

Course Requirements and Registration Priorities
School of Engineering and Digital Sciences, Fall 2020

#	Abbr	Title	Cr(US)	Cr(ECTS)	PreRequisite	CoRequisite	AntiRequisite	1st priority registration	2nd priority registration	3rd priority registration	4th priority registration
Other											
Other											
1	TEST 001	TEST	3	6							
SEDS											
Chemical and Materials Engineering											
2	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 Engineering, Chemical and Materials Engineering		
3	CHME 201	Chemical Engineering Thermodynamics	3	6				2 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical Engineering, Chemical and Materials Engineering		
4	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 Engineering, Chemical and Materials Engineering		
5	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 Engineering, Chemical and Materials Engineering		
6	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 Engineering, Chemical and Materials Engineering		
7	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 Engineering, Chemical and Materials Engineering		
8	CHME 350	Soft Matter, Foods and Colloids	3	6				3 year UG SEDS Chemical Engineering, 3 year UG SEDS Chemical and Materials Engineering, 4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical and Materials Engineering		

9	CHME 351	Environment and Development	3	6				3 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical Engineering, Chemical and Materials Engineering		
10	CHME 461	Powder technology	3	6				3 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical Engineering, Chemical and Materials Engineering		
11	DCHME 700-0	Thesis Research	0	0				1 year PhD SEDS Chemical Engineering	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology		
12	DCHME 755	Integrated Computational Materials Engineering	4	8				1 year PhD SEDS Chemical Engineering	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology		
13	DCHME 761	Advanced Chemical Reaction Engineering	4	8				1 year PhD SEDS Chemical Engineering	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology		

14	DCHME 762	Advanced Materials Processing	4	8				1 year PhD SEDS Chemical Engineering	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology		
15	DCHME 765	Biofilms Science and Engineering	4	8				1 year PhD SEDS Chemical Engineering	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology		
16	ECHE 418	Capstone project 1	3	6	ECHE 323 Computational methods in Chemical Engineering-I (1272) (D and above)			Registration by School Admin only.			
17	ECHE 419	Advanced Process Simulation	3	6	ECHE 323 Computational methods in Chemical Engineering-I (1272) (D and above)			4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical and Materials Engineering		
18	ECHE 478	Electrochemical Engineering and Corrosion Protection	3	6	ECHE 222 Chemistry I (731) (D and above)			4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical and Materials Engineering		
19	ECHE 484	Multiphase Systems	3	6	ECHE 319 Chemical Engineering Thermodynamics (1218) (D and above) AND ECHE 270 Transport Phenomena-I (735) (D and above)			4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical and Materials Engineering		
20	ECHE 486	Chemical Process Safety	3	6				Registration by School Admin only.			

21	ECHE 488	Atmospheric Chemistry and Physics	3	6				4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical and Materials Engineering		
22	MBME 601	Master Thesis I	12	24				2 year Gr SEDS Biomedical Engineering			
23	MBME 603	Biomaterials Science & Engineering	3	6				1 year Gr SEDS Biomedical Engineering, 2 year Gr SEDS Biomedical Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology	
24	MBME 604	Biosensors	3	6				1 year Gr SEDS Biomedical Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology	

25	MBME 610	Anatomy and Physiology for Biomedical Engineers	3	6				1 year Gr SEDS Biomedical Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science, Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology	
26	MCHME 601	Master Thesis I	12	24				2 year Gr SEDS Chemical and Materials Engineering			
27	MCHME 603	Advanced Materials Processing	3	6				1 year Gr SEDS Chemical and Materials Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SMG	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science, Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology	

28	MCHME 604	Advanced Materials Characterization Methods	3	6				1 year Gr SEDS Chemical and Materials Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SMG	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology
29	MCHME 605	Advanced Chemical Reaction Engineering	3	6				1 year Gr SEDS Chemical and Materials Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SMG	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology

30	MCHME 702	Biofilms Science and Engineering	3	6				2 year Gr SEDS Chemical and Materials Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SMG	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology
31	MCHME 714	Computational Materials Engineering	3	6				2 year Gr SEDS Chemical and Materials Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SMG	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology

Civil Engineering

32	MSC 600	Research Methods and Ethics	3	6				1 year Gr SEDS Engineering Management	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics			
33	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 Electrical and Computer Engineering, 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, Electrical and Computer Engineering, Mechanical and Aerospace Engineering, Robotics			
34	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	Mining Engineering, Petroleum Engineering	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology		
35	MSC 615	Advanced Statistics and Probability	3	6				1 year Gr SEDS Engineering Management				

Civil and Environmental Engineering

36	CEE 200	Structural Mechanics I	3	6			2 year UG SEDS Civil and Environmental Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering, 2 year UG SMG Mining Engineering, 2 year UG SMG Petroleum Engineering, 5 year UG SEDS, 5 year UG SSH	Civil Engineering, Civil and Environmental Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering		
37	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 Engineering, Civil and Environmental Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering		
38	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 Engineering, Civil and Environmental Engineering		
39	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 Engineering, Civil and Environmental Engineering		
40	CEE 302	Geotechnical Engineering	3	6			3 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	Civil Engineering, Civil and Environmental Engineering		
41	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 Engineering, Civil and Environmental Engineering		
42	CEE 351	Application of Geomatics in Civil Engineering	3	6	CEE 204 Civil Engineering CAD and Surveying (5002) (D and above) OR ECE 215 Surveying (3153) (D and above)		4 year UG SEDS Civil Engineering, 4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	Civil Engineering, Civil and Environmental Engineering		
43	CEE 454	Foundation Engineering	3	6	ECE 306 Geotechnical Design (1043) (D and above) OR CEE 303 Geotechnical Design (6158) (D and above)		4 year UG SEDS Civil Engineering, 4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	Civil Engineering, Civil and Environmental Engineering		

44	DCEE 700-0	Thesis Research	0	0				1 year PhD SEDS Civil Engineering, Civil Engineering	Chemical Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
45	DCEE 756	Environmental Modeling Development	4	8				1 year PhD SEDS Civil Engineering	Chemical Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
46	DCEE 760	Advanced Foundation Engineering	4	8				1 year PhD SEDS Civil Engineering	Chemical Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
47	DCEE 761	Advanced Soil Mechanics	4	8				1 year PhD SEDS Civil Engineering	Chemical Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
48	DCEE 763	Building Information Modeling in Construction	4	8				1 year PhD SEDS Civil Engineering	Chemical Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
49	ECE 303	Construction Management and Practice	3	6	BENG 148 Engineering Practice (1073) (D and above)			Registration by School Admin only.			
50	ECE 401	Capstone Project 1	3	6				Registration by School Admin only.			
51	ECE 416	Highway Engineering	3	6	ECE 302 Civil Engineering Materials (1040) (D and above)			Registration by School Admin only.			

52	ECE 421	Behaviour and Design of Structural System	3	6	(ECE 318 Structural Design - Concrete (3709) (D and above) OR ECE 314 Structural Engineering Applications I (1042) (D and above)) AND (ECE 319 Structural Design - Steel (4038) (D and above) OR ECE 315 Structural Engineering Applications II (1041) (D and above))			4 year UG SEDS Civil Engineering, 4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	Civil Engineering, Civil and Environmental Engineering		
53	ECE 423	Structure and Properties of Concrete Materials	3	6				4 year UG SEDS Civil Engineering, 4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	Civil Engineering, Civil and Environmental Engineering		
54	ECE 481	Individual Research Projects in Civil Engineering	3	6				4 year UG SEDS Civil Engineering, 4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	Civil Engineering, Civil and Environmental Engineering		
55	ECE 482	Solid and Hazardous Waste Management	3	6	ECE 405 Environmental Engineering (1265) (C- and above)			4 year UG SEDS Civil Engineering, 4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	Civil Engineering, Civil and Environmental Engineering		
56	EMEM 507	Project Management	3	6				1 year Gr SEDS Engineering Management	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		

57	E MEM 509	Systems Engineering	3	6				2 year Gr SEDS Engineering Management	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		
58	E MEM 523	Supply Chain Management	3	6				2 year Gr SEDS Engineering Management	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		
59	E MEM 533	Engineering Management and Engineering Economy	3	6				1 year Gr SEDS Engineering Management	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		

60	E MEM 537	Engineering Decision Tools	3	6				2 year Gr SEDS Engineering Management	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		
61	E MEM 538	Knowledge and Innovation Management	3	6				1 year Gr SEDS Engineering Management	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		
62	E MEM 539	Big Data and Information Management	3	6				2 year Gr SEDS Engineering Management	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		

63	EMEM 542	Production and Service Operations Management	3	6				2 year Gr SEDS Engineering Management	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		
64	MCEE 601	Master Thesis I	12	24	MCEE 600 Research Seminar (4692) (P)			2 year Gr SEDS Civil and Environmental Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SMG		
65	MCEE 603	Finite Element Methods	3	6				1 year Gr SEDS Civil and Environmental Engineering, 1 year Gr SEDS Mechanical and Aerospace Engineering	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, Mining Engineering, Petroleum Engineering, Robotics		
66	MCEE 604	Advanced Soil Mechanics	3	6				1 year Gr SEDS Civil and Environmental Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SMG		
67	MCEE 605	Advanced Environmental Chemistry	3	6				1 year Gr SEDS Civil and Environmental Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SMG		
68	MCEE 705	Environmental Modeling Development	3	6				2 year Gr SEDS Civil and Environmental Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SMG		
69	MCEE 708	Advanced Foundation Engineering	3	6				2 year Gr SEDS Civil and Environmental Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SMG		
70	MCEE 709	Building Information Modeling in Construction	3	6				2 year Gr SEDS Civil and Environmental Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SMG		

Computer Science

71	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	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Robotics and Mechatronics, Undeclared SEDS		
72	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, Physics, Robotics and Mechatronics, Undeclared SEDS, Undeclared SMG, Undeclared SSH	SSH	

73	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)	1 year UG SEDS Computer Science, 1 year UG SEDS Robotics and Mechatronics, 1 year UG SSH Mathematics, 1 year UG SSH Physics, 5 year UG SEDS, 5 year UG SSH, Undeclared SEDS	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Robotics and Mechatronics, Undeclared SSH	SSH	
74	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)			2 year UG SEDS Computer Science, 5 year UG SEDS, 5 year UG SSH	Computer Science		
75	CSCI 235	Programming Languages	4	8	CSCI 152 Performance and Data Structures (489) (C- and above)			2 year UG SEDS Computer Science, 5 year UG SEDS, 5 year UG SSH	Computer Science		
76	CSCI 262	Software Project Management	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			5 year UG SEDS, 5 year UG SSH, Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Robotics and Mechatronics, Undeclared SEDS, Undeclared SMG, Undeclared SSH	SEDS, SSH		
77	CSCI 299	Internship I	3	6							
78	CSCI 341	Database Systems	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			3 year UG SEDS Computer Science, 5 year UG SEDS, 5 year UG SSH	Computer Science		
79	CSCI 355	Compiler Construction	3	6	CSCI 235 Programming Languages (638) (C and above) AND CSCI 272 Formal Languages (4689) (C and above)			5 year UG SEDS, 5 year UG SSH, Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Robotics and Mechatronics, Undeclared SEDS, Undeclared SMG, Undeclared SSH	SSH		

80	CSCI 361	Software Engineering	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			3 year UG SEDS Computer Science, 5 year UG SEDS, 5 year UG SSH	Computer Science		
81	CSCI 371	Algorithmic Problem Solving	3	6	CSCI 270 Algorithms (648) (B and above)			5 year UG SEDS, 5 year UG SSH, Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Robotics and Mechatronics, Undeclared SEDS, Undeclared SMG, Undeclared SSH	SSH		
82	CSCI 390	Artificial Intelligence	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			3 year UG SEDS Computer Science, 5 year UG SEDS, 5 year UG SSH	Computer Science		
83	CSCI 398	Directed Study	3	6				Instructor's Permission Required. Registration through Add Course form only!			
84	CSCI 399	Internship II	3	6				Instructor's Permission Required. Registration through Add Course form only!			
85	CSCI 399F	Internship II - F	6	12				Instructor's Permission Required. Registration through Add Course form only!			
86	CSCI 408	Senior Project I	3	6				4 year UG SEDS Computer Science, 5 year UG SEDS, 5 year UG SSH			
87	CSCI 434	Information Security	3	6		CSCI 333 Computer Networks (1145) (D and above)		5 year UG SEDS, 5 year UG SSH, Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Robotics and Mechatronics, Undeclared SEDS, Undeclared SMG, Undeclared SSH	SSH		

88	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)			5 year UG SEDS, 5 year UG SSH, Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Robotics and Mechatronics, Undeclared SEDS, Undeclared SMG, Undeclared SSH	SEDS, SSH		
89	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)			5 year UG SEDS, 5 year UG SSH, Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Robotics and Mechatronics, Undeclared SEDS, Undeclared SMG, Undeclared SSH	SSH		
90	CSCI 501	Software Principles and Practice	3	6				Computer Science, Robotics	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering	SSH	
91	CSCI 511	Theory of Computation	3	6				Computer Science	SEDS	SSH	
92	CSCI 515	Modeling and Simulation for Computer Science	3	6				Computer Science, Data Science	SEDS	SSH	
93	CSCI 585	Computer Vision	3	6				Computer Science, Data Science	SEDS	SSH	
94	CSCI 594	Deep Learning	3	6				Computer Science, Data Science	SEDS	SSH	
95	CSCI 693	Thesis Proposal	3	6	SEDS 591 Research Methods (3184) (C- and above)			2 year Gr SEDS Computer Science			
96	CSCI 700-0	Thesis Research	0	0				1 year PhD SEDS Computer Science, Computer Science			
97	CSCI 701	Advanced Software Principles and Practice	4	8				Computer Science , Robotics Engineering	Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Science, Engineering and Technology	SSH	

98	CSCI 711	Advanced Theory of Computation	4	8				Computer Science	SEDS	SSH	
99	CSCI 785	Advanced Computer Vision	4	8				Computer Science	SEDS	SSH	
100	CSCI 794	Advanced Deep Learning	4	8				Computer Science	SEDS	SSH	
101	DS 501	Fundamentals of Data Science	3	6				Data Science			
102	DS 502	Probability and Statistics for Data Science	3	6				Data Science			
103	DS 507	Database Management Systems	3	6				Data Science	Computer Science		
104	DS 551	Process and Project Management	3	6				Data Science	SEDS	SSH	
105	DS 552	Data-Driven Innovation	3	6				Data Science	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics	Applied Mathematics, Biological Sciences, Chemistry, Economics, Eurasian Studies, Physics, Political Science and International Relations	
106	DS 693	Thesis Proposal	3	6	SEDS 591 Research Methods (3184) (C-and above)			2 year Gr SEDS Data Science			
107	SEDS 503	Laboratory Practicum	3	6	SEDS 502 Teaching Practicum (2824) (P)			2 year Gr SEDS Computer Science, 2 year Gr SEDS Robotics and Mechatronics			
108	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	Computer Science, Data Science, Robotics		
Electrical and Computer Engineering											
109	DELCE 700-0	Thesis Research	0	0				Electrical Engineering	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology		

110	DELCE 753	Stochastic Processes	4	8				Electrical Engineering	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology		
111	DELCE 760	Advanced System Modelling and Control	4	8				Electrical Engineering	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology		
112	DELCE 761	Advanced Data Structures and Algorithms	4	8				Electrical Engineering	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology		
113	EEE 437	Capstone Project 1	3	6				Registration by School Admin only.			
114	EEE 448	Power Transmission and Distribution plants	3	6				4 year UG SEDS Electrical and Electronic Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		
115	EEE 450	RF and Microwave Circuit Design	3	6				4 year UG SEDS Electrical and Electronic Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		
116	EEE 451	High Voltage Engineering	3	6				4 year UG SEDS Electrical and Electronic Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		
117	EEE 452	Power Systems Protection	3	6				4 year UG SEDS Electrical and Electronic Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		

118	EEE 490	Introduction to Big Data	3	6				4 year UG SEDS Electrical and Electronic Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		
119	EEE 493	Industry 4.0	3	6				Registration by School Admin only.			
120	EEE 494	Modern Characterizations for Semiconductor Industry	3	6				4 year UG SEDS Electrical and Electronic Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		
121	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		
122	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, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		
123	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		
124	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		
125	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		
126	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		

127	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		
128	MECE 601	Master Thesis I	12	24				2 year Gr SEDS Electrical and Computer Engineering			
129	MECE 603	Advanced Data Structures and Algorithms	3	6				1 year Gr SEDS Electrical and Computer Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science, Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology	
130	MECE 605	Statistics and Probability for Electrical and Computer Engineers	3	6				1 year Gr SEDS Electrical and Computer Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science, Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology	

131	MECE 724	System Modelling and Control	3	6				1 year Gr SEDS Electrical and Computer Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science, Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology
132	MECE 725	Smart Grids and Energy Systems	3	6	MECE 700 Industrial and Commercial Power System (4810) (D and above)			2 year Gr SEDS Electrical and Computer Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science, Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology

133	MECE 726	Modern Semiconductor Devices and Systems	3	6				2 year Gr SEDS Electrical and Computer Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology	
Mechanical and Aerospace Engineering											
134	DMAE 700-0	Thesis Research	0	0				1 year PhD SEDS Mechanical Engineering	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology		
135	DMAE 701	Advanced Applied Mathematics	4	8				1 year PhD SEDS Mechanical Engineering	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology		

136	DMAE 750	Advanced Statistics and Probability	4	8			MSC 615 Advanced Statistics and Probability (2394) (B- and above)	1 year PhD SEDS Mechanical Engineering	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Education, Electrical Engineering, Eurasian Studies, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Public Policy, Robotics Engineering, Science, Engineering and Technology		
137	DMAE 751	Modern Control Engineering	4	8				1 year PhD SEDS Mechanical Engineering	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Education, Electrical Engineering, Eurasian Studies, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Public Policy, Robotics Engineering, Science, Engineering and Technology		
138	DMAE 759	Space Structure Design	4	8				2 year PhD SEDS Mechanical Engineering	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Education, Electrical Engineering, Eurasian Studies, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Public Policy, Robotics Engineering, Science, Engineering and Technology		
139	DMAE 763	Computational Fluid Structure Interaction	4	8				1 year PhD SEDS Mechanical Engineering	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology		

140	DMAE 765	Advanced Manufacturing Processes and Strategies	4	8				1 year PhD SEDS Mechanical Engineering	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science, Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology		
141	EME 358	Heat Transfer	3	6	BENG 226 Engineering Thermodynamics (1553) (D and above) AND EME 275 Fluid Mechanics I (1988) (D and above)			Instructor's Permission Required. Registration through Add Course form only!			
142	EME 377	Mechanical Systems Design	3	6	EME 361 Machine Design (1051) (D and above)			5 year UG SEDS			
143	EME 410	Aerodynamics	3	6	EME 357 Fluid Mechanics II (1280) (D and above)			Registration by School Admin only.			
144	EME 413	Computer Aided Geometric Design	3	6	EME 253 Computer Aided Engineering (1050) (C- and above)			4 year UG SEDS Mechanical Engineering, 5 year UG SEDS, 5 year UG SSH	Mechanical and Aerospace Engineering		
145	EME 451	Capstone Project 1	3	6				Registration by School Admin only.			
146	EME 467	Vehicle Propulsion Systems	3	6				4 year UG SEDS Mechanical Engineering, 5 year UG SEDS, 5 year UG SSH	Mechanical and Aerospace Engineering		
147	EME 490	Multiphase Systems	3	6	EME 275 Fluid Mechanics I (1988) (C- and above)			4 year UG SEDS Mechanical Engineering, 5 year UG SEDS, 5 year UG SSH	Mechanical and Aerospace Engineering		

148	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, 1 year UG SMG, 5 year UG SEDS, 5 year UG SSH, Undeclared SEDS	Chemical and Materials Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Geology, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering		
149	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		

150	ENG 200	Engineering Mathematics III (Differential Equations and Linear Algebra)	3	6	MATH 162 Calculus II (170) (C and above)			5 year UG SEDS, 5 year UG SSH	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	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Geology, Mechanical Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, SMG, Undeclared SMG	
151	MAE 201	Computer Aided Design	3	6				2 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	Mechanical Engineering, Mechanical and Aerospace Engineering		
152	MAE 206	Engineering Dynamics I	3	6				Instructor's Permission Required. Registration through Add Course form only!			
153	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 Civil and Environmental Engineering, 3 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	Civil and Environmental Engineering, Mechanical and Aerospace Engineering		
154	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		
155	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		

156	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		
157	MAE 457	Feasibility Analysis of Clean Energy Technologies	3	6				4 year UG SEDS Mechanical Engineering, 5 year UG SEDS, 5 year UG SSH	Mechanical and Aerospace Engineering		
158	MMAE 601	Master Thesis I	12	24	MMAE 600 Research Seminar (4703) (P)			2 year Gr SEDS Mechanical and Aerospace Engineering			
159	MMAE 603	Modern Control Engineering	3	6				1 year Gr SEDS Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		
160	MMAE 605	Advanced Manufacturing Processes and Strategies	3	6				1 year Gr SEDS Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		

161	MMAE 710	Space Structures Design	3	6				2 year Gr SEDS Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics			
162	MMAE 713	Computational Fluid Structure Interaction	3	6				2 year Gr SEDS Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics			
Robotics and Mechatronics												
163	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 and Mechatronics, SMG	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SMG, Undeclared SSH			

164	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 and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SMG, Undeclared SSH		
165	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 and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SMG, Undeclared SSH		
166	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 and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SMG, Undeclared SSH		
167	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 and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SMG, Undeclared SSH		
168	ROBT 307	Power Electronics	3	6	ROBT 204 Electrical and Electronic Circuits II with Lab (491) (C- and above)			5 year UG SEDS, 5 year UG SSH, Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SMG, Undeclared SSH		

169	ROBT 308	Industrial Automation	3	6				5 year UG SEDS, 5 year UG SSH, Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SMG, Undeclared SSH		
170	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 and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SMG, Undeclared SSH		
171	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 and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SMG, Undeclared SSH		
172	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 and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SMG, Undeclared SSH		
173	ROBT 501	Robot Manipulation and Mobility	3	6				Robotics	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering		
174	ROBT 503	Dynamic Systems and Control	3	6				Robotics	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering		

175	ROBT 613	Brain-Machine Interfaces	3	6				Robotics	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering		
176	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	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering		
177	ROBT 691	Thesis Proposal	6	12				2 year Gr SEDS Robotics and Mechatronics			
178	ROBT 700-0	Thesis Research	0	0				1 year PhD SEDS Robotics Engineering	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science, Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology		
179	ROBT 701	Advanced Robot Manipulation and Mobility	4	8				1 year PhD SEDS Robotics Engineering	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science, Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology		

180	ROBT 703	Advanced Optimal Control and Planning	4	8				1 year PhD SEDS Robotics Engineering	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology			
181	ROBT 709	Advanced Robot Dynamics and Control	4	8				1 year PhD SEDS Robotics Engineering	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology			
School of Engineering												
182	DENG 782	Research Methods and Ethics	3	6				1 year PhD SEDS Chemical Engineering, 1 year PhD SEDS Civil Engineering, 1 year PhD SEDS Computer Science, 1 year PhD SEDS Electrical Engineering, 1 year PhD SEDS Mechanical Engineering, 1 year PhD SEDS Robotics Engineering, 1 year PhD SEDS Science, Engineering and Technology, 1 year PhD SMG Mining Engineering, 1 year PhD SMG Petroleum Engineering, 1 year PhD SOM BioMed Sciences, 1 year PhD SSH Life Sciences, 1 year PhD SSH Mathematics, 1 year PhD SSH Physics	Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology			

183	DENG 784	Doctoral Proposal I	0	6				Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology		
184	DENG 785	PhD Proposal Oral Defence	0	0				Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology		
185	DENG 790	Doctoral Seminar II	3	6	DENG 789 Doctoral Seminar I (4598) (P)			Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology		
186	DENG 791	Doctoral Seminar III	3	6	DENG 790 Doctoral Seminar II (4599) (P)			Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology		

187	DENG 792	Doctoral Seminar IV	3	6	DENG 791 Doctoral Seminar III (4600) (P)			Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology		
188	DENG 793	Doctoral Seminar V	3	6	DENG 792 Doctoral Seminar IV (4601) (P)			Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology		
189	DENG 794	Dissertation Research	12	24	DENG 785 PhD Proposal Oral Defence (2604) (P)			Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology		
190	DENG 796	Thesis Completion	0	0				Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology		

191	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)			Biomedical Sciences, Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Robotics Engineering, Science, Engineering and Technology		
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