

## 2022-2023

### Degree Map: [Biochemistry/Molecular Biology \(BS\)](#)

#### Biochemistry 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.
- Students are encouraged to take overload and Summer courses to facilitate their progress towards graduation as necessary.
- Transfer students may not need to take all courses in the plan; they should consult with an academic advisor.
- Students accepted into the articulation agreement with Ernest Mario School of Pharmacy at Rutgers University would have a different degree map based on completing needed prerequisites in necessary time frame
- Degree map would be altered for students who earned AP or dual credit from high school
- Please note that various professional schools might require additional courses. Some can be fulfilled with ASD classes while others require additional science classes

FIRST YEAR - FALL	Credit	FIRST YEAR - SPRING	Credit
Course load	19	Course load	18
FRST or G-course <b>Attribute:</b> First Year Seminar <b>Optional Attributes:</b> W1, A, H, I, R, and/or V	4	G-course <b>Optional Attributes:</b> W, A, H, I, R, and/or V	4
CHEM 2110/15 Chemistry I: General Principles w/lab <sup>1</sup> <b>Attribute:</b> Q2	5	ASD <b>Optional Attributes:</b> W, A, H, I, R, and/or V	4
BIOL 1200/05 Cells and Molecules w/lab	5	CHEM 2120/25 Chemistry II: Organic Structure w/lab <sup>1</sup>	5
MATH 2215 Calculus I <b>Attribute:</b> Q1	5	BIOL 1400/05 Biodiversity & Evolution w/lab	5

SECOND YEAR - FALL	Credit	SECOND YEAR - SPRING	Credit
Course load	17	Course load	17
G-course or ASD <b>Optional Attributes:</b> W, A, H, I, R, and/or V	4	G-course <b>Optional Attributes:</b> W, A, H, I, R, and/or V	4
CHEM 2130 Chemistry III Organic Reactions w/lab <sup>1</sup>	4	ASD <b>Optional Attributes:</b> W, A, H, I, R, and/or V	4
PHYS 2110/15 Physics for Life Science I w/lab <b>OR</b> PHYS 2220/25 Physics I w/lab <sup>2</sup>	5	CHEM 2140 Chemistry IV Theory & App w/lab <sup>1</sup> <b>Attribute:</b> Q2	4
BIOL 2110/15 Genetics w/lab	4	PHYS 2120/25 Physics for Life Science II w/lab <b>OR</b> PHYS 2230/35 Physics II <sup>3</sup>	5

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THIRD YEAR - FALL	Credit	THIRD YEAR - SPRING	Credit
<b>Course load</b>	<b>16</b>	<b>Course load</b>	<b>16</b>
G-course or ASD <b>Optional Attributes:</b> W, A, H, I, R, and/or V	<b>4</b>	G-course <b>Optional Attributes:</b> W, A, H, I, R, and/or V	<b>4</b>
CHEM 3250 Biochemistry	<b>4</b>	ASD <b>Optional Attributes:</b> W, A, H, I, R, and/or V	<b>4</b>
Advanced Chemistry/Biology Course (see list below) <sup>3</sup>	<b>4</b>	CHEM 3350 Biochemistry Lab Methods <b>Attribute:</b> Q2, W2	<b>4</b>
NAMS Cognate course	<b>4</b>	Advanced Chemistry/Biology Course (see list below) <sup>4</sup>	<b>4</b>

FOURTH YEAR - FALL	Credit	FOURTH YEAR - SPRING	Credit
<b>Course load</b>	<b>16</b>	<b>Course load</b>	<b>16</b>
ASD or G-course <b>Optional Attributes:</b> W, A, H, I, R, and/or V	<b>4</b>	G-course <b>Optional Attributes:</b> W, A, H, I, R, and/or V	<b>4</b>
Advanced Chemistry/Biology Course (see list below) <sup>4</sup>	<b>4</b>	Advanced Chemistry/Biology Course (see list below) <sup>4</sup>	<b>4</b>
BCMB 4800/4900 Senior Project or Internship*	<b>4</b>	BCMB 4800/4900 Senior Project or Internship*	<b>4</b>
Molecular Biology course (BIOL 4210, 4211, 4212, 4213, or 4215) <sup>5</sup> <b>only one is required and this cannot count as a Biology elective</b>	<b>4</b>	Program/cognate course	<b>4</b>

**GRADUATION REQUIREMENT TRACKER**

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

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

At-some-distance	✓
ASD	
ASD	
ASD	
ASD	

Attributes	✓
A	
H	
I	
R1	
R2	
V	

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

**Program specific notes**

- A minimum overall **2.0 GPA** is required in Program, Cognate and Elective courses. A grade of **C** or better is required for all core courses (shaded above).
- <sup>1</sup> It is important to note 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.
- <sup>2</sup> PHYS 2220/25 requires MATH 2215 Calculus I (may be taken concurrently).
- <sup>3</sup> PHYS 2230/35 requires MATH 2216 Calculus II (may be taken concurrently).
- <sup>4</sup> **Advanced Chemistry Electives:** Two of the following: CHEM 3035 Survey of Instrumentation, CHEM 3110 Inorganic Chemistry, CHEM 3310 Laboratory Methods I, CHEM 3330 Food Chemistry, CHEM 3410 Physical Chemistry I, CHEM 3520 Advanced Organic Chemistry, CHEM 3550 Advanced Biochemistry. **Advanced Biology Electives:** Two of the following: BIOL 3141 Embryology, BIOL 3160 Developmental Biology, BIOL 3170 Microbiology w/lab, BIOL 3180 Plant Physiology, BIOL 3186 Histology, BIOL 3190 Cell Biology & Biophysics, BIOL 3360 Neurobiology, BIOL 4100 Principles

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of Evolution, BIOL 4110 Bioinformatics, BIOL 4210 Molecular Genetics, BIOL 4211 Molecular Evolution, BIOL 4212 Molecular Microbiology, BIOL 4213 Eukaryotic Molecular Biology, BIOL 4215 Biotechnology, BIOL 4236 Systems Biology, BIOL 4321 Cancer Biology or other approved courses. These courses cannot fulfill both this requirement and the Molecular Biology elective requirement.

- <sup>5</sup> **Molecular Biology Course Electives:** Either BIOL 4210 Molecular Genetics, BIOL 4211 Molecular Evolution, BIOL 4212 Molecular Microbiology, BIOL 4213 Eukaryotic Molecular Biology, BIOL 4215 Biotechnology. This requirement cannot also fulfill the Advanced Biology Elective requirement.
- \*Senior Project or Senior Internship may also have BIOL or CHEM program designation with approval of preceptor.

### 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 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.