

Course Requirements and Registration Priorities (Master), Fall 2021

#	Abbr	Title	Cr(US)	Cr(ECTS)	PreRequisite	CoRequisite	AntiRequisite	1st priority registration	2nd priority registration	3rd priority registration	4th priority registration
GSB											
GSB											
1	GSBF 501	Team Building and Business Communications	1	2				For GSB programs only! Registration by School admin.			
2	GSBF 511	Applied Data Analytics I	2.5	5				For GSB programs only! Registration by School admin.			
3	GSBF 512	Principles of Finance	2.5	5				For GSB programs only! Registration by School admin.			
4	GSBF 513	Financial Data Analytics II	2.5	5				For GSB programs only! Registration by School admin.			
5	GSBF 516	Financial Markets and Institutions	2	4							
6	GSBF 517	Macroeconomics for Finance	2.5	5				For GSB programs only! Registration by School admin.			
7	GSBF 523	Special Topics in Corporate Finance	2	4							
8	GSBF 533	Islamic Banking and Finance	2	4				For GSB programs only! Registration by School admin.			
9	GSBF 535	Insurance and Actuarial Science	2	4				For GSB programs only! Registration by School admin.			
10	GSBF 542	Global Finance Experience Residency (II)	3	6				For GSB programs only! Registration by School admin.			
11	GSBF 550A	Master's Thesis	5	10				For GSB programs only! Registration by School admin.			
12	GSBF 661	Corporate Finance	2.5	5				For GSB programs only! Registration by School admin.			
13	MBA 01	Consequential Leadership	1	2				For GSB programs only! Registration by School admin.			
14	MBA 02	Business Mathematics and Business Computer Application	1	2				For GSB programs only! Registration by School admin.			

15	MBA 03	Financial Accounting	2	4				For GSB programs only! Registration by School admin.			
16	MBA 04	Probability and Statistics	2	4				For GSB programs only! Registration by School admin.			
17	MBA 05	Business Communication	2	4				For GSB programs only! Registration by School admin.			
18	MBA 07	Managerial Effectiveness	2	4				For GSB programs only! Registration by School admin.			
19	MBA 08	Managerial Economics	2	4				For GSB programs only! Registration by School admin.			
20	MBA 11	Managerial Accounting	2	4				For GSB programs only! Registration by School admin.			
21	MBA 13	Macroeconomics	2	4							
22	MBA 16	Entrepreneurship	2	4				1 year Gr SOM Molecular Medicine			
23	MBA 17	Negotiations	2	4				For GSB programs only! Registration by School admin.			
24	MBA 19	Distinguished Speaker Series	0	1				For GSB programs only! Registration by School admin.			
25	MBA 20	Practicum Project	2.5	5				For GSB programs only! Registration by School admin.			
26	MBAE 1	Investments	2	4				For GSB programs only! Registration by School admin.			
27	MBAE 13	Raising Capital	2	4				For GSB programs only! Registration by School admin.			
28	MBAE 14	Innovation Process	2	4							
29	MBAE 16	Project Management	2	4				For GSB programs only! Registration by School admin.			
30	MBAE 17	China Business Environment	2	4				For GSB programs only! Registration by School admin.			
31	MBAE 18	Consumer Behavior	2	4				For GSB programs only! Registration by School admin.			

32	MBAE 19	Global Economics for Managers	2	4	MBA 08 Managerial Economics (1722) (C and above)			For GSB programs only! Registration by School admin.			
33	MBAE 20	Marketing Research	2	4				For GSB programs only! Registration by School admin.			
34	MBAE 21	Project Finance	2	4							
35	MBAE 8	Leadership	2	4				For GSB programs only! Registration by School admin.			
36	MBAE 9	Marketing Strategy	2	4							
37	MHRM 09	Talent Management	2	4				For GSB programs only! Registration by School admin.			
38	MSF 02	Thesis Preparation Seminar	2	4				For GSB programs only! Registration by School admin.			
39	MSF 03	Advanced Econometrics	2	4				For GSB programs only! Registration by School admin.			
40	MSF 04	Private Equity	2	4				For GSB programs only! Registration by School admin.			
41	MSF 06	Credit Modeling	2.5	5				For GSB programs only! Registration by School admin.			
42	MSF 07	Economic Policy in Global Markets	2	4				For GSB programs only! Registration by School admin.			
43	MSF 08	Microeconomics for Finance	2.5	5				For GSB programs only! Registration by School admin.			
44	MSF 09	Corporate Governance	2	4				For GSB programs only! Registration by School admin.			
45	MSF 10	Independent Research	2	4							
GSPP											
Master in Public Administration											
46	MPA 602	Public Administration in Theory and Practice	4	8				1 year GSPP Public Administration			
47	MPA 603	Economic Applications for Public Managers	4	8				1 year GSPP Public Administration			
48	MPA 605	Research Methods for Public Managers	4	8				1 year GSPP Public Administration			

49	MPA 699	Master's Project with Overseas Component	0	0				2 year GSPP Public Administration			
50	MPE 617	Institutions and development policies	4	8				2 year GSPP Public Administration	2 year GSPP Public Policy	Public Administration, Public Policy	
51	MPE 625	Ethical Challenges in Governance	4	8				2 year GSPP Public Administration	2 year GSPP Public Policy	Public Administration, Public Policy	
52	MPE 626	Open Governance	4	8				2 year GSPP Public Administration, 2 year GSPP Public Policy	Public Administration, Public Policy		
53	MPE 627	Public Policy and Health Issues	4	8				2 year GSPP Public Administration	2 year GSPP Public Policy	Public Administration, Public Policy	
54	MPE 628	Good Governance and Corruption	4	8				2 year GSPP Public Administration	2 year GSPP Public Policy	Public Administration, Public Policy	
55	MPE 629	Political Economy of State-Building	4	8				2 year GSPP Public Administration	2 year GSPP Public Policy	Public Administration, Public Policy	
56	MPE 639	International Financial Policy	4	8				2 year GSPP Public Administration	2 year GSPP Public Policy	Public Administration, Public Policy	
57	MPE 640	International Political Economy	4	8				2 year GSPP Public Administration, 2 year GSPP Public Policy	Public Administration, Public Policy		
58	MPE 643	Marketing Public Policy	4	8				2 year GSPP Public Administration	2 year GSPP Public Policy	Public Administration, Public Policy	
59	MPE 650	Science and Technology Policy	4	8				2 year GSPP Public Administration, 2 year GSPP Public Policy	Public Administration, Public Policy		
60	MPE 671	Game Theory and Public Policy	4	8				2 year GSPP Public Administration, 2 year GSPP Public Policy	Public Administration, Public Policy		
61	MPE 685	Water Resources Policy and Management	4	8				2 year GSPP Public Administration	2 year GSPP Public Policy	Public Administration, Public Policy	
Master in Public Policy											
62	MPP 601	Microeconomics and Public Policy	4	8				1 year GSPP Public Policy			
63	MPP 611	Statistics for Public Policy	4	8				1 year GSPP Public Policy			
64	MPP 613	Policy Research Design and Methods	4	8				1 year GSPP Public Policy			
65	MPP 621	Public Policy and Analysis	4	8				1 year GSPP Public Policy			

66	MPP 631	Politics and Public Policy	4	8				2 year GSPP Public Policy			
67	MPP 699-0	Policy Analysis Exercise with Overseas Component	0	0	MPP 613 Policy Research Design and Methods (1301) (C- and above)			2 year GSPP Public Policy			
GSE											
MA in Multilingual Education											
68	EDML 601	Introduction to Linguistics	3	6				1 year GSE MA in Multil.Education			
69	EDML 610	Foundations of Multilingual Education	3	6				1 year GSE MA in Multil.Education			
70	EDML 613	The Multilingual School	3	6				2 year GSE MA in Multil.Education			
71	EDML 614	Multilingual curriculum development and assessment	3	6				2 year GSE MA in Multil.Education			
72	EDML 627	Application of CLIL in Teaching	3	6				2 year GSE MA in Multil.Education			
73	EDML 629	Multiliteracies: Teaching Language and Literacy for a Multilingual Context	3	6				2 year GSE MA in Multil.Education			
74	EDML 690	Thesis Research I	3	6				2 year GSE MA in Multil.Education			
MSc Educational Leadership HE											
75	EDHE 625	Fundamentals of Higher Education	3	6				1 year GSE Educ.Leadership			
76	EDHE 691	Thesis Seminar II	3	6				2 year GSE Educ.Leadership			
77	EDUC 507	Academic English III	1.5	3				2 year GSE Educ.Leadership			
78	EDUC 510	Advanced English for Education Professionals I	3	6				1 year GSE MA in Multil.Education			
79	EDUC 512	English for Thesis Writing I	3	6				2 year GSE MA in Multil.Education			
80	EDUC 535	Academic English I	2	4				1 year GSE Educ.Leadership			
81	EDUC 602	Educational Context and Reform in Kazakhstan	3	6				1 year GSE MA in Multil.Education			
82	EDUC 606	Introduction to Education Research	2	4				1 year GSE Educ.Leadership			
83	EDUC 607	Research Methods 1	3	6							

84	EDUC 617	Contextualizing Education Reform in Kazakhstan and Beyond	3	6				1 year GSE Educ.Leadership		
MSc Educational Leadership IE										
85	EDIE 625	Fundamentals of Inclusive Education	3	6				1 year GSE Educ.Leadership		
86	EDIE 691	Thesis Seminar II	3	6				2 year GSE Educ.Leadership		
MSc Educational Leadership SE										
87	EDSE 625	Fundamentals of School Education	3	6				1 year GSE Educ.Leadership		
88	EDSE 691	Thesis Seminar II	3	6				2 year GSE Educ.Leadership		
89	EDSE 692	Thesis Seminar III	4.5	9				2 year GSE Educ.Leadership		
90	EDSE 693	Thesis Seminar IV	9	18				2 year GSE Educ.Leadership		
Other										
Other										
91	T-MSE 076	Topics in Political Economy and Development	4	8						
92	T-MSE 082	Democracy, Political Mobilization and Economic Development: Korea's Experience	4	8						
93	T-MSN 011	Dispute Resolution and Negotiation	4	8						
94	T-MSN 039	Industrial Policy and International Trade Regulation	4	8						
SoM										
MMM										
95	MMMM 501	Molecular Basis of Infection	3	6				1 year Gr SOM Molecular Medicine		
96	MMMM 502	Molecular Basis of Cancer	3	6				1 year Gr SOM Molecular Medicine		
97	MMMM 503	Bioethics in Research: Principles and Practice	3	6				2 year Gr SOM Molecular Medicine		
98	MMMM 504	Molecular Basis of Genetic Disease	3	6				1 year Gr SOM Molecular Medicine		
99	MMMM 506	Biocomputing	1	2				1 year Gr SOM Molecular Medicine		
100	MMMM 513	Molecular Basis of Neurological Disorders	3	6				2 year Gr SOM Molecular Medicine		

101	MMMM 603	Recombinant Drugs	3	6				2 year Gr SOM Molecular Medicine			
102	MMMM 605	Developmental Biology	3	6				2 year Gr SOM Molecular Medicine			
MPTOX											
103	MPTX 501	Organ system and common diseases	3	6				1 year Gr SOM Pharmacology and Toxicology			
104	MPTX 502	Cellular Communications	3	6				1 year Gr SOM Pharmacology and Toxicology			
105	MPTX 503	Principles of Pharmacology and Toxicology	3	6		MPTX 501 Organ system and common diseases (5841) (C and above)		1 year Gr SOM Pharmacology and Toxicology			
106	MPTX 505	Drug Discovery I	3	6		MPTX 503 Principles of Pharmacology and Toxicology (5843) (C and above)		1 year Gr SOM Pharmacology and Toxicology			
107	MPTX 506	Systemic Pharmacology II	3	6		MPTX 503 Principles of Pharmacology and Toxicology (5843) (C- and above) AND MPTX 504 Systemic Pharmacology I (5844) (C- and above)		2 year Gr SOM Pharmacology and Toxicology			
108	MPTX 601	Biostatistics and Critical Appraisal	3	6		MPTX 503 Principles of Pharmacology and Toxicology (5843) (C- and above) AND MPTX 505 Drug Discovery I (5845) (C- and above)		2 year Gr SOM Pharmacology and Toxicology			

109	MPTX 602	Current Topics in Pharmacology and Toxicology	3	6	MPTX 503 Principles of Pharmacology and Toxicology (5843) (C- and above) AND MPTX 505 Drug Discovery I (5845) (C- and above)	MPTX 601 Biostatistics and Critical Appraisal (6342) (C- and above)		2 year Gr SOM Pharmacology and Toxicology			
110	MPTX 603	Introduction to Research Project	6	12	MPTX 503 Principles of Pharmacology and Toxicology (5843) (C- and above) AND MPTX 505 Drug Discovery I (5845) (C- and above)	MPTX 601 Biostatistics and Critical Appraisal (6342) (C- and above)		2 year Gr SOM Pharmacology and Toxicology			
111	MPTX 604E	Scientific Writing	3	6				1 year Gr SOM Pharmacology and Toxicology, 2 year Gr SOM Molecular Medicine			

MSMR

112	MSMR 501	Musculoskeletal System	3	6				1 year Gr SOM Sports Medicine and Rehabilitation			
113	MSMR 503	Exercise Genetics, Physiology and Endocrinology	3	6				1 year Gr SOM Sports Medicine and Rehabilitation			
114	MSMR 504	Pharmacology in Sports and Rehabilitation	3	6				1 year Gr SOM Sports Medicine and Rehabilitation			
115	MSMR 505	Exercise and Biomechanics	3	6				1 year Gr SOM Sports Medicine and Rehabilitation			
116	MSMR 507	Management and Rehabilitation of Injury	4	8				2 year Gr SOM Sports Medicine and Rehabilitation			
117	MSMR 510	Biostatistics and Epidemiology	3	6				1 year Gr SOM Sports Medicine and Rehabilitation			
118	MSMR 603	Master Research Project	8	16				2 year Gr SOM Sports Medicine and Rehabilitation			
119	MSMR 701	Ethics and Professionalism	3	6				2 year Gr SOM Sports Medicine and Rehabilitation			

Public Health

120	PUBH 501	Principles of Public Health Problem Solving	3	6				1 year Gr SOM Public Health			
121	PUBH 511	Inferential Biostatistics	3	6				1 year Gr SOM Molecular Medicine, 1 year Gr SOM Public Health			
122	PUBH 521	Principles of Analytical Epidemiology	3	6				1 year Gr SOM Public Health, 2 year Gr SOM Molecular Medicine			
123	PUBH 528	Qualitative Research Methods	3	6				1 year Gr SOM Public Health			
124	PUBH 552	Principles of Health Economics and Policy	3	6	PUBH 551 Health Services Management, Health Economic and Health Policy (3696) (C and above)			2 year Gr SOM Public Health			
125	PUBH 561	Graduate Research Seminar I	3	6				2 year Gr SOM Public Health			
126	PUBH 599	Global Nutrition and Sustainability	3	6				1 year Gr SOM Public Health			
127	PUBH 601	Health Education and Promotion	3	6				2 year Gr SOM Public Health			
128	PUBH 633	Methods in Public Health	3	6				2 year Gr SOM Public Health			
129	PUBH 681	Master's Project Planning	3	6				2 year Gr SOM Public Health			
SMG											
Mining Engineering											
130	MINE 501	Foundations of Mining	3	6				Mining Engineering			
131	MINE 502	Geology for Mining Engineers	3	6				Mining Engineering			
132	MINE 503	Applied Geostatistics	3	6				Mining Engineering			
133	MINE 504	Mine Geomechanics	3	6				Mining Engineering			
134	MINE 505	Advanced Mine Ventilation	3	6				Mining Engineering			
135	MINE 601	Mine Management and Sustainability	3	6				Mining Engineering			
136	MINE 602	Mine Maintenance and Services	3	6	MINE 502 Geology for Mining Engineers (3691) (C- and above)			Mining Engineering			

137	MINE 605	Mechanized Excavation and Tunnelling	3	6				Mining Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
138	MINE 606	Underground Hard Rock Geotechnical Engineering	3	6				Mining Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
139	MINE 690	Thesis I	6	12				Mining Engineering			
Petroleum Engineering											
140	PETE 501	Foundations of Petroleum Engineering	3	6				Petroleum Engineering			
141	PETE 502	Petroleum Geology	3	6				Petroleum Engineering			
142	PETE 503	Fluid Flow Through Porous Media	3	6				Petroleum Engineering			
143	PETE 504	Advanced Formation Evaluation	3	6				Petroleum Engineering			
144	PETE 505	Advanced Drilling Engineering	3	6				Petroleum Engineering			
145	PETE 509	Advanced Well Testing and Evaluation	3	6				Petroleum Engineering			
146	PETE 600	Thesis I	6	12				Petroleum Engineering			
147	PETE 601	Petroleum Data Analytics	3	6				Petroleum Engineering			
148	PETE 602	Research Seminar	3	6				Petroleum Engineering			
SSH											
Area Studies											
149	EAS 500	Introduction to Eurasia	4	8				Eurasian Studies	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
150	EAS 501	General Methodology	4	8				Eurasian Studies	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		

151	EAS 502	Disciplinary Methodology	4	8				Instructor's Permission Required. Registration through Add Course form only!			
152	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 SSH Eurasian Studies			
153	EAS 512	Topics in Eurasian Studies	4	8							
154	EAS 513	Critical Issues in Eurasian Studies	4	8							
155	EAS 514	Topics in Eurasian Social Sciences	4	8							
Area Studies, Political Science and International Relations, Sociology and Anthropology											
156	SOC 514/PLS 514/EAS 506	Qualitative Research Methods	4	8				Eurasian Studies	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
Biological Science											
157	BIOL 520	Statistical Methods in Life Sciences	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
158	BIOL 550	Structural and Molecular Biology in Health and Disease	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
159	BIOL 560	Molecular Biology of Prokaryotic Cells	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
160	BIOL 592	Graduate Research Seminar	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
161	BIOL 599	Master's Thesis Research	0	0				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
162	BIOL 631	Synthetic Biology	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	

163	BIOL 632	Drug Discovery and Design	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM
164	BIOL 634	Advanced Cancer Biology	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM
165	BIOL 670	Gene Therapy	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM
166	BIOL 691	Master's Thesis Research Proposal	3	6				2 year Gr SSH Biological Sciences and Technologies		

Chemistry

167	CHEM 510	Principles of Physical Chemistry	3	6				Chemistry	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM
168	CHEM 518	Applied Polymer Science	4	8				Chemistry	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM
169	CHEM 520	Applied Analytical Chemistry	3	6				Chemistry	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM
170	CHEM 522	Analytical Environmental Chemistry	3	6	CHEM 520 Applied Analytical Chemistry (5267) (C and above)			Chemistry	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM
171	CHEM 530	Inorganic Structures and Reaction Mechanisms	3	6				Chemistry	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM
172	CHEM 531	Nanochemistry and Functional Nanomaterials	3	6				Chemistry	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM
173	CHEM 541	Medicinal Chemistry and Drug Design	3	6	CHEM 540 Organic Reactions and Mechanisms (5460) (C and above)			Chemistry	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM
174	CHEM 543	Structural Identification of Organic Compounds	3	6				Chemistry	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM
175	CHEM 591	Scientific Methods in Chemistry	3	6				Chemistry	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM
176	CHEM 691	Thesis Proposal	3	6				Chemistry		

Communication and Composition

177	WCS 501	Science Communication	3	6				SMG, SSH, SoM			
Economics											
178	ECON 501	Microeconomics I	4	8				Economics	SEDS, SMG, SSH, SoM		
179	ECON 502	Macroeconomics I	4	8				Economics	SEDS, SMG, SSH, SoM		
180	ECON 503	Introduction to Contract Theory and Auctions	4	8				Economics	SEDS, SMG, SSH, SoM		
181	ECON 511	Statistics	4	8				Economics	SEDS, SMG, SSH, SoM		
182	ECON 512	Mathematical Economics	4	8				Economics	SEDS, SMG, SSH, SoM		
183	ECON 515	Industrial Organization	4	8	ECON 531 Econometrics (2505) (C- and above)			Economics	SEDS, SMG, SSH, SoM		
184	ECON 532	Applied Econometrics	4	8				Economics	SEDS, SMG, SSH, SoM		
185	ECON 589	Thesis I	4	8				2 year Gr SSH Economics			
Mathematics											
186	MATH 510	Measure Theory and Applications	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
187	MATH 517	Scientific Modeling and Simulation with Mathematics	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
188	MATH 519	Scientific Computing	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
189	MATH 540	Statistical Learning	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
190	MATH 551	Advanced Numerical Methods	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
191	MATH 571	Advanced Nonlinear Differential Equations	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
192	MATH 592	Research Seminar	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
193	MATH 680	Potential Theory and Polynomial Approximation	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
194	MATH 682	Applied Functional Analysis	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
Physics											
195	PHYS 505	Classical Mechanics	3	6				Physics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	

196	PHYS 511	Computational Modeling and Simulation	3	6				Physics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
197	PHYS 515	Classical Electrodynamics	3	6				Physics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
198	PHYS 530	Solid State Physics	4	8				Physics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
199	PHYS 550	Advanced Mathematical Physics	3	6				Physics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
200	PHYS 591	Research Methods	3	6				Physics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
201	PHYS 600	Thesis Research	0	0				Physics			
Political Science and International Relations											
202	PLS 511	Advanced Research I	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
203	PLS 516	Experimental Political Science	4	8	PLS 511 Advanced Research I (1631) (C- and above)			Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
204	PLS 533	Homeland Security	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
205	PLS 540	Core Seminar in Comparative Politics	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
206	PLS 548	Comparative Electoral System	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
207	PLS 549	Politics and Governance of the Gulf	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
208	PLS 550	Core Seminar in IR	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
209	PLS 558	International Organization	4	8	PLS 550 Core Seminar in IR (1372) (C- and above)			Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
210	PLS 559	International Conflict Processes	4	8	PLS 550 Core Seminar in IR (1372) (C- and above) AND PLS 511 Advanced Research I (1631) (C- and above)			Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
211	PLS 598	MA Thesis I	6	12				Instructor's Permission Required. Registration through Add Course form only!			
Sociology and Anthropology											

212	ANT 506	Anthropology of Performance	4	8			ANT 306 Anthropology of Performance (1459) (D and above)	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM			
213	ANT 521	Sport and Construction of Identity	4	8				GSB, GSE, GSPP, SEDS, SMG, SSH, SoM			
SEDS											
Chemical and Materials Engineering											
214	MBME 601	Master Thesis I	12	24				2 year Gr SEDS Biomedical Engineering			
215	MBME 603	Biomaterials Science & Engineering	3	6				1 year Gr SEDS Biomedical Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		
216	MBME 604	Biosensors	3	6				1 year Gr SEDS Biomedical Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		

217	MBME 610	Anatomy and Physiology for Biomedical Engineers	3	6				1 year Gr SEDS Biomedical Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		
218	MBME 703	Medical Device Technology	3	6				2 year Gr SEDS Biomedical Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		
219	MBME 709	Mechanics of Living Tissue	3	6				2 year Gr SEDS Biomedical Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		

220	MCHME 601	Master Thesis I	12	24				2 year Gr SEDS Chemical and Materials Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		
221	MCHME 603	Advanced Materials Processing	3	6				1 year Gr SEDS Chemical and Materials Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		
222	MCHME 604	Advanced Materials Characterization Methods	3	6				1 year Gr SEDS Chemical and Materials Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		

223	MCHME 605	Advanced Chemical Reaction Engineering	3	6				1 year Gr SEDS Chemical and Materials Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics			
224	MCHME 702	Biofilms Science and Engineering	3	6				2 year Gr SEDS Chemical and Materials Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics			
225	MCHME 714	Computational Materials Engineering	3	6				2 year Gr SEDS Chemical and Materials Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics			
Civil Engineering												

226	MSC 600	Research Methods and Ethics	3	6				1 year Gr SEDS Engineering Management	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
227	MSC 601	Technical Communication	3	6				1 year Gr SEDS Biomedical Engineering, 1 year Gr SEDS Chemical and Materials Engineering, 1 year Gr SEDS Civil and Environmental Engineering, 1 year Gr SEDS Computer Science, 1 year Gr SEDS Mechanical and Aerospace Engineering, 1 year Gr SEDS Robotics and Mechatronics	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Mechanical and Aerospace Engineering, Robotics	Electrical and Computer Engineering	
228	MSC 602	Advanced Applied Mathematics	3	6				1 year Gr SEDS Biomedical Engineering, 1 year Gr SEDS Chemical and Materials Engineering, 1 year Gr SEDS Civil and Environmental Engineering, 1 year Gr SEDS Electrical and Computer Engineering, 1 year Gr SEDS Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Mechanical and Aerospace Engineering		
229	MSC 615	Advanced Statistics and Probability	3	6				1 year Gr SEDS Engineering Management	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		

Civil and Environmental Engineering

230	EMEM 507	Project Management	3	6				1 year Gr SEDS Engineering Management	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
231	EMEM 509	Systems Engineering	3	6				2 year Gr SEDS Engineering Management, 2 year Gr SEDS Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
232	EMEM 523	Supply Chain Management	3	6				2 year Gr SEDS Engineering Management	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
233	EMEM 533	Engineering Management and Engineering Economy	3	6				1 year Gr SEDS Engineering Management	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		

234	EMEM 537	Engineering Decision Tools	3	6				2 year Gr SEDS Engineering Management	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
235	EMEM 538	Knowledge and Innovation Management	3	6				1 year Gr SEDS Engineering Management	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
236	EMEM 539	Big Data and Information Management	3	6				2 year Gr SEDS Engineering Management	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
237	EMEM 542	Production and Service Operations Management	3	6				2 year Gr SEDS Engineering Management	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
238	MCEE 601	Master Thesis I	12	24	MCEE 600 Research Seminar (4692) (P)			2 year Gr SEDS Civil and Environmental Engineering			

239	MCEE 603	Finite Element Methods	3	6				1 year Gr SEDS Civil and Environmental Engineering, 1 year Gr SEDS Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
240	MCEE 604	Advanced Soil Mechanics	3	6				1 year Gr SEDS Civil and Environmental Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		
241	MCEE 605	Advanced Environmental Chemistry	3	6				1 year Gr SEDS Civil and Environmental Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		
242	MCEE 708	Advanced Foundation Engineering	3	6				2 year Gr SEDS Civil and Environmental Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		

Computer Science

243	CSCI 501	Software Principles and Practice	3	6				Computer Science, Robotics	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering	SSH	
244	CSCI 511	Theory of Computation	3	6				Computer Science, Robotics	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering	SSH	
245	CSCI 515	Modeling and Simulation for Computer Science	3	6				Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics	Applied Mathematics, Biological Sciences, Chemistry, Economics, Eurasian Studies, Physics, Political Science and International Relations	SSH	
246	CSCI 585	Computer Vision	3	6				Computer Science, Data Science, Robotics	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, SEDS	SSH	

247	CSCI 594	Deep Learning	3	6				Computer Science, Data Science, Robotics	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, SEDS	SSH	
248	CSCI 693	Thesis Proposal	3	6	SEDS 591 Research Methods (3184) (C- and above)			2 year Gr SEDS Computer Science			
249	DS 501	Fundamentals of Data Science	3	6				Data Science			
250	DS 502	Probability and Statistics for Data Science	3	6				Data Science	Computer Science	SEDS, SSH	
251	DS 507	Database Management Systems	3	6				Data Science	Computer Science	SEDS, SSH	
252	DS 551	Process and Project Management	3	6				Data Science	Computer Science	SEDS, SSH	
253	DS 552	Data-Driven Innovation	3	6				Data Science	Computer Science	SEDS, SSH	
254	DS 693	Thesis Proposal	3	6	SEDS 591 Research Methods (3184) (C- and above)			2 year Gr SEDS Data Science			
255	SEDS 503	Laboratory Practicum	3	6	SEDS 502 Teaching Practicum (2824) (P)			2 year Gr SEDS Computer Science, 2 year Gr SEDS Data Science, 2 year Gr SEDS Robotics and Mechatronics			
256	SEDS 504	Innovation and Entrepreneurship	3	6							
257	SEDS 591	Research Methods	3	6				1 year Gr SEDS Computer Science, 1 year Gr SEDS Data Science, 1 year Gr SEDS Robotics and Mechatronics	Computer Science, Data Science, Robotics		
Electrical and Computer Engineering											
258	MECE 600	Research Seminar	3	6				2 year Gr SEDS Electrical and Computer Engineering			
259	MECE 601	Master Thesis I	12	24				2 year Gr SEDS Electrical and Computer Engineering			

260	MECE 603	Advanced Data Structures and Algorithms	3	6				1 year Gr SEDS Electrical and Computer Engineering	Applied Mathematics, Biological Sciences, Biomedical Engineering, Chemical and Materials Engineering, Chemistry, Civil and Environmental Engineering, Computer Science, Data Science, Economics, Electrical and Computer Engineering, Engineering Management, Eurasian Studies, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Physics, Political Science and International Relations, Robotics		
261	MECE 605	Statistics and Probability for Electrical and Computer Engineers	3	6				1 year Gr SEDS Electrical and Computer Engineering	Applied Mathematics, Biological Sciences, Biomedical Engineering, Chemical and Materials Engineering, Chemistry, Civil and Environmental Engineering, Computer Science, Data Science, Economics, Electrical and Computer Engineering, Engineering Management, Eurasian Studies, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Physics, Political Science and International Relations, Robotics		

262	MECE 606	Embedded Systems and Applications	3	6				1 year Gr SEDS Electrical and Computer Engineering	Applied Mathematics, Biological Sciences, Biomedical Engineering, Chemical and Materials Engineering, Chemistry, Civil and Environmental Engineering, Computer Science, Data Science, Economics, Electrical and Computer Engineering, Engineering Management, Eurasian Studies, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Physics, Political Science and International Relations, Robotics		
263	MECE 724	System Modelling and Control	3	6				1 year Gr SEDS Electrical and Computer Engineering	Applied Mathematics, Biological Sciences, Biomedical Engineering, Chemical and Materials Engineering, Chemistry, Civil and Environmental Engineering, Computer Science, Data Science, Economics, Electrical and Computer Engineering, Engineering Management, Eurasian Studies, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Physics, Political Science and International Relations, Robotics		
Mechanical and Aerospace Engineering											

264	MMAE 601	Master Thesis I	12	24	MMAE 600 Research Seminar (4703) (P)			2 year Gr SEDS Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		
265	MMAE 603	Modern Control Engineering	3	6				1 year Gr SEDS Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		
266	MMAE 605	Advanced Manufacturing Processes and Strategies	3	6				1 year Gr SEDS Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		

267	MMAE 702	Sustainable Vehicle Transportation Systems	3	6				2 year Gr SEDS Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		
Robotics and Mechatronics											
268	ROBT 501	Robot Manipulation and Mobility	3	6				Robotics	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering		
269	ROBT 503	Dynamic Systems and Control	3	6				Robotics	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering		
270	ROBT 613	Brain-Machine Interfaces	3	6				Robotics	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering		

271	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	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering		
272	ROBT 691	Thesis Proposal	6	12				Robotics	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering		