

Course Requirements and Registration Priorities
School of Engineering and Digital Sciences (Master), Spring 2021

#	Abbr	Title	Cr(US)	Cr(ECTS)	PreRequisite	CoRequisite	AntiRequisite	1st priority registration	2nd priority registration	3rd priority registration	4th priority registration
SEDS											
Chemical and Materials Engineering											
1	MBME 600	Research Seminar	3	6				Biomedical Engineering	Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
2	MBME 602	Master Thesis II	12	24	MBME 601 Master Thesis I (5953) (P)			Biomedical Engineering	Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
3	MBME 607	Advanced Tissue Engineering	3	6				Biomedical Engineering	Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
4	MBME 700	Strategies for Controlled Topical Delivery of Drugs	3	6				Biomedical Engineering	Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
5	MBME 705	Infectious Diseases and Antimicrobial Strategies	3	6				Biomedical Engineering	Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
6	MBME 708	Biomedical Imaging	3	6				Biomedical Engineering	Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
7	MCHME 600	Research Seminar	3	6				Chemical and Materials Engineering	Biomedical Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		

8	MCHME 602	MSc Thesis II	12	24				Chemical and Materials Engineering	Biomedical Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
9	MCHME 606	Advanced Heat and Mass Transfer	3	6				Chemical and Materials Engineering	Biomedical Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
10	MCHME 701	Advanced Chemical Thermodynamics	3	6				Chemical and Materials Engineering	Biomedical Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
11	MCHME 704	Advanced Safety, Reliability and Risk Engineering in Process Industries	3	6				Chemical and Materials Engineering	Biomedical Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
12	MCHME 707	Polymer Melt Fluid Mechanics and Processing	3	6				Chemical and Materials Engineering	Biomedical Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
13	MCHME 713	Advanced Energy Materials and their Applications	3	6				Chemical and Materials Engineering	Biomedical Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
Civil Engineering											
14	MSC 600	Research Methods and Ethics	3	6				1 year Gr SEDS Biomedical Engineering, 1 year Gr SEDS Chemical and Materials Engineering, 1 year Gr SEDS Civil and Environmental Engineering, 1 year Gr SEDS Electrical and Computer Engineering, 1 year Gr SEDS Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Mechanical and Aerospace Engineering		

15	MSC 601	Technical Communication	3	6				2 year Gr SEDS Biomedical Engineering, 2 year Gr SEDS Chemical and Materials Engineering, 2 year Gr SEDS Civil and Environmental Engineering, 2 year Gr SEDS Computer Science, 2 year Gr SEDS Electrical and Computer Engineering, 2 year Gr SEDS Mechanical and Aerospace Engineering, 2 year Gr SEDS Robotics and Mechatronics	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		
Civil and Environmental Engineering											
16	E MEM 510	Managerial Accounting	2	4				Engineering Management			
17	E MEM 511	Business Strategy	2	4				Engineering Management			
18	E MEM 513	Entrepreneurship	2	4				Engineering Management			
19	E MEM 514	Finance	2	4				Engineering Management			
20	E MEM 516	Management of Organizations	2	4				Engineering Management			
21	E MEM 517	Marketing	2	4				Engineering Management			
22	E MEM 527	Globalization and Engineering	3	6				Engineering Management			
23	E MEM 529	Capstone Project	8	16				Engineering Management			
24	E MEM 535	Managing Product and Service Development	3	6				Engineering Management			
25	E MEM 545	Business Communication	2	4				Engineering Management			
26	E MEM 548	Understanding and Predicting Consumer Behavior	2	4				Engineering Management			
27	MCEE 600	Research Seminar	3	6				Civil and Environmental Engineering	Biomedical Engineering, Chemical and Materials Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		

28	MCEE 602	MSc Thesis II	12	24				Civil and Environmental Engineering	Biomedical Engineering, Chemical and Materials Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
29	MCEE 606	Advanced Project Management	3	6				Civil and Environmental Engineering	Biomedical Engineering, Chemical and Materials Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
30	MCEE 701	Advanced Concrete Technology	3	6				Civil and Environmental Engineering	Biomedical Engineering, Chemical and Materials Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
31	MCEE 704	Contaminated Site Management and Soil Treatment Technologies	3	6				Civil and Environmental Engineering	Biomedical Engineering, Chemical and Materials Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
32	MCEE 706	Concrete Repair and Maintenance	3	6				Civil and Environmental Engineering	Biomedical Engineering, Chemical and Materials Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
33	MCEE 710	Green Building - Concept, Design, Construction, and Operation	3	6				Civil and Environmental Engineering	Biomedical Engineering, Chemical and Materials Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
34	MCEE 711	Soil Improvement and Stabilization	3	6				Civil and Environmental Engineering	Biomedical Engineering, Chemical and Materials Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
Computer Science											
35	CSCI 502	Hardware Software Co-Design	3	6	CSCI 501 Software Principles and Practice (2408) (C- and above)			Computer Science, Robotics	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering		

36	CSCI 545	Big Data Analytics	3	6				Data Science	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
37	CSCI 547	Algorithmic Trading	3	6				Computer Science, Data Science	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
38	CSCI 581	Acquisition and Analysis of Biomedical Data	3	6				Computer Science, Data Science	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
39	CSCI 591	Advanced Artificial Intelligence	3	6	CSCI 501 Software Principles and Practice (2408) (C- and above) OR DS 501 Fundamentals of Data Science (5218) (C- and above)			Computer Science	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
40	CSCI 694	Thesis	15	30				Computer Science			
41	DS 504	Data Mining and Decision Support	3	6				Data Science	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
42	DS 694	Thesis	15	30	DS 693 Thesis Proposal (5915) (P)			Data Science			
43	SEDS 502	Teaching Practicum	3	6				Computer Science, Data Science, Robotics			
44	SEDS 592	Research Seminar	3	6				Computer Science, Data Science, Robotics			

Electrical and Computer Engineering

45	MECE 602	Master Thesis II	12	24				Electrical and Computer Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
46	MECE 606	Embedded Systems and Applications	3	6				Electrical and Computer Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
47	MECE 700	Industrial and Commercial Power System	3	6				Electrical and Computer Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
48	MECE 701	Internet of Things	3	6				Electrical and Computer Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
49	MECE 704	Fundamentals of Signal Processing	3	6				Electrical and Computer Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
50	MECE 707	Advanced Electronic Circuits	3	6				Electrical and Computer Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
51	MECE 717	Pattern Recognition and Machine Learning	3	6				Electrical and Computer Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
Mechanical and Aerospace Engineering											
52	MMAE 600	Research Seminar	3	6				Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Robotics		

53	MMAE 602	Master Thesis II	12	24	MMAE 601 Master Thesis I (5014) (P)			Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Robotics		
54	MMAE 604	Advanced Computational Fluid Dynamics and Heat Transfer in Mechanical Engineering	3	6				Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Robotics		
55	MMAE 700	Advanced Statistics and Probability	3	6				Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Robotics		
56	MMAE 701	Numerical Techniques for Engineers	3	6				Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Robotics		
57	MMAE 704	Design and Manufacturing with Environmental Concern	3	6				Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Robotics		
58	MMAE 705	Design Optimization	3	6				Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Robotics		
59	MMAE 716	Digital Transformation Concepts	3	6				Engineering Management, Mechanical and Aerospace Engineering			
Robotics and Mechatronics											
60	ROBT 502	Robot Perception & Vision	3	6	ROBT 501 Robot Manipulation and Mobility (2263) (C- and above)			Robotics	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering		

61	ROBT 692	Thesis	15	30	ROBT 691 Thesis Proposal (5930) (P)			Robotics			
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