MACEWAN

BACHELOR OF SCIENCE

BIOLOGICAL SCIENCES MINOR

2013/14 Academic Year

REQUIRED JUNIOR LEVEL COURSES[1] — 6 CREDITS

- ☐ **BIOL 107: Introduction to Cell Biology**[2] [FALL/WINTER]
- ☐ **BIOL 108: Organisms in their Environment** [FALL/WINTER]

REQUIRED SENIOR LEVEL COURSES[3] — 3 CREDITS

ONE OF THE FOLLOWING:

- ☐ **BIOL 207: Principles of Genetics**[4] [FALL/WINTER]
- ☐ **BIOL 208: Principles of Ecology** [FALL]

GENERAL SENIOR LEVEL COURSES[5,6] — 15 CREDITS

Within the 15 credits required to meet this minor's general requirements, a minimum of 6 credits must be completed at the 300- or 400-level.

MOLECULAR GENETICS COURSES

- ☐ **BICM 200: Introductory Biochemistry**[7] [FALL/WINTER]
- ☐ **BIOL 201: Eukaryotic Cellular Biology I** [FALL/WINTER]
- ☐ **BIOL 205: Principles of Molecular Biology**[8] [FALL/WINTER]
- ☐ **BIOL 211: Introduction to Microbiology** [WINTER]
- ☐ **ZOOL 241: Animal Physiology I** [FALL]
- ☐ **ZOOL 242: Animal Physiology II** [WINTER]
- ☐ **BICM 320: Structure and Function of Biomolecules** [FALL]
- ☐ **BICM 330: Nucleic Acid Chemistry and Molecular Biology** [WINTER]
- ☐ **BIOL 300: Eukaryotic Cellular Biology II** [WINTER]
- ☐ **BIOL 313: Animal Developmental Biology** [FALL]
- ☐ **GENE 317: Genetics and Society** [WINTER]
- ☐ **GENE 369: Genetic Analysis of Bacteria**[4] [WINTER]
- ☐ **GENE 370: Genetics Analysis of Eukaryotes**[4] [FALL]
- ☐ **GENE 400: Genome Organization**[9] [WINTER]
- ☐ **GENE 404: Genetic Regulatory Mechanisms**[9] [FALL]
- ☐ **GENE 418: Human Genetics** [FALL]
- ☐ **GENE 420: Research Techniques in Molecular Biology**[9] [FALL]

ENVIRONMENTAL BIOLOGY COURSES

- ☐ **BOTN 205: Fundamentals of Plant Biology** [FALL]
- ☐ **ZOOL 224: Vertebrate Adaptations and Evolution**[4] [FALL]
- ☐ **ZOOL 250: Survey of the Invertebrates** [WINTER]
- ☐ **BIOL 310: Fresh Aquatic Ecology** [ODD FALL]
- ☐ **BIOL 312: Terrestrial Ecology** [EVEN FALL]
- ☐ **BIOL 314: Population Ecology** [EVEN WINTER]
- ☐ **BIOL 361: Marine Biology** [WINTER]
- ☐ **BIOL 365: Tropical Rainforest Ecology** [SPRING]
- ☐ **BIOL 367: Conservation Biology** [FALL]
- ☐ **BIOL 371: Animal Behaviour** [FALL]
- ☐ **ZOOL 324: Comparative Anatomy of Vertebrates**[4] [WINTER]
- ☐ **BIOL 410: Techniques in Field Ecology** [SUMMER]
- ☐ **ZOOL 400: Aquatic Vertebrates** [FALL]
- ☐ **ZOOL 401: Terrestrial Vertebrates** [WINTER]
- ☐ **ZOOL 425: Introductory Entomology** [FALL]
- ☐ **ZOOL 452: Principles of Parasitism** [WINTER]

CROSS LISTED COURSES

- ☐ **BIOL 315: History of Biology** [FALL]
- ☐ **BIOL 321: Mechanisms of Evolution** [FALL]
- ☐ **BIOL 337: Biostatistics and Research Design**[4] [WINTER]
- ☐ **BIOL 385: Wildlife Forensics** [NOT OFFERED 2013/14]
- ☐ **BIOL 492: Field Placement** [NOT OFFERED 2013/14]
- ☐ **BIOL 495: Special Topics**[10] [VARIABLE – FALL/WINTER 2013/14]
- ☐ **BIOL 498: Independent Research**[10] [FALL/WINTER]

➢ **Important! Please see the back of this page for planning notes.** ➢

*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.*

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. The typical term in which courses are offered is indicated. All students minoring in Biological Sciences should take careful note of the terms in which courses are offered; many senior-level Biological Sciences courses are offered only once a year. For example, **BIOL 208** is only offered in the Fall term. Some senior level courses are offered in alternate years. Students should confirm course offerings with the Program Office.
3. **BIOL 207** and/or **BIOL 208** should be completed in the second year of a student's program.
4. Please make note of the following changes to course numbers and titles. Note that re-numbered and re-titled courses are considered equivalent to one another and students cannot take both for credit.
   - **BIOL 207** is now titled Principles of Genetics; it was previously titled Molecular Genetics and Heredity.
   - **BIOL 337** is now titled Biostatistics and Research Design; it was previously titled Biological Statistics.
   - **GENE 369**: Genetic Analysis of Bacteria is a renumbering of **GENE 270**: Genetics of Bacteria.
   - **GENE 370** is now titled Genetic Analysis of Eukaryotes; it was previously titled Genetics of Higher Organisms.
   - **ZOOL 224** is now titled Vertebrate Adaptations and Evolution; it was previously titled Vertebrate Diversity.
   - **ZOOL 324**: Comparative Anatomy of Vertebrates is a renumbering of **ZOOL 225**: Comparative Anatomy of the Vertebrates.
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.
6. Arts students who choose a Biological Sciences minor must comply with Bachelor of Science minor residency requirements. Science minors must complete a minimum of nine senior level MacEwan credits, including a minimum of three credits at the 300- or 400-level.
7. Some courses in this minor require prerequisites from another discipline. For example, **BICM 200** requires a minimum grade of C- in **BIOL 107**, **CHEM 101**, and **CHEM 261**. Students should consult the MacEwan Academic Calendar.
8. Students interested in the Molecular Genetics stream should complete **BIOL 205** in the second year of their program. Effective Fall 2014, **BIOL 205** will be one of the prerequisites for **BIOL 300**, **BIOL 313**, **GENE 369**, and **GENE 370**.
9. Effective Fall 2014, both (**GENE 270** or **GENE 369**) and **GENE 370** will be prerequisites for **GENE 400**, **GENE 404**, and **GENE 420**.
10. 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.