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 2xx Machine Learning[#]
CS 201 Complex Analysis
CS 2xx Dynamical Systems
CS 202 Functional Analysis
CS 206 Differential Geometry
CS 207 Intro to Combinatorial Topology
CS 214 Finite Element Methods[#]
CS 243 Non-Linear Partial Differential Equations
CS 244 Stochastic Models[#]

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 315 Cryptography
CS 221 Distributed Systems[##]
CS 232 IT Security
CS 245 Bioinformatics
CS 246 Artificial Intelligence (AI)
CS 248 Computational Biology

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.