

Course Requirements and Registration Priorities
School of Engineering and Digital Sciences, Fall 2022

#	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 200	Basic Principles and Calculations in Chemical Engineering	3	6				2 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical and Materials Engineering		
2	CHME 201	Chemical Engineering Thermodynamics	3	6				2 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical and Materials Engineering		
3	CHME 222	Inorganic and Analytical Chemistry	3	6				2 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical and Materials Engineering		
4	CHME 300	Heat and Mass Transfer	3	6				3 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical and Materials Engineering		
5	CHME 301	Applied Mathematics for Process Design	3	6				3 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical and Materials Engineering		
6	CHME 302	Instrumental Methods of Analysis for Engineers	3	6				3 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical and Materials Engineering		
7	CHME 351	Environment and Development	3	6				3 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical and Materials Engineering		
8	CHME 353	Electrochemical Engineering	3	6				3 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical and Materials Engineering		
9	CHME 400	Process Design and Simulation	3	6	CHME 300 Heat and Mass Transfer (5952) (D and above) AND CHME 304 Chemical Reaction Engineering (6168) (D and above)			4 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical and Materials Engineering		
10	CHME 401	Chemical Engineering Lab II	3	6				4 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical and Materials Engineering		

11	CHME 453	Multiphase Systems	3	6	CHME 202 Fluid Mechanics (5543) (D and above)			4 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical and Materials Engineering		
12	DCHME 700-0	Thesis Research	0	0				1 year PhD SEDS Chemical Engineering, Chemical Engineering	Science, Engineering and Technology		
13	DCHME 755	Integrated Computational Materials Engineering	4	8				1 year PhD SEDS Chemical Engineering	Science, Engineering and Technology		
14	DCHME 761	Advanced Chemical Reaction Engineering	4	8				1 year PhD SEDS Chemical Engineering	Science, Engineering and Technology		
15	DCHME 762	Advanced Materials Processing	4	8				1 year PhD SEDS Chemical Engineering	Science, Engineering and Technology		
16	MBME 601	Master Thesis I	12	24				2 year Gr SEDS Biomedical Engineering			
17	MBME 603	Biomaterials Science & Engineering	3	6				1 year Gr SEDS Biomedical Engineering	SEDS, SMG		
18	MBME 604	Biosensors	3	6				1 year Gr SEDS Biomedical Engineering	SEDS, SMG		
19	MBME 610	Anatomy and Physiology for Biomedical Engineers	3	6				1 year Gr SEDS Biomedical Engineering	SEDS, SMG		
20	MBME 703	Medical Device Technology	3	6				2 year Gr SEDS Biomedical Engineering	SEDS, SMG		
21	MCHME 601	Master Thesis I	12	24				2 year Gr SEDS Chemical and Materials Engineering			
22	MCHME 603	Advanced Materials Processing	3	6				1 year Gr SEDS Chemical and Materials Engineering	SEDS, SMG		
23	MCHME 604	Advanced Materials Characterization Methods	3	6				1 year Gr SEDS Chemical and Materials Engineering	SEDS, SMG		
24	MCHME 605	Advanced Chemical Reaction Engineering	3	6				1 year Gr SEDS Chemical and Materials Engineering	SEDS, SMG		
25	MCHME 714	Computational Materials Engineering	3	6				2 year Gr SEDS Chemical and Materials Engineering	SEDS, SMG		
Civil Engineering											
26	MSC 600	Research Methods and Ethics	3	6				1 year Gr SEDS Electrical and Computer Engineering, 1 year Gr SEDS Engineering Management	Engineering Management, SEDS, SMG, SSH		

27	MSC 601	Technical Communication	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 Computer Science, 1 year Gr SEDS Mechanical and Aerospace Engineering, 1 year Gr SEDS Robotics and Mechatronics	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Robotics	Electrical and Computer Engineering, Mechanical and Aerospace Engineering, SMG	
28	MSC 602	Advanced Applied Mathematics	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	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Mechanical and Aerospace Engineering		
29	MSC 615	Advanced Statistics and Probability	3	6				1 year Gr SEDS Engineering Management	Engineering Management	SEDS	
Civil and Environmental Engineering											
30	CEE 200	Structural Mechanics I	3	6				2 year UG SEDS Civil and Environmental Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH, SMG	Civil and Environmental Engineering, Mechanical and Aerospace Engineering		
31	CEE 201	Environmental Chemistry	3	6				2 year UG SEDS Civil and Environmental Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	Civil and Environmental Engineering, Mechanical and Aerospace Engineering		
32	CEE 204	Civil Engineering CAD and Surveying	3	6				2 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	Civil and Environmental Engineering		
33	CEE 300	Structural Design - Concrete	3	6	CEE 203 Structural Analysis (5500) (D and above)			3 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	Civil and Environmental Engineering		
34	CEE 302	Geotechnical Engineering	3	6				3 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	Civil and Environmental Engineering		

35	CEE 304	Fluid Mechanics	3	6				3 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	Civil and Environmental Engineering		
36	CEE 306	Civil Engineering Materials	3	6	ENG 102 Engineering Materials I (4708) (D and above)			3 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	Civil and Environmental Engineering		
37	CEE 401	Construction Technology and Management	3	6	CEE 306 Civil Engineering Materials (5897) (D and above)			4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	Civil and Environmental Engineering		
38	CEE 450	Behavior and Design of Structural System	3	6	CEE 300 Structural Design - Concrete (5895) (D and above) AND CEE 301 Structural Design - Steel (6157) (D and above)			4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	Civil and Environmental Engineering		
39	CEE 455	Solid and Hazardous Waste Management	3	6	CEE 202 Environmental Engineering (5499) (D and above)			4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	Civil and Environmental Engineering		
40	CEE 460	Water Supply and Distribution Management	3	6	CEE 305 Hydraulics and Hydrology (6177) (D and above)			4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	Civil and Environmental Engineering		
41	CEE 462	Pavement Design and Performance	3	6	CEE 306 Civil Engineering Materials (5897) (D and above) AND CEE 303 Geotechnical Design (6158) (D and above)			4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	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, 5 year UG SEDS, 5 year UG SSH			
43	CEE 465	Structure and Properties of Concrete Materials	3	6	CEE 306 Civil Engineering Materials (5897) (D and above)			4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	Civil and Environmental Engineering		
44	DCEE 700-0	Thesis Research	0	0				1 year PhD SEDS Civil Engineering	SEDS		
45	DCEE 750	Finite Element Methods	4	8				1 year PhD SEDS Civil Engineering	SEDS	SMG	
46	DCEE 757	Advanced Environmental Chemistry	4	8				1 year PhD SEDS Civil Engineering	SEDS		
47	DCEE 761	Advanced Soil Mechanics	4	8				1 year PhD SEDS Civil Engineering	SEDS	SMG	

48	DCEE 772	Engineering Management and Engineering Economy	4	8				1 year PhD SEDS Civil Engineering	SEDS	SMG	
49	DCEE 773	Unsaturated Soil Mechanics for Engineering Practice	4	8				1 year PhD SEDS Civil Engineering	SEDS		
50	EMEM 507	Project Management	3	6				1 year Gr SEDS Engineering Management	Engineering Management	SEDS	
51	EMEM 509	Systems Engineering	3	6				2 year Gr SEDS Mechanical Engineering, 2 year Gr SEDS Mechanical and Aerospace Engineering	Engineering Management, Mechanical and Aerospace Engineering	SEDS	
52	EMEM 523	Supply Chain Management	3	6				2 year Gr SEDS Engineering Management	Engineering Management	SEDS	
53	EMEM 533	Engineering Management and Engineering Economy	3	6				1 year Gr SEDS Engineering Management	Engineering Management	SEDS	
54	EMEM 537	Engineering Decision Tools	3	6				2 year Gr SEDS Engineering Management	Engineering Management	SEDS	
55	EMEM 538	Knowledge and Innovation Management	3	6				1 year Gr SEDS Engineering Management	Engineering Management	SEDS	
56	EMEM 539	Big Data and Information Management	3	6				2 year Gr SEDS Engineering Management	Engineering Management	SEDS	
57	EMEM 549	Capstone Project I	3	6							
58	MCEE 601	Master Thesis I	12	24	MCEE 600 Research Seminar (4692) (P)			2 year Gr SEDS Civil and Environmental Engineering			
59	MCEE 603	Finite Element Methods	3	6				1 year Gr SEDS Civil and Environmental Engineering, 1 year Gr SEDS Mechanical and Aerospace Engineering	SEDS		
60	MCEE 604	Advanced Soil Mechanics	3	6				1 year Gr SEDS Civil and Environmental Engineering	SEDS, SMG		
61	MCEE 605	Advanced Environmental Chemistry	3	6				1 year Gr SEDS Civil and Environmental Engineering	SEDS, SMG		
62	MCEE 716	Unsaturated Soil Mechanics for Engineering Practice	3	6				2 year Gr SEDS Civil and Environmental Engineering	SEDS, SMG		

Computer Science

63	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)	5 year UG SEDS, 5 year UG SSH, SSH			
64	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)	5 year UG SEDS, 5 year UG SSH, Biological Sciences, Chemistry, Mathematics	Undeclared SSH		

65	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)	5 year UG SEDS, 5 year UG SSH, Computer Science, Physics, Robotics Engineering, Robotics and Mechatronics			
66	CSCI 231	Computer Systems and Organization	3	6	CSCI 151 Programming for Scientists and Engineers (192) (C- and above) OR ENG 100 Introduction to Engineering (4518) (B- and above)			5 year UG SEDS, 5 year UG SSH, Computer Science			
67	CSCI 235	Programming Languages	4	8	CSCI 152 Performance and Data Structures (489) (C- and above)			5 year UG SEDS, 5 year UG SSH, Computer Science			
68	CSCI 281	Human-Computer Interaction	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			5 year UG SEDS, 5 year UG SSH, Computer Science			
69	CSCI 341	Database Systems	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, 5 year UG SEDS Computer Science, 5 year UG SSH			
70	CSCI 344	Data Mining and Decision Support	3	6	CSCI 341 Database Systems (195) (C- and above) AND MATH 273 Linear Algebra with Applications (84) (C- and above)			3 year UG SEDS Computer Science, 4 year UG SEDS Computer Science, 5 year UG SEDS, 5 year UG SEDS Computer Science, 5 year UG SSH			
71	CSCI 361	Software Engineering	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, 5 year UG SEDS Computer Science, 5 year UG SSH			
72	CSCI 390	Artificial Intelligence	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, 5 year UG SEDS Computer Science, 5 year UG SSH			

73	CSCI 399	Internship II	3	6				Instructor's Permission Required. Registration through Add Course form only!			
74	CSCI 399F	Internship II - F	6	12				Instructor's Permission Required. Registration through Add Course form only!			
75	CSCI 408	Senior Project I	3	6				4 year UG SEDS Computer Science, 5 year UG SEDS, 5 year UG SSH			
76	CSCI 434	Information Security	3	6		CSCI 333 Computer Networks (1145) (D and above)		3 year UG SEDS Computer Science, 4 year UG SEDS Computer Science, 5 year UG SEDS, 5 year UG SEDS Computer Science, 5 year UG SSH			
77	CSCI 437	Internet of Things: Technologies and Applications	3	6	CSCI 333 Computer Networks (1145) (C- and above) AND ROBT 206 Microcontrollers with Lab (476) (C- and above)			3 year UG SEDS Computer Science, 4 year UG SEDS Computer Science, 5 year UG SEDS, 5 year UG SEDS Computer Science, 5 year UG SSH			
78	CSCI 494	Deep Learning	3	6	CSCI 390 Artificial Intelligence (643) (C and above) AND MATH 273 Linear Algebra with Applications (84) (C and above)			3 year UG SEDS Computer Science, 4 year UG SEDS Computer Science, 5 year UG SEDS, 5 year UG SEDS Computer Science, 5 year UG SSH			
79	CSCI 501	Software Principles and Practice	3	6				Computer Science, Robotics	SEDS	SSH	
80	CSCI 511	Theory of Computation	3	6				Computer Science, Data Science	SEDS	SSH	
81	CSCI 515	Modeling and Simulation for Computer Science	3	6				Computer Science, Data Science	SEDS	SSH	
82	CSCI 585	Computer Vision	3	6				Computer Science, Data Science	SEDS	SSH	
83	CSCI 594	Deep Learning	3	6				Computer Science, Data Science	SEDS	SSH	
84	CSCI 693	Thesis Proposal	3	6	SEDS 591 Research Methods (3184) (C- and above)			2 year Gr SEDS Computer Science			
85	CSCI 700-0	Thesis Research	0	0				1 year PhD SEDS Computer Science, Computer Science			
86	CSCI 701	Advanced Software Principles and Practice	4	8				Computer Science , Robotics Engineering	SEDS	SSH	
87	CSCI 711	Advanced Theory of Computation	4	8				Computer Science , Robotics Engineering	SEDS	SSH	

88	CSCI 785	Advanced Computer Vision	4	8				Computer Science , Robotics Engineering	SEDS	SSH	
89	CSCI 794	Advanced Deep Learning	4	8				Computer Science , Robotics Engineering	SEDS	SSH	
90	DS 501	Fundamentals of Data Science	3	6				Data Science			
91	DS 502	Probability and Statistics for Data Science	3	6				Data Science	Computer Science	SEDS, SSH	
92	DS 507	Database Management Systems	3	6				Data Science	Computer Science	SEDS, SSH	
93	DS 551	Process and Project Management	3	6				Data Science	Computer Science	SEDS, SSH	
94	DS 552	Data-Driven Innovation	3	6				Data Science	Computer Science	SEDS, SSH	
95	DS 693	Thesis Proposal	3	6	SEDS 591 Research Methods (3184) (C- and above)			2 year Gr SEDS Data Science			
96	SEDS 503	Laboratory Practicum	3	6	SEDS 502 Teaching Practicum (2824) (P)			2 year Gr SEDS Computer Science, 2 year Gr SEDS Data Science, 2 year Gr SEDS Robotics and Mechatronics			
97	SEDS 591	Research Methods	3	6				1 year Gr SEDS Computer Science, 1 year Gr SEDS Data Science, 1 year Gr SEDS Robotics and Mechatronics			
Electrical and Computer Engineering											
98	DELCE 700-0	Thesis Research	0	0				1 year PhD SEDS Electrical Engineering	Electrical Engineering		
99	DELCE 753	Stochastic Processes	4	8				1 year PhD SEDS Electrical Engineering	SEDS		
100	DELCE 761	Advanced Data Structures and Algorithms	4	8				1 year PhD SEDS Electrical Engineering	SEDS		
101	ELCE 200	Introduction to Electrical Circuits	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)			2 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		
102	ELCE 203	Signals and Systems	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)			2 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		

103	ELCE 203L	Signals and Systems Laboratory	1	2		ELCE 203 Signals and Systems (4993) (D and above)		2 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		
104	ELCE 204	Solid State Devices	3	6	ENG 103 Engineering Materials II (4818) (C- and above)	ELCE 204L Solid State Devices Laboratory (7769) (D and above)		3 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		
105	ELCE 205	Discrete Mathematics	3	6	MATH 162 Calculus II (170) (C- and above)			2 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		
106	ELCE 301	Electronic Circuits	3	6	ELCE 201 Circuit Theory (5507) (C- and above)			3 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		
107	ELCE 301L	Electronic Circuits Laboratory	1	2	ELCE 201L Circuit Theory Laboratory (6179) (C- and above)	ELCE 301 Electronic Circuits (5918) (C- and above)		3 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		
108	ELCE 304	Computer Networks	3	6	ENG 101 Programming for Engineers (4517) (C- and above)			3 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		
109	ELCE 304L	Computer Networks Laboratory	1	2		ELCE 304 Computer Networks (5920) (D and above)		3 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		
110	ELCE 306	Linear Control Theory	3	6	ELCE 203 Signals and Systems (4993) (C- and above)			3 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		
111	ELCE 307	Digital Signal Processing	3	6	ELCE 203 Signals and Systems (4993) (C- and above)			3 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		
112	ELCE 452	Renewable Energy and Electric Vehicles	3	6	ELCE 200 Introduction to Electrical Circuits (4991) (C- and above)			4 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		

113	ELCE 455	Machine Learning with Python	3	6	ENG 101 Programming for Engineers (4517) (C- and above) OR CSCI 151 Programming for Scientists and Engineers (192) (C- and above)			4 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		
114	ELCE 457	Introduction to Computer Vision	3	6	ENG 101 Programming for Engineers (4517) (C- and above) AND ENG 200 Engineering Mathematics III (Differential Equations and Linear Algebra) (5009) (C- and above)			4 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		
115	ELCE 461	Industrial Automation	3	6	ELCE 202 Digital Logic Design (4992) (C- and above)			4 year UG SEDS Electrical and Computer Engineering			
116	ELCE 462	Wireless Networks	3	6	ENG 201 Applied Probability and Statistics (5505) (C- and above) AND (ELCE 308 Communication Systems (5922) (C- and above) OR ELCE 304 Computer Networks (5920) (C- and above))			4 year UG SEDS Electrical and Computer Engineering			
117	MECE 601	Master Thesis I	12	24				2 year Gr SEDS Electrical and Computer Engineering			
118	MECE 603	Advanced Data Structures and Algorithms	3	6				1 year Gr SEDS Electrical and Computer Engineering	SEDS, SMG, SSH		
119	MECE 605	Statistics and Probability for Electrical and Computer Engineers	3	6				1 year Gr SEDS Electrical and Computer Engineering	SEDS, SMG, SSH		
120	MECE 606	Embedded Systems and Applications	3	6				1 year Gr SEDS Electrical and Computer Engineering	SEDS, SMG, SSH		
121	MECE 726	Modern Semiconductor Devices and Systems	3	6				2 year Gr SEDS Electrical and Computer Engineering			
Mechanical and Aerospace Engineering											
122	DMAE 700-0	Thesis Research	0	0				1 year PhD SEDS Mechanical Engineering, Mechanical Engineering			
123	DMAE 701	Advanced Applied Mathematics	4	8				1 year PhD SEDS Mechanical Engineering	SEDS		

124	DMAE 750	Advanced Statistics and Probability	4	8			MSC 615 Advanced Statistics and Probability (2394) (B- and above)	1 year PhD SEDS Mechanical Engineering	SEDS		
125	DMAE 751	Modern Control Engineering	4	8				1 year PhD SEDS Mechanical Engineering	SEDS		
126	DMAE 753	Computational and Unsteady Aerodynamics	4	8				1 year PhD SEDS Mechanical Engineering			
127	DMAE 765	Advanced Manufacturing Processes and Strategies	4	8				1 year PhD SEDS Mechanical Engineering	SEDS		
128	ENG 100	Introduction to Engineering	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 Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH, SMG, Undeclared SEDS	Chemical and Materials Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Mechanical and Aerospace Engineering		
129	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 Chemical and Materials Engineering, 1 year UG SEDS Civil and Environmental Engineering, 1 year UG SEDS Electrical and Computer Engineering, 1 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH, Undeclared SEDS	Chemical and Materials Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Mechanical and Aerospace Engineering		

130	ENG 200	Engineering Mathematics III (Differential Equations and Linear Algebra)	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, 5 year UG SEDS, 5 year UG SSH		Chemical and Materials Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Mechanical and Aerospace Engineering, SMG	
131	ENG 400	Capstone Project	3	6				4 year UG SEDS Chemical and Materials Engineering, 4 year UG SEDS Civil and Environmental Engineering, 4 year UG SEDS Electrical and Computer Engineering, 4 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH			
132	MAE 201	Computer Aided Design	3	6				2 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	Mechanical and Aerospace Engineering		
133	MAE 300	Fluid Mechanics I	3	6	PHYS 161 Physics I for Scientists and Engineers with Laboratory (116) (D and above)			3 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	Mechanical and Aerospace Engineering		
134	MAE 301	Engineering Thermodynamics	3	6				3 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	Mechanical and Aerospace Engineering		
135	MAE 302	Machine Elements Design	3	6	MAE 205 Material and Manufacturing I (5534) (D and above)			3 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	Mechanical and Aerospace Engineering		
136	MAE 303	Control Systems	3	6				3 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	Mechanical and Aerospace Engineering		
137	MAE 400	Heat Transfer	3	6	MAE 300 Fluid Mechanics I (5926) (D and above) AND MAE 301 Engineering Thermodynamics (5927) (D and above)			4 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	Mechanical and Aerospace Engineering		

138	MAE 401	Mechanical Systems Design	3	6	MAE 302 Machine Elements Design (5928) (D and above)			4 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	Mechanical and Aerospace Engineering		
139	MAE 450	Additive Manufacturing	3	6	MAE 205 Material and Manufacturing I (5534) (D and above)			4 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	Mechanical and Aerospace Engineering		
140	MAE 453	Fire Engineering	3	6	MAE 305 Fluid Mechanics II (6173) (D and above) AND MAE 301 Engineering Thermodynamics (5927) (D and above)			4 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	Mechanical and Aerospace Engineering		
141	MAE 454	Aerodynamics	3	6	MAE 300 Fluid Mechanics I (5926) (D and above)			4 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	Mechanical and Aerospace Engineering		
142	MAE 462	Multiphase Systems	3	6	MAE 300 Fluid Mechanics I (5926) (D and above) AND MAE 305 Fluid Mechanics II (6173) (D and above)			4 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	Mechanical and Aerospace Engineering		
143	MMAE 600	Research Seminar	3	6				1 year Gr SEDS Mechanical and Aerospace Engineering			
144	MMAE 601	Master Thesis I	12	24	MMAE 600 Research Seminar (4703) (P)			2 year Gr SEDS Mechanical and Aerospace Engineering			
145	MMAE 603	Modern Control Engineering	3	6				1 year Gr SEDS Mechanical and Aerospace Engineering	SEDS, SMG		
146	MMAE 605	Advanced Manufacturing Processes and Strategies	3	6				1 year Gr SEDS Mechanical and Aerospace Engineering	SEDS, SMG		
147	MMAE 702	Sustainable Vehicle Transportation Systems	3	6				2 year Gr SEDS Mechanical and Aerospace Engineering	SEDS, SMG		
148	MMAE 706	Computational and Unsteady Aerodynamics	3	6				2 year Gr SEDS Mechanical and Aerospace Engineering			
Robotics and Mechatronics											
149	ROBT 201	Mechanics: Statics and Dynamics	3	6	MATH 162 Calculus II (170) (C- and above) AND (PHYS 161 Physics I for Scientists and Engineers with Laboratory (116) (C- and above) OR PHYS 171 Physics I for Physics Majors with Laboratory (1401) (C- and above))			5 year UG SEDS, 5 year UG SSH, Robotics Engineering, Robotics and Mechatronics, SMG	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		

150	ROBT 203	Electrical and Electronic Circuits I with Lab	4	8	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) OR (PHYS 141 Physics I for non-majors with Lab (1437) (C- and above) AND PHYS 142 Physics II for non-majors with Lab (1438) (C- and above)))			5 year UG SEDS, 5 year UG SSH, Robotics Engineering, Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
151	ROBT 205	Signals and Sensing with Lab	4	8	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))			5 year UG SEDS, 5 year UG SSH, Robotics Engineering, Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
152	ROBT 301	Mechanical Design I with CAD Laboratory	4	8	ROBT 201 Mechanics: Statics and Dynamics (475) (C- and above)			5 year UG SEDS, 5 year UG SSH, Robotics Engineering, Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
153	ROBT 303	Linear Control Theory with Lab	4	8	ROBT 202 System Dynamics and Modeling (68) (C- and above) AND MATH 274 Introduction to Differential Equations (484) (C- and above)			5 year UG SEDS, 5 year UG SSH, Robotics Engineering, Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
154	ROBT 305	Embedded Systems	3	6	ROBT 206 Microcontrollers with Lab (476) (C- and above)			5 year UG SEDS, 5 year UG SSH, Robotics Engineering, Robotics and Mechatronics	Computer Science, Electrical and Computer Engineering, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		

155	ROBT 308	Industrial Automation	3	6				5 year UG SEDS, 5 year UG SSH, Robotics Engineering, Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Electrical and Computer Engineering, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
156	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)			5 year UG SEDS, 5 year UG SSH, Robotics Engineering, Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Electrical and Computer Engineering, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
157	ROBT 403	Robotics II: Control, Modeling and Learning with Laboratory	4	8	ROBT 303 Linear Control Theory with Lab (623) (C and above) AND ROBT 312 Robotics I: Kinematics and Dynamics (5263) (C and above)			5 year UG SEDS, 5 year UG SSH, Robotics Engineering, Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
158	ROBT 407	Statistical Methods and Machine Learning	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)			5 year UG SEDS, 5 year UG SSH, Robotics Engineering, Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Electrical and Computer Engineering, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
159	ROBT 414	Human-Robot Interaction	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			5 year UG SEDS, 5 year UG SSH, Robotics Engineering, Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Electrical and Computer Engineering, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
160	ROBT 501	Robot Manipulation and Mobility	3	6				Robotics	SEDS		
161	ROBT 503	Dynamic Systems and Control	3	6				Robotics	SEDS		

162	ROBT 613	Brain-Machine Interfaces	3	6				Robotics	SEDS		
163	ROBT 615	Optimal Control and Planning	3	6	ROBT 501 Robot Manipulation and Mobility (2263) (C- and above) AND ROBT 503 Dynamic Systems and Control (2264) (C- and above)			Robotics	SEDS		
164	ROBT 691	Thesis Proposal	6	12				Robotics	SEDS		
165	ROBT 700-0	Thesis Research	0	0				1 year PhD SEDS Robotics Engineering	Robotics Engineering, Science, Engineering and Technology		
166	ROBT 701	Advanced Robot Manipulation and Mobility	4	8				1 year PhD SEDS Robotics Engineering	Robotics Engineering, Science, Engineering and Technology		
167	ROBT 703	Advanced Optimal Control and Planning	4	8				1 year PhD SEDS Robotics Engineering	Robotics Engineering, Science, Engineering and Technology		
168	ROBT 709	Advanced Robot Dynamics and Control	4	8				1 year PhD SEDS Robotics Engineering	Robotics Engineering, Science, Engineering and Technology		
School of Engineering											
169	DENG 700	Thesis Research	89	178							
170	DENG 700-0	Thesis Research	0	0				Science, Engineering and Technology			
171	DENG 782	Research Methods and Ethics	3	6				SEDS, SSH	SMG		
172	DENG 792	Doctoral Seminar IV	3	6	DENG 791 Doctoral Seminar III (4600) (P)			Science, Engineering and Technology			
173	DENG 794	Dissertation Research	12	24	DENG 785 PhD Proposal Oral Defence (2604) (P)			Science, Engineering and Technology			
174	DENG 795	Research at Host University	6	12	DENG 785 PhD Proposal Oral Defence (2604) (P)			Science, Engineering and Technology			
175	DENG 796	Thesis Completion	0	0				Science, Engineering and Technology			

176	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			
177	DENG 798	Doctoral Seminar VI	3	6	DENG 793 Doctoral Seminar V (4602) (P)			Science, Engineering and Technology			
178	DENG 799	Doctoral Seminar VII	3	6	DENG 798 Doctoral Seminar VI (4607) (P)			Science, Engineering and Technology			