Molecular Biology and Biochemistry (MBB) Degree Requirements (as of 2006-1)

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:

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

One of:

- θ Math 150-4 Calculus I with Review
- θ Math 151-3 Calculus I
- θ Math 154-3 Calculus I for the Biological Sciences

One of:

- θ Math 152-3 Calculus II
- θ Math 155-3 Calculus II for the Biological Sciences

One of:

- θ Phys 101-3 General Physics I
- θ Phys 120-3 Modern Physics and Mechanics

One of:

- θ Phys 102-3 General Physics II
- θ Phys 121-3 Optics, Electricity and Magnetism

CGPA of above courses:

One of:

- θ Cmpt 102-3 Intro to Scientific Computer Programming
- θ Cmpt 110-3 Event-Driven Programming in Visual Basic
- θ Cmpt 120-3 Intro to Cmpt Science & Programming I

One of:

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

- θ MBB 308-3 Molecular Biology & Biochemistry Lab I
- θ MBB 309W-4 Molecular Biology & Biochemistry lab II
- θ MBB 321-3 Intermediary Metabolism
- θ MBB 322-3 Molecular Physiology
- θ MBB 331-3 Molecular Biology

One of:

- θ MBB 323-3 Intro to Physical Biochemistry
- θ CHEM 360-3 Thermodynamics and Chemical Kinetics

A minimum of 5 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)

- θ MBB 402-3 Molecular and Developmental Genetics
- θ MBB 403-3 Physical Biochemistry (413)
- θ MBB 412-4 Enzymology (4XX)
- θ MBB 420-3 Special Topics in Biochemistry
- θ MBB 421-3 Nucleic Acids #
- θ MBB 422-3 Biomembranes #
- θ MBB 423-3 Protein Structure and Function #
- θ MBB 426-3 Immunology
- θ MBB 430-3 Mechanisms of Secretory Transport
- θ MBB 432-3 Advanced Molecular Biol. Techniques
- θ MBB 435-3 Genomic Analysis *
- θ MBB 436-3 Gene Expression
- θ MBB 437-3 Selected Topics in Signal Transduction
- θ MBB 438-3 Human Molecular Genetics
- θ MBB 440-3 Special Topics in Molecular Biology
- θ MBB 441-3 Bioinformatics *
- θ MBB 442-3 Proteomics *
- θ MBB 443-3 Protein Biogenesis and Degradation #
- θ MBB 444-3 Developmental Neurobiology

Recommended Upper Division Electives:

- θ Bisc 303-3 Microbiology
- θ Bisc 333-3 Developmental Biology
- θ Bisc 403-3 Advanced Cell Biology
- θ 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 October 12, 2006

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).

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