

Course Requirements and Registration Priorities
School of Engineering and Digital Sciences (Master), Spring 2022

#	Abbr	Title	Cr(US)	Cr(ECTS)	PreRequisite	CoRequisite	AntiRequisite	1st priority registration	2nd priority registration	3rd priority registration	4th priority registration
SEDS											
Chemical and Materials Engineering											
1	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, Industrial and Systems Engineering, 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, Industrial and Systems Engineering, 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, Industrial and Systems Engineering, 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, Industrial and Systems Engineering, 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, Industrial and Systems Engineering, 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, Industrial and Systems Engineering, 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, Industrial and Systems Engineering, 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, Industrial and Systems Engineering, 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, Industrial and Systems Engineering, 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, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
11	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, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
12	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, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
13	MCHME 715	Air Quality, Toxicity and Health	3	6				Chemical and Materials Engineering	Biomedical Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, 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				1 year Gr SEDS Electrical and Computer Engineering	SEDS, SMG		
Civil and Environmental Engineering											
16	EMEM 510	Managerial Accounting	2	4				Engineering Management			
17	EMEM 511	Business Strategy	2	4				Engineering Management			
18	EMEM 513	Entrepreneurship	2	4				Engineering Management			
19	EMEM 514	Finance	2	4				Engineering Management			
20	EMEM 516	Management of Organizations	2	4				Engineering Management			
21	EMEM 517	Marketing	2	4				Engineering Management			
22	EMEM 527	Globalization and Engineering	3	6				Engineering Management			
23	EMEM 529	Capstone Project	8	16				Engineering Management			
24	EMEM 543	Quality and Lean Management	3	6				Engineering Management			
25	EMEM 545	Business Communication	2	4				Engineering Management			
26	EMEM 547	Applying Industry 4.0	3	6				Instructor's Permission Required. Registration through Add Course form only!			
27	EMEM 548	Understanding and Predicting Consumer Behavior	2	4				Engineering Management			

28	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, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
29	MCEE 602	MSc Thesis II	12	24				2 year Gr SEDS Civil and Environmental Engineering			
30	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, Industrial and Systems Engineering, 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, Industrial and Systems Engineering, 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, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
33	MCEE 707	Geotechnical Earthquake Engineering	3	6				Civil and Environmental Engineering	Biomedical Engineering, Chemical and Materials Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
34	MCEE 712	Advanced Pavement Design, Analysis, and Rehabilitation	3	6				Civil and Environmental Engineering	Biomedical Engineering, Chemical and Materials Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, 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, Industrial and Systems Engineering, 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, Industrial and Systems Engineering, 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, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
38	CSCI 572	Cognitive Modelling for Human-Computer Interaction	3	6				Computer Science, Data Science	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
39	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, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
40	CSCI 591	Advanced Artificial Intelligence	3	6	CSCI 501 Software Principles and Practice (2408) (C- and above) OR DS 501 Fundamentals of Data Science (5218) (C- and above)			Computer Science, Data Science	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
41	CSCI 694	Thesis	15	30				Computer Science			

42	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, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
43	DS 694	Thesis	15	30	DS 693 Thesis Proposal (5915) (P)			Data Science			
44	SEDS 502	Teaching Practicum	3	6				Computer Science, Data Science, Robotics			
45	SEDS 592	Research Seminar	3	6				Computer Science, Data Science, Robotics			
Electrical and Computer Engineering											
46	MECE 600	Research Seminar	3	6				1 year Gr SEDS Electrical and Computer Engineering			
47	MECE 602	Master Thesis II	12	24				2 year Gr SEDS Electrical and Computer Engineering			
48	MECE 606	Embedded Systems and Applications	3	6							
49	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, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
50	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, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
51	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, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		

52	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, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
Mechanical and Aerospace Engineering											
53	MMAE 600	Research Seminar	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, Robotics		
54	MMAE 602	Master Thesis II	12	24	MMAE 601 Master Thesis I (5014) (P)			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, Robotics		
55	MMAE 604	Advanced Computational Fluid Dynamics and Heat Transfer in Mechanical 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, Robotics		
56	MMAE 700	Advanced Statistics and Probability	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, Robotics		
57	MMAE 701	Numerical Techniques for Engineers	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, Robotics		

58	MMAE 704	Design and Manufacturing with Environmental Concern	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, Robotics		
59	MMAE 705	Design Optimization	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, Robotics		
60	MMAE 710	Space Structures Design	3	6				SEDS, SMG			
61	MMAE 716	Digital Transformation Concepts	3	6				1 year Gr SEDS Engineering Management, 1 year Gr SEDS Mechanical and Aerospace Engineering, Engineering Management	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
Robotics and Mechatronics											
62	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, Industrial and Systems Engineering, Mechanical and Aerospace Engineering		
63	ROBT 692	Thesis	15	30	ROBT 691 Thesis Proposal (5930) (P)			Robotics			