

# BS in Computer Science & General Education Requirements\*

General Education (GE) (15 courses)	AND	CS Core Requirements (17 courses)	AND	CS Tracks (5 courses)	AND	Free Electives (Min. 3 courses)
<p><u>Foundation Requirements</u> (6 courses)</p> <p>FND 101 Freshman Seminar 1 FND 102 Freshman Seminar 2 FND 103 Armenian Language &amp; Literature 1 FND 104 Armenian Language &amp; Literature 2 FND 121 Armenian History 1 FND 122 Armenian History 2</p> <p><u>Quantitative Sciences Requirements</u> (3 courses)</p> <p>Any 3 quantitative sciences courses forming a cohesive cluster coded as GE-QS</p> <p><u>Arts &amp; Humanities Requirements</u> (3 courses)</p> <p>Any 3 humanities courses forming a cohesive cluster coded as GE-AH</p> <p><u>Social Sciences Requirements</u> (3 courses)</p> <p>Any 3 social sciences courses forming a cohesive cluster coded as GE-SS</p> <p><u>Physical Education, First Aid, and Civil Defense Requirements**</u></p> <p>FND 110 Physical Education (120 hours) FND 152 First Aid (20 hours) FND 153 Civil Defense (20 hours)</p> <p><i>For complete information about AUA's General Education program, visit <a href="http://aua.am/gened/">http://aua.am/gened/</a></i></p>		<p>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 ENGS 121 Mechanics CS 296 Capstone</p>		<p style="text-align: center;"><b>Mathematical Modeling Track</b> (Minimum 5 courses)</p> <p><u>Track Requirements</u></p> <p>CS 105 Ordinary Differential Equations CS 205 Partial Differential Equations CS 226 Math Modeling Applications</p> <p><u>Track Electives</u></p> <p>CS 215 Cryptography# CS 217 Computer Graphics# CS 246 Dynamical Systems CS 251 Machine Learning# CS 260 Image Processing# CS 231 Quantum Computing# CS 261 Portfolio Theory and Risk Management CS 262 Game Theory# CS 310 Theory of Computing# DS 231 Computer Vision# DS 233 Natural Language Processing# DS 330 Deep Learning#</p> <p style="text-align: center;"><b>OR</b></p> <p style="text-align: center;"><b>Applied Computer Science Track</b> (Minimum 5 courses)</p> <p><u>Track Requirements</u></p> <p>CS 132 Theory of Communication Networks CS 220 Parallel and High-Performance Computing CS 222 Databases</p> <p><u>Track Electives</u></p> <p>CS 131 Human-Computer Interaction CS 221 Distributed Systems### CS 218 Game Development CS 219 Mobile Application Development CS 230 Software Testing Fundamentals CS 232 Cybersecurity CS 236 Compiler Design CS 245 Bioinformatics## CS 246 Artificial Intelligence (AI) ## CS 252 Data Science### CS 290 Special Topics in Applied CS</p> <p style="text-align: center;"><b>OR</b></p> <p style="text-align: center;"><b>General Track</b> (Minimum 5 courses)</p> <p>Students may choose a combination from Mathematical Modeling Track and Computer Science Track. The combination should be approved by the program chair</p>		<p>Any 3 additional courses offered at AUA</p>

\* 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.