

DECLARATION PROCESS

The Biology major is a competitive major. Students must complete BIOL 107 and BIOL 108 with no grade lower than C-. Students must also have completed a minimum of one of BIOL 207 or BIOL 208, and be registered in the remaining course during the winter term when declarations close.

The number of new seats available in the Biology major will be determined by the Biology department annually. Students will submit their declaration by January 15. Students who apply will be ranked by their admissions GPA, which is calculated using their most recent 24 credits of university-level course work, without breaking up a term. The applicants with the highest GPA will be admitted to the program first, until no seats remain. Students will be notified of the success or denial of their application to the Biology major no later than February 1.

REQUIRED JUNIOR LEVEL COURSES^{1,2}

6 CREDITS

- BIOL 107: Introduction to Cell Biology³
- BIOL 108: Organisms in their Environment

REQUIRED SENIOR LEVEL COURSES⁴

6 CREDITS

- BIOL 207: Principles of Genetics
- BIOL 208: Principles of Ecology

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/CELLULAR BIOLOGY COURSES

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|---|---|
| <input type="checkbox"/> BICM 200: Introductory Biochemistry | <input type="checkbox"/> GENE 317: Genetics and Society |
| <input type="checkbox"/> BIOL 201: Eukaryotic Cellular Biology I | <input type="checkbox"/> GENE 369: Genetic Analysis of Bacteria |
| <input type="checkbox"/> BIOL 205: Principles of Molecular Biology | <input type="checkbox"/> GENE 370: Genetics Analysis of Eukaryotes |
| <input type="checkbox"/> BIOL 211: Introduction to Microbiology | |
| <input type="checkbox"/> BICM 310: Intermediary Metabolism | <input type="checkbox"/> BIOL 421: Techniques in Molecular and Cellular Biology |
| <input type="checkbox"/> BICM 320: Structure and Function of Biomolecules | <input type="checkbox"/> BIOL 430: Pathobiology: The Cellular Basis of Disease |
| <input type="checkbox"/> BICM 330: Nucleic Acid Chemistry and Molecular Biology | <input type="checkbox"/> GENE 400: Genome Organization |
| <input type="checkbox"/> BIOL 300: Eukaryotic Cellular Biology II | <input type="checkbox"/> GENE 404: Genetic Regulatory Mechanisms |
| <input type="checkbox"/> BIOL 313: Animal Developmental Biology | <input type="checkbox"/> GENE 418: Human Genetics |

ECOLOGY/DIVERSITY BIOLOGY COURSES

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

CROSS LISTED COURSES

- | | |
|--|--|
| <input type="checkbox"/> BIOL 315: History of Biology | <input type="checkbox"/> BIOL 495: Special Topics ⁶ |
| <input type="checkbox"/> BIOL 321: Mechanisms of Evolution | <input type="checkbox"/> BIOL 498: Independent Research ⁶ |
| <input type="checkbox"/> BIOL 337: Biostatistics and Research Design | <input type="checkbox"/> ZOOL 241: Animal Physiology I |
| <input type="checkbox"/> BIOL 492: Field Placement | <input type="checkbox"/> ZOOL 242: Animal Physiology II |

IMPORTANT PLANNING NOTES

- BIOL 107** and **BIOL 108** must 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.
- 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.
- 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 2016 term, dependent upon enrolment numbers: **BIOL 107**, **BIOL 108**, **BIOL 205**, **BIOL 207**, **BIOL 208**, and **BICM 200**.
- For students interested in pursuing the Molecular/Cellular Biology stream, **BIOL 205** and **BIOL 207** should be completed in the second year of their program. For students interested in pursuing the Ecology/Diversity Biology stream, **BIOL 208** should be completed in the second year of their program.
- The Molecular/Cellular Biology and Ecology/Diversity Biology streams are suggested paths of study; they are not formal or required concentrations. Students majoring in Biological Sciences can choose a Molecular/Cellular Biology focus, an Ecology/Diversity Biology focus, or a general Biological Sciences major.
 - Students interested in pursuing the Ecology/Diversity 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.
- 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.

*This planning sheet should be used only as a **guide** for course planning and it should be used in conjunction with the Bachelor of Science Degree Planner. Remember: not all courses listed are offered each year and course offerings are subject to change. In the event of a discrepancy between the information presented on this sheet and that available on myStudentSystem, the information on myStudentSystem will be considered accurate.*