

## Molecular Biology and Biochemistry (MBB) Degree Requirements (as of 2003-2)

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:		UPPER LEVEL CORE REQUIREMENTS:
<b>All of:</b>		<b>All of:</b>
<input type="checkbox"/> MBB 221-3 Cell Biology and Biochemistry <input type="checkbox"/> MBB 222-3 Molecular Biology and Biochemistry <input type="checkbox"/> Bisc 101-4 General Biology <input type="checkbox"/> Bisc 102-4 General Biology <input type="checkbox"/> Bisc 202-3 Genetics <input type="checkbox"/> Chem 121-4 General Chemistry and Laboratory I <input type="checkbox"/> Chem 122-2 General Chemistry II <input type="checkbox"/> Chem 126-2 General Chemistry Laboratory II <input type="checkbox"/> Chem 215-4 Introduction to Analytical Chemistry <input type="checkbox"/> Chem 281-4 Organic Chemistry I <input type="checkbox"/> Chem 282-2 Organic Chemistry II <input type="checkbox"/> Chem 286-2 Organic Chemistry Laboratory II		<input type="checkbox"/> MBB 308-3 Molecular Biology & Biochemistry Lab I <input type="checkbox"/> MBB 309-3 Molecular Biology & Biochemistry Lab II <input type="checkbox"/> MBB 321-3 Intermediary Metabolism <input type="checkbox"/> MBB 322-3 Molecular Physiology <input type="checkbox"/> MBB 331-3 Molecular Biology <input type="checkbox"/> MBB 432-3 Advanced Molecular Biol. Techniques
<b>One of:</b>		<b>One of:</b>
<input type="checkbox"/> Math 151-3 Calculus I <input type="checkbox"/> Math 154-3 Calculus I for the Biological Sciences		<input type="checkbox"/> MBB 323-3 Intro to Physical Biochemistry <input type="checkbox"/> CHEM 360-3 Thermodynamics and Chemical Kinetics
<b>One of:</b>		<b>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)</b>
<input type="checkbox"/> Math 152-3 Calculus II <input type="checkbox"/> Math 155-3 Calculus II for the Biological Sciences		<input type="checkbox"/> MBB 402-3 Molecular Genetics <input type="checkbox"/> MBB 403-3 Physical Biochemistry <input type="checkbox"/> MBB 412-4 Enzymology <input type="checkbox"/> MBB 420-3 Special Topics in Biochemistry <input type="checkbox"/> MBB 421-3 Nucleic Acids #
<input type="checkbox"/> Phys 101-3 General Physics I <input type="checkbox"/> Phys 120-3 Modern Physics and Mechanics		<input type="checkbox"/> MBB 422-3 Biomembranes #
<b>One of:</b>		<input type="checkbox"/> MBB 423-3 Protein Structure and Function #
<input type="checkbox"/> Phys 102-3 General Physics II <input type="checkbox"/> Phys 121-3 Optics, Electricity and Magnetism		<input type="checkbox"/> MBB 426-3 Immunology <input type="checkbox"/> MBB 435-3 Genomic Analysis *
<b>One of:</b>		<input type="checkbox"/> MBB 438-3 Human Molecular Genetics <input type="checkbox"/> MBB 440-3 Special Topics in Molecular Biology
<input type="checkbox"/> Cmpt 101-4 Introduction to Computer Programming <input type="checkbox"/> Cmpt 102-3 Intro to Scientific Computer Programming <input type="checkbox"/> Cmpt 110-3 Event-Driven Programming in Visual Basic		<input type="checkbox"/> MBB 441-3 Bioinformatics *
<b>One of:</b>		<input type="checkbox"/> MBB 442-3 Proteomics *
<input type="checkbox"/> Math 310-3 Intro to Ordinary Differential Equations <input type="checkbox"/> Stat 201-3 Statistics for the Life Sciences		<input type="checkbox"/> MBB 443-3 Protein Biogenesis and Degradation #
<b>Electives:</b> 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.		<b>Recommended Upper Division Electives:</b>
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		<input type="checkbox"/> Bisc 303-3 Microbiology <input type="checkbox"/> Bisc 333-3 Developmental Biology <input type="checkbox"/> Bisc 403-3 Advanced Cell Biology <input type="checkbox"/> Chem 333-3 Inorganic Chem of Biol. Processes
<b>Minors:</b> All lower division core requirements (except for Bisc 202, Stat 201/Math 310 and Cmpt) plus any five upper division MBB courses.		<b>Honours Requirements:</b> 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).
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		<input type="checkbox"/> MBB 493-15 Individual Study Semester <input type="checkbox"/> MBB 491-5 Undergraduate Research <input type="checkbox"/> MBB 492-10 Individual Study Semester
Revised Feb. 28, 2003		