

BS in Computer Science & General Education Requirements*

General Education (GE)
(15 courses)

Foundation Requirements
(6 courses)

- FND 101 Freshman English Seminar 1
- FND 102 Freshman English Seminar 2
- FND 103 Armenian Language & Literature 1
- FND 104 Armenian Language & Literature 2
- FND 121 Armenian History 1
- FND 122 Armenian History 2

All undergraduate students must take these six courses

Quantitative Sciences Requirements
(3 courses)

Any 3 quantitative sciences courses forming a cohesive cluster coded as GE-QS

Arts & Humanities Requirements
(3 courses)

Any 3 humanities courses forming a cohesive cluster coded as GE-AH

Social Sciences Requirements
(3 courses)

Any 3 social sciences courses forming a cohesive cluster coded as GE-SS

Physical Education, First Aid, and Civil Defense Requirements

- FND 110 Physical Education (120 hours)
- FND 152 First Aid (20 hours)
- FND 153 Civil Defense (20 hours)

*All undergraduate students must take these three courses***

AND

CS Core Requirements
(17 courses)

- CS 100 Calculus 1
- CS 101 Calculus 2
- CS 102 Calculus 3
- CS 103 Real Analysis
- CS 104 Linear Algebra
- CS 111 Discrete Mathematics
- CS 107 Probability
- CS 108 Statistics
- CS 110 Introduction to Computer Science
- CS 120 Introduction to Object Oriented Programming
- CS 121 Data Structures
- CS 211 Introduction to Algorithms
- CS 112 Numerical Analysis
- CS 213 Optimization
- CS 130 Computer Organization
- CS 140 Mechanics
- CS 296 Capstone

AND

CS Tracks
(5 courses)

Mathematical Modeling Track
(Minimum 5 courses)

Track Requirements (3 courses)

- CS 105 Ordinary Differential Equations
- CS 205 Partial Differential Equations
- CS 2xx Math Modeling Applications

Track Electives (2 courses from following)

- CS 201 Complex Analysis
- CS 202 Functional Analysis
- CS 206 Differential Geometry
- CS 207 Intro to Combinatorial Topology
- CS 214 Finite Element Methods[#]
- CS 217 Computer Graphics[#]
- CS 226 Machine Learning[#]
- CS 243 Non-Linear Partial Differential Equations
- CS 244 Stochastic Models[#]
- CS 246 Dynamical Systems

OR

Applied Computer Science Track
(Minimum 5 courses)

Track Requirements (3 courses)

- CS 220 Parallel and High Performance Computing
- CS 132 Theory of Communication Networks
- CS 222 Databases

Track Electives (2 courses from following)

- CS 131 Human-Computer Interaction
- CS 217 Graphics and Visualization^{##}
- CS 216 Computational Geometry^{##}
- CS 215 Cryptography
- CS 221 Distributed Systems^{##}
- CS 232 IT Security
- CS 245 Bioinformatics
- CS 246 Artificial Intelligence (AI)
- CS 248 Computational Biology
- CS 252 Data Science with R

OR

General Track
(Minimum 5 courses)

Students may choose any combination of Computer Science courses from Mathematical Modeling Track, Computer Science Track

AND

Free Electives
(Min. 3 courses)

Any 3 additional courses offered at AUA

* All courses are three credits unless otherwise noted.

**To complete the BS in Computer Science program, students must complete a total of 40 courses, including 15 General Education courses, 17 CS Core Requirements, 5 CS Track courses, and a minimum of 3 Free Elective courses. In addition to these 40 courses, students are also required to complete the physical education (PHED 110), first aid (PHED 152), and civil defense (PHED 153) requirements as dictated by Armenian Law.

Also satisfies CS Track elective requirement.

Also satisfies MM Track elective requirement.