

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

#	Abbr	Title	Cr(US)	Cr(ECTS)	PreRequisite	CoRequisite	AntiRequisite	1st priority registration	2nd priority registration	3rd priority registration	4th priority registration
SMG											
School of Mining and Geosciences											
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	
SEDS											
Chemical and Materials Engineering											
2	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	
3	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	
4	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	
5	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	
Civil and Environmental Engineering											

6	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	
7	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	
8	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	
9	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		
10	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	
Computer Science											
11	CSCI 700-0	Thesis Research	0	0							
12	CSCI 725	Advanced Quantum Computing	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS	SSH	
13	CSCI 745	Advanced Big Data Analytics	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS	SSH	
14	CSCI 794	Advanced Deep Learning	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS	SSH	
Electrical and Computer Engineering											

15	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	
16	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	
17	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	
18	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	
19	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	
20	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	

Mechanical and Aerospace Engineering

21	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	
22	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	
23	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	
Robotics and Mechatronics											
24	ROBT 700-0	Thesis Research	0	0							
25	ROBT 701	Advanced Robot Manipulation and Mobility	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS		
26	ROBT 703	Advanced Optimal Control and Planning	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS		
27	ROBT 709	Advanced Robot Dynamics and Control	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS		
School of Engineering											
28	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		
29	DENG 784	Doctoral Proposal I	0	6				Science, Engineering and Technology			
30	DENG 785	PhD Proposal Oral Defence	0	0				Science, Engineering and Technology			
31	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			

32	DENG 789	Doctoral Seminar I	3	6	DENG 785 PhD Proposal Oral Defence (2604) (P)			Science, Engineering and Technology			
33	DENG 790	Doctoral Seminar II	3	6	DENG 789 Doctoral Seminar I (4598) (P)			Science, Engineering and Technology			
34	DENG 791	Doctoral Seminar III	3	6	DENG 790 Doctoral Seminar II (4599) (P)			Science, Engineering and Technology			
35	DENG 794	Dissertation Research	12	24	DENG 785 PhD Proposal Oral Defence (2604) (P)			Science, Engineering and Technology			
36	DENG 795	Research at Host University	6	12	DENG 785 PhD Proposal Oral Defence (2604) (P)			Science, Engineering and Technology			
37	DENG 796	Thesis Completion	0	0				Science, Engineering and Technology			
38	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			