Intelligence Minor |
| English Studies Minor |
| Forensic Investigation Minor |
| GIS Certificate |
| Psychological Science Minor |
| Self-Designed Tool (department approval required) |

52 hours at the 200-level or above

Total Credit Hours 79-84

¹ Limits of 3 hours total of BSC 321 or BSC 340 to count for the degree.

Human Biology and Health Sciences Concentration

| Code | Title | Credit Hours |
|--|--|--------------|
| Required Courses | | |
| BIO 115 | Biological Concepts: Ecology, Evolution, Genetics, and Diversity | 4 |
| BIO 116 | Biological Concepts: Structure, Function, Cellular, and Molecular Biology | 4 |
| BIO 201 | Human Anatomy | 4 |
| BIO 203 | Introduction to Cell Biology | 3 |
| BIO 206 or BIO 209 | Evolutionary Biology Fundamentals of Ecology | 3 |
| BIO 305 | Human Physiology | 4 |
| BIO 342 | Genetics | 3 |
| BSC 292 | Applied Biology Sophomore Seminar: Planning Your Future in Applied Biology (Seminar I) | 1 |
| BSC 492 | Applied Biology Senior Seminar: Becoming a Professional Biologist (Seminar II) | 1 |
| Professional Courses | | |
| Select three of the following: (1 required at the 400-level) | | 9 |

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|---|--|--------------|
| BIO 325 | Pathophysiology | |
| BIO 449 | Biology Of Cancer | |
| BIO 464 | Laboratory in Cell and Molecular Biology | |
| BSC 313 | Microbial Diversity | |
| BSC 321 | Research in Applied Biology ¹ | |
| or BSC 340 | Internship | |
| BSC 415 | Approaches to Problem Solving and Research in Applied Biology Capstone | |
| BSC 416 | | |
| MBI 361 | Fundamentals of Epidemiology | |
| Related Hours | | |
| CHM 141 | College Chemistry | 4 |
| or CHM 141R | College Chemistry | |
| CHM 142 | College Chemistry | 3 |
| CHM 144 | College Chemistry Laboratory | 2 |
| CHM 145 | College Chemistry Laboratory | 2 |
| CHM 241 | Organic Chemistry | 4-10 |
| & CHM 242 | and Organic Chemistry | |
| & CHM 244 | and Organic Chemistry Laboratory | |
| & CHM 245 | and Organic Chemistry Laboratory | |
| or CHM 231 | Fundamentals of Organic Chemistry | |
| CHM 332 | Outlines of Biochemistry | 4 |
| & 332L | and Outlines of Biochemistry Lab | |
| MTH 151 | Calculus I | 4 |
| or STA 261 | Statistics | |
| PHY 161 | Physics for the Life Sciences with Laboratory I | 4 |
| Earn 1 Tool | | 18-21 |
| Applied Social Science Minor | | |
| Commerce Minor | | |
| Communication Studies Minor | | |
| Data Intelligence Minor | | |
| English Studies Minor | | |
| Forensic Investigation Minor | | |
| GIS Certificate | | |
| Psychological Science Minor | | |
| Self-Designed Tool (department approval required) | | |
| 52 hours at the 200-level or above | | |
| Total Credit Hours | | 81-90 |

¹ Limits of 3 hours total of BSC 321 or BSC 340 to count for the degree.