

**Course Requirements and Registration Priorities  
(Graduate: Master), Fall 2018**

#	Abbr	Title	Cr(US)	Cr(ECTS)	PreRequisite	CoRequisite	AntiRequisite	1st priority registration	2nd priority registration	3rd priority registration	4th priority registration
<b>GSB</b>											
<b>GSB</b>											
1	GSBF 501	Team Building and Business Communications	1	2							
2	GSBF 511	Statistical Methods	2	4							
3	GSBF 512	Principles of Finance	2	4							
4	GSBF 516	Financial Markets and Institutions	2	4							
5	GSBF 535	Insurance & Actuarial Science	2	4							
6	GSBF 550	Master's Thesis	9	18							
7	MBA 01	Consequential Leadership	1	2							
8	MBA 02	Business Mathematics and Business Computer Application	1	2							
9	MBA 03	Financial Accounting	2	4							
10	MBA 04	Probability and Statistics	2	4							
11	MBA 05	Business Communication	2	4							
12	MBA 07	Managerial Effectiveness	2	4							
13	MBA 09	Marketing Management	2	4							
14	MBA 16	Entrepreneurship	2	4							
15	MBA 19	Distinguished Speaker Series	0	1							
16	MBA 20	Practicum Project	2.5	5							
17	MBAE 5	Competitive Analysis	2	4							
18	MBAE 6	International Finance	2	4							
19	MBAE 7	Supply Chain Management	2	4							
20	MBAE 9	Marketing Strategy	2	4							
21	MSF 01	Financial Modeling	2	4							
22	MSF 03	Advanced Econometrics	2	4							
23	MSF 04	Private Equity	2	4							
<b>GSPP</b>											
<b>GSPP</b>											
24	MPA 602	Public Administration in Theory and Practice	4	8							
25	MPA 603	Economic Applications for Public Managers	4	8							
26	MPA 605	Research Methods for Decision Making	4	8							

27	MPA 622	Public Policy and Economics of Health Systems	4	8				2 year GSPP Public Administration	GSPP	GSB, GSE, SEng, SHSS, SMG, SST, SoM
28	MPA 623	Law and Development	4	8				2 year GSPP Public Administration	GSPP	GSB, GSE, SEng, SHSS, SMG, SST, SoM
29	MPA 637	Comparative Policy-Making and Public Policy	4	8				2 year GSPP Public Administration	GSPP	GSB, GSE, SEng, SHSS, SMG, SST, SoM
30	MPA 699	Master's Project with Overseas Component	0	0						
31	MPE 617	Institutions and development policies	4	8				2 year GSPP Public Policy	GSPP	GSB, GSE, SEng, SHSS, SMG, SST, SoM
32	MPE 625	Ethics and Public Policy	4	8				2 year GSPP Public Administration	GSPP	GSB, GSE, SEng, SHSS, SMG, SST, SoM
33	MPE 639	International Financial Policy	4	8				2 year GSPP Public Administration	GSPP	GSB, GSE, SEng, SHSS, SMG, SST, SoM
34	MPE 685	Water Resources Policy and Management	4	8				2 year GSPP Public Administration	GSPP	GSB, GSE, SEng, SHSS, SMG, SST, SoM
35	MPP 601	Microeconomics and Public Policy	4	8						
36	MPP 611	Statistical Techniques for Public Policy	4	8						
37	MPP 612	Public Policy Research and Evaluation	4	8						
38	MPP 621	Introduction to Public Policy and Analysis	4	8						
39	MPP 625	Central Asian politics: Comparative Analysis	4	8				2 year GSPP Public Policy	GSPP	GSB, GSE, SEng, SHSS, SMG, SST, SoM
40	MPP 631	Politics and Public Policy	4	8						
41	MPP 670	Behavioral Economics and Public Policy	4	8	MPP 601 Microeconomics and Public Policy (1449) (C- and above) OR MPA 603 Economic Applications for Public Managers (2074) (C- and above)			2 year GSPP Public Policy	GSPP	GSB, GSE, SEng, SHSS, SMG, SST, SoM
42	MPP 687	Science, Technology, and Public Policy	4	8				2 year GSPP Public Policy	GSPP	GSB, GSE, SEng, SHSS, SMG, SST, SoM

**GSE**

43	EDHE 609	Introduction to Educational Leadership: Higher Education	3	6				1 year GSE Educ.Leadership			
44	EDHE 610	Applying Educational Leadership in Kazakhstan	3	6				1 year GSE Educ.Leadership			
45	EDHE 691	Thesis Seminar II	3	6				2 year GSE Educ.Leadership			
46	EDIE 609	Introduction to Educational Leadership: Inclusive Education	3	6				1 year GSE Educ.Leadership			
47	EDIE 651	Inclusive Education: Policy Perspectives	3	6				1 year GSE Educ.Leadership			
48	EDIE 652	Curriculum Design: perspectives on Addressing Barriers to Teaching and Learning (Including SEN)	3	6				1 year GSE Educ.Leadership			
49	EDIE 691	Thesis Seminar II	3	6				2 year GSE Educ.Leadership			
50	EDML 601	Introduction to Linguistics	3	6				1 year GSE MA in Multil.Education			
51	EDML 610	Foundations of Multilingual Education	3	6				1 year GSE MA in Multil.Education			
52	EDML 613	The Multilingual School	3	6				2 year GSE MA in Multil.Education			
53	EDML 620	Language and Literacy Development	3	6				2 year GSE MA in Multil.Education			
54	EDML 690	Thesis Research I	3	6				2 year GSE MA in Multil.Education			
55	EDSE 609	Introduction to Educational Leadership: School Education	3	6				1 year GSE Educ.Leadership			
56	EDSE 636	Preparing Children for the Future: Skills and Employability	3	6				1 year GSE Educ.Leadership			
57	EDSE 637	Student Discourse and Argumentation: Theories, Practices and Policies	3	6				1 year GSE Educ.Leadership			
58	EDSE 691	Thesis Seminar II	3	6				2 year GSE Educ.Leadership			
59	EDUC 505	Academic English 1	1.5	3				1 year GSE Educ.Leadership			
60	EDUC 507	Academic English III	1.5	3				2 year GSE Educ.Leadership			
61	EDUC 510	Advanced English for Education Professionals I	3	6				1 year GSE MA in Multil.Education			
62	EDUC 512	English for Thesis Writing I	3	6				2 year GSE MA in Multil.Education			
63	EDUC 571	Basic Kazakh	3	6				1 year GSE Educ.Leadership			

64	EDUC 572	Kazakh for Professional Purposes	3	6					2 year GSE Educ.Leadership		
65	EDUC 600	Research Methods I	3	6					1 year GSE Educ.Leadership, 1 year GSE MA in Multil.Education		
66	EDUC 602	Educational Context and Reform in Kazakhstan	3	6					1 year GSE Educ.Leadership, 1 year GSE MA in Multil.Education		
<b>Other</b>											
<b>Other</b>											
67	T-DECISION 618	Data Analytics for Business	3	6							
68	T-MARKETNG 797	Consumer Behavior	3	6							
69	T-MP 30GB	Managing Global Business Projects	3	6							
70	T-MP 31	Information Supply Chain	1.5	3							
71	T-PP 5144	Decision and Game Theory for Public Managers	4	8							
72	T-PP 5168	Public Service Leadership	4	8							
73	T-PP 5178	Leadership and Decision-Making Skills	4	8							
74	T-PP 5191	Public Administration, Technology and Innovation	4	8							
75	T-PP 5196	Education Economics and Policy	4	8							
76	T-PP 5203	Behavioral Economics and Public Policy	4	8							
77	T-PP 5216	Economic Growth in Developing Asia	4	8							
78	T-PP 5267	Urban Transport Policy: A Global View	4	8							
79	T-PP 5298	Singapore's Development Experience	4	8							
80	T-PP 5511	Systemic and Integrated Policy Design and Analysis	4	8							
<b>SoM</b>											
<b>Biomedical Sciences</b>											
81	MMMM 501	Molecular Basis of Infection	3	6							
82	MMMM 502	Molecular Pathology of Cancer	3	6							
83	MMMM 504	Molecular Basis of Genetic Disease	3	6							
84	MMMM 505	Inferential Biostatistics	2	4							
85	MMMM 506	Biocomputing	1	2							

86	MMMM 513	Molecular Basis of Neurological Disorders	3	6						
87	MMMM 603	Recombinant Drugs	3	6						
88	MMMM 604	Nutrigenomics	1.5	3						
89	MMMM 605	Developmental Biology	1.5	3						
<b>Public Health</b>										
90	PUBH 501	Principles of Public Health Problem Solving	3	6						
91	PUBH 510	Inferential Biostatistics	1.5	3	MMMM 505 Inferential Biostatistics (3839) (C and above)					
92	PUBH 511	Inferential Biostatistics	3	6						
93	PUBH 521	Principles of Analytical Epidemiology	3	6						
94	PUBH 528	Qualitative Research Methods	3	6						
95	PUBH 531	Emerging Infectious Diseases	3	6						
96	PUBH 551	Health Services Management, Health Economic and Health Policy	3	6						
97	PUBH 601	Health Education and Promotion	3	6						
98	PUBH 641	Problem Investigations in Environmental Health	3	6						
99	PUBH 662	Graduate Research Seminar II	3	6						
100	PUBH 681	Master's Project Planning	3	6						
<b>SMG</b>										
<b>Mining Engineering</b>										
101	MINE 501	Foundations of Mining	3	6						
102	MINE 502	Geology for Mining Engineers	3	6						
103	MINE 503	Applied Geostatistics	3	6						
104	MINE 504	Mine Geomechanics	3	6						
105	MINE 505	Advanced Mine Ventilation	3	6						
106	MINE 524	Advanced Tunnelling	3	6				2 year Gr SMG		
107	MINE 602	Mine Automation and Maintenance	3	6						
108	MINE 603	Multivariate Geostatistics	3	6	MINE 503 Applied Geostatistics (3692) (C- and above)			2 year Gr SMG		
109	MINE 604	Geology of Ore Deposits	3	6				2 year Gr SMG		
110	MINE 606	Underground Hard Rock Geotechnical Engineering	3	6				2 year Gr SMG		
111	MINE 690	Thesis I	6	12						
<b>Petroleum Engineering</b>										

112	PETE 501	Foundations of Petroleum Engineering	3	6							
113	PETE 502	Petroleum Geology	3	6							
114	PETE 503	Fluid Flow Through Porous Media	3	6							
115	PETE 504	Advanced Formation Evaluation	3	6							
116	PETE 505	Advanced Drilling Engineering	3	6							
<b>SSH</b>											
<b>Area Studies</b>											
117	EAS 500	Introduction to Eurasia	4	8				Eurasian Studies	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
118	EAS 501	General Methodology	4	8				Eurasian Studies	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
119	EAS 503	Thesis I	7.5	15	EAS 500 Introduction to Eurasia (1632) (C- and above) AND EAS 501 General Methodology (1633) (C- and above) AND EAS 502 Disciplinary Methodology (1379) (C- and above)			2 year Gr SHSS Eurasian Studies			
120	EAS 511	Independent Study in Eurasian Studies	4	8							
<b>Area Studies, Political Science and International Relations, Sociology and Anthropology</b>											
121	SOC 514/PLS 514/EAS 506	Qualitative Research Methods	4	8				Eurasian Studies	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
<b>Biological Science</b>											
122	BIOL 520	Statistical Methods in Life Sciences	3	6							
123	BIOL 550	Structural and Molecular Biology in Health and Disease	3	6							
124	BIOL 560	Molecular Biology of Prokaryotic Cells	3	6							
125	BIOL 600	Graduate Seminar Series	3	6							
126	BIOL 623	Advanced Immunology	3	6				Biological Sciences	SST, Science, Engineering and Technology	SEng, SHSS	
127	BIOL 635	Hot Topics in Life Sciences	3	6							
128	BIOL 670	Gene Therapy	3	6				Biological Sciences	SST, Science, Engineering and Technology	SEng, SHSS	

129	BIOL 690	Research Thesis I	6	12							
<b>Economics</b>											
130	ECON 501	Microeconomics I	4	8				1 year Gr SHSS Economics	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
131	ECON 502	Macroeconomics I	4	8				1 year Gr SHSS Economics	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
132	ECON 505	Behavioral and Experimental Economics	4	8				2 year Gr SHSS Economics	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
133	ECON 511	Statistics	4	8				1 year Gr SHSS Economics	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
134	ECON 512	Mathematical Economics	4	8				1 year Gr SHSS Economics	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
135	ECON 516	Empirical Industrial Organization	4	8	ECON 501 Microeconomics I (2187) (C- and above) AND ECON 531 Econometrics (2505) (C- and above)			2 year Gr SHSS Economics	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
136	ECON 532	Applied Econometrics	4	8				2 year Gr SHSS Economics	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
137	ECON 589	Thesis I	4	8				2 year Gr SHSS Economics			
<b>Languages, Literature and Linguistics</b>											
138	WLL 540	Oral Epic in Central Asia	4	8				Eurasian Studies	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
<b>Mathematics</b>											
139	MATH 517	Scientific Modeling and Simulation with Mathematics	3	6							
140	MATH 518	Applied Finite Element Analysis	3	6	MATH 517 Scientific Modeling and Simulation with Mathematics (2341) (B- and above) AND MATH 351 Numerical Methods with Applications (1166) (C and above)						
141	MATH 540	Statistical Learning	3	6							
142	MATH 576	Numerical Methods for Partial Differential Equations	3	6							

143	MATH 676	Advanced Partial Differential Equations with Applications	3	6	MATH 481 Partial Differential Equations (1168) (C and above) OR MATH 482 Fourier Analysis (3389) (C and above)						
<b>Physics</b>											
144	PHYS 505	Classical Mechanics	3	6							
145	PHYS 511	Computational Modeling and Simulation	3	6				Physics	SST, Science, Engineering and Technology	SEng, SHSS	
146	PHYS 515	Classical Electrodynamics	3	6							
147	PHYS 550	Advanced Mathematical Physics	3	6				Physics	SST, Science, Engineering and Technology	SEng, SHSS	
148	PHYS 574	Lasers and Photonics	3	6				Physics	SST, Science, Engineering and Technology	SEng, SHSS	
149	SST 501	Teaching and Learning	3	6							
150	SST 503	Laboratory Practicum	3	6	SST 501 Teaching and Learning (2260) (C- and above) AND SST 502 Teaching Practicum (2824) (C- and above)						
151	SST 591	Research Methods	3	6							
152	SST 693	Thesis Proposal	3	6	SST 591 Research Methods (3184) (C- and above)						
<b>Political Science and International Relations</b>											
153	PLS 511	Advanced Research I	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
154	PLS 516	Experimental Political Science	4	8	PLS 511 Advanced Research I (1631) (C- and above)			Political Science and International Relations	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
155	PLS 532	Comparative Democratization	4	8	PLS 540 Core Seminar in Comparative Politics (1374) (C- and above)			Political Science and International Relations	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
156	PLS 540	Core Seminar in Comparative Politics	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
157	PLS 541	Advanced Topics in Comparative Politics	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		



158	PLS 550	Core Seminar in IR	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
159	PLS 565	Politics of International Finance	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
160	PLS 581	Independent Study in Political Science	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
161	PLS 597	Research for Thesis	6	12				Political Science and International Relations	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
<b>SEDS</b>											
<b>Chemical Engineering</b>											
162	MCHE 600	MSc Thesis in Chemical Engineering	15	30							
<b>Chemical and Materials Engineering</b>											
163	MCHME 603	Advanced Materials Processing	3	6				1 year Gr SENG, 2 year Gr SENG	Science, Engineering and Technology	GSB, GSE, GSPP, SHSS, SMG, SST, SoM	
164	MCHME 604	Advanced Materials Characterization Methods	3	6				1 year Gr SENG, 2 year Gr SENG	Science, Engineering and Technology	GSB, GSE, GSPP, SHSS, SMG, SST, SoM	
165	MCHME 605	Advanced Chemical Reaction Engineering	3	6				1 year Gr SENG, 2 year Gr SENG	Science, Engineering and Technology	GSB, GSE, GSPP, SHSS, SMG, SST, SoM	
<b>Civil Engineering</b>											
166	EMEM 507	Project Management	3	6				1 year Gr SENG, 2 year Gr SENG	Science, Engineering and Technology	GSB, GSE, GSPP, SHSS, SMG, SST, SoM	
167	EMEM 509	Systems Engineering	3	6							
168	EMEM 523	Supply Chain Management	3	6							
169	EMEM 533	Engineering Management and Engineering Economy	3	6				1 year Gr SENG, 2 year Gr SENG	Science, Engineering and Technology	GSB, GSE, GSPP, SHSS, SMG, SST, SoM	
170	EMEM 537	Engineering Decision Tools	3	6							
171	EMEM 539	Big Data and Information Management	3	6							
172	EMEM 542	Production and Service Operations Management	3	6							
173	EMEM 543	Quality and Lean Management	3	6				1 year Gr SENG, 2 year Gr SENG	Science, Engineering and Technology	GSB, GSE, GSPP, SHSS, SMG, SST, SoM	
174	MCE 600	MSc Thesis in Civil Engineering	15	30							
175	MCEE 603	Finite Element Methods	3	6				1 year Gr SENG, 2 year Gr SENG	Science, Engineering and Technology	GSB, GSE, GSPP, SHSS, SMG, SST, SoM	

176	MCEE 604	Advanced Soil Mechanics	3	6				1 year Gr SENG, 2 year Gr SENG	Science, Engineering and Technology	GSB, GSE, GSPP, SHSS, SMG, SST, SoM	
177	MCEE 605	Advanced Environmental Chemistry	3	6				1 year Gr SENG, 2 year Gr SENG	Science, Engineering and Technology	GSB, GSE, GSPP, SHSS, SMG, SST, SoM	
178	MSC 601	Technical Communication	3	6							
179	MSC 602	Advanced Applied Mathematics	3	6				1 year Gr SENG, 2 year Gr SENG	Science, Engineering and Technology	GSB, GSE, GSPP, SHSS, SMG, SST, SoM	
180	MSC 615	Advanced Statistics and Probability	3	6				1 year Gr SENG, 2 year Gr SENG	Science, Engineering and Technology	GSB, GSE, GSPP, SHSS, SMG, SST, SoM	
181	MSC 616	Research Methods	3	6				1 year Gr SENG, 2 year Gr SENG	Science, Engineering and Technology	GSB, GSE, GSPP, SHSS, SMG, SST, SoM	
<b>Computer Science</b>											
182	CSCI 501	Software Principles and Practice	3	6							
183	CSCI 511	CS Track Core-Theory	3	6							
184	CSCI 512	Information Theory	3	6							
185	CSCI 525	Quantum Computing	3	6				Computer Science, Physics	SST, Science, Engineering and Technology	SEng, SHSS	
186	CSCI 545	Big Data Analytics	3	6							
187	CSCI 575	Formal Methods and Applications	3	6							
<b>Electrical and Computer Engineering</b>											
188	MECE 603	Advanced Data Structures and Algorithms	3	6				1 year Gr SENG, 2 year Gr SENG	Science, Engineering and Technology	GSB, GSE, GSPP, SHSS, SMG, SST, SoM	
189	MECE 605	Statistics and Probability for Electrical and Computer Engineers	3	6				1 year Gr SENG, 2 year Gr SENG	Science, Engineering and Technology	GSB, GSE, GSPP, SHSS, SMG, SST, SoM	
190	MECE 606	Embedded Systems and Applications	3	6				1 year Gr SENG, 2 year Gr SENG	Science, Engineering and Technology	GSB, GSE, GSPP, SHSS, SMG, SST, SoM	
<b>Electrical and Electronic Engineering</b>											
191	MEE 600	MSc Thesis in Electrical and Electronics Engineering	15	30							
<b>Mechanical Engineering</b>											
192	MME 600	MSc Thesis in Mechanical Engineering	15	30							
<b>Mechanical and Aerospace Engineering</b>											
193	MMAE 603	Modern Control Engineering	3	6				1 year Gr SENG, 2 year Gr SENG	Science, Engineering and Technology	GSB, GSE, GSPP, SHSS, SMG, SST, SoM	

194	MMAE 605	Advanced Manufacturing Processes & Strategies	3	6				1 year Gr SENG, 2 year Gr SENG	Science, Engineering and Technology	GSB, GSE, GSPP, SHSS, SMG, SST, SoM	
<b>Robotics and Mechatronics</b>											
195	ROBT 501	Robot Manipulation and Mobility	3	6							
196	ROBT 503	Dynamic Systems and Control	3	6							
197	ROBT 611	Industrial Robotics	3	6	ROBT 501 Robot Manipulation and Mobility (2263) (C-and above) AND CSCI 501 Software Principles and Practice (2408) (C-and above)			Robotics	SST, Science, Engineering and Technology	SEng, SHSS	
198	ROBT 613	Brain-Machine Interfaces	3	6				Robotics	SST, Science, Engineering and Technology	SEng, SHSS	
199	ROBT 615	Optimal Control and Planning	3	6	ROBT 501 Robot Manipulation and Mobility (2263) (C-and above) AND ROBT 503 Dynamic Systems and Control (2264) (C-and above)			Robotics	SST, Science, Engineering and Technology	SEng, SHSS	