**THE UNIVERSITY OF PUGET SOUND**

2015-2016 CURRICULUM GUIDE

**MATH/DUAL DEGREE ENGINEERING**

DEGREE: BS IN MATHEMATICS: SAMPLE 3-YEAR PROGRAM

CONTACT PERSON: RAND WORLAND, PHYSICS

**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 (NS core) | 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 | 1 | 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) CSCI161 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 inmathematics 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.

**MAJOR REQUIREMENTS**

|  |  |  |  |
| --- | --- | --- | --- |
| COURSE | UNITS | TERM | GRADE |
|  |  |  |  |
| MATH 180 |  |  |  |
|  |  |  |  |
| MATH 181 |  |  |  |
|  |  |  |  |
| MATH 280 |  |  |  |
|  |  |  |  |
| MATH 290 |  |  |  |
|  |  |  |  |
| CSCI 161 |  |  |  |
|  |  |  |  |
| MATH 300-400 level: |  |  |  |
|  |  |  |  |
| 1. MATH 3011 |  |  |  |
|  |  |  |  |
| 2. |  |  |  |
|  |  |  |  |
| 3. |  |  |  |
|  |  |  |  |
| 4. |  |  |  |
|  |  |  |  |
| 5. |  |  |  |
|  |  |  |  |
| Additional DDE Requirements: |  |  |  |
|  |  |  |  |
| MATH 301 |  |  |  |
|  |  |  |  |
| PHYS 121 |  |  |  |
|  |  |  |  |
| PHYS 122 |  |  |  |
|  |  |  |  |
| CHEM 110 |  |  |  |
|  |  |  |  |
| CHEM 230 |  |  |  |
|  |  |  |  |

**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**

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**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.

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