

**Math Biology Track Requirements**
**Part A: Required Prerequisites**

|                    |  |    |
|--------------------|--|----|
| Math 1151 and 1152 | Calculus I and Calculus II                                 | 10 |
| Math 1295          | Introductory Seminar                                       | 1  |
| Chem 1210          | General Chemistry I  | 5  |
| Biology 1113       | Biological Sciences: Energy Transfer and Development       | 4  |
| Biology 1114       | Biological Sciences: Form, Function, Diversity and Ecology | 4  |

**Part B: Major Program (Minimum grade of C- and GPA of 2.0)**

## Core Requirements

|                        |  |                                      |
|------------------------|--|--------------------------------------|
| Math 2153 or 2182H     | Calculus III or Honors Calculus II                       | 4-5                                  |
| Math 2568 or 2568H     | Linear Algebra   | Prereq: Math 2153<br>3               |
| Math 3345 or 3345H     | Foundations of Higher Mathematics                        | Prereq: Math 2153<br>3               |
| Math 4530 or Stat 4201 | Probability or Introduction to Mathematical Statistics I | Prereq: Math 2153<br>3-4             |
| Stat 4202              | Introduction to Mathematical Statistics II               | Prereq: Math 4530 or Stats 4201<br>4 |

## Required Courses

|                                  |   |   |
|----------------------------------|---|---|
| Math 2255                        | Differential Equations and Their Applications | Prereq: Math 2153<br>3                                |
| Math 3350                        | Introduction to Mathematical Biology          | Prereq: Math 2255<br>3                                |
| Choose one of the following two: |   |   |
| Biology 3401                     | Integrated Biology                            | Prereq: Biology 1113, 1114, Chem 1220, Math 1150<br>4 |
| Molgen 4500                      | General Genetics                              | Prereq: Bio 1113 plus 1 Bio course<br>3               |

## Applied Math Courses (choose two of the following three):

|           |                                |                                 |
|-----------|--------------------------------|---------------------------------|
| Math 3607 | Beginning Scientific Computing | Prereq: Math 2255 and 2568<br>3 |
| Math 4556 | Dynamical Systems              | Prereq: Math 2153<br>3          |
| Math 4557 | Partial Differential Equations | Prereq: Math 2255<br>3          |

## Applied Math Electives (choose at least 6 hours):

|                  |  |  |
|------------------|--|--|
| Math 3607        | Beginning Scientific Computing (IF NOT BEFORE)               | Prereq: Math 2255 and 2568<br>3                        |
| Math 4350        | Quantitative Neuroscience                                    | Prereq: Math 1152<br>3                                 |
| Math 4547        | Introductory Analysis I                                      | Prereq: Math 3345<br>3                                 |
| Math 4551        | Vector Analysis  | Prereq: Math 2153<br>3                                 |
| Math 4552        | Complex Analysis   | Prereq: Math 2153<br>3                                 |
| Math 4556        | Dynamical Systems (IF NOT BEFORE)                            | Prereq: Math 2153<br>3                                 |
| Math 4557        | Partial Differential Equations (IF NOT BEFORE)               | Prereq: Math 2255<br>3                                 |
| Math 4580        | Abstract Algebra I   | Prereq: Math 3345 & 2568<br>3                          |
| Math 5101        | Linear Mathematics in Finite Dimensions                      | Prereq: Math 2568<br>3                                 |
| Math 5102        | Linear Mathematics in Infinite Dimensions                    | Prereq: Math 5101<br>3                                 |
| Math 5540H       | Honors Differential Geometry                                 | Prereq: Math 5520H or (2182H & 2568)<br>5              |
| Biochem 4511     | Introduction to Biological Chemistry                         | Prereq: Chem (1220 or 1250) & Chem (2510 or 2310)<br>4 |
| Chem 2510        | Organic Chemistry  | Prereq: Chem 1220<br>4                                 |
| EEOB 3310        | Evolution Ecology  | Prereq: Bio 1114<br>4                                  |
| EEOB 3420        | Behavioral Ecology   | Prereq: Bio 1114<br>3-4                                |
| EEOB 4520        | Comparative Physiology                                       | Prereq: Bio 1114 plus 1 bio course<br>3                |
| Math/Molgen 5660 | Integrated Molecular and Cellular Biology for Non-Biologists | 5  |
| Molgen 5601      | Eukaryotic Molecular Genetics Lab                            | Prereq: MolGen 4500 plus 1 Bio course<br>3-4           |
|                  |  | Total Hours<br>38-45                                   |

**Honors Degree: Students completing an honors degree must complete at least 5 honors eligible courses selected in consultation with a faculty advisor. At most 2 courses can count from (2182H, 2568H, 3345H) and at least 3 must be from a list of approved 5000 level courses.**



**Math Biology Track Sample Schedule**

|        | Autumn                          |       | Spring                          |       |
|--------|---------------------------------|-------|---------------------------------|-------|
| Year 1 | Math 1151                       | 5     | Math 1152                       | 5     |
|        | Chem 1210                       | 5     | Biology 1113                    | 4     |
|        | ARTSSCI 1100.01                 | 1     | English 1110                    | 3     |
|        | GE                              | 3     | GE                              | 3     |
|        | GE                              | 3     |                                 |       |
|        |                                 | 17    |                                 | 15    |
| Year 2 | Math 2153                       | 4     | Math 3345                       | 3     |
|        | Biology 1114                    | 4     | Math 2255                       | 3     |
|        | GE                              | 3     | Math 2568                       | 3     |
|        | GE                              | 3     | Math 1295                       | 1     |
|        |                                 |       | GE                              | 3     |
|        |                                 | 14    |                                 | 13    |
| Year 3 | Math 4530 or Stat 4201          | 3-4   | Stat 4202                       | 4     |
|        | Biol 3401 or Math/MolGen 5660   | 4-5   | Applied Math Course or Elective | 3-5   |
|        | GE                              | 3     | Math 3350                       | 3     |
|        |                                 |       |                                 |       |
|        |                                 | 10-12 |                                 | 10-12 |
| Year 4 | Applied Math Course or Elective | 3-5   | Applied Math Course or Elective | 3-5   |
|        | Applied Math Course or Elective | 3-5   | GE                              | 3     |
|        | GE                              | 3     | GE                              | 3     |
|        |                                 |       |                                 |       |
|        |                                 | 9-12  |                                 | 9-11  |

Additional hours may be necessary depending on course selection.