

Course Requirements and Registration Priorities
School of Engineering and Digital Sciences (Undergraduate), Spring 2020

#	Abbr	Title	Cr(US)	Cr(ECTS)	PreRequisite	CoRequisite	AntiRequisite	1st priority registration	2nd priority registration	3rd priority registration	4th priority registration
SEDS											
Chemical and Materials Engineering											
1	CHME 202	Fluid Mechanics	3	6				2 year UG SEDS Chemical Engineering, 2 year UG SEDS Chemical and Materials Engineering	SEDS		
2	CHME 203	Organic and Polymer Chemistry	3	6	CHME 222 Inorganic and Analytical Chemistry (5039) (D and above)			2 year UG SEDS Chemical Engineering, 2 year UG SEDS Chemical and Materials Engineering	SEDS		
3	CHME 454	Transport Phenomena and Operations	3	6				4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering	SEDS		
4	ECHE 323	Computational methods in Chemical Engineering-I	3	6	ECHE 333 Separation Processes-I (1271) (D and above)	ECHE 481 Chemical Reaction Engineering (1985) (D and above)		Registration by School Admin only			
5	ECHE 383	Separation Processes II	3	6	ECHE 126 Introduction to Chemical Engineering (33) (D and above) AND ECHE 225 Heat and Mass Transfer Operations (541) (D and above)			Registration by School Admin only			
6	ECHE 386	Chemical Plant Design and Optimization	3	6				Registration by School Admin only			
7	ECHE 387	Chemical Reaction Engineering 2	3	6				Registration by School Admin only			
8	ECHE 388	Process Dynamics and Control	3	6				Registration by School Admin only			
9	ECHE 420	Polymer Processing and Rheology	3	6				4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering	SEDS		
10	ECHE 421	Tissue Engineering	3	6				4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering	SEDS	SMG, SSH, SoM	
11	ECHE 479	Capstone Project II	9	18	ECHE 418 Capstone project 1 (1278) (D and above)			Registration by School Admin only			

12	ECHE 485	Introduction to Biochemical Engineering	3	6				4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering	SEDS		
Civil Engineering											
13	CEE 202	Environmental Engineering	3	6	CEE 201 Environmental Chemistry (4999) (D and above)			2 year UG SEDS Civil Engineering, 2 year UG SEDS Civil and Environmental Engineering	SEDS		
14	CEE 203	Structural Analysis	3	6	MAE 200 Structural Mechanics I (5010) (D and above) OR CEE 200 Structural Mechanics I (5005) (D and above)			2 year UG SEDS Civil Engineering, 2 year UG SEDS Civil and Environmental Engineering	SEDS		
15	ECE 306	Geotechnical Design	3	6	ECE 210 Soil Mechanics (862) (D and above)			Registration by School Admin only			
16	ECE 319	Structural Design - Steel	3	6				Registration by School Admin only			
17	ECE 320	Engineering Hydrology	3	6				Registration by School Admin only			
18	ECE 420	Modern Information Technology in Construction	3	6				3 year UG SEDS Civil Engineering, 3 year UG SEDS Civil and Environmental Engineering, 4 year UG SEDS Civil Engineering, 4 year UG SEDS Civil and Environmental Engineering	SEDS		
19	ECE 422	Prestressed Concrete Design	3	6				3 year UG SEDS Civil Engineering, 3 year UG SEDS Civil and Environmental Engineering, 4 year UG SEDS Civil Engineering, 4 year UG SEDS Civil and Environmental Engineering	SEDS		
20	ECE 427	Individual Research Projects in Civil Engineering (II)	3	6	ECE 481 Individual Research Projects in Civil Engineering (4484) (D and above)			3 year UG SEDS Civil Engineering, 3 year UG SEDS Civil and Environmental Engineering, 4 year UG SEDS Civil Engineering, 4 year UG SEDS Civil and Environmental Engineering	SEDS		
21	ECE 428	Introduction to Finite Element Methods	3	6				3 year UG SEDS Civil Engineering, 3 year UG SEDS Civil and Environmental Engineering, 4 year UG SEDS Civil Engineering, 4 year UG SEDS Civil and Environmental Engineering	SEDS		
22	ECE 472	Water and Wastewater Treatment Processes	3	6	ECE 218 Environmental Chemistry (3296) (D and above)			Registration by School Admin only			

23	ECE 473	Environmental Systems	3	6				3 year UG SEDS Civil Engineering, 3 year UG SEDS Civil and Environmental Engineering, 4 year UG SEDS Civil Engineering, 4 year UG SEDS Civil and Environmental Engineering	SEDS		
24	ECE 478	Capstone Project II	9	18	ECE 401 Capstone Project 1 (1270) (D and above)			Registration by School Admin only			
Civil and Environmental Engineering											
25	MAE 205	Material and Manufacturing I	3	6				2 year UG SEDS Mechanical Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering	SEDS		
26	MAE 206	Engineering Dynamics I	3	6				2 year UG SEDS Mechanical Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering	SEDS		
Computer Science											
27	CSCI 101	Introduction to Computational Sciences	3	6				SSH			
28	CSCI 111	Web Programming & Problem Solving	3	6			CSCI 100 Computation and Problem Solving (1078) (C- and above)	SSH			
29	CSCI 115	Programming Fundamentals	4	8			CSCI 151 Programming for Scientists and Engineers (192) (C- and above)	Biological Sciences, Chemistry	SSH		
30	CSCI 151	Programming for Scientists and Engineers	4	8			ROBT 102 Programming for robotics and physics (188) (C- and above) OR CSCI 150 Fundamentals of Programming (1501) (C- and above)	Computer Science	Mathematics, Physics, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	

31	CSCI 152	Performance and Data Structures	4	8	CSCI 151 Programming for Scientists and Engineers (192) (C- and above) OR CSCI 150 Fundamentals of Programming (1501) (C- and above) OR CSCI 261 Object Oriented Programming with Java I (171) (C- and above) OR ROBT 102 Programming for robotics and physics (188) (C- and above)			Computer Science, Mathematics, Physics, Robotics and Mechatronics	SSH	SEDS, SMG, SoM	
32	CSCI 245	System Analysis and Design	3	6	CSCI 341 Database Systems (195) (C- and above)			Computer Science	SEDS	SMG, SSH, SoM	
33	CSCI 270	Algorithms	3	6	CSCI 152 Performance and Data Structures (489) (C- and above) AND MATH 251 Discrete Mathematics (85) (C- and above)			Computer Science	SEDS	SMG, SSH, SoM	
34	CSCI 272	Formal Languages	3	6	CSCI 152 Performance and Data Structures (489) (C and above) AND MATH 251 Discrete Mathematics (85) (C- and above)			Computer Science	SEDS	SMG, SSH, SoM	
35	CSCI 307	Research Methods	3	6				3 year UG SEDS Computer Science			
36	CSCI 330	Mobile Computing	3	6	CSCI 332 Operating Systems (490) (C- and above)			Computer Science	SEDS	SMG, SSH, SoM	
37	CSCI 332	Operating Systems	3	6	CSCI 231 Computer Systems and Organization (194) (C- and above)			Computer Science	SEDS	SMG, SSH, SoM	
38	CSCI 333	Computer Networks	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science	SEDS	SMG, SSH, SoM	
39	CSCI 399A	Internship II - A	1	2				Registration by School Admin only			
40	CSCI 409	Senior Project II	3	6	CSCI 408 Senior Project I (1481) (C- and above)			4 year UG SEDS Computer Science			
41	CSCI 447	Machine Learning: Theory and Practice	3	6	MATH 273 Linear Algebra with Applications (84) (C and above) AND MATH 321 Probability (482) (C and above)			Computer Science	SEDS	SMG, SSH, SoM	
42	CSCI 462	Open Source Software	3	6	CSCI 361 Software Engineering (640) (C- and above)			Computer Science	SEDS	SMG, SSH, SoM	

Electrical and Computer Engineering

43	ELCE 201	Circuit Theory	3	6	ELCE 200 Introduction to Electrical Circuits (4991) (D and above)			2 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Electronic Engineering	SEDS		
44	ELCE 204	Solid State Devices	3	6	ENG 103 Engineering Materials 2 (4818) (C- and above)			2 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Electronic Engineering	SEDS		
Electrical and Electronic Engineering											
45	EEE 239	Communication systems	3	6				Registration by School Admin only			
46	EEE 343	Embedded Microcontrollers	3	6				Registration by School Admin only			
47	EEE 379	Power Systems Analysis	3	6				Registration by School Admin only			
48	EEE 381	Electrical Machines and Drives	3	6				Registration by School Admin only			
49	EEE 480	Capstone Project II	9	18				Registration by School Admin only			
50	EEE 484	Electric Power Generation	3	6				4 year UG SEDS Electrical and Computer Engineering, 4 year UG SEDS Electrical and Electronic Engineering	SEDS		
51	EEE 485	Power System Operation and Control	3	6	EEE 379 Power Systems Analysis (1956) (D and above) OR EEE 452 Power Systems Protection (2652) (D and above)			4 year UG SEDS Electrical and Computer Engineering, 4 year UG SEDS Electrical and Electronic Engineering	SEDS		
52	EEE 486	Photonics for Engineering	3	6	EEE 342 Electromagnetics (533) (D and above)			4 year UG SEDS Electrical and Computer Engineering, 4 year UG SEDS Electrical and Electronic Engineering	SEDS		
53	EEE 488	Numerical Optimization Techniques and Computer Applications	3	6				4 year UG SEDS Electrical and Computer Engineering, 4 year UG SEDS Electrical and Electronic Engineering	SEDS		
54	EEE 489	Analog Circuit Design	3	6				Registration by School Admin only			
55	EEE 495	Fundamentals of Biomedical Engineering and Biophysics	3	6				4 year UG SEDS Electrical and Computer Engineering, 4 year UG SEDS Electrical and Electronic Engineering	SEDS		
Mechanical Engineering											
56	EME 300	Research Project	3	6				Registration by School Admin only			
57	EME 352	Computational Fluid Dynamics	3	6				Registration by School Admin only			

58	EME 357	Fluid Mechanics 2	3	6				Registration by School Admin only			
59	EME 377	Mechanical Systems Design	3	6	EME 361 Machine Design (1051) (D and above)			Registration by School Admin only			
60	EME 413	Computer Aided Geometric Design	3	6	EME 253 Computer Aided Engineering (1050) (C- and above)			Registration by School Admin only			
61	EME 414	Fire Engineering	3	6	BENG 226 Engineering Thermodynamics (1553) (D and above)			4 year UG SEDS Mechanical Engineering, 4 year UG SEDS Mechanical and Aerospace Engineering	SEDS		
62	EME 415	Flight Mechanics	3	6				4 year UG SEDS Mechanical Engineering, 4 year UG SEDS Mechanical and Aerospace Engineering	SEDS		
63	EME 476	Materials and Manufacturing II	3	6				Registration by School Admin only			
64	EME 477	Capstone Project II	9	18				Registration by School Admin only			
65	EME 489	Advanced Engineering Mathematics	3	6	BENG 228 Engineering Mathematics III (3154) (D and above)			4 year UG SEDS Mechanical Engineering, 4 year UG SEDS Mechanical and Aerospace Engineering	SEDS		
Mechanical and Aerospace Engineering											
66	ENG 101	Programming for Engineers	3	6				SEDS, SMG			
67	ENG 102	Engineering Materials I	3	6				1 year UG SEDS Civil Engineering, 1 year UG SEDS Civil and Environmental Engineering, 1 year UG SEDS Mechanical Engineering, 1 year UG SEDS Mechanical and Aerospace Engineering	Civil Engineering, Civil and Environmental Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering	SEDS	
68	ENG 103	Engineering Materials 2	3	6				1 year UG SEDS Chemical Engineering, 1 year UG SEDS Chemical and Materials Engineering, 1 year UG SEDS Electrical and Computer Engineering, 1 year UG SEDS Electrical and Electronic Engineering	Chemical Engineering, Chemical and Materials Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering	SEDS	

69	ENG 201	Applied Statistics	3	6	MATH 162 Calculus II (170) (C and above)			2 year UG SEDS Chemical Engineering, 2 year UG SEDS Chemical and Materials Engineering, 2 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Electronic Engineering, 2 year UG SEDS Mechanical Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering	2 year UG SEDS Civil Engineering, 2 year UG SEDS Civil and Environmental Engineering	SEDS	
70	ENG 202	Numerical Methods in Engineering	3	6	ENG 200 Engineering Mathematics III (Differential Equations & Linear Algebra) (5009) (D and above)			2 year UG SEDS Chemical Engineering, 2 year UG SEDS Chemical and Materials Engineering, 2 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Electronic Engineering, 2 year UG SEDS Mechanical Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering	2 year UG SEDS Civil Engineering, 2 year UG SEDS Civil and Environmental Engineering	SEDS	
Other											
71	TEST 001	TEST	3	6							
Robotics and Mechatronics											
72	ROBT 202	System Dynamics and Modeling	3	6	MATH 162 Calculus II (170) (C- and above) AND (PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above) OR PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above))			Robotics and Mechatronics	SEDS		
73	ROBT 204	Electrical and Electronic Circuits II with Lab	4	8	ROBT 203 Electrical and Electronic Circuits I with Lab (62) (C- and above)			Robotics and Mechatronics	SEDS		
74	ROBT 206	Microcontrollers with Lab	4	8	CSCI 151 Programming for Scientists and Engineers (192) (C- and above) OR ROBT 102 Programming for robotics and physics (188) (C- and above) OR CSCI 150 Fundamentals of Programming (1501) (C- and above)			Computer Science, Robotics and Mechatronics	SEDS		
75	ROBT 304	Electromechanical Systems with lab	4	8	ROBT 204 Electrical and Electronic Circuits II with Lab (491) (C- and above)			Robotics and Mechatronics	SEDS		

76	ROBT 310	Image Processing	3	6	MATH 162 Calculus II (170) (C- and above) AND MATH 273 Linear Algebra with Applications (84) (C- and above)			Robotics and Mechatronics	SEDS		
77	ROBT 312	Robotics I: Kinematics and Dynamics	3	6	ROBT 201 Mechanics: Statics and Dynamics (475) (C and above) AND MATH 273 Linear Algebra with Applications (84) (C and above)			Robotics and Mechatronics	SEDS		
78	ROBT 402	Robotic/Mechatronic System Design	3	6	ROBT 204 Electrical and Electronic Circuits II with Lab (491) (C- and above) AND ROBT 206 Microcontrollers with Lab (476) (C- and above) AND ROBT 302 Mechanical Design II with Machining Laboratory (1170) (C- and above)			Robotics and Mechatronics	SEDS		
79	ROBT 407	Machine Learning with Applications	3	6	MATH 273 Linear Algebra with Applications (84) (C and above) AND MATH 321 Probability (482) (C and above) AND CSCI 152 Performance and Data Structures (489) (C and above)			Robotics and Mechatronics	SEDS		
80	ROBT 491	Graduation Project	3	6				Robotics and Mechatronics	SEDS		