

# THE UNIVERSITY OF PUGET SOUND

2021-2022 CURRICULUM GUIDE

**BIOLOGY: MOLECULAR AND CELLULAR**

DEGREE: BS

CONTACT PERSON: STACEY WEISS

## A SUGGESTED four-year program:

*Fall Semester Classes*

*Spring Semester Classes*

Freshman	Units	Units	Units
SSI 1	1	SSI 2	1
BIOL 111/lab (NS core)	1	BIOL elective 1 <sup>3</sup> or Elective	1
CHEM 110/lab or CHEM 115/lab <sup>1</sup>	1	CHEM 120/lab or CHEM 230/lab <sup>1</sup>	1
FL (if needed) or MATH 180, 181, or 260 <sup>2</sup> (MA core)	1	FL (if needed) or MATH 181 or 260 <sup>2</sup> or Elective	1
Sophomore	Units	Units	Units
BIOL 212, 213, or BIOL elective 1 <sup>3</sup>	1	BIOL 212, 213 or BIOL elective 1 <sup>3</sup>	1
CHEM 250/lab	1	CHEM 251/lab	1
Approaches core	1	Elective or MATH 181 or 260 <sup>2</sup>	1
Elective or MATH 180, 181, or 260 <sup>2</sup> (MA core)	1	Analyt. Sci. elective 1 <sup>4</sup> (BIOL 231 recommended) or Elective	0.5 - 1
		CHEM 231 (if needed) <sup>4</sup>	0.5
Junior	Units	Units	Units
BIOL 212, 213 or BIOL elective 1 <sup>3</sup> or Elective	1	BIOL elective 2 (300+) <sup>3</sup>	1
CHEM 460/lab <sup>4</sup>	1	CHEM 461/lab	1
Approaches core	1	Approaches core	1
Elective	1	Elective	1
Senior	Units	Units	Units
Analyt. Sci. elective 1 <sup>4</sup> or Elective	1	BIOL 404 or Analyt. Sci. elective 2 <sup>4</sup>	1
BIOL 404 or Analyt. Sci. elective 2 <sup>4</sup>	1	CN core <sup>5</sup> or Elective	1
CN core <sup>5</sup> or Elective	1	Elective	1
Elective	1	Elective	1

**NOTES:**

**Puget Sound requires a total of 32 units to graduate.**

- 1) Chemistry should be taken in the first year. General Chemistry requirements: CHEM 110 and 120 or CHEM 115 and 230.
- 2) Two units of Mathematics: Any two of MATH 180, 181, and 260. MATH 260 is STRONGLY ENCOURAGED. MATH 160 may substitute for MATH 260 if and only if BIOL 211 or BIOL 231 (0.5 units) is also taken. MATH 180, or its equivalent, is prerequisite for MATH 181. MATH 260 prerequisite includes one of the following **or its equivalent**: MATH 160, MATH 181, PSYC 201, AP Statistics. Math may be delayed for a year or two.
- 3) Two additional units in Biology are required, one of which must be at the 300 or 400 level (excluding BIOL 398) and which can include up to one research credit (BIOL 390, 490, or 491). Students with an interest in evolutionary, environmental, or ecological applications should strongly consider BIOL 112 or 360 as their electives. BIOL 112 may be taken during the freshman year and is strongly encouraged. Students may not use BIOL 361 to satisfy this requirement.
- 4) Two units of analytical science from the following: BIOL 211 or BIOL 231 (0.5 units); CHEM 231 (0.5 units); PHYS 111/112 or PHYS 121/122; MATH 150+; CSCI 141+
- 5) Students who satisfy the General Chemistry requirement with CHEM 110 and 120 must also complete CHEM 231 prior to enrolling in CHEM 460.
- 6) Of the three units of upper division coursework required outside the first major, the Connections course will count for one unless it is used to meet a major requirement.

# THE UNIVERSITY OF PUGET SOUND

## COURSE CHECKLIST

### BIOLOGY: MOLECULAR AND CELLULAR

#### CORE CURRICULUM

UNIVERSITY CORE	CRS	TERM	GRADE
SSI 1			
SSI 2			
AR			
HM			
MA (MATH 180, 181, 260) <sup>2</sup>			
NS (BIOL 111, 112; CHEM 110, 115) <sup>1</sup>			
SL			
CN			

#### MAJOR REQUIREMENTS

COURSE	UNITS	TERM	GRADE
BIOL 111 <sup>1</sup>			
BIOL 212 <sup>3</sup>			
BIOL 213 <sup>4</sup>			
BIOL 404			
<b>Two additional Biology electives: *</b>			
1. Any level			
2. 300+			
CHEM 110 <sup>1</sup> or 115 <sup>1</sup>			
CHEM 120# or 230			
CHEM 250			
CHEM 251			
CHEM 460#			
CHEM 461			
<b>Two units of Mathematics:**</b>			
1. MATH 180 <sup>2</sup> #			
2. MATH 181 <sup>2</sup> or 260 <sup>2</sup> ##			
<b>Two units of analytical science: ***</b>			
1.			
2.			

#### KEY

SSI1= Seminar in Scholarly Inquiry1 MA= Mathematical Approaches  
 SSI2= Seminar in Scholarly Inquiry2 NS= Natural Scientific Approaches  
 AR= Artistic Approaches SL= Social Scientific Approaches  
 HM= Humanistic Approaches CN= Connections  
 FL= Foreign Language

#### **Foreign Language Requirement** (circle one)

- 1) Two semesters at 101/102 level or One semester at 200+ level
- 2) Proficiency exam (3rd year high school level or 1st year college level)
- 3) AP foreign language score of 4 or 5
- 4) IB higher level foreign language score of 5, 6, or 7

#### **Upper Division Level Requirement**

Three units at the upper division level outside the first major.

#### **KNOWledge, Identity, and Power Requirement**

One course. See Bulletin for details. Courses may also fulfill other program or graduation requirements.

**THIS FORM IS NOT AN  
OFFICIAL GRADUATION ANALYSIS**

#### NOTES

**Students majoring in Molecular and Cellular Biology may not also major or minor in Biology, Chemistry, or Biochemistry.**

**The following courses do not satisfy major or minor requirements: BIOL 101, 102, 201, 205, 398, 498, or 499; INTN 497.**

- 1) These major requirements may be used to fill the Mathematical Approaches core.
- 2) These major requirements may be used to fulfill the Natural Scientific Approaches core.
- 3) BIOL 212 prerequisite: BIOL 111 and CHEM 115 or CHEM 120, or by permission of instructor.
- 4) BIOL 213 prerequisite: BIOL 111 OR BIOL 112, and one additional BIOL or CHEM 110+ course with a lab.

\*Two additional units in Biology are required, one of which must be at the 300 or 400 level (excluding BIOL 398) and which can include up to one research unit (BIOL 390, 490, or 491). One of these electives must be completed on the Puget Sound campus. Students with an interest in evolutionary, environmental, or ecological applications of molecular biology should strongly consider BIOL 112 and 360 as their electives. BIOL 112 may be taken during the freshman year and is strongly encouraged. Students may not use BIOL 361 to satisfy this requirement.

#Students who satisfy the general Chemistry requirement with CHEM 110 and 120 must also complete CHEM 231 (0.5 unit) prior to enrolling in CHEM 460.

\*\*Two required mathematical units from MATH 180, 181, or 260.

#MATH 180, or its equivalent, is prerequisite for MATH 181.

##MATH 260 is STRONGLY ENCOURAGED. MATH 160 may substitute for MATH 260 if and only if BIOL 211 or BIOL 231 is also taken.

MATH 260 prerequisite includes one of the following **or its equivalent**: MATH 160, MATH 181, PSYC 201, AP Statistics. Math may be delayed for a year or two.

\*\*\*Two units of analytical science from the following: BIOL 211 or 231; CHEM 231; PHYS 111/112 or PHYS 121/122; MATH 150+; CSCI 141+.

Molecular and Cell Biology majors are encouraged to participate in the undergraduate research program, provided they consult with and gain approval from a biology faculty research advisor and submit a research proposal. Related courses include 290/390/490 (Directed research), and 491 (Senior Thesis). Students planning a senior thesis should enroll in BIOL 201 (Biology Colloquium), BIOL 392 (Introduction to Biological research) and either one unit of BIOL 491 or BIOL 490 and 491. One research unit or independent study (390, 490, and 491) may count as an advanced elective for the major.