

# THE UNIVERSITY OF PUGET SOUND

2016-2017 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 advisor. 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 290	1	Approaches core	1
MATH 280	1	MATH 301	1
CHEM 110/lab or CHEM 115/lab	1	CHEM 120/lab or CHEM 230/lab	1
CSCI 161	1	Approaches core	1

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

#### **NOTES:**

There are two options for the Mathematics major: the contract option and the standard option.

**Contract option:** Each contract will consist of: (1) Between 8 and 16 units with no more than 9 units in mathematics. (2) CSCI 161 or equivalent. (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 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 first upper-division course is completed. The contract will normally include 180/181/ 280/290.

**Standard option:** (1) Completion of 180/181/ 280/290. (2) CSCI 161. (3) At least five upper-division (300-400 level) units in mathematics to include (a) two units of related upper-division courses; (b) one upper-division unit in a proof-based course; and (c) at least one upper-division unit from each of the following lists: (A) MATH 301, 302, 321, 322, 352, 360, 375, 376, 420 (only some topics as noted in topic course descriptions); and (B) MATH 300, 310, 335, 338, 420 (only some topics as noted in topic course descriptions), 433, 434, 471.

\*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. Upper division courses transferred back from the engineering program can also be used for this requirement.

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## COURSE CHECKLIST MATH/DUAL DEGREE ENGINEERING

### CORE CURRICULUM

UNIVERSITY CORE	CRS	TERM	GRADE
SSI1			
SSI2			
AR			
HM			
MA (MATH 180, 181, CSCI 161)			
NS (PHYS 121)			
SL			
CN			

### 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.

### MAJOR REQUIREMENTS

COURSE	UNITS	TERM	GRADE
MATH 180			
MATH 181			
MATH 280			
MATH 290			
CSCI 161			
MATH 300-400 level:			
1. MATH 301 <sup>1</sup>			
2.			
3.			
4.			
5.			
Additional DDE Requirements:			
MATH 301			
PHYS 121			
PHYS 122			
CHEM 110 or 115			
CHEM 120 or 230			

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

### NOTES

This guide is based on the Mathematics Department's contract major requirements.

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