SMO/SMOH Electives
Spring Semester AYE 2026

Track Electives (TRK EL1, TRK EL2)

SA234 Data Wrangling & Visualization (Formerly SA433)[1]

SA325 Cost Estimation

SA403 Graph and Network Algorithms

SA435 Decision Analysis

SM364 Intro to Scientific Computing

Math Electives (MATH EL)

SM244 Discrete Math for OR

SM279 Multivariable Calculus

SM291 Fundamentals of Mathematics

SM342 Discrete Mathematics

Breadth Electives (BR EL1, BR EL2)

All Math Electives count as BR EL1

All Track Electives count as BR EL1 or BR EL2

SM212 Differential Equations

SM222 Differential Equations with Matrices

SM332H Real Analysis II

SM350 Wargame Theory

SM411 Complex Variables

SM450 Intro to Differential Equations on Fractals

Non-math courses with no prereqs:

SE201 Principles of Microeconomics (limited seats)[2]

SE202 Principles of Macroeconomics (limited seats)[2]

IC210 / SI204 Intro to Computing

(Check mids for the full list of Breadth Electives)

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[1] Course descriptions included below for courses that appear in bold. Some of these are umbrella courses that do not have descriptions in mids.

[2] Students cannot receive credit for both FE210 and (SE201 or SE202). (FE210 is a HM SS elective.)

Capstone Courses (SA475 in the matrix)

SA475 Naval Innovation Capstone II *(prereq: SA485A Naval Innovations Capstone I)*
SA496 Independent Research *(prereq: Bowman or SMOH)*
SA475B OR for the Military Business and Society *(all other SMO 1/C)* ←"Standard" Capstone

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Course Descriptions

SA234 Data Wrangling & Visualization

In this course, midshipmen will learn to (i) wrangle (i.e. clean and manipulate) large, messy data sets into forms suitable for modeling and analysis (in particular, operations research and statistical models), and (ii) create sophisticated visualizations of large data sets that provide useful insights for decision-making as well as further modeling and analysis. *Prereq: SA233*

SA325 Cost Estimation

Introduces quantitative methods of cost estimation analysis for DoD weapon systems, with the supporting operations research techniques of cost-estimating relationships, inflation indices, learning curves, uncertainty analysis, and economic analysis. *Prereq: SM239*

SA403 Graph and Network Algorithms

This course introduces graph algorithms for problems in network and combinatorial optimization. Topics include: minimum spanning trees, matchings, shortest paths, maximum flows and minimum cost flows. Students will also be expected to program algorithms on a computer. *Prereq: SA233*

SA435 Decision Analysis

This course provides an introduction to modern theory and methods for decision analysis. Decision making under uncertainty and military applications are emphasized. Topics include decision trees, influence diagrams, the value of information and real options, risk, utility theory, and multiple criteria decision making. *Prereq: SM239*