To graduate with a degree in MBB: A student must complete a minimum of 44 upper division credit hours and a total of 120 credit hours (upper and lower division).

### LOWER LEVEL CORE REQUIREMENTS:

- 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 125-4 Introduction to Analytical Chemistry
- Chem 281-4 Organic Chemistry I
- Chem 282-2 Organic Chemistry II
- Chem 286-2 Organic Chemistry Laboratory II

### UPPER LEVEL CORE REQUIREMENTS:

- 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

- Math 151-3 Calculus I
- Math 154-3 Calculus I for the Biological Sciences
- Math 152-3 Calculus II
- Math 155-3 Calculus II for the Biological Sciences
- Phys 101-3 General Physics I
- Phys 120-3 Modern Physics and Mechanics
- Phys 102-3 General Physics II
- Phys 121-3 Optics, Electricity and Magnetism

### CGPA of above courses:

- One of:
- 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
- Stat 270-3 Introduction to Probability and Statistics

**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.

- One of:
- 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 436-3 Gene Expression
- MBB 437-3 Selected Topics in Signal Transduction
- 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

### Minors:

- All lower division core requirements (except for Bisc 202, Chem 215, Stat 201/270 and Math 310 and Cmpt) plus any five upper division MBB courses.

### Honors Requirements:

- In addition to fulfilling the MBB Major requirements, honors students must complete an Individual Study Semester (ISS) over one (MBB 493-15) or two semesters (MBB 491-5 and MBB 492-10). Honors 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

Revised December 14, 2004