## LOWER LEVEL CORE REQUIREMENTS:

All of:
- MBB 221-3 Cell Biology and Biochemistry
- MBB 222-3 Molecular Biology and Biochemistry
- Bisc 101-4 General Biology
- Bisc 102-4 General Biology
- Bisc 202-3 Genetics
- Chem 121-4 General Chemistry and Laboratory I
- Chem 122-2 General Chemistry II
- Chem 126-2 General Chemistry Laboratory II
- Chem 215-4 Introduction to Analytical Chemistry
- Chem 281-4 Organic Chemistry I
- Chem 282-2 Organic Chemistry II
- Chem 286-2 Organic Chemistry Laboratory II

One of:
- Math 151-3 Calculus I
- Math 154-3 Calculus I for the Biological Sciences

One of:
- Math 152-3 Calculus II
- Math 155-3 Calculus II for the Biological Sciences

One of:
- Phys 101-3 General Physics I
- Phys 120-3 Modern Physics and Mechanics

One of:
- Phys 102-3 General Physics II
- Phys 121-3 Optics, Electricity and Magnetism

One of:
- Cmpt 101-4 Introduction to Computer Programming
- Cmpt 102-3 Intro to Scientific Computer Programming
- Cmpt 110-3 Event-Driven Programming in Visual Basic

One of:
- Math 310-3 Intro to Ordinary Differential Equations
- Stat 201-3 Statistics for the Life Sciences

**Electives:** 9 credit hours of the 120 total must be electives from outside the Faculty of Science and 6 of these credit hours must be electives from the Faculty of Arts. Can be upper or lower division courses.

### Minors:
All lower division core requirements (except for Bisc 202, Stat 201/Math 310 and Cmpt) plus any five upper division MBB courses.

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## UPPER LEVEL CORE REQUIREMENTS:

All of:
- MBB 308-3 Molecular Biology & Biochemistry Lab I
- MBB 309-3 Molecular Biology & Biochemistry Lab II
- MBB 321-3 Intermediary Metabolism
- MBB 322-3 Molecular Physiology
- MBB 331-3 Molecular Biology
- MBB 432-3 Advanced Molecular Biol. Techniques

One of:
- MBB 323-3 Intro to Physical Biochemistry
- CHEM 360-3 Thermodynamics and Chemical Kinetics

A minimum of 4 courses from the following list which must include a minimum of one of the courses indicated by # and a minimum of one of the courses indicated by * (you may take as many as you want)

- MBB 402-3 Molecular Genetics
- MBB 403-3 Physical Biochemistry
- MBB 412-4 Enzymology
- MBB 420-3 Special Topics in Biochemistry
- MBB 421-3 Nucleic Acids #
- MBB 422-3 Biomembranes #
- MBB 423-3 Protein Structure and Function #
- MBB 426-3 Immunology
- MBB 435-3 Genomic Analysis *
- MBB 438-3 Human Molecular Genetics
- MBB 440-3 Special Topics in Molecular Biology
- MBB 441-3 Bioinformatics *
- MBB 442-3 Proteomics *
- MBB 443-3 Protein Biogenesis and Degradation #

### Recommended Upper Division Electives:
- Bisc 303-3 Microbiology
- Bisc 333-3 Developmental Biology
- Bisc 403-3 Advanced Cell Biology

### Honours Requirements:
In addition to fulfilling the MBB Major requirements, honours students must complete an Individual Study Semester (ISS) over one (MBB 493-15) or two semesters (MBB 491-5 and MBB 492-10). Honours students must also complete a total of 132 credit hours. Of the 132 credit hours, 60 must be upper division credits (and includes the ISS).

- MBB 493-15 Individual Study Semester
- MBB 491-5 Undergraduate Research
- MBB 492-10 Individual Study Semester

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Revised Feb. 28, 2003