

REQUIRED JUNIOR LEVEL COURSES^{1,2}

6 CREDITS

- BIOL 107: Introduction to Cell Biology [FALL/WINTER]³
- BIOL 108: Organisms in their Environment [FALL/WINTER]

REQUIRED SENIOR LEVEL COURSES⁴

6 CREDITS

- BIOL 207: Principles of Genetics [FALL/WINTER]
- BIOL 208: Principles of Ecology [FALL]

GENERAL SENIOR LEVEL COURSES⁵

36 CREDITS

Within the 36 credits required to meet this major's general requirements, a minimum of 18 credits must be completed at the 300- or 400-level, of which a minimum of 6 credits must be completed at the 400-level.

MOLECULAR GENETICS COURSES

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|--|---|
| <input type="checkbox"/> BICM 200: Introductory Biochemistry [FALL/WINTER] | <input type="checkbox"/> GENE 317: Genetics and Society [WINTER] |
| <input type="checkbox"/> BIOL 201: Eukaryotic Cellular Biology I [FALL/WINTER] | <input type="checkbox"/> GENE 369: Genetic Analysis of Bacteria [WINTER] |
| <input type="checkbox"/> BIOL 205: Principles of Molecular Biology [FALL/WINTER] | <input type="checkbox"/> GENE 370: Genetics Analysis of Eukaryotes [FALL] |
| <input type="checkbox"/> BIOL 211: Introduction to Microbiology [WINTER] | |
| <input type="checkbox"/> ZOOL 241: Animal Physiology I [FALL] | <input type="checkbox"/> GENE 400: Genome Organization [WINTER] |
| <input type="checkbox"/> ZOOL 242: Animal Physiology II [WINTER] | <input type="checkbox"/> GENE 404: Genetic Regulatory Mechanisms [FALL] |
| | <input type="checkbox"/> GENE 418: Human Genetics [WINTER] |
| <input type="checkbox"/> BICM 320: Structure and Function of Biomolecules [FALL] | <input type="checkbox"/> GENE 420A: Techniques in Molecular Biology I and |
| <input type="checkbox"/> BICM 330: Nucleic Acid Chemistry and Molecular Biology [WINTER] | <input type="checkbox"/> GENE 420B: Techniques in Molecular Biology II |
| <input type="checkbox"/> BIOL 300: Eukaryotic Cellular Biology II [WINTER] | [GENE 420A and 420B must be taken in consecutive |
| <input type="checkbox"/> BIOL 313: Animal Developmental Biology [FALL] | FALL/WINTER terms.] |

ENVIRONMENTAL BIOLOGY COURSES

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|--|---|
| <input type="checkbox"/> BOTN 205: Fundamentals of Plant Biology [FALL] | <input type="checkbox"/> BIOL 410: Techniques in Field Ecology [SUMMER] |
| <input type="checkbox"/> ZOOL 224: Vertebrate Adaptations and Evolution [FALL] | <input type="checkbox"/> ZOOL 400: Aquatic Vertebrates [FALL] |
| <input type="checkbox"/> ZOOL 250: Survey of the Invertebrates [WINTER] | <input type="checkbox"/> ZOOL 401: Terrestrial Vertebrates [WINTER] |
| | <input type="checkbox"/> ZOOL 425: Introductory Entomology [FALL] |
| <input type="checkbox"/> BIOL 310: Fresh Water Ecology [ODD FALL] | <input type="checkbox"/> ZOOL 452: Principles of Parasitism [WINTER] |
| <input type="checkbox"/> BIOL 312: Terrestrial Ecology [EVEN FALL] | |
| <input type="checkbox"/> BIOL 314: Population Ecology [ODD WINTER] | |
| <input type="checkbox"/> BIOL 361: Marine Biology [WINTER] | |
| <input type="checkbox"/> BIOL 365: Tropical Rainforest Ecology [SPRING] | |
| <input type="checkbox"/> BIOL 367: Conservation Biology [FALL] | |
| <input type="checkbox"/> BIOL 371: Animal Behaviour [FALL] | |
| <input type="checkbox"/> ZOOL 324: Comparative Anatomy of Vertebrates [WINTER] | |

CROSS LISTED COURSES

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|---|--|
| <input type="checkbox"/> BIOL 315: History of Biology [FALL] | <input type="checkbox"/> BIOL 492: Field Placement [NOT OFFERED 2014/15] |
| <input type="checkbox"/> BIOL 321: Mechanisms of Evolution [FALL/WINTER] | <input type="checkbox"/> BIOL 495: Special Topics ⁶ |
| <input type="checkbox"/> BIOL 337: Biostatistics and Research Design [WINTER] | [VARIABLE – FALL/WINTER 2014/15] |
| <input type="checkbox"/> BIOL 385: Wildlife Forensics [NOT OFFERED 2014/15] | <input type="checkbox"/> BIOL 498: Independent Research ⁶ [FALL/WINTER] |

➤ Important! Please see the back of this page for planning notes. ◀

IMPORTANT PLANNING NOTES

1. **BIOL 107** and **BIOL 108** should be completed in the first year of a program and can be taken in either order. **BIOL 107** and **BIOL 108** can be used to satisfy core requirements in the Bachelor of Science degree.
2. Students are required to consult with the MacEwan University Academic Calendar to ensure they meet the prerequisites for all Biological Sciences courses they enrol in.
 - Some courses in this major require prerequisites from another discipline. For example, **BICM 200** requires a minimum grade of C- in **BIOL 107**, **CHEM 101**, and **CHEM 261**. Students must consult the Academic Calendar.
3. The typical term in which courses are offered is indicated. All students majoring in Biological Sciences should take careful note of the terms in which courses are offered; many essential senior-level Biological Sciences courses are offered only once a year. For example, **BIOL 208** is only offered in the Fall term, so students who neglect to take **BIOL 208** early in their degree may significantly set back their graduation date. Some senior level courses are offered in alternate years. Students should confirm course offerings with the Program Office.
 - The following Biological Sciences courses will be offered in the Spring/Summer 2015 term, dependent upon enrolment numbers: **BIOL 107**, **BIOL 108**, **BIOL 205**, **BIOL 207**, **BIOL 208**, and **BICM 200**.
4. For students interested in pursuing the Molecular Genetics stream, **BIOL 205** and **BIOL 207** should be completed in the second year of their program. For students interested in pursuing the Environmental Biology stream, **BIOL 208** should be completed in the second year of their program.
5. The Molecular Genetics and Environmental Biology streams are suggested paths of study; they are not formal or required concentrations. Students majoring in Biological Sciences can choose a Molecular Genetics focus, an Environmental Biology focus, or a general Biological Sciences major.
 - Students interested in pursuing the Environmental Biology stream are encouraged, but not required, to take **STAT 151** in their first year. While it is not a prerequisite for **BIOL 208**, it can be helpful with some of the material covered in the course.
6. Students may take **BIOL 495** and **BIOL 498** for credit a maximum of two times each, as long as the course topic is different each time they take either course.