# THE UNIVERSITY OF PUGET SOUND

2020-2021 CURRICULUM GUIDE

## MATH/DUAL DEGREE ENGINEERING

DEGREE: BS IN MATHEMATICS: SAMPLE 3-YEAR PROGRAM

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## A suggested three-year program:

This schedule is a possible sequence that allows completion in three years. Other sequences are possible. Please talk with your advisor and the Dual Degree Engineering program director. Those students with advanced standing (transfer credit, AP, etc.) will have more flexibility.

#### Fall Semester Classes

## **Spring Semester Classes**

Freshman	Units		Units
SSI 1	1	SSI 1	1
PHYS 121/Lab (NS core)	1	PHYS 122/Lab	1
MATH 180 (MA core)	1	MATH 181	1
FL (if needed) or elective	1	FL (if needed) or elective	1

Sophomore	Units		Units
MATH 280	1	MATH 290	1
CHEM 110/lab or CHEM 115/lab	1	CHEM 120/lab or CHEM 230/lab	1
CSCI 161 or equivalent	1	MATH 300+ Elective	1
Approaches core	1	Approaches core	1

Junior	Units		Units
MATH 300+ Elective	1	MATH 300+ Elective	1
MATH 300+ Elective	1	MATH 300+ Elective	1
MATH 301	1	CN core*	1
Approaches core	1	Elective	1

#### **NOTES**

Students majoring in Mathematics must earn a GPA of at least 2.0 in all upper-division mathematics courses (upper division courses are those at the 300-400 level).

There are two options for the Mathematics major: the contract option and the standard option. This guide represents a suggested four-year program for the standard major in Mathematics.

Contract option: Each contract will consist of: (1) Between eight and 16 units with no more than nine units in mathematics; (2) CSCI 161 or equivalent and (3) At least five-upper-division (300-400 level) units in mathematics or mathematics substitute courses to include: (a) two units of related upper-division courses to provide depth and (b) one upper-division unit in a proof-based course. Final shape is worked out in consultation with the advisor and a departmental committee before the end of the semester in which the first upper-division course on the contract is completed. The contract will normally include MATH 180/181/280/290.

**Standard option**: (1) Completion of 180/181/280/290; (2) CSCI 161 or equivalent and (3) At least five upper-division (300-400 level) units in mathematics to include: (a) two units of related upper-division courses to provide depth; (b) one upper-division unit in a proof-based course; and (c) at least one upper-division unit from **each** of the following two lists: (List A) MATH 301, 302, 350, 355, 360, 375, 376, 380, 420 (some topics as noted in topic course descriptions), 480, 481 and (List B) MATH 300, 310, 335, 338, 340, 345, 390, 420 (some topics as noted in topic course descriptions), 471, 490, 491.

\*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 MATH/DUAL DEGREE ENGINEERING

#### CORE CURRICULUM

### STANDARD MAJOR REQUIREMENTS

					<del></del>		
UNIVERSITY CORE	CRS	TERM	GRADE	COURSE	UNITS	TERM	GRADE
SSI 1				MATH 180			
SSI 2				MATH 181			
AR				MATH 280			
НМ				MATH 290			
MA (MATH 180, 181, CSCI 161)				CSCI 161 (or equivalent)			
NS (PHYS 121)				Five units at the MATH 30	00-400 level:	•	-
SL				1.#			
CN				2. #			
KEY			•	3. ##			
SSI1= Seminar in Scholarly Inquiry1 SSI2= Seminar in Scholarly Inquiry2				4. List A <sup>1</sup>			
AR= Artistic Approaches  HM= Humanistic Approaches  SL= Social Scientific Approaches  CN= Connections			5. List B <sup>1</sup>				
		Foreign Language		Additional DDE Requirements:			
Foreign Language Requirement (circle one)			MATH 301			T	

## Foreign Language Requirement (circle one)

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

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**

**PHYS 121** 

**PHYS 122** 

CHEM 110 or 115

CHEM 120 or 230

A grade of C- or better is required in all prerequisite courses in Math and Computer Science.

This curriculum guide is based on the Mathematics Department's **standard** major requirements.

#When choosing upper-division units in mathematics include two related courses to provide depth. Current options include: MATH 301/302, 335/471, 340/345, 350/355, 375/376, 480/481, 490/491.

##Include one proof-based upper-division mathematics course.

- 1) Two of the five upper-division mathematics units need to include one from List A and one from List B.
  - List A: MATH 301, 302, 350, 355, 360, 375, 376, 380, 420 (some topics as noted in topic course descriptions), 480, 481.

List B: MATH 300, 310, 335, 338, 340, 345, 390, 420 (some topics as noted in topic course descriptions), 471, 490, 491.

When choosing upper division math courses, consider MATH 302 (Partial Differential Equations), MATH 335 (Optimization), and MATH 471 (Modeling).

Both Columbia University and Washington University (St. Louis) have specific requirements that can be met by choosing core classes appropriately. See the Dual Degree Engineering requirements.

Majors must maintain a minimum of 2.0 GPA in all contract courses and in all upper-division courses. A higher GPA is necessary for successful admission to the affiliate engineering programs. At least 4 units of upper-division courses must be completed at Puget Sound. All contracts must meet specific requirements (see Bulletin) and will normally include MATH 180, 181, 280, 290.

Refer to the Engineering 2020-2021 Bulletin for courses recommended for students interested in pursuing Biomechanical, Electrical, Chemical, or Mechanical Engineering.