Biology

http://www.pacificu.edu/as/biology

Advanced Placement:

Students who achieve a score of 4 or 5 on the Advanced Placement exam in Biology will receive four credits toward graduation. However, credit based on the Biology Advanced Placement exam is not equivalent to the Introductory Biology courses (BIOL 200 or 201) at Pacific. Students who plan to major or minor in Biology (or other majors or minors that require Introductory Biology) will need to enroll in these courses at Pacific.

Students planning on a Biology major:
Students who major in Biology may be planning to attend graduate programs in biological fields, to find employment in the biological sciences, to attend a health care professions graduate program, or to enter a career in teaching. Regardless of their future plans, it is critical to complete the following courses during their **first two years**:

- Chem 220 and 230 Gen Chem I and II (these have math pre-requisites)
- Biol 200 Intro Bio: Flow of energy and Biol 201 Intro Biol: Flow of Info (**recommend starting the intro sequence with Biol 201: Flow if Info**)
- Biol 312 Genetics & Evolution and 313 Molecular and Cell Bio (these have chemistry pre- or co-requisites)
- Biol 314 Molecular Genetics Lab (this has chemistry pre- or co-requisites)

Ideally, students will complete all of the above courses as well as Chem 300 during their first two years at Pacific.

Students who have the math background to complete Chem 220 and 230 (i.e., are "chem ready") in their first year should do so. This allows for more flexibility (e.g., greater opportunities to study abroad) in the junior or senior year.

Students may start Biology during either their first or second semester at Pacific and complete the major in 4 years (assuming success in all required courses). **To start Biology in the first semester, freshmen must place into Math 226 (i.e., are "bio ready"); otherwise, they will start in the spring semester of the freshmen year**. Transfer students who enter with sophomore standing are bio ready, and may enroll in Biol 200 or 201 their first semester.

The Biology major includes an introductory year (Biol 200 and 201) and an intermediate year (Biol 312, 313, and 314). Within each years the courses are not sequenced, and thus can be taken in any order.

Below are suggested schedules for students who fall into three groups: neither chem nor bio ready, chem ready but not bio ready, and both chem and bio ready. Students should follow the suggested schedule for the group they belong to.

Neither Chem Ready nor Bio Ready as entering first year student

FIRST-YEAR SCHEDULE

Fall		
	Math 122: College Algebra	4
	Hum 100: First-Year Seminar	4
	Core electives	8
Total		**16**
Winter	Elective	2
Spring		
	Math 125: Precalculus	4
	Biol 200 or Biol 201	4
	(recommend starting with 201)	
	Core electives	8
Total		**16**

SECOND-YEAR SCHEDULE

Fall		
	Biol 200 or Biol 201	4
	Chem 220: General Chemistry I	4
	Math core	4
	Core elective (Eng 201 recommended)	4
Total		**16**
Winter	Elective	2
Spring		
	Chem 230: General Chemistry II	4
	Biol 312	4
	Biol 313	4
	Biol 314	2
	Elective	0-4
Total		**1-18**

Chem Ready but not Bio Ready as entering first year student

FIRST-YEAR SCHEDULE

Fall

	Math 125: Precalculus	4
	Chem 220: General Chemistry I	4
	Hum 100: First-Year Seminar	4
	Core elective	4
Total		**16**
Winter	Elective	2
Spring		
	Math core	4
	Chem 230: General Chemistry II	4
	Biol 200 or 201	4
	(recommend starting with 201)	
	Core elective	4
Total		**16**

SECOND-YEAR SCHEDULE

Fall		
	Biol 200 or Biol 201	4
	Chem 300: Fund. of Organic Chem.	4
	Core electives (Eng 201 recommended)	8
Total		**16**
Winter	Elective	2
Spring		
	Biol 312	4
	Biol 313	4
	Biol 314	2
	Chem 400: Adv. Organic Chem.*	4
Total		**14-16**

Both Chem and Bio Ready as entering first year student

FIRST-YEAR SCHEDULE

Fall		
	Bio 200 or 201	4
	(recommend starting with 201)	
	Chem 220: General Chemistry I	4
	Hum 100: First-Year Seminar	4
	Core elective or Math 226	4
Total		**16**
Winter	Elective	2

Spring

Bio 200 or 201	4
Chem 230: General Chemistry II	4
Core electives	8
Total	**16**

SECOND-YEAR SCHEDULE

Fall

Biol 312 or 313	4
Biol 314 (can be taken in spring)	2
Chem 300: Fund. of Organic Chem.	4
Core electives (Eng 201 recommended)	4-8
Total	**14-16**

Winter	Elective	2

Spring

Biol 312 or 313	4
Biol 314 (can be taken in fall)	2
Chem 400: Adv. Organic Chem.*	4
Elective	4-6
Total	**14-16**

***Notes**

The biology major requires a 1-semester survey course in organic chemistry (Chem 300); however, many graduate and health programs require a full year of organic chemistry. Students who may be uncertain about their future plans should be advised to take the full year of organic chemistry.

Potential Biology majors should be enrolled in Chem 220: General Chemistry I during **the fall of their first year**. Grades of C- or better in Chem 220 **and** Math 125 Precalculus are prerequisites for Chem 230 General Chemistry II in the spring term.

Students planning on a <u>Biology minor</u>:

Students interested in a minor in Biology must complete Math 125 or 226, Chem 220, Chem 230, Biol 200, Biol 201 plus three additional upper-division courses in Biology (excluding 385, 490 and Biol 495). At least one of these courses must include a lab. Up to 4 credits of CHEM 380 or ENV 301 may be used toward elective credits. All upper division courses must be completed on campus

Rev 4/17