

Course Requirements and Registration Priorities (PhD), Spring 2022

#	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	66	132	DPP 689 PhD Qualifying Examinations (4830) (P) AND DPP 699 Thesis Design and Written Proposal (4831) (B- and above)						
8	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)			Instructor's Permission Required. Registration through Add Course form only!			
9	DPP 690-0	Thesis Preparation and Writing	0	0				3 year GSPP PhD Public Policy, 4 year GSPP PhD Public Policy			
10	DPP 699	Thesis Design and Written Proposal	6	12				2 year GSPP PhD Public Policy			
GSE											
MSc Educational Leadership HE											
11	EDUC 591	Academic English Writing for Doctoral Students II	3	6				2 year GSE PhD Education			

12	EDUC 592	Academic English Writing for Doctoral Students III	3	6				4 year GSE PhD Education		
13	EDUC 704	Advanced Methods of Education Research	3	6				1 year GSE PhD Education		
14	EDUC 705	Advanced Methods of Education Research: Qualitative Methods	3	6				1 year GSE PhD Education		
15	EDUC 711	Globalisation and Education	3	6				1 year GSE PhD Education		
16	EDUC 720	Philosophy of Education	3	6				1 year GSE PhD Education		
17	EDUC 728	Exploring the Research Topic 2	0	0				1 year GSE PhD Education		
18	EDUC 730	Preparation for Proposal Defence	0	0				2 year GSE PhD Education, 4 year GSE PhD Education		
19	EDUC 740	Doctoral Seminar	3	6				2 year GSE PhD Education, 3 year GSE PhD Education		
20	EDUC 750	Dissertation Research	9	18				3 year GSE PhD Education, 4 year GSE PhD Education		
21	EDUC 760	Teaching and Learning in the University Context: Curriculum, Pedagogy and Assessment	3	6				3 year GSE PhD Education		
SoM										
PHD										
22	PHDBS 701-0	Thesis Research	0	0				Biomedical Sciences		
23	PHDBS 702	Molecular Basis of Health and Disease	4	8				Biomedical Sciences	Life Sciences	
24	PHDBS 703	Biomedical Research Analysis and Design of Experimentation	4	8				Biomedical Sciences	Life Sciences	
25	PHDBS 704-0	NUSOM seminar	0	0				Biomedical Sciences	Life Sciences	
26	PHDBS 706	Advanced Biomedical Research Analysis and Design of Experimentation	4	8				Biomedical Sciences		
27	PHDBS 707	Publication Analysis	4	8				Biomedical Sciences		
28	PHDBS 708	Writing for Biomedical Sciences	3	6				Biomedical Sciences	Life Sciences	
29	PHDBS 712	Molecular Immunology	2	4				Biomedical Sciences	Life Sciences	

30	PHDBS 713	From the Bench to the Bedside: Drug Development and Clinical Trials	3	6				Biomedical Sciences	Life Sciences		
31	PHDBS 714	Molecular Basis of Chronic Inflammation	1	2	PHDBS 712 Molecular Immunology (6518) (C+ and above)			Biomedical Sciences	Life Sciences		
32	PHDBS 719	Systemic Pharmacology	3	6				Biomedical Sciences			
33	PHDBS 723	Drug addiction and toxicology	3	6				Biomedical Sciences			
SMG											
Mining Engineering											
34	MINE 702	Current Research Literature	4	8				Mining Engineering			
35	MINE 703	Advanced Mining Systems	4	8				Mining Engineering	Petroleum Engineering, SEDS, SSH		
36	MINE 803	Advanced Geometallurgy	4	8				Mining Engineering	Petroleum Engineering, SEDS, SSH		
37	MINE 890-0	Thesis Research	0	0				Mining Engineering			
Petroleum Engineering											
38	PETE 701	Advanced Well Engineering	4	8				Petroleum Engineering	Mining Engineering, SEDS, SSH		
39	PETE 702	Current Research Literature	4	8				Petroleum Engineering			
40	PETE 703	Advanced Reservoir Engineering	4	8				Petroleum Engineering	Mining Engineering, SEDS, SSH		
41	PETE 801	Advanced Reservoir Simulation	4	8				Petroleum Engineering	Mining Engineering, SEDS, SSH		
42	PETE 803	Advanced Enhanced Oil Recovery	4	8				Petroleum Engineering	Mining Engineering, SEDS, SSH		
43	PETE 890	Thesis Research	0	0				Petroleum Engineering			
SSH											
Area Studies											
44	EAS 702	Elective in Eurasian Humanities	4	8				Instructor's Permission Required. Registration through Add Course form only!			
45	EAS 703	Elective in Eurasian Social Sciences	4	8				Instructor's Permission Required. Registration through Add Course form only!			

46	EAS 704	Elective 2 in Eurasian Humanities	4	8				Instructor's Permission Required. Registration through Add Course form only!			
47	EAS 708	Proseminar in Eurasian Humanities	4	8				Instructor's Permission Required. Registration through Add Course form only!			
48	EAS 709	Proseminar in Eurasian Social Sciences	4	8				Instructor's Permission Required. Registration through Add Course form only!			
49	EAS 710	Independent Study in Eurasian Studies	4	8				Instructor's Permission Required. Registration through Add Course form only!			
50	EAS 712	Doctoral Seminar in Eurasian Studies II	4	8				Instructor's Permission Required. Registration through Add Course form only!			
51	EAS 713	Qualifying Examination	0	0				Instructor's Permission Required. Registration through Add Course form only!			
52	EAS 800-0	Dissertation Research in Eurasian Studies	0	0				Instructor's Permission Required. Registration through Add Course form only!			
Biological Science											
53	BIOL 800-0	Thesis Research	0	0				Life Sciences			
54	BIOL 830	Advanced Neuroscience	4	8				Life Sciences	Biomedical Sciences, SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
55	BIOL 837	Advanced Optical and Electron Microscopy	4	8				Life Sciences	Biomedical Sciences, SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
56	BIOL 870	Advanced Biotechnology	4	8				Life Sciences	Biomedical Sciences, SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
57	BIOL 880	Applied Bioinformatics	4	8				Life Sciences	Biomedical Sciences, SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
58	BIOL 891	Cellular Biophysics	4	8				Life Sciences	Biomedical Sciences, SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
Kazakh Language and Turkic Studies											
59	TUR 775	Doctoral Topic in Turkic Studies	4	8				GSB, GSE, GSPP, SEDS, SMG, SSH, SoM			

Languages, Literature and Linguistics

60	LING 772	Language Ideologies	4	8				SSH	GSB, GSE, GSPP, SEDS, SMG, SoM		
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Mathematics

61	MATH 700-0	Thesis Research	0	0				Mathematics			
62	MATH 702	Functional Analysis with Applications	4	8				Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
63	MATH 742	Advanced statistical programming	4	8				Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
64	MATH 761	Mathematical Finance	4	8				Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
65	MATH 791	Topics in Mathematics	4	8				Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	

Physics

66	PHYS 700-0	Thesis Research	0	0				Physics			
67	PHYS 701	Current Research Literature	3	6				Physics			
68	PHYS 710	Quantum Mechanics	4	8				Physics	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
69	PHYS 720	Statistical Physics	4	8				Physics	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
70	PHYS 763	General Relativity	4	8				Physics	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
71	PHYS 770	Introduction to Optoelectronics	4	8				Physics	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		

SEDS

Chemical and Materials Engineering

72	DCHME 700-0	Thesis Research	0	0				Chemical Engineering	Civil Engineering, Computer Science, Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
73	DCHME 701	Current Research Literature	4	8				Chemical Engineering	Civil Engineering, Computer Science, Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		

74	DCHME 715	Air Quality, Toxicity and Health	4	8				Chemical Engineering	Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
75	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		
76	DCHME 757	Advanced Chemical Engineering Thermodynamics	4	8				Chemical Engineering	Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
77	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		
78	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											
79	DCEE 700-0	Thesis Research	0	0				Civil Engineering	Chemical Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
80	DCEE 701	Current Research Literature	4	8				Civil Engineering	Chemical Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
81	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		

82	DCEE 759	Geotechnical Earthquake Engineering	4	8				Civil Engineering	Chemical Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
83	DCEE 762	Advanced Project Management	4	8				Civil Engineering	Chemical Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
84	DCEE 765	Concrete Repair and Maintenance	4	8				Civil Engineering	Chemical Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
85	DCEE 766	Advanced Pavement Design, Analysis, and Rehabilitation	4	8				Civil Engineering	Chemical Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
Computer Science											
86	CSCI 700-0	Thesis Research	0	0				Computer Science			
87	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		
88	CSCI 722	Current Research Literature	4	8				Computer Science			
89	CSCI 745	Advanced Big Data Analytics	4	8				Computer Science	Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
90	CSCI 747	Advanced Algorithmic Trading	4	8				Computer Science	Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		

91	CSCI 772	Advanced Cognitive Modelling for Human-Computer Interaction	4	8				Computer Science	Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
92	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		
93	CSCI 791	Advanced Artificial Reasoning and Problem solving	4	8				Computer Science	Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
94	DS 704	Advanced Data Mining and Decision Support	4	8				Computer Science	Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
Electrical and Computer Engineering											
95	DELCE 700-0	Thesis Research	0	0				Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
96	DELCE 701	Current Research Literature	4	8				Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
97	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		
98	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		

99	DELCE 762	Fundamentals of Signal Processing	4	8				Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
100	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											
101	DMAE 700-0	Thesis Research	0	0				Mechanical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Robotics Engineering, Science, Engineering and Technology		
102	DMAE 702	Current Research Literature	4	8				Mechanical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Robotics Engineering, Science, Engineering and Technology		
103	DMAE 703	Numerical Techniques for Engineers	4	8				Mechanical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mining Engineering, Petroleum Engineering, Robotics Engineering, Science, Engineering and Technology		
104	DMAE 750	Advanced Statistics and Probability	4	8			MSC 615 Advanced Statistics and Probability (2394) (B- and above)	Mechanical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Robotics Engineering, Science, Engineering and Technology		
105	DMAE 756	Design and Manufacturing with Environmental Concern	4	8				Mechanical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Robotics Engineering, Science, Engineering and Technology		
106	DMAE 757	Design Optimization	4	8				Mechanical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Robotics Engineering, Science, Engineering and Technology		

107	DMAE 759	Space Structure Design	4	8				Mechanical Engineering, Science, Engineering and Technology			
108	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		
Robotics and Mechatronics											
109	ROBT 700-0	Thesis Research	0	0				Robotics Engineering			
110	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		
111	ROBT 722	Current Research Literature	4	8				Robotics Engineering			
School of Engineering											
112	DENG 700-0	Thesis Research	0	0				Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology			
113	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			
114	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			

115	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			
116	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			
117	DENG 796	Thesis Completion	0	0				Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology			
118	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			
119	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			
120	DENG 799	Doctoral Seminar VII	3	6	DENG 798 Doctoral Seminar VI (4607) (P)			Science, Engineering and Technology			