Department of Mathematics

PennState Eberly College of Science

Bachelor of Science
Computational Option

Foundational Courses	Option Requirements	Supporting Courses	General Education Requirements
(30-31 credits total)	(33 credits total)	(17-18 credits total)	(39 credits total)
☐ **MATH 140** (4) ☐ **MATH 141** (4) ☐ **MATH 220** (2) ☐ **MATH 230** (4) ☐ **MATH 250** (3) or **251** (4) ☐ **MATH 311W** (3) ☐ **MATH 312** (3) ☐ CMPSC 101 or 131 or 201 (3) ☐ STAT 200 (4)	☐ CMPSC 122 (3) ☐ CMPSC 465 (3) ☐ **MATH/STAT 414** (3) ☐ **MATH/STAT 415** (3) ☐ **MATH 455** (3) ☐ **MATH 456** (3) ☐ **MATH 467** (3) ☐ **MATH 484** (3) Choose 3 credits from the following: ☐ **MATH 411** (3) ☐ **MATH 412** (3) ☐ **MATH 417** (3) Choose 6 credits of computational math: ☐ **MATH 310** (3) ☐ **MATH 468** (3) ☐ **MATH 485** (3)	☐ _____ ☐ _____ ☐ _____ ☐ _____ ☐ _____ ☐ _____ ☐ _____ ☐ _____ ☐ _____ *Bold type indicates that courses require a grade of C or better.	Writing/Speaking Skills (GWS) (9 credits) ☐ ENGL 15 or 30 (3) ☐ ENGL 202 (3) ☐ CAS 100 (3) Arts (GA) (6 credits) ☐ _____ ☐ _____ Humanities (GH) (6 credits) ☐ _____ ☐ _____ Social and Behavior Sciences (GS) (6 credits) ☐ _____ ☐ _____ Natural Science (GN) (9 credits) ☐ _____ ☐ _____ ☐ _____ Health and (GHW) (3 credits) ☐ _____ ☐ _____ ☐ United States Cultures (US) ☐ International Cultures (IL) ☐ First Year Seminar

Computational Option

The goal of this option is to train students in the areas of mathematics most relevant to scientific computations. These include the mathematical tools needed for analyzing algorithms (i.e. computational procedures) as well as those mathmatical problem-solving methods which can be implemented on computers. The main mathematical tools needed are numerical analysis, matrix theory, differential equations, statistics, combinatorics, and linear programming.