This document is not a substitute for academic advisement.

Approved by The Biology Program (February 2022)

Degree Map: Biology - Biotechnology Concentration (BS)*

Biology Program

School of Natural Sciences & Mathematics | Stockton University

USC 1 - 240 | 609-652-4546

The following is a **suggested** plan of study for completion of this degree program.

The **goal of a Degree Map** is to ensure that students graduate with no more than 128 credits and in four years.

- All students should speak with their preceptor about their academic programs.
- Transfer students may not need to take all courses in the plan; they should consult with an academic advisor.

FIRST YEAR - FALL	Credit	FIRST YEAR - SPRING	Credit
Course load	**17**	**Course load**	**14**
MATH 1100 Precalculus[1] **Attribute:** Q1	**4**	BIOL 1400/1405 Biodiversity & Evolution w/lab	**5**
BIOL 1200/1205 Cells & Molecules w/lab	**5**	CHEM 2110/2115 Chemistry I: General Principles w/lab[2] **Attribute:** Q2	**5**
FRST or G-course **Attribute:** First Year Seminar **Optional Attributes:** A, H, I, R, and/or V	**4**	FRST, ASD, or G-course **Optional Attributes:** W, A, H, I, R, and/or V	**4**
FRST, ASD, or G-course **Attribute:** W1 **Optional Attributes:** A, H, I, R, and/or V	**4**		

SECOND YEAR - FALL	Credit	SECOND YEAR - SPRING	Credit
Course load	**17**	**Course load**	**17**
CHEM 2120/2125 Chemistry II: Organic Structure w/lab[2]	**5**	BIOL 2110/2115 Genetics w/lab **Attribute:** Q2	**4**
BIOL or other NAMS elective[3,4]	**4**	BIOL 2600 Scientific Literacy[5]	**1**
ASD or G-course **Optional Attributes:** W, A, H, I, R, and/or V	**4**	BIOL or other NAMS elective[3,4]	**4**
ASD or G-course **Optional Attributes:** W, A, H, I, R, and/or V	**4**	ASD or G-course **Optional Attributes:** W, A, H, I, R, and/or V	**4**
		ASD or G-course **Optional Attributes:** W, A, H, I, R, and/or V	**4**

THIRD YEAR - FALL	Credit	THIRD YEAR - SPRING	Credit
Course load	**14**	**Course load**	**17-18**
PHYS 2110/2115 Physics for Life Sciences I w/lab **OR** PHYS 2220/25 Physics I **[Fall and Spring]**[6] **Attribute:** Q1	**5**	PHYS 2120/2125 Physics for Life Sciences II w/lab **OR** PHYS 2230/35 Physics II **[Fall and Spring]**[6] **Attribute:** Q1	**5-6**
CHEM elective[7]	**4**	Upper-level biology elective[9]	**4**
BIOL 4600 Biology Seminar[8]	**1**	BIOL or other NAMS elective[3,4]	**4**
ASD or G-course **Optional Attributes:** W, A, H, I, R, and/or V	**4**	ASD or G-course **Optional Attributes:** W, A, H, I, R, and/or V	**4**

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FOURTH YEAR - FALL	Credit	FOURTH YEAR - SPRING	Credit
Course load	**16**	**Course load**	**16**
Biotechnology elective[10]	**4**	Upper-level biology elective[9]	**4**
BIOL or other NAMS elective[3,4,11]	**4**	BIOL or other NAMS elective[3,4,11]	**4**
BIOL or other NAMS elective[3,4,11]	**4**	ASD or G-course **Optional Attributes:** W, A, H, I, R, and/or V	**4**
ASD or G-course **Optional Attributes:** W, A, H, I, R, and/or V	**4**	ASD or G-course **Optional Attributes:** W, A, H, I, R, and/or V	**4**

GRADUATION REQUIREMENT TRACKER

G-course	✓
GAH	
GAH	
GEN	
GIS	
GNM	
GNM	
GSS	
GSS	

Quantitative Reasoning	✓
Q1 (First year)	
Q1/Q2	
Q2	

Writing Requirement	✓
W1 (First year)	
W1/W2	
W1/W2	
W1/W2 (3000 level or higher)	

At-some-distance	✓
ASD	
ASD	
ASD	
ASD	

Attributes	✓
A	
H	
I	
R1	
R2	
V	

Program specific notes

* Credit for BIOL 1200/05, 1400/05, 2600, and 2110/2115 **[Q2]** may only be earned with a C grade or higher. Students must have a minimum overall 2.0 GPA for all NAMS courses. No biology core or cognate course may be taken P/NC and be counted toward any degree track in biology.

1. Dependent on first-year math competency placement. MATH 1100 Precalculus **[Q1]** is a prerequisite for BIOL 2110/2115 Genetics **[Q2].**
2. At Stockton, Chemistry I and IV are 'General Chemistry' while CHEM II and CHEM III are 'Organic Chemistry', thereby students may proceed to CHEM II or CHEM IV after taking CHEM I with lab.
3. Courses may be from: BCMB, BIOL, CHEM, CPLS, ENVL, GEOL, MARS, MATH, PHYS, SUST, or other courses approved by preceptor.
4. **Ecology (Plants) requirement.** Among their chosen science electives, students must take at least ONE course that focuses on ecology and/or plants. This course can also be used to satisfy part of the upper-level requirement (if 3000-level or higher; see below). Courses that will fulfill this requirement include (but are not necessarily limited to) the following: BIOL 2100 **[Q2]** or 2120 or 2126 or 3180 or 3184 or 3365 or 3370 [Holistic Health IMHL] or 3414 or 3416 or 3417 or 3419 or 3440 or 3465 or 3416 or 3450 or 3465 or 3370 or ENVL 2200 or 3414 or 3416 or 3419 or MARS 3335 **[W2]** or 3336 or 3416 or SUST 3440 or 3450.
5. Recommended in the Spring term of the second year.
6. Instead of a physics course, students may take one of the following three chemistry courses: CHEM 2130 Chemistry III, CHEM 2140 Chemistry IV **[Q2],** or CHEM/BIOL 3250 Biochemistry. Since these chemistry courses are 4 credits rather than 5 credits, students opting for chemistry instead of physics may need to make up 1 or 2 science credits. MATH 2215 Calculus I **[Q1]** is a required prerequisite for PHYS 2220/25 Physics I **[Q1]** (may be taken concurrently)**.** MATH 2216 Calculus II **[Q1]** is a required prerequisite for PHYS 2230/35 Physics I **[Q1]** (may be taken concurrently).
7. Must be CHEM 2130 Chemistry III, CHEM 2140 Chemistry IV **[Q2],** or CHEM/BIOL 3250 Biochemistry.
8. Recommended in the third year but may be taken in the second or fourth year.
9. **Upper-Level Biology requirement.** Students must take at least 12 credits of upper-level biology (BIOL 3000-4999) at Stockton. The chosen biotechnology elective course (see below) will count towards this requirement. No transfer work is allowed for this requirement. Independent studies may not be used for this requirement. Non-BIOL courses that are allowed to meet this requirement include: CHEM 3250, GEOL 3242, PHYS 3030 [Behavioral Neuroscience IMBN], SUST 3450, MARS 3300, 3340, 3105 **[Q1],** 3106 **[Q1],** 3333, 3306, 3416, 3489, and ENVL 3423, 3426, 3121, 3136, 3413, 3433.

10. **Biotechnology elective.** Choices include BIOL 4210 Molecular Genetics, BIOL 4211 Molecular Evolution, BIOL 4215 Biotechnology, or CHEM 3350 Biochemistry Lab Methods.
11. BIOL 4800/4900 BIOL Senior Project (2-4 credits) with poster session optional but strongly encouraged.

ADDITIONAL INFORMATION

- **FIRST (FRST).** All newly admitted freshmen or transfer students with 15 or fewer credits are required to fulfill the University's first-year competency requirement. The requirement may be met by demonstrating competency on the placement tests, or by passing, with a grade of C or better, all FRST courses: FRST 1101 – College Writing, 1002 – Critical Thinking and Reading, and 1103 – Quantitative Reasoning into which students have been placed. Students enrolled in FRST 1100 – Developmental Mathematics must receive a grade of C or better, and then enroll in and receive a grade of C or better in FRST 1103 to demonstrate competency. Full-time students must register for all required FRST courses in their first semester. Depending on time to completion of competency requirements, some students may need additional time for degree completion. *Note*- certain FRST courses also meet the requirements of the General Studies course distribution categories.
- **General Studies.** B.S. students must complete 48 credits of General Studies with the distribution requirement of: 8 GAH, 4 GEN, 4 GIS, 8 GNM, 8 GSS and 16 ASD (At Some Distance). See 2022-2023 Bulletin for more information. B.A. students must complete 64 credits of General Studies with the distribution requirement of: 8 GAH, 4 GEN, 4 GIS, 8 GNM, 8 GSS and 32 ASD.
- **W1/W2- Writing requirement.** Students are required to complete (C or better) four Writing intensive (WI/W2) courses. One W1 is required in the first year and an additional three W1 or W2 with one in the upper-level division (3000-level or higher). W1/W2 courses can be found in General Studies or Program/cognate courses depending on major.
- **Q1/Q2- Quantitative Reasoning.** Students are required to complete (D- or better) three Q1/Q2 courses. One Q1 in the first year and at least one Q2. Q1/Q2 courses may be found in General Studies or Program/cognate course depending on major.
- **R1/R2- Race and Racism.** Students are required to pass one (1) R1 and another R1/R2 course. R1 (C or better) , R2 (D or better). R1/R2 courses may be found in General Studies or Program/cognate courses depending on major.
- **Minor program.** Students may select a Minor program of study, in consultation with their preceptor. Minor courses would replace some of the ASD or Program/cognate courses in the Degree Map.
- **Attributes (AHVI/Q, W and R).** A course may fulfill multiple attributes and/or other requirements. Therefore, many attributes can be fulfilled without taking additional courses. Attributes can be taken in any order except for the first-year requirements. Many course choices are available to fulfill an attribute.
- **Transfer students.** Transfer students must take 25% of their remaining credits in General Studies with a GIS course required (The 25% Rule). Depending on transferred courses, individual attribute requirements may be met (AHVI/Q, W and R) but will be evaluated on transfer. For students transferring 64 credits or more, the General Studies course requirement is lowered to 16 credits (i.e. only four G courses are required, but all students must take 4 credits in the GIS category, the other three G courses can be any combination of the G course categories). Up to two W1 and two Q1 courses can be transferred, all W2 and Q2 courses need to be taken at Stockton. Up to one R1 or R2 can be transferred. Consult with an academic advisor for careful guidance.
- **Second degree.** Students with an earned degree will be exempt from all general studies course requirements (i.e. G courses, ASD) and AHVI/Q, W and R attributes.