

Course Requirements and Registration Priorities (PhD), Spring 2021

#	Abbr	Title	Cr(US)	Cr(ECTS)	PreRequisite	CoRequisite	AntiRequisite	1st priority registration	2nd priority registration	3rd priority registration	4th priority registration
GSPP											
PhD in Public Policy											
1	DPP 600	Developing Dissertation Research	0	0				Public Policy			
2	DPP 602	Macroeconomics in Public Sector	4	8				1 year GSPP PhD Public Policy			
3	DPP 613	Research Design (qualitative and quantitative)	4	8				1 year GSPP PhD Public Policy			
4	DPP 615	Law, Governance and Public Policy	4	8				1 year GSPP PhD Public Policy			
5	DPP 631	Politics of Public Policy	4	8				1 year GSPP PhD Public Policy			
6	DPP 689	PhD Qualifying Examinations	0	0				2 year GSPP PhD Public Policy			
7	DPP 690	Thesis Preparation and Writing	60	120	DPP 689 PhD Qualifying Examinations (4830) (P) AND DPP 699 Thesis Design and Written Proposal (4831) (C- and above)						
8	DPP 690-0	Thesis Preparation and Writing	0	0				3 year GSPP PhD Public Policy, 4 year GSPP			
9	DPP 699	Thesis Design and Written Proposal	6	12				2 year GSPP PhD Public Policy			
GSE											
MSc Educational Leadership HE											
10	EDUC 591	Academic English Writing for Doctoral Students II	3	6				2 year GSE PhD Education			
11	EDUC 592	Academic English Writing for Doctoral Students III	3	6				4 year GSE PhD Education			
12	EDUC 704	Advanced Methods of Education Research	3	6				1 year GSE PhD Education			
13	EDUC 705	Advanced Methods of Education Research: Qualitative Methods	3	6				1 year GSE PhD Education			
14	EDUC 711	Globalisation and Education	3	6				1 year GSE PhD Education			

15	EDUC 720	Philosophy of Education	3	6				1 year GSE PhD Education			
16	EDUC 728	Exploring the Research Topic 2	0	0				1 year GSE PhD Education			
17	EDUC 730	Preparation for Proposal Defence	0	0				2 year GSE PhD Education			
18	EDUC 740	Doctoral Seminar	3	6				2 year GSE PhD Education			
19	EDUC 750	Dissertation Research	9	18				3 year GSE PhD Education, 4 year GSE PhD Education			
20	EDUC 760	Teaching and Learning in the University Context: Curriculum, Pedagogy and Assessment	3	6				3 year GSE PhD Education			
SoM											
PHD											
21	PHDBS 701-0	Thesis Research	0	0				1 year PhD SOM BioMed Sciences, 2 year PhD SOM BioMed Sciences			
22	PHDBS 702	Molecular Basis of Health and Disease	4	8				1 year PhD SOM BioMed Sciences, 1 year PhD SSH Life Sciences, 2 year PhD SOM BioMed Sciences			
23	PHDBS 703	Biomedical Research Analysis and Design of Experimentation	4	8				1 year PhD SOM BioMed Sciences, 1 year PhD SSH Life Sciences, 2 year PhD SOM BioMed Sciences			
24	PHDBS 704-0	NUSOM seminar	0	0				1 year PhD SOM BioMed Sciences, 1 year PhD SSH Life Sciences, 2 year PhD SOM BioMed Sciences	Chemical Engineering, Civil Engineering, Computer Science , Education, Electrical Engineering, Eurasian Studies, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Public Policy, Robotics Engineering, Science, Engineering and Technology		
25	PHDBS 706	Advanced Biomedical Research Analysis and Design of Experimentation	4	8				2 year PhD SOM BioMed Sciences			
26	PHDBS 707	Publication Analysis	4	8				2 year PhD SOM BioMed Sciences			
27	PHDBS 708	Writing for Biomedical Sciences	3	6				2 year PhD SOM BioMed Sciences			

SMG											
Mining Engineering											
28	MINE 702	Current Research Literature	4	8				Mining Engineering			
29	MINE 703	Advanced Mining Systems	4	8				Mining Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
30	MINE 803	Advanced Geometallurgy	4	8				Mining Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
31	MINE 806	Advanced Numerical Methods	4	8				Mining Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Petroleum Engineering, Robotics Engineering, Science, Engineering and Technology		
32	MINE 890-0	Thesis Research	0	0				Mining Engineering			
Petroleum Engineering											
33	PETE 702	Current Research Literature	4	8				Petroleum Engineering			
34	PETE 703	Advanced Reservoir Engineering	4	8				Petroleum Engineering	Mining Engineering, SEDS, SSH		
35	PETE 801	Advanced Reservoir Simulation	4	8				Petroleum Engineering	Mining Engineering, SEDS, SSH		
36	PETE 803	Advanced Enhanced Oil Recovery	4	8				Petroleum Engineering	Mining Engineering, SEDS, SSH		
37	PETE 890	Thesis Research	0	0				Petroleum Engineering			
38	PETE 899	Special topics in Petroleum Engineering: Unconventional Resources Drilling	4	8				Petroleum Engineering	Mining Engineering, SEDS, SSH		
SSH											
Area Studies											
39	EAS 703	Elective in Eurasian Social Sciences	4	8							
40	EAS 708	Proseminar in Eurasian Humanities	4	8							

41	EAS 709	Proseminar in Eurasian Social Sciences	4	8							
42	EAS 712	Doctoral Seminar in Eurasian Studies II	4	8							
43	EAS 713	Qualifying Examination	0	0							
44	EAS 800-0	Dissertation Research in Eurasian Studies	0	0							
Biological Science											
45	BIOL 800-0	Thesis Research	0	0				Life Sciences			
46	BIOL 830	Advanced Neuroscience	4	8				Biomedical Sciences, Life Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
47	BIOL 837	Advanced Optical and Electron Microscopy	4	8				Biomedical Sciences, Life Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
48	BIOL 870	Advanced Biotechnology	4	8				Biomedical Sciences, Life Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
49	BIOL 880	Applied Bioinformatics	4	8				Biomedical Sciences, Life Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
50	BIOL 891	Cellular Biophysics	4	8				Biomedical Sciences, Life Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
Languages, Literature and Linguistics											
51	LING 772	Language Ideologies	4	8				SSH		GSB, GSE, GSPP, SEDS, SMG, SoM	
52	WLL 740	Oral Epic in Central Asian	4	8			WLL 440 Oral Epic in Central Asia (4016) (C- and above) OR WLL 540 Oral Epic in Central Asia (4017) (C- and above)				
Mathematics											
53	MATH 700-0	Thesis Research	0	0				Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
54	MATH 702	Functional Analysis with Applications	4	8				Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
55	MATH 722	Advanced Partial Differential Equations	4	8			MATH 701 Real Analysis (5489) (B and above)	Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	

56	MATH 751	Probability Theory	4	8				Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
57	MATH 791	Topics in Mathematics	4	8				Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
Physics											
58	PHYS 700-0	Thesis Research	0	0				Physics			
59	PHYS 701	Current Research Literature	3	6				Physics			
60	PHYS 710	Quantum Mechanics	4	8				Physics	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
61	PHYS 720	Statistical Physics	4	8				Physics	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
62	PHYS 774	Lasers and Photonics	4	8				Physics	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
Sociology and Anthropology											
63	SOC 725	COVID-19: The sociocultural aspects of a pandemic	4	8				GSB, GSE, GSPP, SEDS, SMG, SSH, SoM			
SEDS											
Chemical and Materials Engineering											
64	DCHME 700-0	Thesis Research	0	0				Chemical Engineering	Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
65	DCHME 701	Current Research Literature	4	8				Chemical Engineering	Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
66	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		
67	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		

68	DCHME 757	Advanced Chemical Engineering Thermodynamics	4	8				Chemical Engineering	Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
69	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		
70	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		
Civil and Environmental Engineering											
71	DCEE 700-0	Thesis Research	0	0				Civil Engineering	Chemical Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
72	DCEE 701	Current Research Literature	4	8				Civil Engineering	Chemical Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
73	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		
74	DCEE 762	Advanced Project Management	4	8				Civil Engineering	Chemical Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
75	DCEE 765	Concrete Repair and Maintenance	4	8				Civil Engineering	Chemical Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		

76	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		
77	DCEE 771	Soil Improvement and Stabilization	4	8				Civil Engineering	Chemical Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
Computer Science											
78	CSCI 700-0	Thesis Research	0	0				Computer Science			
79	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		
80	CSCI 722	Current Research Literature	4	8				Computer Science			
81	CSCI 745	Advanced Big Data Analytics	4	8				Computer Science	Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
82	CSCI 747	Advanced Algorithmic Trading	4	8				Computer Science	Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
83	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		
Electrical and Computer Engineering											
84	DELCE 700-0	Thesis Research	0	0				Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		

85	DELCE 701	Current Research Literature	4	8				Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
86	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		
87	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		
88	DELCE 762	Fundamentals of Signal Processing	4	8				Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
89	DELCE 763	Advanced Electronic Circuits	4	8				Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
Mechanical and Aerospace Engineering											
90	DMAE 700-0	Thesis Research	0	0				Mechanical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Robotics Engineering, Science, Engineering and Technology		
91	DMAE 702	Current Research Literature	4	8				Mechanical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Robotics Engineering, Science, Engineering and Technology		
92	DMAE 703	Numerical Techniques for Engineers	4	8				Mechanical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Robotics Engineering, Science, Engineering and Technology		

93	DMAE 757	Design Optimization	4	8				Mechanical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Robotics Engineering, Science, Engineering and Technology		
94	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		
95	DMAE 770	Digital Transformation Concepts	4	8				Mechanical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Robotics Engineering, Science, Engineering and Technology		
Robotics and Mechatronics											
96	ROBT 700-0	Thesis Research	0	0				Robotics Engineering			
97	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		
98	ROBT 722	Current Research Literature	4	8				Robotics Engineering			
School of Engineering											
99	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		
100	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		

101	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			
102	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			
103	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			
104	DENG 796	Thesis Completion	0	0				Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology			
105	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			

106	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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