

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

Required Courses

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

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

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

Applied Math Electives (choose at least 6 hours):

| | | | |
|--------------------|--|---|--------------|
| Math 3607 | Beginning Scientific Computing (IF NOT BEFORE) | Prereq: Math 2255 and 2568 | 3 |
| Math 4350 | Quantitative Neuroscience | Prereq: Math 1152 | 3 |
| Math 4547 | Introductory Analysis I | Prereq: Math 3345 | 3 |
| Math 4551 | Vector Analysis | Prereq: Math 2153 | 3 |
| Math 4552 | Complex Analysis | Prereq: Math 2153 | 3 |
| Math 4556 | Dynamical Systems (IF NOT BEFORE) | Prereq: Math 2153 | 3 |
| Math 4557 | Partial Differential Equations (IF NOT BEFORE) | Prereq: Math 2255 | 3 |
| Math 4580 | Abstract Algebra I | Prereq: Math 3345 & 2568 | 3 |
| Math 5101 | Linear Mathematics in Finite Dimensions | Prereq: Math 2568 | 3 |
| Math 5102 | Linear Mathematics in Infinite Dimensions | Prereq: Math 5101 | 3 |
| Math 5540H | Honors Differential Geometry | Prereq: Math 5520H or (2182H & 2568) | 5 |
| Biochem 4511 | Introduction to Biological Chemistry | Prereq: Chem (1220 or 1250) & Chem (2510 or 2310) | 4 |
| Chem 2510 | Organic Chemistry | Prereq: Chem 1220 | 4 |
| EEOB 3310 | Evolution | Prereq: Bio 1114 | 4 |
| EEOB 3420 | Behavioral Ecology | Prereq: Bio 1114 | 3-4 |
| EEOB 4520 | Comparative Physiology | Prereq: Bio 1114 plus 1 Bio course | 3 |
| MolGen/Math 5660 | Integrated Molecular and Cellular Biology for Non-Biologists | | 5 |
| MolGen 5601 | Eukaryotic Molecular Genetics Lab | Prereq: MolGen 4500 plus 1 Bio course | 3-4 |
| Total Hours | | | 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, or 3607H), at least 3 courses must be at the 4000-5000 level.

Math Biology Track Sample Schedule

| | Autumn | | Spring | | |
|--------|---------------------------------|-----|---------------------------------|-----|-------|
| Year 1 | Math 1151 | 5 | Math 1152 | 5 | |
| | Chem 1210 | 5 | Math 1295 | 1 | |
| | ARTSSCI 1100.01 | 1 | Biology 1113 | 4 | |
| | GE | 3 | English 1110 | 3 | |
| | GE | 3 | GE | 3 | |
| | | 17 | | 16 | |
| Year 2 | Math 2153 | 4 | Math 3345 | 3 | |
| | Biology 1114 | 4 | Math 2255 | 3 | |
| | GE | 3 | Math 2568 | 3 | |
| | GE | 3 | GE | 3 | |
| | | | 14 | | 12 |
| Year 3 | Math 4530 or Stat 4201 | 3-4 | Stat 4202 | 4 | |
| | Biol 3401 or MolGen 4500 | 3-4 | Applied Math Course or Elective | 3-5 | |
| | GE | 3 | Math 3350 | 3 | |
| | | | 9-11 | | 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.