Molecular Biology and Biochemistry (MBB) Degree Requirements (as of 2004-3)

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:

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

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.

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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 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
- ❑ Chem 333-3 Inorganic Chem of Biol. Processes

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.

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Revised December 14, 2004

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