

# Start to Finish: Pathway for the BS in Biology

## Major Requirements (71 cr)

Offered: A - All except Winter,  
F - Fall, S - Spring, Su - Summer

### Prerequisite - (0-7 cr)

if required by placement assessment

- CHEM106 Principles of Chemistry (A)
- MATH111 Precalculus (A)

### Bio Major Requirements (23 cr)

- BIOL112 Principles of Bio I (A)
- BIOL113 Principles of Biol II (A)
- BIOL213 Intro to Ecology (A)
- BIOL230 Cell and Molecular Biology (A)
- BIOL380 Genetics (A)
- BIOL417 Evolutionary Biology (A W)

### Collaterals in Chemistry (16 cr)

- CHEM 120 General Chem I (A)
- CHEM 121 General Chem II (S Su)
- CHEM 230 Organic Chem I (F Su)
- CHEN 231 Organic Chem II (F Su)
- CHEM 232 Experimental Org Chem I (F Su)

### Collaterals in Math (8 cr)

- STAT230+231 Statistics (A)
  - MATH 116 Calculus A (A)
- OR**
- MATH122 Calculus I (A)
  - MATH221 Calculus II (A)

### Collaterals in Physics (8 cr)

- PHYS193 College Physics I (F Su)
  - PHYS194 College Physics II (S Su)
- OR**
- PHYS191 University Physics I (F Su)
  - PHYS192 University Physics II (S Su)

### Major Electives (16 cr)

- Select one from each  
(see page 2 for elective details)
- Elective in Ecology
  - Elective in Cell & Molecular
  - Elective in Organismal
  - Add'l 4 credit Bio elective
  - Add'l 3 credit Bio elective

**Total Credits: 71**  
(excluding prerequisites)

**Prerequisite:** Courses must be taken sequentially. →

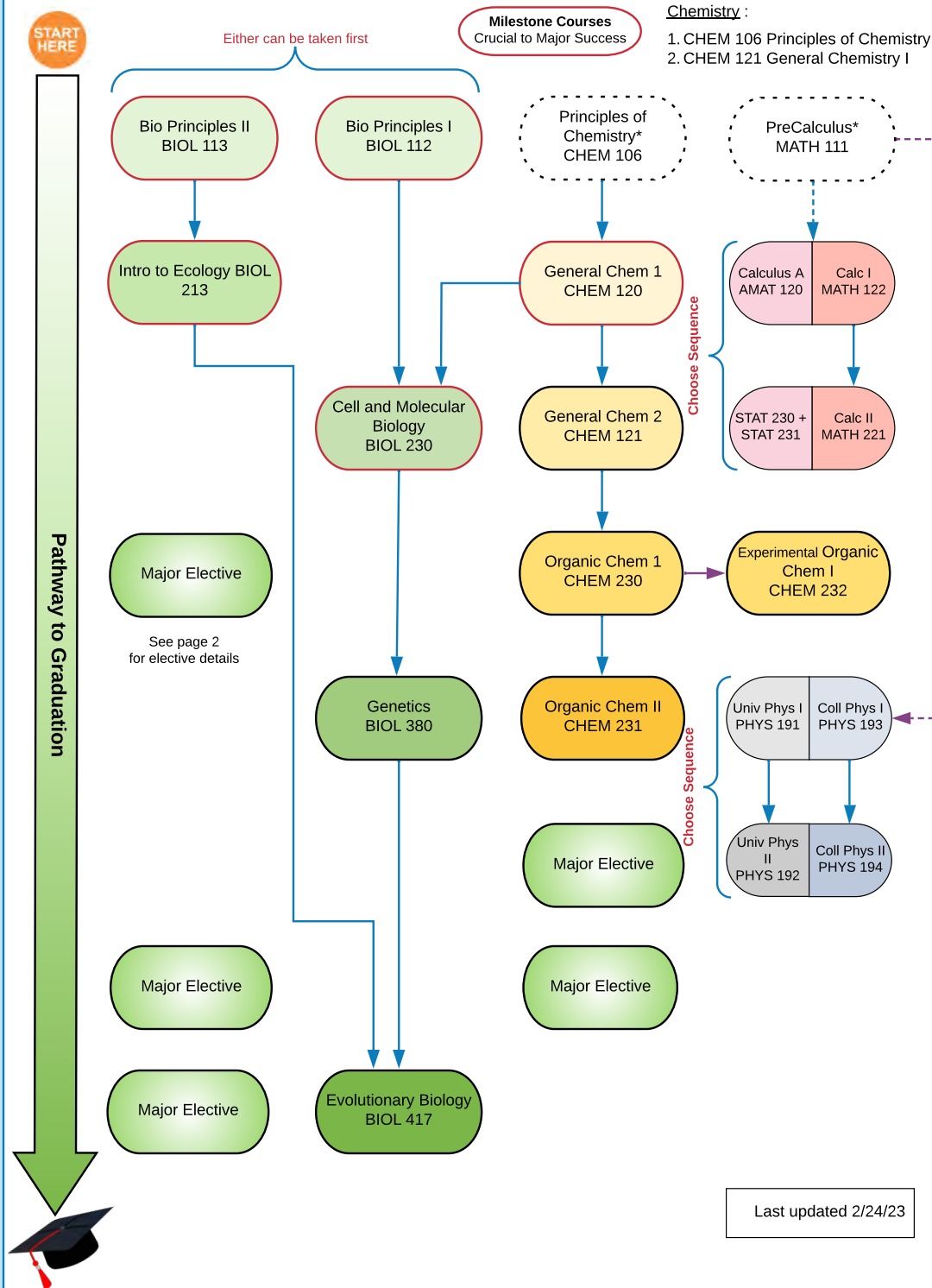
**Corequisite:** Courses may be taken at the same time or after →

### Initial Placement Options

- Math**
1. MATH 111 Precalculus
  2. MATH 122 Calculus I

### Chemistry :

1. CHEM 106 Principles of Chemistry
2. CHEM 121 General Chemistry I



## 7 Tips to Achieve Success in BIOLOGY

1. Take 2 or 3 major or collateral courses each semester -- no more, no less -- and do not put off collaterals in Chemistry in particular, as the sequence takes time.
2. Fill out schedule to 15 credits with general education courses. Gen ed courses don't need to be taken all in the first semester.
3. If you are averaging a C or below in a required course, seek help.
4. If you need to repeat a course, do not despair: do so immediately, and seek supplemental support.
5. Use summer & winter to catch-up or push ahead.
6. Plan around when courses are offered: see list on page 2 and consult with departments for elective schedule.
7. See your adviser regularly. Contact the CSAM Student Success Center at csamssc@montclair.edu; 973-655-3329.

## Figuring out Biology Electives (5 total)

1. Select one in Ecology (E)
2. Select one in Cell and Molecular Biology (C)
3. Select one in Organismal (O)
4. Select two more -- one that is a 4 credit lab course, and one that is a 3 credit course
5. Category A only counts toward the "additional electives" requirement (see page 1)
6. No double-dipping -- an individual course may only be applied to meet one elective requirement

Tip: Get started early, courses on this page are ordered by prerequisite to help you see when a course will become available to you

Course	Prereqs	Category	Course	Prereqs	Category
AQUA351: Aquatic Biological Processes	BIOL113, CHEM120, CHEM121	E	BIOL497: Genomics	BIOL230, BIOL380	C
BIOL461: Aquatic Ecology	BIOL112, BIOL213	E	BIOL433: Developmental Biology	BIOL230, BIOL380, CHEM230	C, O
BIOL484: Research Comm 1: Ecology	BIOL112, BIOL213	E	BIOL475: Medical Genetics	BIOL230, BIOL380, CHEM230	C
BIMS220: Intro to Marine Bio	BIOL213	E	BIOL476: Biology of Cancer	BIOL230, BIOL380, CHEM230	C, O
BIOL300: Environmental Biology	BIOL213	E	BIOL350: Microbiology	BIOL230, CHEM120	C
BIOL319: Genes, Brains, and Behavior	BIOL112 and BIOL230	C, O	BIOL450: Medical Microbiology	BIOL350	O
BIOL320: Social Neurobiology	BIOL230	O	BIOL405: Cell Culture	BIOL350, BIOL380	O
BIOL330: Intro to Animal Behavior	BIOL213	E	BIOL458: Microbial Genetics	BIOL350, BIOL380	C
BIOL370: Principles of Ecology	BIOL213	E	BIOL434: Molecular Biology	BIOL350, BIOL380, CHEM370	C
BIOL429: Herpetology	BIOL213	E	BIOL406: Scanning Electron Microscopy	BIOL380	A
BIOL430: Ornithology	BIOL213	E	BIOL409: Externship in Biological Research	BIOL380	A
BIOL431: Entomology	BIOL213	E	BIOL411: Introduction to Transmission Electron Microscopy	BIOL380	A
BIOL432: Medical Entomology	BIOL213	O	BIOL415: Population Genetics	BIOL380	C, E
BIOL436: Phylogenetic Zoology	BIOL213	E	BIOL457: Virology	BIOL380	C, O
BIOL460: Biological Oceanography	BIOL213	E	BIOL482: Research Community I: Molecular Biology	BIOL380	C
BIOL404: Plant and Animal Histological Techniques	BIOL213, BIOL230	A	BIOL488: Selected Topics in Cell and Molecular Biology	BIOL380	C
BIOL418: Biology Independent Research	BIOL213, BIOL230	A	BIOL492: Senior Colloquium	BIOL380	A
BIOL439: Biology of Animal Parasites	BIOL213, BIOL230	O	BIOL410: Toxicology	BIOL380, CHEM230	C, O
BIOL441: Comparative Anatomy of Vertebrates	BIOL213, BIOL230	O	BIOL442: Human Physiology	BIOL380, CHEM230	O
BIOL495: Selected Topics in Ecology	BIOL213, BIOL380	E	BIOL443: Vertebrate Embryology	BIOL380, CHEM230	O
BIOL451: Comparative Animal Physiology	BIOL213, BIOL230	E, O	BIOL444: Cell Physiology	BIOL380, CHEM230	C
BIOL480: Research Community I: Organism Biology	BIOL213, BIOL230	O	BIOL445: Immunology	BIOL380, CHEM230	C, O
BIOL486: Selected Topics in Biology	BIOL213, BIOL230	A	BIOL446: Endocrinology	BIOL380, CHEM230	C, O
BIOL489: Selected Topics in Organismal Biology	BIOL213, BIOL230	O	BIOL447: Fundamentals of Pharmacology	BIOL380, CHEM230	O
BIOL493: Molecular Ecology	BIOL213, BIOL230, BIOL380	C, E	BIOL487: Statistical Genomics	BIOL380, STAT401, STAT440	C
BIOL425: Elementary Plant Physiology	BIOL213, BIOL230, CHEM230	O	BIOL435: Experimental Molecular Biology	BIOL434	C
BIOL440: Gross Mammalian Anatomy	BIOL230	O	BIOL481: Research Community II: Organism Biology	BIOL480	O
BIOL468: Neurobiology	BIOL230, BIOL380	C, O	BIOL483: Research Community II: Molecular Biology	BIOL482	C
			BIOL485: Research Community II: Ecology	BIOL484	E
			CHEM370: Biochemistry I	CHEM231	A

### General Education (35 cr)

\* Courses in red should be taken as early as possible

- A. GNED199
- C1. WRIT105 (3)
- C2. WRIT106 (3)
- C3. CMST 101 (3)
- D. Fine & Performing Arts (3)
- F.1. Great Works & their Influences (3)
- F2. Philosophical & Religious Perspectives (3)
- H. Computer Science (3)
- J. Physical Educaiton (1)
- K1 American & European History (3)
- K2. Global Cultural Perspectives (3)
- K3. Social Science Perspectives (3)
- L. Interdisciplinary Studies (3)

### University Requirements (3-9 cr)

World Languages (3-6)  
*determined by placement test*

World Cultures (0-3)\*

\* some World Cultures courses fulfill other Gen Ed Requirements, especially Global Cultural Perspectives.