Bachelor of Science in Engineering Sciences
Curriculum Map

B=Beginner; I=Intermediate; A=Advanced

Course Title	Credits	1.1	1.2	2.1	2.2	2.3	2.4	3.1	3.2	3.3	4.1	4.2	4.3	5.1	5.2	5.3
Core Courses																
Calculus: Single Variable	4	B										B				
Calculus: Multi Variable	4	I										I				
Linear Algebra and Ordinary Differential Equations	4	A										A				
Probability and Statistics	3	A			A											
Chemistry	3	B			B										B	
Chemistry Lab	1	B			B	B							B			
Mechanics	3	B			B										B	
Mechanics Lab	1	B			B	B							B			
Electricity and Magnetism	3	B			B										B	
Electricity and Magnetism Lab	1	B			B	B							B			
Discrete Math	3	B	B													
Introduction to Programming	4		B											B		
Computer Organization	3		B	I										B		
Data Structures and Algorithms	3		A			B								A		
Engineering Statics	3	I		B												
Engineering Dynamics	3	A		A												
Circuits	3	I		I	I											
Circuits Lab	1	I		I	I									A		
Embedded Systems	3	A		A		B										
Signals and Systems	3			A		I								A		
Numerical Methods	3			A			I							A		
Computer Aided Design	3		I	B		I			I			B		I		
Control Systems 1	3					A							A			

Course Title	Credits	1.1	1.2	2.1	2.2	2.3	2.4	3.1	3.2	3.3	4.1	4.2	4.3	5.1	5.2	5.3
Control Systems 1 Lab	1				A		A			I		A		A		
Control Systems 2	3					A		A	I				A			
Control Systems 2 Lab	1				A		A	A		I				A		
Mechatronics Design	3				A	A		A	A		I					
Capstone	3					A		A	A	A	A				A	A
Distribution 1 (Choose one)																
Introduction to Materials Science	3			B						B		B				
Introduction to Chemical Engineering	3			B						B		B				
Thermodynamics	3			I						B		B				
Introduction to Fluid Mechanics	3			I						B		B				
Data Science with R	3			I			A			B		B				
Heat Transfer	3			I						B		B				
Machine Learning	3			I			A			B		B				
Distribution 2 (Choose one)																
Biotechnology	3			I					B	B		B				
Alternative Energy	3			B					B	B		B				
Biology	3			B					B	B		B				
Bioinformatics	3			I			A		B	B		B				
Environmental Engineering	3			B					B	B		B	B			
Resource Management	3			I					B		B	B	B			
Project Management	3								B		B	B	B			
General Education																
Freshman Seminar 1	3										B	B	B	B	B	B
Freshman Seminar 2	3										B	B	B	B	B	B
Armenian Language /Literature 1	3										B	B	B	B	I	I
Armenian Language /Literature 2	3										I	I	B	B	I	I
Armenian History 1	3										A	A	A	A	A	A

Course Title	Credits	1.1	1.2	2.1	2.2	2.3	2.4	3.1	3.2	3.3	4.1	4.2	4.3	5.1	5.2	5.3
Armenian History 2	3										A	A	A	A	A	A
GE-AH 1	3															
GE-AH 2	3															
GE-AH 3	3										Fulfilled through cluster of elective courses					
GE-SS 1	3															
GE-SS 2	3															
GE-SS 3	3															
GE-QS 1, 2, 3	9										Fulfilled through program requirements					

Student Learning Outcomes

1.1. Identify fundamental mathematical and scientific concepts to define and model a wide-variety of engineering problems.

1.2. Identify and explain the theoretical and practical significance of computer science and its application to engineering problems.

2.1. Utilize appropriate software and suitable engineering tools for problem solving

2.2. Conduct properly posed scientific and engineering experiments.

2.3. Develop a multidisciplinary system, product, or process to meet design requirements.

2.4. Collect and interpret relevant data.

3.1. Pursue graduate studies or gain employment suited to their expertise and interests.

3.2. Demonstrate professional and ethical responsibility and/or contextual understanding of environmental and societal consequences of technological solutions.

3.3. Formulate research questions, critically assess sources, and apply appropriate investigative techniques.

4.1. Produce and deliver written and oral presentations, and communicate with specialists and non-specialists using appropriate media and technology.

4.2. Think critically and creatively, conceptualizing real-world problems from different perspectives.

4.3. Work productively in diverse teams, and solve problems collaboratively.

5.1. Use common software and information technology to pursue inquiry relevant to their academic and professional fields, and personal interests.

5.2. Weigh evidence and arguments, and appreciate and engage in diverse modes of inquiry characteristic of historical, cultural, political, economic, and quantitative disciplines.

5.3. Properly document and synthesize existing scholarship and data, keep current with developments, conduct independent research, and discover and learn new material on their own.