

**Course Requirements and Registration Priorities**  
**School of Engineering and Digital Sciences, Fall 2019**

#	Abbr	Title	Cr(US)	Cr(ECTS)	PreRequisite	CoRequisite	AntiRequisite	1st priority registration	2nd priority registration	3rd priority registration	4th priority registration
<b>SMG</b>											
<b>School of Mining and Geosciences</b>											
1	SMG 710	Research Methods and Statistics	3	6				1 year PhD SEDS Science, Engineering and Technology	Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	
<b>SEDS</b>											
<b>Chemical and Materials Engineering</b>											
2	CHME 200	Basic Principles and Calculations in Chemical Engineering	3	6				2 year UG SEDS Chemical Engineering, 2 year UG SEDS Chemical and Materials Engineering	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, Undeclared SEDS	SEDS, SMG, SSH, SoM	
3	CHME 201	Chemical Engineering Thermodynamics	3	6				2 year UG SEDS Chemical Engineering, 2 year UG SEDS Chemical and Materials Engineering	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, Undeclared SEDS	SEDS, SMG, SSH, SoM	
4	CHME 222	Inorganic and Analytical Chemistry	3	6				2 year UG SEDS Chemical Engineering, 2 year UG SEDS Chemical and Materials Engineering	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, Undeclared SEDS	SEDS, SMG, SSH, SoM	

5	CHME 350	Soft Matter, Foods and Colloids	3	6				4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering	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, Undeclared SEDS	SEDS, SMG, SSH, SoM	
6	DCHME 700-0	Thesis Research	0	0				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	
7	DCHME 755	Integrated Computational Materials Engineering	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	
8	DCHME 761	Advanced Chemical Reaction Engineering	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	
9	DCHME 762	Advanced Materials Processing	4	8				Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	
10	ECHE 333	Separation Processes-I	3	6	ECHE 319 Chemical Engineering Thermodynamics (1218) (D and above)			Registration by School Administration			

11	ECHE 369	Transport Phenomena-II	3	6				Registration by School Administration			
12	ECHE 385	Research Practice	3	6				Registration by School Administration			
13	ECHE 418	Capstone project 1	3	6	ECHE 323 Computational methods in Chemical Engineering-I (1272) (D and above)			Registration by School Administration			
14	ECHE 463	Introduction to Molecular Modeling Methods	3	6				4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering	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, Undeclared SEDS	SEDS, SMG, SSH, SoM	
15	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	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, Undeclared SEDS	SEDS, SMG, SSH, SoM	
16	ECHE 481	Chemical Reaction Engineering	3	6	ECHE 126 Introduction to Chemical Engineering (33) (D and above) AND BENG 124 Engineering Mathematics I (101) (D and above) AND BENG 225 Engineering Mathematics II (48) (D and above)			Registration by School Administration			

17	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	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, Undeclared SEDS	SEDS, SMG, SSH, SoM	
18	ECHE 486	Chemical Process Safety	3	6				Registration by School Administration			
19	ECHE 488	Atmospheric Chemistry and Physics	3	6				4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering	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, Undeclared SEDS	SEDS, SMG, SSH, SoM	
20	MBME 603	Biomaterials Science & Engineering	3	6				1 year Gr SEDS Biomedical Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	

21	MBME 604	Biosensors	3	6				1 year Gr SEDS Biomedical Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	
22	MBME 610	Anatomy and Physiology for Biomedical Engineers	3	6				1 year Gr SEDS Biomedical Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	
23	MCHME 601	Master Thesis I	12	24				2 year Gr SEDS Chemical Engineering, 2 year Gr SEDS Chemical and Materials Engineering			
24	MCHME 603	Advanced Materials Processing	3	6				1 year Gr SEDS Chemical Engineering, 1 year Gr SEDS Chemical and Materials Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	

25	MCHME 604	Advanced Materials Characterization Methods	3	6				1 year Gr SEDS Chemical Engineering, 1 year Gr SEDS Chemical and Materials Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	
26	MCHME 605	Advanced Chemical Reaction Engineering	3	6				1 year Gr SEDS Chemical Engineering, 1 year Gr SEDS Chemical and Materials Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	
27	MCHME 714	Computational Materials Engineering	3	6				2 year Gr SEDS Chemical Engineering, 2 year Gr SEDS Chemical and Materials Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	
<b>Civil Engineering</b>											
28	MSC 600	Research Methods and Ethics	3	6				1 year Gr SEDS Biomedical Engineering, 1 year Gr SEDS Engineering Management	1 year Gr SMG, 2 year Gr SMG		

29	MSC 601	Technical Communication	3	6				1 year Gr SEDS Chemical Engineering, 1 year Gr SEDS Chemical and Materials Engineering, 1 year Gr SEDS Civil 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 Electrical and Electronic Engineering, 1 year Gr SEDS Mechanical Engineering, 1 year Gr SEDS Mechanical and Aerospace Engineering, 1 year Gr SEDS Robotics and Mechatronics	1 year Gr SMG, 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	
30	MSC 602	Advanced Applied Mathematics	3	6				1 year Gr SEDS Biomedical Engineering, 1 year Gr SEDS Chemical Engineering, 1 year Gr SEDS Chemical and Materials Engineering, 1 year Gr SEDS Civil Engineering, 1 year Gr SEDS Civil and Environmental Engineering, 1 year Gr SEDS Electrical and Computer Engineering, 1 year Gr SEDS Electrical and Electronic Engineering, 1 year Gr SEDS Mechanical Engineering, 1 year Gr SEDS Mechanical and Aerospace Engineering	1 year Gr SMG, 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year UG SEDS (pending graduation)	
31	MSC 615	Advanced Statistics and Probability	3	6				1 year Gr SEDS Engineering Management	1 year Gr SMG, 2 year Gr SMG		

**Civil and Environmental Engineering**

32	CEE 200	Structural Mechanics I	3	6				2 year UG SEDS Civil Engineering, 2 year UG SEDS Civil and Environmental Engineering, 2 year UG SEDS Mechanical 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, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared SEDS	SEDS, SMG, SSH, SoM	
33	CEE 201	Environmental Chemistry	3	6				2 year UG SEDS Civil Engineering, 2 year UG SEDS Civil and Environmental Engineering, 2 year UG SEDS Mechanical 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, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared SEDS	SEDS, SMG, SSH, SoM	
34	CEE 204	Civil Engineering CAD and Surveying	3	6				2 year UG SEDS Civil Engineering, 2 year UG SEDS Civil and Environmental Engineering	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, Undeclared SEDS	SEDS, SMG, SSH, SoM	
35	DCEE 700-0	Thesis Research	0	0				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	



36	DCEE 750	Finite Element Methods	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Public Policy	
37	DCEE 753	Structural Evaluation and Rehabilitation	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Public Policy	
38	DCEE 756	Environmental Modeling Development	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology		
39	DCEE 757	Advanced Environmental Chemistry	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Public Policy	
40	ECE 303	Construction Management and Practice	3	6	BENG 148 Engineering Practice (1073) (D and above)			Registration by School Administration			
41	ECE 307	Engineering Geology and Rock Mechanics	3	6				Registration by School Administration			
42	ECE 318	Structural Design - Concrete	3	6	ECE 479 Structural Analysis II (2460) (C- and above)			Registration by School Administration			
43	ECE 401	Capstone Project 1	3	6				Registration by School Administration			
44	ECE 404	Construction Technologies and Processes	3	6	BENG 148 Engineering Practice (1073) (D and above) AND ECE 302 Civil Engineering Materials (1040) (D and above)			Registration by School Administration			

45	ECE 405	Environmental Engineering	3	6	ECE 473 Environmental Systems (1953) (D and above) OR ECE 218 Environmental Chemistry (3296) (D and above)			Registration by School Administration			
46	ECE 416	Highway Engineering	3	6	ECE 302 Civil Engineering Materials (1040) (D and above)			Registration by School Administration			
47	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	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, Undeclared SEDS	SEDS, SMG, SSH, SoM	
48	ECE 481	Individual Research Projects in Civil Engineering	3	6				Registration by School Administration			
49	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	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, Undeclared SEDS	SEDS, SMG, SSH, SoM	

50	EMEM 507	Project Management	3	6				1 year Gr SEDS Engineering Management	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology
51	EMEM 509	Systems Engineering	3	6				2 year Gr SEDS Engineering Management	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology
52	EMEM 523	Supply Chain Management	3	6				2 year Gr SEDS Engineering Management	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology
53	EMEM 533	Engineering Management and Engineering Economy	3	6				1 year Gr SEDS Engineering Management	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology

54	EMEM 537	Engineering Decision Tools	3	6				2 year Gr SEDS Engineering Management	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology	
55	EMEM 538	Knowledge and Innovation Management	3	6				1 year Gr SEDS Engineering Management	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	
56	EMEM 539	Big Data and Information Management	3	6				2 year Gr SEDS Engineering Management	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology	
57	EMEM 542	Production and Service Operations Management	3	6				2 year Gr SEDS Engineering Management	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology	
58	MCEE 601	Master Thesis I	12	24	MCEE 600 Research Seminar (4692) (P)			2 year Gr SEDS Civil Engineering, 2 year Gr SEDS Civil and Environmental Engineering			

59	MCEE 603	Finite Element Methods	3	6				1 year Gr SEDS Civil Engineering, 1 year Gr SEDS Civil and Environmental Engineering, 1 year Gr SEDS Mechanical Engineering, 1 year Gr SEDS Mechanical and Aerospace Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	
60	MCEE 604	Advanced Soil Mechanics	3	6				1 year Gr SEDS Civil Engineering, 1 year Gr SEDS Civil and Environmental Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	
61	MCEE 605	Advanced Environmental Chemistry	3	6				1 year Gr SEDS Civil Engineering, 1 year Gr SEDS Civil and Environmental Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	
62	MCEE 702	Structural Evaluation and Rehabilitation	3	6				2 year Gr SEDS Civil Engineering, 2 year Gr SEDS Civil and Environmental Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	

63	MCEE 705	Environmental Modeling Development	3	6				2 year Gr SEDS Civil Engineering, 2 year Gr SEDS Civil and Environmental Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	
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**Computer Science**

64	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)	Anthropology, Economics, History, Political Science and International Relations, Sociology, Undeclared SSH, World Languages, Literatures and Cultures			
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65	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)	Biological Sciences, Chemistry	Computer Science, Mathematics, Physics, Robotics and Mechatronics, Undeclared SEDS, Undeclared SSH	SSH	
66	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, Mathematics, Physics, Robotics and Mechatronics	Biological Sciences, Chemistry, Undeclared SEDS, Undeclared SSH	SSH	
67	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)			Computer Science			
68	CSCI 235	Programming Languages	4	8	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science			

69	CSCI 262	Software Project Management	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science	Biological Sciences, Chemistry, Mathematics, Physics, Robotics and Mechatronics, Undeclared SEDS, Undeclared SSH	SSH	
70	CSCI 341	Database Systems	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science			
71	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)			Computer Science			
72	CSCI 361	Software Engineering	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science			
73	CSCI 390	Artificial Intelligence	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science			
74	CSCI 398	Directed Study	3	6				Instructor's permission required			
75	CSCI 399	Internship II	3	6				Instructor's Permission Required			
76	CSCI 399A	Internship II - A	1	2				Instructor's permission required			
77	CSCI 399F	Internship II - F	6	12				Instructor's Permission Required			
78	CSCI 408	Senior Project I	3	6				Computer Science			
79	CSCI 434	Information Security	3	6		CSCI 333 Computer Networks (1145) (D and above)		Computer Science	Biological Sciences, Chemistry, Mathematics, Physics, Robotics and Mechatronics, Undeclared SEDS, Undeclared SSH		
80	CSCI 471	Complexity and Computability	3	6	MATH 251 Discrete Mathematics (85) (C- and above)			Computer Science			
81	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)			Computer Science	Biological Sciences, Chemistry, Mathematics, Physics, Robotics and Mechatronics, Undeclared SEDS, Undeclared SSH	SSH	



82	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)			Computer Science	Biological Sciences, Chemistry, Mathematics, Physics, Robotics and Mechatronics, Undeclared SEDS, Undeclared SSH		
83	CSCI 501	Software Principles and Practice	3	6				Computer Science, Robotics	SEDS	SSH	
84	CSCI 511	Theory of Computation	3	6				Computer Science	SEDS	SSH	
85	CSCI 525	Quantum Computing	3	6				Computer Science, Physics	SEDS	SSH	
86	CSCI 545	Big Data Analytics	3	6				Computer Science	SEDS	SSH	
87	CSCI 575	Formal Methods and Applications	3	6				Computer Science	SEDS	SSH	
88	CSCI 594	Deep Learning	3	6				Computer Science	SEDS	SSH	
89	CSCI 700-0	Thesis Research	0	0							
90	CSCI 725	Advanced Quantum Computing	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS	SSH	
91	CSCI 745	Advanced Big Data Analytics	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS	SSH	
92	CSCI 794	Advanced Deep Learning	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS	SSH	
93	DS 501	Fundamentals of Data Science	3	6				Data Science	SEDS	SSH	
94	DS 507	Database Management Systems	3	6				Data Science	SEDS	SSH	
95	DS 551	Process and Project Management	3	6				Data Science	SEDS	SSH	
<b>Electrical and Computer Engineering</b>											
96	DELCE 700-0	Thesis Research	0	0				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	

97	DELCE 750	Advanced Biomedical Imaging Devices and Technologies	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	
98	DELCE 752	Optical Wireless Communications	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	
99	DELCE 753	Stochastic Processes	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	
100	DELCE 754	Optimal and Robust Control	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	
101	DELCE 755	Advanced Electromagnetics	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	
102	EEE 238	Digital Signal and Image Processing	3	6				Registration by School Administration			
103	EEE 342	Electromagnetics	3	6				Registration by School Administration			
104	EEE 345	Power Electronics	3	6				Registration by School Administration			

105	EEE 382	Antennas and Propagation	3	6				Registration by School Administration			
106	EEE 384	Digital Integrated Circuits Design	3	6	EEE 250 Microelectronic Devices and Circuits (3152) (C- and above)			Registration by School Administration			
107	EEE 437	Capstone Project 1	3	6				Registration by School Administration			
108	EEE 448	Power Transmission and Distribution plants	3	6				Registration by School Administration			
109	EEE 450	RF and Microwave Circuit Design	3	6				Registration by School Administration			
110	EEE 452	Power Systems Protection	3	6				Registration by School Administration			
111	EEE 490	Introduction to Big Data	3	6				Registration by School Administration			
112	EEE 493	Industry 4.0	3	6				Registration by School Administration			
113	EEE 494	Modern Characterizations for Semiconductor Industry	3	6				Registration by School Administration			
114	EEE 497	Signal Processing for Communications	3	6				Registration by School Administration			
115	EEE 498	Computer Networks	3	6				Registration by School Administration			
116	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, 2 year UG SEDS Electrical and Electronic Engineering	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, Undeclared SEDS	SEDS, SMG, SSH, SoM	

117	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, 2 year UG SEDS Electrical and Electronic Engineering	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, Undeclared SEDS	SEDs, SMG, SSH, SoM	
118	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, 2 year UG SEDS Electrical and Electronic Engineering	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, Undeclared SEDS	SEDs, SMG, SSH, SoM	
119	MECE 601	Master Thesis I	12	24				2 year Gr SEDS Electrical and Computer Engineering, 2 year Gr SEDS Electrical and Electronic Engineering			
120	MECE 603	Advanced Data Structures and Algorithms	3	6				1 year Gr SEDS Electrical and Computer Engineering, 1 year Gr SEDS Electrical and Electronic Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	

121	MECE 605	Statistics and Probability for Electrical and Computer Engineers	3	6				1 year Gr SEDS Electrical and Computer Engineering, 1 year Gr SEDS Electrical and Electronic Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology
122	MECE 606	Embedded Systems and Applications	3	6				1 year Gr SEDS Electrical and Computer Engineering, 1 year Gr SEDS Electrical and Electronic Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology
123	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, 2 year Gr SEDS Electrical and Electronic Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year UG SEDS (pending graduation)
124	MECE 726	Modern Semiconductor Devices and Systems	3	6				2 year Gr SEDS Electrical and Computer Engineering, 2 year Gr SEDS Electrical and Electronic Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year UG SEDS (pending graduation)

**Mechanical and Aerospace Engineering**

125	DMAE 700-0	Thesis Research	0	0				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	
126	DMAE 701	Advanced Applied Mathematics	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	
127	DMAE 765	Advanced Manufacturing Processes and Strategies	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	
128	EME 354	Advanced Control Systems	3	6	BENG 219 Control Systems (728) (D and above)			Registration by School Administration			
129	EME 358	Heat Transfer	3	6	BENG 226 Engineering Thermodynamics (1553) (D and above) AND EME 275 Fluid Mechanics I (1988) (D and above)			Registration by School Administration			
130	EME 361	Machine Design	3	6				Registration by School Administration			
131	EME 410	Aerodynamics	3	6	EME 357 Fluid Mechanics II (1280) (D and above)			Registration by School Administration			

132	EME 412	Heating, Ventilating and Air Conditioning	3	6				4 year UG SEDS Mechanical Engineering, 4 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, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared SEDS	SEDS, SMG, SSH, SoM	
133	EME 413	Computer Aided Geometric Design	3	6	EME 253 Computer Aided Engineering (1050) (C- and above)			4 year UG SEDS Mechanical Engineering, 4 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, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared SEDS	SEDS, SMG, SSH, SoM	
134	EME 451	Capstone Project 1	3	6				Registration by School Administration			
135	EME 463	Machine Dynamics II	3	6				Registration by School Administration			
136	EME 467	Vehicle Propulsion Systems	3	6				4 year UG SEDS Mechanical Engineering, 4 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, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared SEDS	SEDS, SMG, SSH, SoM	

137	ENG 100	Introduction to Engineering	3	6			1 year UG SEDS Chemical Engineering, 1 year UG SEDS Chemical and Materials Engineering, 1 year UG SEDS Civil Engineering, 1 year UG SEDS Civil and Environmental Engineering, 1 year UG SEDS Electrical and Computer Engineering, 1 year UG SEDS Electrical and Electronic Engineering, 1 year UG SEDS Mechanical Engineering, 1 year UG SEDS Mechanical and Aerospace Engineering, 1 year UG SEDS Undeclared	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, Undeclared SEDS	SEDS, SMG, SSH, SoM	
138	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 Engineering, 1 year UG SEDS Chemical and Materials Engineering, 1 year UG SEDS Civil Engineering, 1 year UG SEDS Civil and Environmental Engineering, 1 year UG SEDS Electrical and Computer Engineering, 1 year UG SEDS Electrical and Electronic Engineering, 1 year UG SEDS Mechanical Engineering, 1 year UG SEDS Mechanical and Aerospace Engineering, 1 year UG SEDS Undeclared	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, Undeclared SEDS		



139	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 Engineering, 2 year UG SEDS Chemical and Materials Engineering, 2 year UG SEDS Civil Engineering, 2 year UG SEDS Civil and Environmental Engineering, 2 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Electronic Engineering, 2 year UG SEDS Mechanical Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering, 2 year UG SEDS Undeclared	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, Undeclared SEDS	SEDs, SMG, SSH, SoM	
140	MAE 201	Computer Aided Design	3	6				2 year UG SEDS Mechanical 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, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared SEDS	SEDs, SMG, SSH, SoM	
141	MAE 457	Feasibility Analysis of Clean Energy Technologies	3	6				4 year UG SEDS Mechanical Engineering, 4 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, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared SEDS	SEDs, SMG, SSH, SoM	
142	MMAE 601	Master Thesis I	12	24	MMAE 600 Research Seminar (4703) (P)			2 year Gr SEDS Mechanical Engineering, 2 year Gr SEDS Mechanical and Aerospace Engineering			

143	MMAE 603	Modern Control Engineering	3	6				1 year Gr SEDS Mechanical Engineering, 1 year Gr SEDS Mechanical and Aerospace Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology
144	MMAE 605	Advanced Manufacturing Processes and Strategies	3	6				1 year Gr SEDS Mechanical Engineering, 1 year Gr SEDS Mechanical and Aerospace Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology
145	MMAE 710	Space Structures Design	3	6				2 year Gr SEDS Mechanical Engineering, 2 year Gr SEDS Mechanical and Aerospace Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology
146	MMAE 713	Computational Fluid Structure Interaction	3	6				2 year Gr SEDS Mechanical Engineering, 2 year Gr SEDS Mechanical and Aerospace Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology

**Robotics and Mechatronics**

147	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))			Robotics and Mechatronics, SMG	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
148	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)))			Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
149	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))			Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
150	ROBT 301	Mechanical Design I with CAD Laboratory	4	8	ROBT 201 Mechanics: Statics and Dynamics (475) (C- and above)			Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		

151	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)			Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
152	ROBT 305	Embedded Systems	3	6	ROBT 206 Microcontrollers with Lab (476) (C- and above)			Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
153	ROBT 307	Power Electronics	3	6	ROBT 204 Electrical and Electronic Circuits II with Lab (491) (C- and above)			Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
154	ROBT 308	Industrial Automation	3	6				Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
155	ROBT 401	Robot Dynamics and Control	3	6	ROBT 303 Linear Control Theory with Lab (623) (C- and above)			Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
156	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)			Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
157	ROBT 414	Human-Robot Interaction	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
158	ROBT 501	Robot Manipulation and Mobility	3	6				Robotics	SEDS		
159	ROBT 503	Dynamic Systems and Control	3	6				Robotics	SEDS		

160	ROBT 611	Industrial Robotics	3	6	ROBT 501 Robot Manipulation and Mobility (2263) (C- and above) AND CSCI 501 Software Principles and Practice (2408) (C- and above)			Robotics	SEDS		
161	ROBT 613	Brain-Machine Interfaces	3	6				Robotics	SEDS		
162	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		
163	ROBT 700-0	Thesis Research	0	0							
164	ROBT 701	Advanced Robot Manipulation and Mobility	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS		
165	ROBT 703	Advanced Optimal Control and Planning	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS		
166	ROBT 709	Advanced Robot Dynamics and Control	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS		
<b>School of Engineering</b>											
167	BENG 405	Project Management	3	6				Registration by School Administration			
168	DENG 782	Research Methods and Ethics	3	6				1 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy, Science, Engineering and Technology		
169	DENG 784	Doctoral Proposal I	0	6				Science, Engineering and Technology			
170	DENG 785	PhD Proposal Oral Defence	0	0				Science, Engineering and Technology			
171	DENG 787	Doctoral Proposal II	3	6	DENG 784 Doctoral Proposal I (1774) (P)	DENG 785 PhD Proposal Oral Defence (2604) (P)		Science, Engineering and Technology			
172	DENG 789	Doctoral Seminar I	3	6	DENG 785 PhD Proposal Oral Defence (2604) (P)			Science, Engineering and Technology			
173	DENG 790	Doctoral Seminar II	3	6	DENG 789 Doctoral Seminar I (4598) (P)			Science, Engineering and Technology			

174	DENG 791	Doctoral Seminar III	3	6	DENG 790 Doctoral Seminar II (4599) (P)			Science, Engineering and Technology			
175	DENG 794	Dissertation Research	12	24	DENG 785 PhD Proposal Oral Defence (2604) (P)			Science, Engineering and Technology			
176	DENG 795	Research at Host University	6	12	DENG 785 PhD Proposal Oral Defence (2604) (P)			Science, Engineering and Technology			
177	DENG 796	Thesis Completion	0	0				Science, Engineering and Technology			
178	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			