

Course Requirements and Registration Priorities
School of Engineering and Digital Sciences, Spring 2023

#	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 and Materials Engineering	4 year UG SEDS Chemical and Materials Engineering	3 year UG SEDS Chemical and Materials Engineering	
2	CHME 203	Organic and Polymer Chemistry	3	6	CHME 222 Inorganic and Analytical Chemistry (5039) (D and above)			2 year UG SEDS Chemical and Materials Engineering	4 year UG SEDS Chemical and Materials Engineering	3 year UG SEDS Chemical and Materials Engineering	
3	CHME 303	Separation Processes	3	6	CHME 200 Basic Principles and Calculations in Chemical Engineering (5038) (D and above) AND CHME 201 Chemical Engineering Thermodynamics (5007) (D and above)			3 year UG SEDS Chemical and Materials Engineering	Chemical and Materials Engineering		
4	CHME 304	Chemical Reaction Engineering	3	6	CHME 200 Basic Principles and Calculations in Chemical Engineering (5038) (D and above)			3 year UG SEDS Chemical and Materials Engineering	4 year UG SEDS Chemical and Materials Engineering		
5	CHME 305L	Chemical Engineering Laboratory I	3	6	CHME 201 Chemical Engineering Thermodynamics (5007) (D and above) AND CHME 202 Fluid Mechanics (5543) (D and above) AND CHME 300 Heat and Mass Transfer (5952) (D and above)			2 year UG SEDS Chemical and Materials Engineering	4 year UG SEDS Chemical and Materials Engineering	3 year UG SEDS Chemical and Materials Engineering	
6	CHME 352	Research Practice	3	6				3 year UG SEDS Chemical and Materials Engineering	4 year UG SEDS Chemical and Materials Engineering		
7	CHME 402	Materials Chemistry	3	6				4 year UG SEDS Chemical and Materials Engineering	5 year UG SEDS Civil and Environmental Engineering		

8	CHME 403	Chemical Process Control and Safety	3	6				4 year UG SEDS Chemical and Materials Engineering	5 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS Civil and Environmental Engineering		
9	CHME 421	Tissue Engineering	3	6				4 year UG SEDS Chemical and Materials Engineering	3 year UG SEDS Chemical and Materials Engineering		
10	CHME 454	Transport Phenomena and Operations	3	6				4 year UG SEDS Chemical and Materials Engineering, 4 year UG SEDS Civil and Environmental Engineering	3 year UG SEDS Mechanical and Aerospace Engineering, 4 year UG SEDS Mechanical and Aerospace Engineering		
11	CHME 461	Powder technology	3	6				4 year UG SEDS Chemical and Materials Engineering	3 year UG SEDS Chemical and Materials Engineering		
12	DCHME 700-0	Thesis Research	0	0				Chemical Engineering			
13	DCHME 701	Current Research Literature	4	8				Chemical Engineering			
14	DCHME 752	Polymer Melt Fluid Mechanics and Processing	4	8				Chemical Engineering			
15	DCHME 757	Advanced Chemical Engineering Thermodynamics	4	8				Chemical Engineering			
16	DCHME 763	Advanced Heat and Mass Transfer	4	8				Chemical Engineering			
17	DCHME 766	Advanced Energy Materials and Their Application	4	8				Chemical Engineering			
18	MBME 600	Research Seminar	3	6				Biomedical Engineering	SEDS		
19	MBME 602	Master Thesis II	12	24	MBME 601 Master Thesis I (5953) (P)			Biomedical Engineering	SEDS		
20	MBME 607	Advanced Tissue Engineering	3	6				Biomedical Engineering	SEDS		
21	MBME 700	Strategies for Controlled Topical Delivery of Drugs	3	6				Biomedical Engineering	SEDS		
22	MBME 708	Biomedical Imaging	3	6				Biomedical Engineering	SEDS		
23	MCHME 600	Research Seminar	3	6				Chemical and Materials Engineering	SEDS		

24	MCHME 602	MSc Thesis II	12	24				Chemical and Materials Engineering	SEDS		
25	MCHME 606	Advanced Heat and Mass Transfer	3	6				Chemical and Materials Engineering	SEDS		
26	MCHME 701	Advanced Chemical Thermodynamics	3	6				Chemical and Materials Engineering	SEDS		
27	MCHME 707	Polymer Melt Fluid Mechanics and Processing	3	6				Chemical and Materials Engineering	SEDS		
28	MCHME 713	Advanced Energy Materials and their Applications	3	6				Chemical and Materials Engineering	SEDS		
Civil Engineering											
29	MSC 600	Research Methods and Ethics	3	6				1 year Gr SEDS Biomedical Engineering, 1 year Gr SEDS Chemical and Materials Engineering, 1 year Gr SEDS Civil and Environmental Engineering, 1 year Gr SEDS Electrical and Computer Engineering, 1 year Gr SEDS Mechanical and Aerospace Engineering	2 year Gr SEDS Biomedical Engineering, 2 year Gr SEDS Chemical and Materials Engineering, 2 year Gr SEDS Civil and Environmental Engineering, 2 year Gr SEDS Mechanical and Aerospace Engineering	SMG	
30	MSC 601	Technical Communication	3	6				Civil and Environmental Engineering, Electrical and Computer Engineering, Mechanical and Aerospace Engineering	SEDS	SMG	
Civil and Environmental Engineering											
31	CEE 201	Environmental Chemistry	3	6				Instructor's Permission Required. Registration through Add Course form only!			
32	CEE 202	Environmental Engineering	3	6	CEE 201 Environmental Chemistry (4999) (D and above)			2 year UG SEDS Civil and Environmental Engineering	3 year UG SEDS Civil and Environmental Engineering	4 year UG SEDS Civil and Environmental Engineering	

33	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 and Environmental Engineering	3 year UG SEDS Civil and Environmental Engineering	4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS Civil and Environmental Engineering	
34	CEE 301	Structural Design - Steel	3	6	CEE 203 Structural Analysis (5500) (D and above)			3 year UG SEDS Civil and Environmental Engineering	4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS Civil and Environmental Engineering		
35	CEE 303	Geotechnical Design	3	6	CEE 302 Geotechnical Engineering (5896) (D and above)			3 year UG SEDS Civil and Environmental Engineering	4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS Civil and Environmental Engineering		
36	CEE 305	Hydraulics and Hydrology	3	6	MAE 300 Fluid Mechanics I (5926) (D and above) OR EME 275 Fluid Mechanics I (1988) (D and above) OR CEE 304 Fluid Mechanics (6348) (D and above)			3 year UG SEDS Civil and Environmental Engineering	4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS Civil and Environmental Engineering		
37	CEE 350	Water and Wastewater Treatment Processes	3	6	CEE 201 Environmental Chemistry (4999) (D and above) AND CEE 202 Environmental Engineering (5499) (D and above)			3 year UG SEDS Civil and Environmental Engineering	4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS Civil and Environmental Engineering		
38	CEE 352	Engineering geology	3	6				3 year UG SEDS Civil and Environmental Engineering	4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS Civil and Environmental Engineering		
39	CEE 400	Transportation Engineering	3	6	CEE 204 Civil Engineering CAD and Surveying (5002) (D and above)			4 year UG SEDS Civil and Environmental Engineering	5 year UG SEDS Civil and Environmental Engineering		
40	CEE 457	Air Quality Management	3	6				4 year UG SEDS Civil and Environmental Engineering	5 year UG SEDS Civil and Environmental Engineering		

41	CEE 458	Modern Information Technology in Construction	3	6	CEE 204 Civil Engineering CAD and Surveying (5002) (D and above)			3 year UG SEDS Civil and Environmental Engineering	4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS Civil and Environmental Engineering		
42	CEE 463	Individual Research Project in Civil & Environmental Engineering 1	3	6				4 year UG SEDS Civil and Environmental Engineering			
43	CEE 464	Individual Research Project in Civil and Environmental Engineering II	3	6	CEE 463 Individual Research Project in Civil & Environmental Engineering 1 (6594) (C and above)			4 year UG SEDS Civil and Environmental Engineering			
44	CEE 466	Introduction to Finite Element Methods	3	6	CEE 200 Structural Mechanics I (5005) (D and above)			4 year UG SEDS Civil and Environmental Engineering	5 year UG SEDS Civil and Environmental Engineering		
45	CEE 467	Building Information Modelling for Geotechnical Engineering	3	6	CEE 303 Geotechnical Design (6158) (D and above)			4 year UG SEDS Civil and Environmental Engineering	5 year UG SEDS Civil and Environmental Engineering		
46	CEE 468	Structural Design - Concrete II	3	6	CEE 300 Structural Design - Concrete (5895) (C- and above)			4 year UG SEDS Civil and Environmental Engineering	5 year UG SEDS Civil and Environmental Engineering		
47	DCEE 700	Thesis Research	89	178							
48	DCEE 700-0	Thesis Research	0	0				Civil Engineering			
49	DCEE 701	Current Research Literature	4	8				2 year PhD SEDS Civil Engineering	Civil Engineering		
50	DCEE 751	Structural Dynamics and Earthquake Engineering	4	8				1 year PhD SEDS Civil Engineering	2 year PhD SEDS Civil Engineering		
51	DCEE 752	Advanced Concrete Technology	4	8				1 year PhD SEDS Civil Engineering	2 year PhD SEDS Civil Engineering		
52	DCEE 755	Contaminated Site Management and Soil Treatment Technologies	4	8				1 year PhD SEDS Civil Engineering	2 year PhD SEDS Civil Engineering		
53	DCEE 762	Advanced Project Management	4	8				1 year PhD SEDS Civil Engineering, Civil Engineering	2 year PhD SEDS Civil Engineering		
54	DCEE 771	Soil Improvement and Stabilization	4	8				1 year PhD SEDS Civil Engineering	2 year PhD SEDS Civil Engineering		
55	EMEM 510	Managerial Accounting	2	4				Engineering Management			
56	EMEM 511	Business Strategy	2	4				Engineering Management			
57	EMEM 513	Entrepreneurship	2	4				Engineering Management			

58	EMEM 514	Finance	2	4				Engineering Management			
59	EMEM 516	Management of Organizations	2	4				Engineering Management			
60	EMEM 517	Marketing	2	4				Engineering Management			
61	EMEM 527	Globalization and Engineering	3	6				Engineering Management			
62	EMEM 542	Production and Service Operations Management	3	6				Engineering Management			
63	EMEM 545	Business Communication	2	4				Engineering Management			
64	EMEM 548	Understanding and Predicting Consumer Behavior	2	4				Engineering Management			
65	EMEM 549	Capstone Project I	3	6				Instructor's Permission Required. Registration through Add Course form only!			
66	EMEM 550	Capstone Project II	5	10				2 year Gr SEDS Engineering Management			
67	MCEE 600	Research Seminar	3	6				1 year Gr SEDS Civil and Environmental Engineering	2 year Gr SEDS Civil and Environmental Engineering		
68	MCEE 602	MSc Thesis II	12	24				2 year Gr SEDS Civil and Environmental Engineering			
69	MCEE 606	Advanced Project Management	3	6				1 year Gr SEDS Civil and Environmental Engineering			
70	MCEE 700	Structural Dynamics and Earthquake Engineering	3	6				1 year Gr SEDS Civil and Environmental Engineering	2 year Gr SEDS Civil and Environmental Engineering		
71	MCEE 701	Advanced Concrete Technology	3	6				1 year Gr SEDS Civil and Environmental Engineering	2 year Gr SEDS Civil and Environmental Engineering		
72	MCEE 704	Contaminated Site Management and Soil Treatment Technologies	3	6				1 year Gr SEDS Civil and Environmental Engineering	2 year Gr SEDS Civil and Environmental Engineering		
73	MCEE 711	Soil Improvement and Stabilization	3	6				1 year Gr SEDS Civil and Environmental Engineering	2 year Gr SEDS Civil and Environmental Engineering		

Computer Science

74	CSCI 111	Web Programming and Problem Solving	3	6			CSCI 101 Introduction to Computational Sciences (147) (D and above) OR CSCI 115 Programming Fundamentals (5257) (D and above) OR CSCI 151 Programming for Scientists and Engineers (192) (D and above) OR ENG 101 Programming for Engineers (4517) (D and above)	SSH, SoM			
75	CSCI 115	Programming Fundamentals	4	8			CSCI 101 Introduction to Computational Sciences (147) (D and above) OR CSCI 111 Web Programming and Problem Solving (110) (D and above) OR CSCI 151 Programming for Scientists and Engineers (192) (D and above) OR ENG 101 Programming for Engineers (4517) (D and above)	1 year UG SOM, 2 year UG SOM, 3 year UG SOM, 4 year UG SOM, Biological Sciences, Chemistry, Mathematics	SSH		

76	CSCI 151	Programming for Scientists and Engineers	4	8			CSCI 111 Web Programming and Problem Solving (110) (D and above) OR CSCI 115 Programming Fundamentals (5257) (D and above) OR ENG 101 Programming for Engineers (4517) (B- and above)	Computer Science, Robotics Engineering, Robotics and Mechatronics	Physics, Undeclared SEDS	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM	
77	CSCI 152	Performance and Data Structures	4	8	CSCI 151 Programming for Scientists and Engineers (192) (C- and above) OR ENG 101 Programming for Engineers (4517) (B- and above)			Computer Science, Robotics Engineering, Robotics and Mechatronics	Undeclared SEDS, Undeclared SSH	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM	
78	CSCI 245	System Analysis and Design	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science			
79	CSCI 262	Software Project Management	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science			
80	CSCI 270	Algorithms	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)	MATH 251 Discrete Mathematics (85) (D and above)		Computer Science			
81	CSCI 272	Formal Languages	3	6	CSCI 151 Programming for Scientists and Engineers (192) (C- and above) OR ENG 101 Programming for Engineers (4517) (B- and above)	MATH 251 Discrete Mathematics (85) (D and above)		Computer Science			
82	CSCI 281	Human-Computer Interaction	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science			

83	CSCI 307	Research Methods	3	6				3 year UG SEDS Computer Science, 4 year UG SEDS Computer Science, 5 year UG SEDS Computer Science			
84	CSCI 325	Introduction to Parallel Systems and Graphics Processing Unit Programming	3	6	CSCI 332 Operating Systems (490) (C- and above)			3 year UG SEDS Computer Science, 4 year UG SEDS Computer Science, 5 year UG SEDS Computer Science			
85	CSCI 332	Operating Systems	3	6	CSCI 231 Computer Systems and Organization (194) (C- and above)			3 year UG SEDS Computer Science, 4 year UG SEDS Computer Science, 5 year UG SEDS Computer Science			
86	CSCI 333	Computer Networks	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			3 year UG SEDS Computer Science, 4 year UG SEDS Computer Science, 5 year UG SEDS Computer Science			
87	CSCI 409	Senior Project II	3	6	CSCI 408 Senior Project I (1481) (C- and above)			4 year UG SEDS Computer Science, 5 year UG SEDS Computer Science			
88	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)			3 year UG SEDS Computer Science, 4 year UG SEDS Computer Science, 5 year UG SEDS Computer Science			
89	CSCI 462	Open Source Software	3	6	CSCI 361 Software Engineering (640) (C- and above)			3 year UG SEDS Computer Science, 4 year UG SEDS Computer Science, 5 year UG SEDS Computer Science			
90	CSCI 490	Brain Computer Interface	3	6	MATH 273 Linear Algebra with Applications (84) (C and above) AND MATH 321 Probability (482) (C and above)			3 year UG SEDS Computer Science, 4 year UG SEDS Computer Science, 5 year UG SEDS Computer Science			
91	CSCI 495	Connectionist Models of Computation	3	6	MATH 251 Discrete Mathematics (85) (C- and above)			Computer Science			

92	CSCI 502	Hardware Software Co-Design	3	6	CSCI 501 Software Principles and Practice (2408) (C- and above)			Computer Science, Robotics			
93	CSCI 545	Big Data Analytics	3	6				Data Science	Computer Science	Robotics	
94	CSCI 575	Formal Methods and Applications	3	6				Computer Science, Data Science		Robotics	
95	CSCI 581	Acquisition and Analysis of Biomedical Data	3	6				Computer Science, Data Science		Robotics	
96	CSCI 585	Computer Vision	3	6				Computer Science, Data Science		Robotics	
97	CSCI 591	Advanced Artificial Intelligence	3	6	CSCI 501 Software Principles and Practice (2408) (C- and above) OR DS 501 Fundamentals of Data Science (5218) (C- and above)			Computer Science, Data Science		Robotics	
98	CSCI 694	Thesis	15	30				2 year Gr SEDS Computer Science			
99	CSCI 700-0	Thesis Research	0	0				Computer Science			
100	CSCI 702	Advanced Hardware/Software Co-Design	4	8				Computer Science , Robotics Engineering			
101	CSCI 722	Current Research Literature	4	8				Computer Science			
102	CSCI 745	Advanced Big Data Analytics	4	8				Computer Science	Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
103	CSCI 775	Advanced Formal Methods and Applications	4	8				GSB, GSE, GSPP, SEDS, SMG, SSH, SoM			

104	CSCI 781	Advanced Acquisition and Analysis of Biomedical Data	4	8				Computer Science	Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
105	CSCI 785	Advanced Computer Vision	4	8				Computer Science	Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Science, Engineering and Technology		
106	CSCI 791	Advanced Artificial Reasoning and Problem solving	4	8				Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology			
107	DS 504	Data Mining and Decision Support	3	6				Data Science	Computer Science		
108	DS 509	Information Retrieval	3	6	DS 501 Fundamentals of Data Science (5218) (C- and above) OR CSCI 501 Software Principles and Practice (2408) (C- and above)			SEDS, SMG, SSH, SoM			
109	DS 694	Thesis	15	30	DS 693 Thesis Proposal (5915) (P)			2 year Gr SEDS Data Science			
110	DS 709	Advanced Information Retrieval	4	8				GSB, GSE, GSPP, SEDS, SMG, SSH, SoM			
111	SEDS 502	Teaching Practicum	3	6					Computer Science, Data Science, Robotics		
112	SEDS 592	Research Seminar	3	6					Computer Science, Data Science, Robotics		

Electrical and Computer Engineering

113	DELCE 700-0	Thesis Research	0	0				Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
114	DELCE 701	Current Research Literature	4	8				Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
115	DELCE 759	Advanced Pattern Recognition and Machine Learning	4	8				Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
116	DELCE 763	Advanced Electronic Circuits	4	8				Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
117	ELCE 201	Circuit Theory	3	6	ELCE 200 Introduction to Electrical Circuits (4991) (C- and above)			2 year UG SEDS Electrical and Computer Engineering	3 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	
118	ELCE 201L	Circuit Theory Laboratory	1	2		ELCE 201 Circuit Theory (5507) (D and above)		2 year UG SEDS Electrical and Computer Engineering	3 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	

119	ELCE 202	Digital Logic Design	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) AND ENG 101 Programming for Engineers (4517) (C- and above)			2 year UG SEDS Electrical and Computer Engineering	3 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	
120	ELCE 202L	Digital Logic Design Laboratory	1	2		ELCE 202 Digital Logic Design (4992) (D and above)		2 year UG SEDS Electrical and Computer Engineering	3 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	
121	ELCE 300	Microprocessor Systems	3	6	ELCE 202 Digital Logic Design (4992) (C- and above)			3 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	1 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS Electrical and Computer Engineering, Electrical and Computer Engineering	
122	ELCE 300L	Microprocessor Systems Laboratory	1	2		ELCE 300 Microprocessor Systems (6183) (C- and above)		3 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	1 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS Electrical and Computer Engineering, Electrical and Computer Engineering	

123	ELCE 302	Electric Machines	3	6	ELCE 201 Circuit Theory (5507) (C- and above)			3 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	1 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS Electrical and Computer Engineering, Electrical and Computer Engineering
124	ELCE 302L	Electrical Machines Laboratory	1	2	ELCE 201 Circuit Theory (5507) (C- and above)	ELCE 302 Electric Machines (5919) (C- and above)		3 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	1 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS Electrical and Computer Engineering, Electrical and Computer Engineering
125	ELCE 303	Power System Analysis	3	6	ELCE 200 Introduction to Electrical Circuits (4991) (C- and above)			3 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	1 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS Electrical and Computer Engineering, Electrical and Computer Engineering

126	ELCE 305	Data Structures and Algorithms	3	6	CSCI 151 Programming for Scientists and Engineers (192) (C- and above) OR ENG 101 Programming for Engineers (4517) (C- and above)			3 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	1 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS Electrical and Computer Engineering, Electrical and Computer Engineering
127	ELCE 308	Communication Systems	3	6	ELCE 203 Signals and Systems (4993) (C- and above)			3 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	1 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS Electrical and Computer Engineering, Electrical and Computer Engineering
128	ELCE 309	Individual Study	3	6				3 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	1 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS Electrical and Computer Engineering, Electrical and Computer Engineering

129	ELCE 310L	Electronics Instrumentation and Measurement	1	2	ELCE 201 Circuit Theory (5507) (C- and above)	ELCE 301 Electronic Circuits (5918) (C- and above)		3 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	1 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS Electrical and Computer Engineering, Electrical and Computer Engineering	
130	ELCE 403	Introduction to Adaptive Signal Processing	3	6	ELCE 307 Digital Signal Processing (5921) (C- and above)			5 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	Electrical and Computer Engineering	
131	ELCE 458	Numerical Optimization Techniques and Computer Applications	3	6	ENG 200 Engineering Mathematics III (Differential Equations and Linear Algebra) (5009) (C- and above)			5 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	Electrical and Computer Engineering	
132	ELCE 459	Design of Application Specific Electronic Circuits	3	6	ELCE 301 Electronic Circuits (5918) (C- and above)			5 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	Electrical and Computer Engineering	
133	ELCE 486	Photonics for Engineering	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)			5 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	Electrical and Computer Engineering	
134	MECE 600	Research Seminar	3	6				1 year Gr SEDS Electrical and Computer Engineering	2 year Gr SEDS Electrical and Computer Engineering	SEDS	
135	MECE 602	Master Thesis II	12	24				1 year Gr SEDS Electrical and Computer Engineering	2 year Gr SEDS Electrical and Computer Engineering	SEDS	
136	MECE 608	Energy Systems Operations and Planning	3	6				2 year Gr SEDS Electrical and Computer Engineering	1 year Gr SEDS Electrical and Computer Engineering	Electrical and Computer Engineering	

137	MECE 704	Fundamentals of Signal Processing	3	6				2 year Gr SEDS Electrical and Computer Engineering	1 year Gr SEDS Electrical and Computer Engineering	Electrical and Computer Engineering	
138	MECE 707	Advanced Electronic Circuits	3	6				2 year Gr SEDS Electrical and Computer Engineering	1 year Gr SEDS Electrical and Computer Engineering	Electrical and Computer Engineering	
139	MECE 716	Adaptive Signal Processing	3	6				2 year Gr SEDS Electrical and Computer Engineering	1 year Gr SEDS Electrical and Computer Engineering	Electrical and Computer Engineering	
140	MECE 717	Pattern Recognition and Machine Learning	3	6				2 year Gr SEDS Electrical and Computer Engineering	1 year Gr SEDS Electrical and Computer Engineering	Electrical and Computer Engineering	
Mechanical and Aerospace Engineering											
141	DMAE 700-0	Thesis Research	0	0				Mechanical Engineering			
142	DMAE 702	Current Research Literature	4	8				Mechanical Engineering	Science, Engineering and Technology	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Robotics Engineering	
143	DMAE 703	Numerical Techniques for Engineers	4	8							
144	DMAE 750	Advanced Statistics and Probability	4	8			MSC 615 Advanced Statistics and Probability (2394) (B- and above)	Mechanical Engineering	Science, Engineering and Technology	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Robotics Engineering	
145	DMAE 756	Design and Manufacturing with Environmental Concern	4	8				Mechanical Engineering	Science, Engineering and Technology	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Robotics Engineering	

146	DMAE 769	Advanced Computational Fluid Dynamics and Heat Transfer in Mechanical Engineering	4	8				Mechanical Engineering	Science, Engineering and Technology	Chemical Engineering, Civil Engineering, Computer Science, Electrical Engineering, Robotics Engineering
147	ENG 101	Programming for Engineers	3	6			CSCI 151 Programming for Scientists and Engineers (192) (F) OR CSCI 111 Web Programming and Problem Solving (110) (F) OR CSCI 115 Programming Fundamentals (5257) (F) OR CSCI 152 Performance and Data Structures (489) (F) OR CSCI 408 Senior Project I (1481) (F) OR CSCI 409 Senior Project II (1483) (F)	1 year UG SEDS, 2 year UG SMG, Undeclared SMG	2 year UG SEDS Electrical and Computer Engineering, 3 year UG SEDS Electrical and Computer Engineering, 4 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS Electrical and Computer Engineering	SEDS
148	ENG 102	Engineering Materials I	3	6				1 year UG SEDS Civil and Environmental Engineering, 1 year UG SEDS Mechanical and Aerospace Engineering, Undeclared SEDS	Civil and Environmental Engineering, Mechanical and Aerospace Engineering	

149	ENG 103	Engineering Materials II	3	6				1 year UG SEDS Chemical and Materials Engineering, 1 year UG SEDS Civil and Environmental Engineering, 1 year UG SEDS Electrical and Computer Engineering, 1 year UG SEDS Undeclared	2 year UG SEDS Chemical and Materials Engineering, 2 year UG SEDS Electrical and Computer Engineering, 3 year UG SEDS Chemical and Materials Engineering, 3 year UG SEDS Electrical and Computer Engineering, 4 year UG SEDS Chemical and Materials Engineering, 4 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS Electrical and Computer Engineering, Civil and Environmental Engineering	SEDS	
150	ENG 201	Applied Probability and Statistics	3	6	MATH 162 Calculus II (170) (C- and above)			2 year UG SEDS Chemical and Materials Engineering, 2 year UG SEDS Civil and Environmental Engineering, 2 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering	3 year UG SEDS Chemical and Materials Engineering, 3 year UG SEDS Civil and Environmental Engineering, 3 year UG SEDS Electrical and Computer Engineering, 3 year UG SEDS Mechanical and Aerospace Engineering	SEDS	
151	ENG 202	Numerical Methods in Engineering	3	6	ENG 200 Engineering Mathematics III (Differential Equations and Linear Algebra) (5009) (D and above)			2 year UG SEDS Chemical and Materials Engineering, 2 year UG SEDS Civil and Environmental Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering	3 year UG SEDS Chemical and Materials Engineering, 3 year UG SEDS Civil and Environmental Engineering, 3 year UG SEDS Mechanical and Aerospace Engineering		

152	ENG 300	Interdisciplinary Project	3	6				Instructor's Permission Required. Registration through Add Course form only!			
153	ENG 400	Capstone Project	3	6				4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering, 4 year UG SEDS Electrical and Computer Engineering, 4 year UG SEDS Electrical and Electronic Engineering, 4 year UG SEDS Mechanical Engineering, 4 year UG SEDS Mechanical and Aerospace Engineering	4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS Chemical Engineering, 5 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS Electrical and Electronic Engineering, 5 year UG SEDS Mechanical Engineering, 5 year UG SEDS Mechanical and Aerospace Engineering		
154	MAE 205	Material and Manufacturing I	3	6				2 year UG SEDS Mechanical and Aerospace Engineering	3 year UG SEDS Mechanical and Aerospace Engineering	Mechanical and Aerospace Engineering	
155	MAE 206	Engineering Dynamics I	3	6				2 year UG SEDS Mechanical and Aerospace Engineering	3 year UG SEDS Mechanical and Aerospace Engineering	Mechanical and Aerospace Engineering	
156	MAE 305	Fluid Mechanics II	3	6	MAE 300 Fluid Mechanics I (5926) (D and above) OR EME 275 Fluid Mechanics I (1988) (D and above)			3 year UG SEDS Mechanical and Aerospace Engineering	4 year UG SEDS Mechanical and Aerospace Engineering	Mechanical and Aerospace Engineering	
157	MAE 306	Computer Aided Engineering	3	6	ENG 202 Numerical Methods in Engineering (5506) (D and above) AND MAE 201 Computer Aided Design (5011) (D and above)			3 year UG SEDS Mechanical and Aerospace Engineering	4 year UG SEDS Mechanical and Aerospace Engineering	Mechanical and Aerospace Engineering	
158	MAE 307	Engineering Dynamics II	3	6	MAE 206 Engineering Dynamics I (5535) (D and above)			3 year UG SEDS Mechanical and Aerospace Engineering	4 year UG SEDS Mechanical and Aerospace Engineering	Mechanical and Aerospace Engineering	

159	MAE 350	Structural Mechanics II	3	6	MAE 200 Structural Mechanics I (5010) (D and above) OR CEE 200 Structural Mechanics I (5005) (D and above)			3 year UG SEDS Mechanical and Aerospace Engineering	4 year UG SEDS Mechanical and Aerospace Engineering	Mechanical and Aerospace Engineering	
160	MAE 351	Vehicle Propulsion Systems	3	6	MAE 301 Engineering Thermodynamics (5927) (D and above) OR BENG 226 Engineering Thermodynamics (1553) (D and above)			3 year UG SEDS Mechanical and Aerospace Engineering	4 year UG SEDS Mechanical and Aerospace Engineering	Mechanical and Aerospace Engineering	
161	MAE 451	Unmanned Aerial Vehicle Design	3	6	(MAE 303 Control Systems (5929) (D and above) AND MAE 454 Aerodynamics (6576) (D and above)) OR MMAE 603 Modern Control Engineering (4500) (C- and above)			4 year UG SEDS Mechanical and Aerospace Engineering			
162	MAE 455	Flight Performance and Mechanics	3	6	MAE 454 Aerodynamics (6576) (D and above) OR MAE 305 Fluid Mechanics II (6173) (D and above)			4 year UG SEDS Mechanical and Aerospace Engineering	1 year UG SEDS Mechanical and Aerospace Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering, 3 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS Mechanical and Aerospace Engineering	SEDS	
163	MAE 456	Materials and Manufacturing II	3	6				4 year UG SEDS Mechanical and Aerospace Engineering	1 year UG SEDS Mechanical and Aerospace Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering, 3 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS Mechanical and Aerospace Engineering	SEDS	

164	MAE 457	Feasibility Analysis of Clean Energy Technologies	3	6				4 year UG SEDS Mechanical and Aerospace Engineering	1 year UG SEDS Mechanical and Aerospace Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering, 3 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS Mechanical and Aerospace Engineering		
165	MAE 460	Advanced Topics in Computational Fluid Dynamics	3	6	MAE 300 Fluid Mechanics I (5926) (D and above) AND ENG 202 Numerical Methods in Engineering (5506) (D and above)			4 year UG SEDS Mechanical and Aerospace Engineering	1 year UG SEDS Mechanical and Aerospace Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering, 3 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS Mechanical and Aerospace Engineering	SEDS	
166	MAE 463	Micro-Electro-Mechanical Systems and Microsystems technology	3	6				4 year UG SEDS Mechanical and Aerospace Engineering	1 year UG SEDS Mechanical and Aerospace Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering, 3 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS Mechanical and Aerospace Engineering	SEDS	
167	MAE 464	Mechanics of Soft Materials	3	6	ENG 102 Engineering Materials I (4708) (D and above)			4 year UG SEDS Mechanical and Aerospace Engineering	1 year UG SEDS Mechanical and Aerospace Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering, 3 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS Mechanical and Aerospace Engineering	SEDS	

168	MAE 500	Unmanned Aerial Vehicle Design	3	6	MMAE 603 Modern Control Engineering (4500) (C- and above)				1 year Gr SEDS Mechanical and Aerospace Engineering, 2 year Gr SEDS Mechanical and Aerospace Engineering		
169	MMAE 602	Master Thesis II	12	24	MMAE 601 Master Thesis I (5014) (P)				1 year Gr SEDS Mechanical and Aerospace Engineering, 2 year Gr SEDS Mechanical and Aerospace Engineering		
170	MMAE 604	Advanced Computational Fluid Dynamics and Heat Transfer in Mechanical Engineering	3	6					1 year Gr SEDS Mechanical and Aerospace Engineering	2 year Gr SEDS Mechanical and Aerospace Engineering	
171	MMAE 700	Advanced Statistics and Probability	3	6					1 year Gr SEDS Mechanical and Aerospace Engineering	2 year Gr SEDS Mechanical and Aerospace Engineering	
172	MMAE 701	Numerical Techniques for Engineers	3	6					1 year Gr SEDS Mechanical and Aerospace Engineering	2 year Gr SEDS Mechanical and Aerospace Engineering	
173	MMAE 704	Design and Manufacturing with Environmental Concern	3	6					1 year Gr SEDS Mechanical and Aerospace Engineering	2 year Gr SEDS Mechanical and Aerospace Engineering	
174	MMAE 710	Space Structures Design	3	6					1 year Gr SEDS Mechanical and Aerospace Engineering	2 year Gr SEDS Mechanical and Aerospace Engineering	
175	MMAE 716	Digital Transformation Concepts	3	6					2 year Gr SEDS Engineering Management	2 year Gr SEDS Mechanical and Aerospace Engineering	1 year Gr SEDS Mechanical and Aerospace Engineering
Robotics and Mechatronics											
176	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 Engineering, Robotics and Mechatronics		

177	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 Engineering, Robotics and Mechatronics			
178	ROBT 206	Microcontrollers with Lab	4	8	CSCI 150 Fundamentals of Programming (1501) (C and above) OR CSCI 151 Programming for Scientists and Engineers (192) (C and above) OR ENG 101 Programming for Engineers (4517) (C and above)			Computer Science, Robotics Engineering, Robotics and Mechatronics			
179	ROBT 304	Electromechanical Systems with lab	4	8	ROBT 204 Electrical and Electronic Circuits II with Lab (491) (C- and above)			Robotics Engineering, Robotics and Mechatronics	SEDS		
180	ROBT 308	Industrial Automation	3	6				Robotics Engineering, Robotics and Mechatronics	SEDS		
181	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 Engineering, Robotics and Mechatronics	SEDS		
182	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)			5 year UG SEDS, Robotics Engineering, Robotics and Mechatronics	SEDS		
183	ROBT 491	Graduation Project	3	6				5 year UG SEDS, Robotics Engineering, Robotics and Mechatronics	SEDS		
184	ROBT 502	Robot Perception & Vision	3	6	ROBT 501 Robot Manipulation and Mobility (2263) (C- and above)			Robotics	SEDS		

185	ROBT 692	Thesis	15	30	ROBT 691 Thesis Proposal (5930) (P)				Biomedical Engineering, Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Electrical and Electronic Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Robotics		
186	ROBT 700-0	Thesis Research	0	0				Robotics Engineering			
School of Engineering											
187	DENG 700-0	Thesis Research	0	0				Science, Engineering and Technology			
188	DENG 791	Doctoral Seminar III	3	6	DENG 790 Doctoral Seminar II (4599) (P)			Science, Engineering and Technology			
189	DENG 793	Doctoral Seminar V	3	6	DENG 792 Doctoral Seminar IV (4601) (P)			Science, Engineering and Technology			
190	DENG 794	Dissertation Research	12	24	DENG 785 PhD Proposal Oral Defence (2604) (P)			Science, Engineering and Technology			
191	DENG 795	Research at Host University	6	12	DENG 785 PhD Proposal Oral Defence (2604) (P)			Science, Engineering and Technology			
192	DENG 796	Thesis Completion	0	0				Science, Engineering and Technology			

193	DENG 797	Oral Defence of PhD Dissertation	0	0	DENG 785 PhD Proposal Oral Defence (2604) (P) AND DENG 789 Doctoral Seminar I (4598) (P) AND DENG 790 Doctoral Seminar II (4599) (P)			Science, Engineering and Technology			
194	DENG 798	Doctoral Seminar VI	3	6	DENG 793 Doctoral Seminar V (4602) (P)			Science, Engineering and Technology			
195	DENG 799	Doctoral Seminar VII	3	6	DENG 798 Doctoral Seminar VI (4607) (P)			Instructor's Permission Required. Registration through Add Course form only!			