

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

#	Abbr	Title	Cr(US)	Cr(ECTS)	PreRequisite	CoRequisite	AntiRequisite	1st priority registration	2nd priority registration	3rd priority registration	4th priority registration
<b>SEDS</b>											
<b>Chemical and Materials Engineering</b>											
1	DCHME 700-0	Thesis Research	0	0				Chemical Engineering	Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
2	DCHME 701	Current Research Literature	4	8				Chemical Engineering	Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
3	DCHME 751	Advanced Safety, Reliability and Risk Engineering in Process Industries	4	8				Chemical Engineering	Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
4	DCHME 752	Polymer Melt Fluid Mechanics and Processing	4	8				Chemical Engineering	Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
5	DCHME 757	Advanced Chemical Engineering Thermodynamics	4	8				Chemical Engineering	Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
6	DCHME 763	Advanced Heat and Mass Transfer	4	8				Chemical Engineering	Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
7	DCHME 766	Advanced Energy Materials and Their Application	4	8				Chemical Engineering	Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
<b>Civil and Environmental Engineering</b>											
8	DCEE 700-0	Thesis Research	0	0				Civil Engineering	Chemical Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		

9	DCEE 701	Current Research Literature	4	8				Civil Engineering	Chemical Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
10	DCEE 755	Contaminated Site Management and Soil Treatment Technologies	4	8				Civil Engineering	Chemical Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
11	DCEE 762	Advanced Project Management	4	8				Civil Engineering	Chemical Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
12	DCEE 765	Concrete Repair and Maintenance	4	8				Civil Engineering	Chemical Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
13	DCEE 770	Green Building - Concept, Design, Construction, and Operation	4	8				Civil Engineering	Chemical Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
14	DCEE 771	Soil Improvement and Stabilization	4	8				Civil Engineering	Chemical Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
<b>Computer Science</b>											
15	CSCI 700-0	Thesis Research	0	0				Computer Science			
16	CSCI 702	Advanced Hardware/Software Co-Design	4	8				Computer Science , Robotics Engineering	Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Science, Engineering and Technology		
17	CSCI 722	Current Research Literature	4	8				Computer Science			
18	CSCI 745	Advanced Big Data Analytics	4	8				Computer Science	Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
19	CSCI 747	Advanced Algorithmic Trading	4	8				Computer Science	Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		

20	CSCI 781	Advanced Acquisition and Analysis of Biomedical Data	4	8				Computer Science	Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
<b>Electrical and Computer Engineering</b>											
21	DELCE 700-0	Thesis Research	0	0				Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
22	DELCE 701	Current Research Literature	4	8				Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
23	DELCE 758	Advanced Industrial and Commercial Energy Systems	4	8				Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
24	DELCE 759	Advanced Pattern Recognition and Machine Learning	4	8				Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
25	DELCE 762	Fundamentals of Signal Processing	4	8				Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
26	DELCE 763	Advanced Electronic Circuits	4	8				Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
<b>Mechanical and Aerospace Engineering</b>											
27	DMAE 700-0	Thesis Research	0	0				Mechanical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Robotics Engineering, Science, Engineering and Technology		
28	DMAE 702	Current Research Literature	4	8				Mechanical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Robotics Engineering, Science, Engineering and Technology		

29	DMAE 703	Numerical Techniques for Engineers	4	8				Mechanical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Robotics Engineering, Science, Engineering and Technology		
30	DMAE 757	Design Optimization	4	8				Mechanical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Robotics Engineering, Science, Engineering and Technology		
31	DMAE 769	Advanced Computational Fluid Dynamics and Heat Transfer in Mechanical Engineering	4	8				Mechanical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Robotics Engineering, Science, Engineering and Technology		
32	DMAE 770	Digital Transformation Concepts	4	8				Mechanical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Robotics Engineering, Science, Engineering and Technology		
<b>Robotics and Mechatronics</b>											
33	ROBT 700-0	Thesis Research	0	0				Robotics Engineering			
34	ROBT 702	Advanced Robot Perception and Vision	4	8				Robotics Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Science, Engineering and Technology		
35	ROBT 722	Current Research Literature	4	8				Robotics Engineering			
<b>School of Engineering</b>											
36	DENG 789	Doctoral Seminar I	3	6	DENG 785 PhD Proposal Oral Defence (2604) (P)			Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology			
37	DENG 791	Doctoral Seminar III	3	6	DENG 790 Doctoral Seminar II (4599) (P)			Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology			

38	DENG 792	Doctoral Seminar IV	3	6	DENG 791 Doctoral Seminar III (4600) (P)			Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology			
39	DENG 793	Doctoral Seminar V	3	6	DENG 792 Doctoral Seminar IV (4601) (P)			Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology			
40	DENG 794	Dissertation Research	12	24	DENG 785 PhD Proposal Oral Defence (2604) (P)			Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology			
41	DENG 796	Thesis Completion	0	0				Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology			
42	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)			Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology			

43	DENG 798	Doctoral Seminar VI	3	6	DENG 793 Doctoral Seminar V (4602) (P)			Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
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