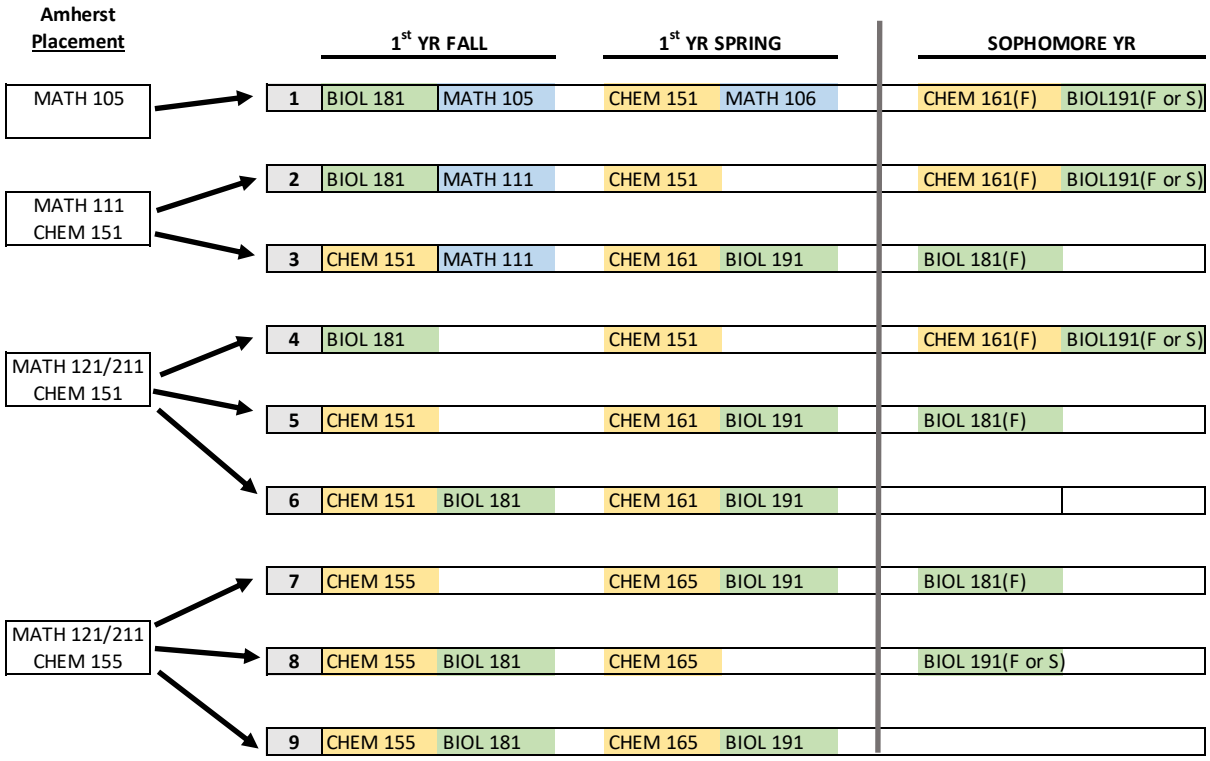
## Pathways into the Biology Major

There are several ways to navigate the Introductory math and science courses necessary for the foundation of a Biology major. In consultation with your advisor, you should tailor your own path to give you the best opportunity for success in these courses so that you can move on to advanced courses with confidence (see 9 samples below). Consider your Amherst College Math/Chemistry placements, your previous preparation in Biology, whether you are interested in other related majors and/or the pre-medical curriculum (see the relevant web sites for requirements), and also consider your extracurricular interests since these may affect whether you have the time to commit to two lab courses in the same semester (all introductory chemistry and biology courses have labs) See below for additional considerations and for a key to the courses listed here.

**9 Sample Pathways for laying the foundations for a Biology Major in 1st and 2nd year:**




**Specific Notes:**

- Since MATH 121 is not a required prerequisite for any Biology course, so is not listed in these paths.
- Biology, Chemistry, and Math Departments agree that it is NOT in a student's best interest to take more than two STEM courses in the fall of the first year; instead, chose 1-2 to fit your own preparation and future plans.
- Note that unlike Chemistry and Math courses, the introductory Biology courses can be taken in either order. They each serve as a pre-requisite for different advanced Biology courses (consult course description); courses that require BIOL191 also require a year of intro Chemistry (since this is required for BIOL191).
- BIOL 191 requires completion of, or concurrent enrollment in, CHEM 161/165.
- CHEM 161/165 requires completion of CHEM 151/155 or the equivalent, and completion of MATH 111 or MATH 105/106 or equivalent (eg. AP credit that places you into MATH 121 OR 211).
- BIOL 181 is offered every fall semester and BIOL 191 is offered both fall and spring semesters.
- Most advanced Biology courses are not open to first year students (consult course description).
- Students who are following a pre-med curriculum are recommended to begin with chemistry; check with the health professions advisor for other specific recommendations.
- Other majors that overlap with the Biology major are Environmental Studies, Biochemistry & Biophysics, and Neurosciences; consult web sites for these majors to learn of their course requirements.

*Update 6/28/2020*

Key to courses and course numbers:

| | Course Type and when offered | Pre-Requisites |
|---|---|---|
| **BIOLOGY** | | |
| **BIOL-181: Adaptation and the Organism**<br>This a prerequisite for courses such as Ecology, Evolution, Animal Behavior, and Disease Ecology | Lect/Disc/Lab<br>Fall only | No pre-requisites |
| **BIOL-191: Molecules, Genes and Cells**<br>This a prerequisite for courses such as Molecular Genetics, Cell Biology, Development, Microbiology, Biochemistry, and Neuroscience | Lect/TBL/Lab<br>Fall & Spring | Completion of or co-enrollment in CHEM-161/165 |
| **CHEMISTRY:** | | |
| **CHEM-151**: **Introductory Chemistry** | Lect/Lab/Disc<br>Fall & Spring | Placement by Chem Dept |
| OR | | |
| **CHEM-155**: **Fundamental Chem Principles** | Lect/Lab/Disc<br>Fall only | Placement by Chem Dept |
| **CHEM-161**: **Chemical Principles** | Lect/Lab/Disc<br>Fall & Spring | Completion of CHEM-151 and MATH 111/105-6 |
| **CHEM-165**: **Foundations of Thermodynamics & Kinetics** | Lect/Lab/Disc<br>Fall & Spring | Completion of CHEM-155 and MATH 111 |
| **MATH:** | | |
| **MATH-105 Calculus with Algebra**<br>**MATH-106** | Lect/Disc<br>Fall, Spring | Placement by Math Dept |
| OR | | |
| **MATH-111**: **Intro to the Calculus** | Lect/Disc<br>Fall & Spring | Placement by Math Dept |