

Course Requirements and Registration Priorities (Master), Fall 2018

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

26	MPA 603	Economic Applications for Public Managers	4	8							
27	MPA 605	Research Methods for Public Managers	4	8							
28	MPA 622	Public Policy and Economics of Health Systems	4	8				2 year GSPP Public Administration	GSPP	GSB, GSE, SEng, SHSS, SMG, SST, SoM	
29	MPA 699	Master's Project with Overseas Component	0	0							
30	MPE 617	Institutions and development policies	4	8				2 year GSPP Public Policy	GSPP	GSB, GSE, SEng, SHSS, SMG, SST, SoM	
31	MPE 623	Law and Development	4	8				2 year GSPP Public Administration	GSPP	GSB, GSE, SEng, SHSS, SMG, SST, SoM	
32	MPE 625	Ethical Challenges in Governance	4	8				2 year GSPP Public Administration	GSPP	GSB, GSE, SEng, SHSS, SMG, SST, SoM	
33	MPE 637	Comparative Policy-Making and Public Policy	4	8				2 year GSPP Public Administration	GSPP	GSB, GSE, SEng, SHSS, SMG, SST, SoM	
34	MPE 639	International Financial Policy	4	8				2 year GSPP Public Administration	GSPP	GSB, GSE, SEng, SHSS, SMG, SST, SoM	
35	MPE 670	Behavioural Insights and Public Policy	4	8				2 year GSPP Public Policy	GSPP	GSB, GSE, SEng, SHSS, SMG, SST, SoM	
36	MPE 685	Water Resources Policy and Management	4	8				2 year GSPP Public Administration	GSPP	GSB, GSE, SEng, SHSS, SMG, SST, SoM	
Master in Public Policy											
37	MPP 601	Microeconomics and Public Policy	4	8							
38	MPP 611	Statistics for Public Policy	4	8							
39	MPP 612	Public Policy Research and Evaluation	4	8							
40	MPP 621	Public Policy and Analysis	4	8							
41	MPP 625	Central Asian politics: Comparative Analysis	4	8				2 year GSPP Public Policy	GSPP	GSB, GSE, SEng, SHSS, SMG, SST, SoM	
42	MPP 631	Politics and Public Policy	4	8							
43	MPP 687	Science, Technology, and Public Policy	4	8				2 year GSPP Public Policy	GSPP	GSB, GSE, SEng, SHSS, SMG, SST, SoM	
GSE											
MA in Multilingual Education											

44	EDML 601	Introduction to Linguistics	3	6				1 year GSE MA in Multil.Education			
45	EDML 610	Foundations of Multilingual Education	3	6				1 year GSE MA in Multil.Education			
46	EDML 613	The Multilingual School	3	6				2 year GSE MA in Multil.Education			
47	EDML 620	Language and Literacy Development	3	6				2 year GSE MA in Multil.Education			
48	EDML 690	Thesis Research I	3	6				2 year GSE MA in Multil.Education			
MSc Educational Leadership HE											
49	EDHE 609	Introduction to Educational Leadership: Higher Education	3	6				1 year GSE Educ.Leadership			
50	EDHE 610	Applying Educational Leadership in Kazakhstan	3	6				1 year GSE Educ.Leadership			
51	EDHE 691	Thesis Seminar II	3	6				2 year GSE Educ.Leadership			
52	EDUC 505	Academic English 1	1.5	3				1 year GSE Educ.Leadership			
53	EDUC 507	Academic English III	1.5	3				2 year GSE Educ.Leadership			
54	EDUC 510	Advanced English for Education Professionals I	3	6				1 year GSE MA in Multil.Education			
55	EDUC 512	English for Thesis Writing I	3	6				2 year GSE MA in Multil.Education			
56	EDUC 571	Basic Kazakh	3	6				1 year GSE Educ.Leadership			
57	EDUC 572	Kazakh for Professional Purposes	3	6				2 year GSE Educ.Leadership			
58	EDUC 602	Educational Context and Reform in Kazakhstan	3	6				1 year GSE Educ.Leadership, 1 year GSE MA in Multil.Education			
59	EDUC 607	Research Methods 1	3	6				1 year GSE Educ.Leadership, 1 year GSE MA in Multil.Education			
MSc Educational Leadership IE											
60	EDIE 609	Introduction to Educational Leadership: Inclusive Education	3	6				1 year GSE Educ.Leadership			
61	EDIE 651	Inclusive Education: Policy Perspectives	3	6				1 year GSE Educ.Leadership			
62	EDIE 652	Curriculum Design: perspectives on Addressing Barriers to Teaching and Learning (Including SEN)	3	6				1 year GSE Educ.Leadership			

63	EDIE 691	Thesis Seminar II	3	6				2 year GSE Educ.Leadership			
MSc Educational Leadership SE											
64	EDSE 609	Introduction to Educational Leadership: School Education	3	6				1 year GSE Educ.Leadership			
65	EDSE 636	Preparing Children for the Future: Skills and Employability	3	6				1 year GSE Educ.Leadership			
66	EDSE 637	Student Discourse and Argumentation: Theories, Practices and Policies	3	6				1 year GSE Educ.Leadership			
67	EDSE 691	Thesis Seminar II	3	6				2 year GSE Educ.Leadership			
Other											
Other											
68	T-DECISION 618	Data Analytics for Business	3	6							
69	T-MARKETNG 797	Consumer Behavior	3	6							
70	T-MP 30GB	Managing Global Business Projects	3	6							
71	T-MP 31	Information Supply Chain	1.5	3							
72	T-PP 5144	Decision and Game Theory for Public Managers	4	8							
73	T-PP 5168	Public Service Leadership	4	8							
74	T-PP 5178	Leadership and Decision-Making Skills	4	8							
75	T-PP 5191	Public Administration, Technology and Innovation	4	8							
76	T-PP 5196	Education Economics and Policy	4	8							
77	T-PP 5203	Behavioral Economics and Public Policy	4	8							
78	T-PP 5216	Economic Growth in Developing Asia	4	8							
79	T-PP 5267	Urban Transport Policy: A Global View	4	8							
80	T-PP 5298	Singapore's Development Experience	4	8							
81	T-PP 5511	Systemic and Integrated Policy Design and Analysis	4	8							
SoM											
MMM											
82	MMMM 501	Molecular Basis of Infection	3	6							
83	MMMM 502	Molecular Basis of Cancer	3	6							
84	MMMM 504	Molecular Basis of Genetic Disease	3	6							

85	MMMM 505	Inferential Biostatistics	2	4						
86	MMMM 506	Biocomputing	1	2						
87	MMMM 513	Molecular Basis of Neurological Disorders	3	6						
88	MMMM 603	Recombinant Drugs	3	6						
89	MMMM 604	Nutrigenomics	1.5	3						
90	MMMM 605	Developmental Biology	3	6						
Public Health										
91	PUBH 501	Principles of Public Health Problem Solving	3	6						
92	PUBH 510	Inferential Biostatistics	1.5	3	MMMM 505 Inferential Biostatistics (3839) (C and above)					
93	PUBH 511	Inferential Biostatistics	3	6						
94	PUBH 521	Principles of Analytical Epidemiology	3	6						
95	PUBH 528	Qualitative Research Methods	3	6						
96	PUBH 531	Emerging Infectious Diseases	3	6						
97	PUBH 551	Health Services Management, Health Economic and Health Policy	3	6						
98	PUBH 601	Health Education and Promotion	3	6						
99	PUBH 641	Problem Investigations in Environmental Health	3	6						
100	PUBH 662	Graduate Research Seminar II	3	6						
101	PUBH 681	Master's Project Planning	3	6						
SMG										
Mining Engineering										
102	MINE 501	Foundations of Mining	3	6						
103	MINE 502	Geology for Mining Engineers	3	6						
104	MINE 503	Applied Geostatistics	3	6						
105	MINE 504	Mine Geomechanics	3	6						
106	MINE 505	Advanced Mine Ventilation	3	6						
107	MINE 524	Advanced Tunnelling	3	6				2 year Gr SMG		
108	MINE 602	Mine Maintenance and Services	3	6	MINE 502 Geology for Mining Engineers (3691) (C- and above)					
109	MINE 603	Multivariate Geostatistics	3	6	MINE 503 Applied Geostatistics (3692) (C- and above)			2 year Gr SMG		

110	MINE 604	Geology of Ore Deposits	3	6				2 year Gr SMG		
111	MINE 606	Underground Hard Rock Geotechnical Engineering	3	6				2 year Gr SMG		
112	MINE 690	Thesis I	6	12						
Petroleum Engineering										
113	PETE 501	Foundations of Petroleum Engineering	3	6						
114	PETE 502	Petroleum Geology	3	6						
115	PETE 503	Fluid Flow Through Porous Media	3	6						
116	PETE 504	Advanced Formation Evaluation	3	6						
117	PETE 505	Advanced Drilling Engineering	3	6						
SSH										
Area Studies										
118	EAS 500	Introduction to Eurasia	4	8				Eurasian Studies	GSB, GSE, GSPP, SEng, SHSS, SMG, SST	
119	EAS 501	General Methodology	4	8				Eurasian Studies	GSB, GSE, GSPP, SEng, SHSS, SMG, SST	
120	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		
121	EAS 511	Independent Study in Eurasian Studies	4	8						
Area Studies, Political Science and International Relations, Sociology and Anthropology										
122	SOC 514/PLS 514/EAS 506	Qualitative Research Methods	4	8				Eurasian Studies	GSB, GSE, GSPP, SEng, SHSS, SMG, SST	
Biological Science										
123	BIOL 520	Statistical Methods in Life Sciences	3	6						
124	BIOL 550	Structural and Molecular Biology in Health and Disease	3	6						
125	BIOL 560	Molecular Biology of Prokaryotic Cells	3	6						
126	BIOL 600	Graduate Seminar Series	3	6						

127	BIOL 623	Advanced Immunology	3	6				Biological Sciences	SST, Science, Engineering and Technology	SEng, SHSS	
128	BIOL 635	Hot Topics in Life Sciences	3	6							
129	BIOL 670	Gene Therapy	3	6				Biological Sciences	SST, Science, Engineering and Technology	SEng, SHSS	
130	BIOL 690	Research Thesis I	6	12							
Economics											
131	ECON 501	Microeconomics I	4	8				1 year Gr SHSS Economics	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
132	ECON 502	Macroeconomics I	4	8				1 year Gr SHSS Economics	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
133	ECON 505	Behavioral and Experimental Economics	4	8				2 year Gr SHSS Economics	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
134	ECON 511	Statistics	4	8				1 year Gr SHSS Economics	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
135	ECON 512	Mathematical Economics	4	8				1 year Gr SHSS Economics	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
136	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		
137	ECON 532	Applied Econometrics	4	8				2 year Gr SHSS Economics	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
138	ECON 589	Thesis I	4	8				2 year Gr SHSS Economics			
Languages, Literature and Linguistics											
139	WLL 540	Oral Epic in Central Asia	4	8				Eurasian Studies	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
Mathematics											
140	MATH 517	Scientific Modeling and Simulation with Mathematics	3	6							
141	MATH 518	Applied Finite Element Analysis	3	6							
142	MATH 540	Statistical Learning	3	6							
143	MATH 576	Numerical Methods for Partial Differential Equations	3	6							

144	MATH 676	Advanced Partial Differential Equations with Applications	3	6							
Physics											
145	PHYS 505	Classical Mechanics	3	6							
146	PHYS 511	Computational Modeling and Simulation	3	6				Physics	SST, Science, Engineering and Technology	SEng, SHSS	
147	PHYS 515	Classical Electrodynamics	3	6							
148	PHYS 550	Advanced Mathematical Physics	3	6				Physics	SST, Science, Engineering and Technology	SEng, SHSS	
149	PHYS 574	Lasers and Photonics	3	6				Physics	SST, Science, Engineering and Technology	SEng, SHSS	
150	SST 501	Teaching and Learning	3	6							
Political Science and International Relations											
151	PLS 511	Advanced Research I	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
152	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		
153	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		
154	PLS 540	Core Seminar in Comparative Politics	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
155	PLS 541	Advanced Topics in Comparative Politics	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
156	PLS 550	Core Seminar in IR	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
157	PLS 565	Politics of International Finance	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
158	PLS 581	Independent Study in Political Science	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		
159	PLS 597	Research for Thesis	6	12				Political Science and International Relations	GSB, GSE, GSPP, SEng, SHSS, SMG, SST		

SEDS

Chemical Engineering

160	MCHE 600	MSc Thesis in Chemical Engineering	15	30							
Chemical and Materials Engineering											
161	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	
162	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	
163	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	
Civil Engineering											
164	MCE 600	MSc Thesis in Civil Engineering	15	30							
165	MSC 601	Technical Communication	3	6							
166	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	
167	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	
168	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	
Civil and Environmental Engineering											
169	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	
170	EMEM 509	Systems Engineering	3	6							
171	EMEM 523	Supply Chain Management	3	6							
172	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	
173	EMEM 537	Engineering Decision Tools	3	6							
174	EMEM 539	Big Data and Information Management	3	6							
175	EMEM 542	Production and Service Operations Management	3	6							
176	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	
177	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	
178	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	

179	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	
Computer Science											
180	CSCI 501	Software Principles and Practice	3	6							
181	CSCI 511	Theory of Computation	3	6							
182	CSCI 525	Quantum Computing	3	6				Computer Science, Physics	SST, Science, Engineering and Technology	SEng, SHSS	
183	CSCI 545	Big Data Analytics	3	6							
184	CSCI 575	Formal Methods and Applications	3	6							
185	CSCI 693	Thesis Proposal	3	6	SEDS 591 Research Methods (3184) (C- and above)						
186	SEDS 503	Laboratory Practicum	3	6	SEDS 502 Teaching Practicum (2824) (P)						
187	SEDS 591	Research Methods	3	6							
Electrical and Computer Engineering											
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	
Electrical and Electronic Engineering											
191	MEE 600	MSc Thesis in Electrical and Electronics Engineering	15	30							
Mechanical Engineering											
192	MME 600	Master Thesis in Mechanical Engineering	15	30							
Mechanical and Aerospace Engineering											
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 and Strategies	3	6				1 year Gr SENG, 2 year Gr SENG	Science, Engineering and Technology	GSB, GSE, GSPP, SHSS, SMG, SST, SoM	
Robotics and Mechatronics											
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