

## Course Requirements and Registration Priorities Fall 2019

#	Abbr	Title	Cr(US)	Cr(ECTS)	PreRequisite	CoRequisite	AntiRequisite	1st priority registration	2nd priority registration	3rd priority registration	4th priority registration
<b>CPS</b>											
<b>NUFYP</b>											
1	FBIO 011	Introduction to Biology	1	2							
2	FBUS 011	Introduction to Business	1	2							
3	FCHM 011	Introduction to Chemistry	1	2							
4	FEAP 001	English for Academic Purposes	0	0				The course is already added to your schedule			
5	FGEO 011	Introduction to Geography	1	2							
6	FHUM 011	Introduction to Humanities and Social Science	1	2							
7	FMATH 001	Mathematics	1	2				The course is already added to your schedule			
8	FPHY 011	Introduction to Physics	1	2			FBIO 011 Introduction to Biology (4579) (C- and above)				
<b>NUZYP</b>											
9	ZCOM 040	Academic Communications for Graduate Studies I	0	0							
10	ZRDG 030	Academic Reading for Graduate Studies I	0	0							
11	ZWRT 020	Academic Writing for Graduate Studies I	0	0							
<b>GSB</b>											
<b>GSB</b>											
12	GSBF 501	Team Building and Business Communications	1	2							
13	GSBF 511	Statistical Methods	2	4							
14	GSBF 512	Principles of Finance	2	4							
15	GSBF 515a	Investments I	2	4							
16	GSBF 516	Financial Markets and Institutions	2	4							
17	GSBF 533	Islamic Banking and Finance	2	4							

18	GSBF 535	Insurance & Actuarial Science	2	4							
19	GSBF 550A	Master's Thesis	3	6							
20	MBA 01	Consequential Leadership	1	2							
21	MBA 02	Business Mathematics and Business Computer Application	1	2							
22	MBA 03	Financial Accounting	2	4							
23	MBA 04	Probability and Statistics	2	4							
24	MBA 05	Business Communication	2	4							
25	MBA 07	Managerial Effectiveness	2	4							
26	MBA 08	Managerial Economics	2	4							
27	MBA 16	Entrepreneurship	2	4							
28	MBA 16A	Introduction to Entrepreneurship	1	2							
29	MBA 19	Distinguished Speaker Series	0	1							
30	MBA 20	Practicum Project	2.5	5							
31	MBA 20A	Internship	6	12							
32	MBAE 14	Innovation Process	2	4							
33	MBAE 15	Advanced Corporate Finance	2	4							
34	MBAE 16	Project Management	2	4							
35	MBAE 17	China Business Environment	2	4							
36	MBAE 18	Consumer Behavior	2	4							
37	MBAE 3	Valuation	2	4							
38	MBAE 4	Pricing	2	4							
39	MBAE 8	Leadership	2	4							
40	MSF 02	Thesis Preparation Seminar	2	4							
41	MSF 03	Advanced Econometrics	2	4							
42	MSF 04	Private Equity	2	4							
<b>GSPP</b>											
<b>GSPP</b>											
43	DPE 627	Population Health and Social Policy	4	8					2 year GSPP PhD Public Policy		
44	DPE 628	Good Governance and Corruption	4	8					2 year GSPP PhD Public Policy		
45	DPE 685	Water Resources Policy and Management	4	8					2 year GSPP PhD Public Policy		
46	DPP 601	Microeconomics in the Public Sector	4	8					1 year GSPP PhD Public Policy		

47	DPP 603	Public Administration and Management	4	8				1 year GSPP PhD Public Policy			
48	DPP 609	Human Resource Management	4	8							
49	DPP 611	Statistics in Public Policy	4	8				1 year GSPP PhD Public Policy			
50	DPP 614	Advanced Quantitative Methods	4	8				2 year GSPP PhD Public Policy			
51	DPP 615	Governance and Public Policy	4	8				1 year GSPP PhD Public Policy			
52	DPP 616	Advanced Qualitative Methods	4	8				2 year GSPP PhD Public Policy			
53	DPP 637	Comparative Policy-Making and Public Policy	4	8				2 year GSPP PhD Public Policy			
54	DPP 690	Thesis Preparation and Writing	0	0							
55	MPA 602	Public Administration in Theory and Practice	4	8				1 year GSPP Public Administration			
56	MPA 603	Economic Applications for Public Managers	4	8				1 year GSPP Public Administration			
57	MPA 605	Research Methods for Decision Making	4	8				1 year GSPP Public Administration			
58	MPA 609	Human Resource Management	4	8				2 year GSPP Public Administration, GSPP		GSE, SEDS, SMG, SSH, SoM	
59	MPA 624	Public Management Reforms in Transitional Countries	4	8				2 year GSPP Public Policy	GSPP	GSB, GSE, SEDS, SMG, SSH, SoM	
60	MPA 637	Comparative Policy-Making and Public Policy	4	8				2 year GSPP Public Administration	GSPP	GSB, GSE, SEDS, SMG, SSH, SoM	
61	MPA 699	Master's Project with Overseas Component	0	0				2 year GSPP Public Administration			
62	MPE 617	Institutions and development policies	4	8				2 year GSPP Public Administration	GSPP	GSB, GSE, SEDS, SMG, SSH, SoM	
63	MPE 625	Ethics and Public Policy	4	8				2 year GSPP Public Administration	GSPP	GSB, GSE, SEDS, SMG, SSH, SoM	
64	MPE 626	Open Governance	4	8				2 year GSPP Public Policy	GSPP	GSB, GSE, SEDS, SMG, SSH, SoM	
65	MPE 627	Population Health and Social Policy	4	8				2 year GSPP Public Policy	GSPP	GSB, GSE, SEDS, SMG, SSH, SoM	
66	MPE 628	Good Governance and Corruption	4	8				2 year GSPP Public Administration	GSPP	GSB, GSE, SEDS, SMG, SSH, SoM	

67	MPE 685	Water Resources Policy and Management	4	8				2 year GSPP Public Administration	GSPP	GSB, GSE, SEDS, SMG, SSH, SoM	
68	MPP 601	Microeconomics and Public Policy	4	8				1 year GSPP Public Policy			
69	MPP 611	Statistical Techniques for Public Policy	4	8				1 year GSPP Public Policy			
70	MPP 612	Public Policy Research and Evaluation	4	8				1 year GSPP Public Policy			
71	MPP 621	Introduction to Public Policy and Analysis	4	8				1 year GSPP Public Policy			
72	MPP 631	Politics and Public Policy	4	8				2 year GSPP Public Policy			
<b>GSE</b>											
<b>GSE</b>											
73	EDHE 609	Introduction to Educational Leadership: Higher Education	3	6				1 year GSE Educ.Leadership			
74	EDHE 610	Applying Educational Leadership in Kazakhstan	3	6				1 year GSE Educ.Leadership			
75	EDHE 623	Transformations of Higher Education in Eurasia/Post-Soviet States	3	6				1 year GSE Educ.Leadership			
76	EDHE 691	Thesis Seminar II	3	6				2 year GSE Educ.Leadership			
77	EDIE 609	Introduction to Educational Leadership: Inclusive Education	3	6				1 year GSE Educ.Leadership			
78	EDIE 651	Inclusive Education: Policy Perspectives	3	6				1 year GSE Educ.Leadership			
79	EDIE 652	Curriculum Design: perspectives on Addressing Barriers to Teaching and Learning (Including SEN)	3	6				1 year GSE Educ.Leadership			
80	EDIE 691	Thesis Seminar II	3	6				2 year GSE Educ.Leadership			
81	EDML 601	Introduction to Linguistics	3	6				1 year GSE MA in Multil.Education			
82	EDML 610	Foundations of Multilingual Education	3	6				1 year GSE MA in Multil.Education			
83	EDML 614	Multilingual curriculum development and assessment	3	6				2 year GSE MA in Multil.Education			
84	EDML 627	Application of CLIL in Teaching	3	6				2 year GSE MA in Multil.Education			

85	EDML 630	Language Policy and Education Reform Across Contexts	3	6				2 year GSE MA in Multil.Education			
86	EDML 690	Thesis Research I	3	6				2 year GSE MA in Multil.Education			
87	EDSE 609	Introduction to Educational Leadership: School Education	3	6				1 year GSE Educ.Leadership			
88	EDSE 632	School Improvement and Effectiveness	3	6				1 year GSE Educ.Leadership			
89	EDSE 637	Student Discourse and Argumentation: Theories, Practices and Policies	3	6				1 year GSE Educ.Leadership			
90	EDSE 690	Thesis Seminar I	3	6				Registration by School Administration			
91	EDSE 691	Thesis Seminar II	3	6				2 year GSE Educ.Leadership			
92	EDUC 505	Academic English 1	1.5	3				1 year GSE Educ.Leadership			
93	EDUC 507	Academic English III	1.5	3				2 year GSE Educ.Leadership			
94	EDUC 510	Advanced English for Education Professionals I	3	6				1 year GSE MA in Multil.Education			
95	EDUC 512	English for Thesis Writing I	3	6				2 year GSE MA in Multil.Education			
96	EDUC 571	Basic Kazakh	3	6				1 year GSE Educ.Leadership			
97	EDUC 590	Academic English Writing for Doctoral Students I	1.5	3				1 year GSE PhD Education			
98	EDUC 600	Research Methods I	3	6				1 year GSE Educ.Leadership, 1 year GSE MA in Multil.Education			
99	EDUC 602	Educational Context and Reform in Kazakhstan	3	6				1 year GSE Educ.Leadership, 1 year GSE MA in Multil.Education			
100	EDUC 701	Education Research Methods	3	6				1 year GSE PhD Education			
101	EDUC 709	Introduction to Scholarship in Education	3	6				1 year GSE PhD Education			
102	EDUC 712	Educational Policy and Reform	3	6				1 year GSE PhD Education			
103	EDUC 720	Philosophy of Education	3	6				1 year GSE PhD Education			
104	EDUC 730	Preparation for Proposal Defence I	6	12				2 year GSE PhD Education			

105	EDUC 731	Proposal Defence	3	6				3 year GSE PhD Education			
106	EDUC 740	Doctoral Seminar	3	6				3 year GSE PhD Education			
107	EDUC 750	Dissertation Research	9	18				3 year GSE PhD Education			
108	EDUC 800	International Study	12	24				2 year GSE PhD Education			
<b>Other</b>											
<b>Other</b>											
109	STUMOB 001	Student Mobility Course	0	0							
110	T-ACCOUNTG 597	FINANCIAL STATEMENT ANLY	3	6							
111	T-CE 500	The Chinese Economy	2.5	5.5							
112	T-CSER 500	Contemporary Sino-European Relations	2.5	5.5							
113	T-DECISION 618	Data Analytics for Business	3	6							
114	T-FINANCE 652	PROJECT FINANCE	3	6							
115	T-IC 500	Introduction of China	2.5	5.5							
116	T-MMC:HSP 500	The Making of Modern China: Historical and Social Perspectives	2.5	5.5							
117	T-MSH 021	Labor Economics and Public Policy	4	8							
118	T-MSI 064	Topic in North Korean Economy	4	8							
119	T-MSN 026	Korean Economic Development	4	8							
120	T-MSN 048	Input/Output Analysis	4	8							
121	T-MSR 044	Urbanization for Economic Development	4	8							
122	T-MSR 060	Smart Cities	4	8							
123	T-OPERATNS 823	OPERATIONS STRATEGY	3	6							
124	T-PM:TP 500	Public Management: Theory and Practice	2.5	5.5							
125	T-PP 5196	Education Economics and Policy	4	8							
126	T-PP 5212	Financial Issues, Trade and Investment in Asia	4	8							
127	T-PP 5257	Urban Water Governance	4	8							
128	T-PP 5267	Urban Transport Policy: A Global View	4	8							

129	T-PP 5510	Governing Cities of Tomorrow	4	8						
130	T-RMPA 500	Research Methods in Public Administration	2.5	5.5						
131	T-STRATEGY 627	Sustainable Business Strategy	3	6						
<b>SoM</b>										
<b>Biomedical Sciences</b>										
132	MMMM 501	Molecular Basis of Infection	3	6				For MMMM Yr 1 Only. Registration by School Admin.		
133	MMMM 502	Molecular Pathology of Cancer	3	6				For MMMM Yr 1 Only. Registration by School Admin.		
134	MMMM 503	Bioethics in Research: Principles and Practice	3	6				For MMMM Yr 2 Only. Registration by School Admin.		
135	MMMM 504	Molecular Basis of Genetic Disease	3	6				For MMMM Yr 1 Only. Registration by School Admin.		
136	MMMM 506	Biocomputing	1	2				For MMMM Yr 1 Only. Registration by School Admin.		
137	MMMM 603	Recombinant Drugs	3	6				For MMMM Yr 2 Only. Registration by School Admin.		
138	MMMM 604	Nutrigenomics	1.5	3				For MMMM Yr 2 Only. Registration by School Admin.		
139	MMMM 607	Basics and Applied Precision Medicine	3	6				For MMMM Yr 2 Only. Registration by School Admin.		
<b>Nursing</b>										
140	NUR 101	Human Anatomy and Physiology 1 and Lab	4	8				Nursing		
141	NUR 112	Introduction to Professional Nursing	2	4				Nursing		
142	NUR 301	Nutrition for Clinical Practice	3	6				For Applied Nursing program only		
143	NUR 302	Physical Assessment Across the Lifespan	4	8				For Applied Nursing program only		
144	NUR 303	Nursing Care of Older Adults	4	8				For Applied Nursing program only		
145	NUR 304	Introduction to Basic Statistics for Evidence Based Practice	3	6				For Applied Nursing program only		
<b>Public Health</b>										

146	PUBH 501	Principles of Public Health Problem Solving	3	6				For PUBH Yr 1 Only. Registration by School Admin.			
147	PUBH 510	Inferential Biostatistics	1.5	3	MMMM 505 Inferential Biostatistics (3839) (C and above)						
148	PUBH 511	Inferential Biostatistics	3	6				For PUBH Yr 1 Only. Registration by School Admin.			
149	PUBH 521	Principles of Analytical Epidemiology	3	6				For PUBH Yr 1 Only. Registration by School Admin.			
150	PUBH 528	Qualitative Research Methods	3	6				For PUBH Yr 1 Only. Registration by School Admin.			
151	PUBH 531	Emerging Infectious Diseases	3	6				For PUBH Yr 1 Only. Registration by School Admin.			
152	PUBH 552	Principles of Health Economics and Policy	3	6	PUBH 551 Health Services Management, Health Economic and Health Policy (3696) (C and above)			For PUBH Yr 2 Only. Registration by School Admin.			
153	PUBH 601	Health Education and Promotion	3	6				For PUBH Yr 2 Only. Registration by School Admin.			
154	PUBH 633	Methods in Public Health	3	6				For PUBH Yr 2 Only. Registration by School Admin.			
155	PUBH 641	Problem Investigations in Environmental Health	3	6				For PUBH Yr 2 Only. Registration by School Admin.			
156	PUBH 681	Master's Project Planning	3	6				For PUBH Yr 2 Only. Registration by School Admin.			
<b>SMG</b>											
<b>Mining Engineering</b>											
157	MINE 501	Foundations of Mining	3	6				Mining Engineering			
158	MINE 502	Geology for Mining Engineers	3	6				Mining Engineering			
159	MINE 503	Applied Geostatistics	3	6				Mining Engineering			
160	MINE 504	Mine Geomechanics	3	6				Mining Engineering			
161	MINE 505	Advanced Mine Ventilation	3	6				Mining Engineering			
162	MINE 601	Mine Management and Sustainability	3	6				Mining Engineering			

163	MINE 602	Mine Automation and Maintenance	3	6				Mining Engineering			
164	MINE 603	Multivariate Geostatistics	3	6	MINE 503 Applied Geostatistics (3692) (C- and above)			Mining Engineering			
165	MINE 606	Underground Hard Rock Geotechnical Engineering	3	6				Mining Engineering			
166	MINE 690	Thesis I	6	12				Mining Engineering			
167	MINE 701	Advanced Mine Geomechanics	4	8				1 year PhD SEDS Science, Engineering and Technology	Eurasian Studies		
168	MINE 804	Unconventional Mining Systems	4	8	MINE 501 Foundations of Mining (3693) (C and above)			1 year PhD SEDS Science, Engineering and Technology	Eurasian Studies		
169	MINE 890	Thesis Research	0	0				1 year PhD SEDS Science, Engineering and Technology			
<b>Petroleum Engineering</b>											
170	PETE 201	Fluid Mechanics and Thermodynamics	3	6	MATH 161 Calculus I (118) (D and above) OR CHEM 101 General Chemistry I (113) (D and above)			SMG	SEDS, SSH, SoM		
171	PETE 501	Foundations of Petroleum Engineering	3	6				Petroleum Engineering	2 year Gr SMG Petroleum Engineering	SEDS, SSH	
172	PETE 502	Petroleum Geology	3	6				Petroleum Engineering	SEDS, SSH		
173	PETE 503	Fluid Flow Through Porous Media	3	6				Petroleum Engineering	SEDS, SSH		
174	PETE 504	Advanced Formation Evaluation	3	6				Petroleum Engineering	SEDS, SSH		
175	PETE 505	Advanced Drilling Engineering	3	6				Petroleum Engineering	SEDS, SSH		
176	PETE 509	Advanced Well Testing and Evaluation	3	6				Petroleum Engineering	SEDS, SSH		
177	PETE 600	MSc Thesis	12	24				Petroleum Engineering			
178	PETE 601	Petroleum Data Analytics	3	6				Petroleum Engineering			
179	PETE 612	Research Proposal Preparation	3	6				Petroleum Engineering			
180	PETE 802	Fluid Flow Through Porous Media	4	8				1 year PhD SEDS Science, Engineering and Technology	Eurasian Studies		

181	PETE 890	Thesis Research	0	0				1 year PhD SEDS Science, Engineering and Technology		
<b>School of Mining and Geosciences</b>										
182	GEOL 201	Mineralogy	3	6				SMG	SEDS, SSH, SoM	
183	GEOL 202	Geologic Maps & Cross-Sections	3	6	GEOL 101 Fundamentals of Geology (4774) (D and above) OR GEOL 102 Fundamentals of Geology (4772) (D and above)			SMG	SEDS, SSH, SoM	
<b>SSH</b>										
<b>Area Studies</b>										
184	EAS 500	Introduction to Eurasia	4	8				Eurasian Studies	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM	
185	EAS 501	General Methodology	4	8				Eurasian Studies	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM	
186	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		
187	EAS 511	Independent Study in Eurasian Studies	4	8				Instructor's permission required		
188	EAS 700	Introduction to Eurasia	4	8				Eurasian Studies	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM	
189	EAS 701	Critical Issues in Eurasian Studies	2	4				Eurasian Studies	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM	
190	EAS 702	Elective in Eurasian Humanities	4	8						
191	EAS 703	Elective in Eurasian Social Sciences	4	8						
<b>Area Studies, Political Science and International Relations, Sociology and Anthropology</b>										
192	SOC 514/PLS 514/EAS 506	Qualitative Research Methods	4	8				Eurasian Studies, Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM	
<b>Biological Science</b>										

193	BIOL 101	Biology for non-Science majors	3	6			BIOL 110 Modern Biology I (1070) (C- and above)	Anthropology, Economics, History, Nursing, Political Science and International Relations, SEDS, SMG, Sociology, Undeclared, World Languages, Literature and Culture		
194	BIOL 110	Modern Biology I	3	6				Biological Sciences, Chemistry	Computer Science, Mathematics, Physics, Robotics and Mechatronics	Anthropology, Economics, History, Political Science and International Relations, Sociology, Undeclared, World Languages, Literature and Culture
195	BIOL 230	Human Anatomy and Physiology I	4	8	BIOL 110 Modern Biology I (107) (C and above) OR BIOL 110 Modern Biology I (1070) (C and above)			Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM
196	BIOL 305	Introduction to Microbiology with Lab	4	8	BIOL 110 Modern Biology I (1070) (C and above) AND BIOL 120 Modern Biology II (1195) (C and above)			Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM
197	BIOL 320	Developmental Biology	3	6	BIOL 230 Human Anatomy and Physiology I (72) (C and above)			Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM
198	BIOL 340	Introduction to Bioinformatics with Lab	4	8	BIOL 120 Modern Biology II (1195) (C and above) AND MATH 310 Applied Statistical Methods (82) (C and above)			Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM
199	BIOL 341	Biochemistry I	3	6	CHEM 211 Organic Chemistry I (154) (C and above)			Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM
200	BIOL 352	Biology of Cancer	3	6	BIOL 231 Human Anatomy and Physiology II (479) (C and above) OR BIOL 301 Molecular Biology of Cell with Lab (1197) (C and above)			Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM
201	BIOL 355	Critical Research Reasoning	3	6	BIOL 120 Modern Biology II (177) (C and above) OR BIOL 120 Modern Biology II (177) (C and above)			Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM

202	BIOL 370	Genetics	3	6	BIOL 120 Modern Biology II (1195) (C and above)			Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM	
203	BIOL 385	Cell signaling: principles and mechanisms	3	6	BIOL 120 Modern Biology II (1195) (C and above)			Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM	
204	BIOL 410	Immunology	3	6	BIOL 301 Molecular Biology of Cell with Lab (1197) (C and above) OR BIOL 305 Introduction to Microbiology with Lab (1642) (C and above)			Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM	
205	BIOL 425	Biomedical Research Methods	3	6	BIOL 110 Modern Biology I (1070) (C and above) AND BIOL 301 Molecular Biology of Cell with Lab (1197) (C and above) AND BIOL 341 Biochemistry I (2002) (C and above)			Biological Sciences			
206	BIOL 455	Biotechnology	3	6	BIOL 301 Molecular Biology of Cell with Lab (1197) (C- and above)			Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM	
207	BIOL 470	Advanced Cell Biology	3	6	BIOL 301 Molecular Biology of Cell with Lab (1197) (C and above) AND (BIOL 341 Biochemistry I (2002) (C and above) OR CHEM 341 Biochemistry I (1058) (C and above))			Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM	
208	BIOL 490	Graduation Project 1	4	8				Instructor's Permission Required			
209	BIOL 492	Directed Study in Biology	3	6				Instructor's Permission Required			
210	BIOL 520	Statistical Methods in Life Sciences	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
211	BIOL 550	Structural and Molecular Biology in Health and Disease	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
212	BIOL 560	Molecular Biology of Prokaryotic Cells	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
213	BIOL 631	Synthetic Biology	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
214	BIOL 632	Drug Discovery and Design	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	

215	BIOL 635	Hot Topics in Life Sciences	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
216	BIOL 670	Gene Therapy	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
217	BIOL 720	Statistical Methods in Life Sciences	3	6				1 year PhD SEDS Science, Engineering and Technology	SSH	GSE, GSPP, SEDS, SMG	
218	BIOL 731	Synthetic Biology	4	8				1 year PhD SEDS Science, Engineering and Technology	SSH	GSE, GSPP, SEDS, SMG	
219	BIOL 732	Drug Discovery and Design	4	8				1 year PhD SEDS Science, Engineering and Technology	SSH	GSE, GSPP, SEDS, SMG	
220	BIOL 750	Structural and Molecular Biology in Health and Disease	4	8				1 year PhD SEDS Science, Engineering and Technology	SSH	GSE, GSPP, SEDS, SMG	
221	BIOL 799	Thesis Research	0	0				1 year PhD SEDS Science, Engineering and Technology	SSH	GSE, GSPP, SEDS, SMG	
<b>Chemistry</b>											
222	CHEM 090	Chemistry for Non-Science majors	3	6				Anthropology, Economics, History, Nursing, Political Science and International Relations, Sociology, Undeclared, World Languages, Literature and Culture			
223	CHEM 091	Survey of Physical Science	3	6				Anthropology, Economics, History, Political Science and International Relations, Sociology, Undeclared, World Languages, Literature and Culture			
224	CHEM 101	General Chemistry I	3	6				Biological Sciences, Chemistry	Mathematics, Physics	SMG	
225	CHEM 101L	General Chemistry I lab	1	2			CHEM 101 General Chemistry I (113) (C and above)	Biological Sciences, Chemistry		SMG	
226	CHEM 102	General Chemistry II	3	6			CHEM 101 General Chemistry I (113) (C and above)	SMG	Biological Sciences, Chemistry	SEDS, SSH, SoM	

227	CHEM 211	Organic Chemistry I	3	6	CHEM 102 General Chemistry II (232) (C and above)			Biological Sciences, Chemistry	SEDS, SMG, SSH, SoM		
228	CHEM 211L	Organic Chemistry I Lab	1	2	CHEM 101L General Chemistry I lab (179) (C and above)	CHEM 211 Organic Chemistry I (154) (C and above)		Biological Sciences, Chemistry	SEDS, SMG, SSH, SoM		
229	CHEM 220	Quantitative Chemical Analysis	3	6	CHEM 102 General Chemistry II (232) (C and above)			Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
230	CHEM 220L	Quantitative Chemical Analysis Lab	1	2	CHEM 101L General Chemistry I lab (179) (C and above)	CHEM 220 Quantitative Chemical Analysis (555) (C and above)		Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
231	CHEM 331	Physical Chemistry I	3	6	CHEM 220 Quantitative Chemical Analysis (555) (C and above) AND PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C and above)			Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
232	CHEM 331L	Physical Chemistry Lab	1	2	CHEM 101L General Chemistry I lab (179) (C and above)	CHEM 331 Physical Chemistry I (634) (C and above)		Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
233	CHEM 341	Biochemistry I	3	6	CHEM 211 Organic Chemistry I (154) (C and above) AND BIOL 120 Modern Biology II (1195) (C- and above)			Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
234	CHEM 341L	Biochemistry I Lab	1	2	CHEM 212L Organic Chemistry II Lab (444) (C and above)	CHEM 341 Biochemistry I (1058) (C and above)		Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
235	CHEM 350	Advanced Inorganic Chemistry	3	6	CHEM 212 Organic Chemistry II (443) (C and above) AND CHEM 212L Organic Chemistry II Lab (444) (C and above) AND CHEM 250 Descriptive Inorganic Chemistry (445) (C and above)			Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	

236	CHEM 350L	Advanced Inorganic Chemistry Laboratory	1	2	CHEM 212 Organic Chemistry II (443) (C and above) AND CHEM 212L Organic Chemistry II Lab (444) (C and above) AND CHEM 250 Descriptive Inorganic Chemistry (445) (C and above)	CHEM 350 Advanced Inorganic Chemistry (1905) (C and above)		Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
237	CHEM 400	Chemistry Seminar	3	6	CHEM 380 Research Methods (636) (C and above)			Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
238	CHEM 410	Structural Spectroscopy	4	8	CHEM 212 Organic Chemistry II (443) (C and above)			Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
239	CHEM 471	Environmental Chemistry	3	6	CHEM 320 Instrumental Analysis (1055) (C and above) AND CHEM 212 Organic Chemistry II (443) (C and above)			Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
240	CHEM 510	Principles of Physical Chemistry	3	6				Chemistry	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
241	CHEM 520	Applied Analytical Chemistry	3	6				Chemistry	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
242	CHEM 530	Inorganic Structures and Reaction Mechanisms	3	6				Chemistry	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
<b>Communication and Composition</b>											
243	SHSS 300	SHSS Internship	3	6				Instructor permission required			
244	SHSS 301	SHSS Internship Second Experience	3	6				Instructor's permission only			
245	WCS 150	Rhetoric and Composition	3	6				SEDS, SMG, SSH, SoM			
246	WCS 202	Introduction to Public Speaking	3	6	WCS 150 Rhetoric and Composition (2183) (C-and above)			2 year UG SSH		2 year UG SEDS, 2 year UG SMG	
247	WCS 210	Technical and Professional Writing	3	6	WCS 150 Rhetoric and Composition (2183) (C-and above)			SEDS, SMG, SSH, SoM			
248	WCS 230	Say What you Mean: Clarity, Precision, and Style in Academic Writing	3	6	WCS 150 Rhetoric and Composition (2183) (C-and above)			SEDS, SMG, SSH, SoM			
249	WCS 240	Writing for Digital Media	3	6	WCS 150 Rhetoric and Composition (2183) (C-and above)			SEDS, SMG, SSH, SoM			

250	WCS 390	Writing Fellows I - Composition and Collaboration in Theory and Practice	3	6	WCS 150 Rhetoric and Composition (2183) (B+ and above) AND (WCS 210 Technical and Professional Writing (4881) (B+ and above) OR ) ( and above) OR WCS 230 Say What you Mean: Clarity, Precision, and Style in Academic Writing (3026) (B+ and above) OR WCS 240 Writing for Digital Media (4421) (B+ and above) OR WCS 250 Advanced Rhetoric and Composition (3027) (B+ and above)			Instructor's Permission Required		
251	WCS 730	From Genre to Style and Back: Writing for PhD Students	4	8				Instructor's Permission Required		
<b>Communication and Composition, Languages, Literature and Linguistics</b>										
252	WCS 260/WLL 235	Creative Writing: Introduction to Fiction Writing I	3	6	WCS 150 Rhetoric and Composition (2183) (C- and above)			SEDS, SMG, SSH, SoM		
<b>Economics</b>										
253	ECON 101	Introduction to Microeconomics	3	6				SEDS, SMG, SSH, SoM		
254	ECON 102	Introduction to Macroeconomics	3	6				SEDS, SMG, SSH, SoM		
255	ECON 201	Intermediate Microeconomics	3	6	ECON 101 Introduction to Microeconomics (379) (B- and above) AND (MATH 161 Calculus I (118) (B- and above) OR MATH 162 Calculus II (170) (B- and above))			Economics		SSH
256	ECON 202	Intermediate Macroeconomics	3	6	ECON 102 Introduction to Macroeconomics (503) (B- and above) AND (MATH 161 Calculus I (118) (B- and above) OR MATH 162 Calculus II (170) (B- and above))			Economics		SSH
257	ECON 211	Economic Statistics	3	6	ECON 101 Introduction to Microeconomics (379) (C and above) OR ECON 102 Introduction to Macroeconomics (503) (C and above)			Economics		SSH

258	ECON 300	Research Assistance in Economics	1	2	ECON 101 Introduction to Microeconomics (379) (C- and above) AND ECON 102 Introduction to Macroeconomics (503) (C- and above)			Instructor permission required			
259	ECON 301	Econometrics I	3	6	ECON 211 Economic Statistics (2280) (C- and above) OR (MATH 321 Probability (482) (C- and above) AND (MATH 322 Mathematical Statistics (1165) (C- and above) OR MATH 310 Applied Statistical Methods (82) (C- and above)))			Economics		SSH	
260	ECON 317	East Asian Economic Development	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above)			Economics		SSH	
261	ECON 322	Natural Resources and Environmental Economics	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above)		ECON 331 Environmental Economics (1687) (C- and above)	Economics		SSH	
262	ECON 325	International Trade	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above)			Economics		SSH	
263	ECON 326	The Economics of Financial Markets	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above)			Economics		SSH	
264	ECON 399	Independent Study in Economics	3	6				Economics		SSH	
265	ECON 403	Introduction to Contract Theory and Auctions	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above) AND ECON 301 Econometrics I (664) (C- and above)			Economics		SSH	
266	ECON 405	Behavioral and Experimental Economics	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above) AND ECON 301 Econometrics I (664) (C- and above)			Economics		SSH	
267	ECON 413	Econometrics II	3	6	ECON 301 Econometrics I (664) (C- and above)			Economics		SSH	
268	ECON 417	Development Economics	3	6	ECON 301 Econometrics I (664) (C- and above)			Economics		SSH	
269	ECON 501	Microeconomics I	4	8				Economics	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		

270	ECON 502	Macroeconomics I	4	8				Economics	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
271	ECON 503	Introduction to Contract Theory and Auctions	4	8				Economics	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
272	ECON 505	Behavioral and Experimental Economics	4	8				Economics	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
273	ECON 511	Statistics	4	8				Economics	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
274	ECON 512	Mathematical Economics	4	8				Economics	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
275	ECON 517	Development Economics	4	8				Economics	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
276	ECON 532	Applied Econometrics	4	8				Economics	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
277	ECON 589	Thesis I	4	8				2 year Gr SSH Economics			
<b>History, Philosophy and Religious Studies</b>											
278	HST 100	History of Kazakhstan	3	6				4 year UG SEDS, 4 year UG SEDS(pending graduation), 4 year UG SSH, 4 year UG SSH (pending graduation)	1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 1 year UG SSH	SEDS, SMG, SSH, SoM	
279	HST 104	Central Asian History II (1700 - 1991)	3	6				History, Undeclared	SEDS, SMG, SSH, SoM		
280	HST 105	Introduction to Eurasian Environmental History	3	6				History, Undeclared	SEDS, SMG, SSH, SoM		
281	HST 124	Introduction to the History of Medicine	3	6				History, Undeclared	SEDS, SMG, SSH, SoM		
282	HST 151	US History I (to 1877)	3	6				History, Undeclared	SEDS, SMG, SSH, SoM		
283	HST 232	Russian History from Riurik to Catherine the Great	3	6				SSH	SEDS, SMG, SoM		
284	HST 235	Peter the Great (1682-1725): First Emperor of Russia and "Father of the Fatherland"	3	6				SSH	SEDS, SMG, SoM		

285	HST 335	European Nationalisms	3	6	HST 100 History of Kazakhstan (172) (C- and above) OR HST 103 Central Asian History I (to 1700) (197) (C- and above) OR HST 104 Central Asian History II (1700 - 1991) (1192) (C- and above) OR HST 121 World History I (to 1500) (1193) (C- and above) OR HST 122 World History II (from 1500) (1162) (C- and above) OR HST 131 European History I (to 1700) (201) (C- and above) OR HST 132 European History II (from 1700) (139) (C- and above) OR HST 151 US History I (to 1877) (668) (C- and above) OR HST 152 US History II (from 1877) (465) (C- and above) OR HST 172 Middle Eastern History II (from 1800) (1194) (C- and above) OR HST 182 East Asian History II (from 1500) (213) (C- and above) OR HST 199 Freshman Seminar (241) (C- and above)			SSH	SEDS, SMG, SoM		
286	HST 336	The Totalitarian Phenomenon	3	6	HST 100 History of Kazakhstan (172) (C- and above)			SSH	SEDS, SMG, SoM		
287	HST 420	The Russian Empire in Asia and its Neighbours 1552-1919	3	6	Subject "HST" BETWEEN 200 and 299 OR Subject "HST" BETWEEN 300 and 399			SSH	SEDS, SMG, SoM		
288	HST 498	Directed Reading	3	6				History			
289	HST 520	The Russian Empire in Asia and its neighbours, 1552-1919	4	8				Eurasian Studies	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
290	PHIL 101	Introduction to Philosophy	3	6				SEDS, SMG, SSH, SoM			
291	PHIL 110	The Good Life in Practice	3	6				SEDS, SMG, SSH, SoM			
292	PHIL 124	Knowledge and Reality	3	6				SEDS, SMG, SSH, SoM			
293	PHIL 141	Critical Thinking	3	6				SEDS, SMG, SSH, SoM			

294	PHIL 210	Ethics	3	6				2 year UG SEDS Chemical Engineering, 2 year UG SEDS Chemical and Materials Engineering, 2 year UG SEDS Civil Engineering, 2 year UG SEDS Civil and Environmental Engineering, 2 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Electronic Engineering, 2 year UG SEDS Mechanical Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering, 2 year UG SMG	SEDS, SMG, SSH, SoM		
295	PHIL 215	Bioethics	3	6				SEDS, SMG, SSH, SoM			
296	PHIL 223	Philosophy of Science	3	6				SEDS, SMG, SSH, SoM			
297	PHIL 240	Formal Logic	3	6				SEDS, SMG, SSH, SoM			
298	PHIL 320	Truth, Knowledge and Belief	3	6				SEDS, SMG, SSH, SoM			
299	PHIL 325	Truth, Lies, Media, and Propaganda	3	6				SEDS, SMG, SSH, SoM			
300	PHIL 352	Sex, Life, and Death: The Philosophy of Biology	3	6				SEDS, SMG, SSH, SoM			
<b>History, Philosophy and Religious Studies, History, Philosophy and Religious Studies</b>											
301	HST 261/REL 261	History of Islam (570s to 1258)	3	6	Subject "HST" BETWEEN 100 and 199 OR Subject "REL" BETWEEN 100 and 199			SSH	SEDS, SMG, SoM		
<b>History, Philosophy and Religious Studies, Political Science and International Relations</b>											
302	HST 312/PLS 333	Comparative Colonialism	3	6	Subject "HST" BETWEEN 100 and 199 OR Subject "WLL" BETWEEN 100 and 199 OR Subject "PLS" BETWEEN 100 and 199			SSH	SEDS, SMG, SoM		
<b>History, Philosophy and Religious Studies, Sociology and Anthropology</b>											
303	ANT 313/REL 332	Islam and Politics in Eurasia	3	6				Anthropology, Sociology	SSH	SEDS, SMG, SoM	

304	HST 223/ANT 287	Cannibalism and Civilization	3	6				SSH	SEDS, SMG, SoM		
<b>Kazakh Language and Turkic Studies</b>											
305	KAZ 201	Academic Kazakh I	3	6	KLL "Basic" OR KLL "Intermediate"			SEDS, SMG, SSH, SoM			
306	KAZ 202	Academic Kazakh II	3	6	KAZ 201 Academic Kazakh I (4561) (C- and above) OR KLL "Upper-Intermediate"			SEDS, SMG, SSH, SoM			
307	KAZ 211	Academic Speaking in Kazakh	3	6	KAZ 201 Academic Kazakh I (4561) (C- and above) OR KLL "Upper-Intermediate" OR KLL "Advanced"			SEDS, SMG, SSH, SoM			
308	KAZ 212	Academic Writing in Kazakh	3	6	KLL "Advanced" OR KLL "Upper-Intermediate"			SEDS, SMG, SSH, SoM			
309	KAZ 226	Kazakh for Medical School	3	6	KLL "Upper-Intermediate" OR KLL "Advanced"			SEDS, SMG, SSH, SoM			
310	KAZ 313	Kazakh for Business	3	6	KLL "Advanced" OR KLL "Upper-Intermediate"			SEDS, SMG, SSH, SoM			
311	KAZ 349	Kazakh Mythology	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "Advanced"			SEDS, SMG, SSH, SoM			
312	KAZ 351	Kazakh Short Stories	3	6	KLL "Advanced" OR KLL "Upper-Intermediate"			SEDS, SMG, SSH, SoM			
313	KAZ 354	Kazakh Drama	3	6	KLL "Advanced" OR KLL "Upper-Intermediate"			SEDS, SMG, SSH, SoM			
314	KAZ 356	Kazakh Music History	3	6	KLL "Advanced"			SEDS, SMG, SSH, SoM			
315	KAZ 357	Literature of Alash	3	6	KLL "Advanced" OR KLL "Upper-Intermediate"			SEDS, SMG, SSH, SoM			
316	KAZ 362	Creative Writing in Kazakh Language	3	6	KLL "Upper-Intermediate" OR KLL "Advanced"			SEDS, SMG, SSH, SoM			
317	KAZ 363	Language and Globalization	3	6	KLL "Upper-Intermediate" OR KLL "Advanced"			SEDS, SMG, SSH, SoM			
318	KAZ 364	Kazakh for Civil Service	3	6	KLL "Advanced" OR KLL "Upper-Intermediate" OR KAZ 314 Speech Culture in Business (1836) (C- and above)			SEDS, SMG, SSH, SoM			
319	KAZ 366	Kazakh Language for Engineers	3	6	KLL "Advanced" OR KLL "Upper-Intermediate"			SEDS, SMG, SSH, SoM			
320	KAZ 368	Onomastics: History and Function of Names	3	6	KLL "Advanced" OR KLL "Upper-Intermediate"			SEDS, SMG, SSH, SoM			

321	KAZ 371	Contemporary Kazakh Literature	3	6	KLL "Advanced"			SEDS, SMG, SSH, SoM			
322	KAZ 372	Language and ethnicity	3	6	KLL "Advanced" OR KAZ 211 Academic Speaking in Kazakh (702) (C- and above) OR KAZ 212 Academic Writing in Kazakh (703) (C- and above)			SEDS, SMG, SSH, SoM			
323	KAZ 373	Kazakh Terminology	3	6	KLL "Advanced" OR KAZ 202A Kazakh Literature 2/K(C) (228) (C- and above) OR KAZ 211 Academic Speaking in Kazakh (702) (C- and above) OR KAZ 212 Academic Writing in Kazakh (703) (C- and above)			SEDS, SMG, SSH, SoM			
324	KAZ 374	Kazakh Diplomacy	3	6	KAZ 202A Kazakh Literature 2/K(C) (228) (C- and above) OR KAZ 211 Academic Speaking in Kazakh (702) (C- and above) OR KAZ 212 Academic Writing in Kazakh (703) (C- and above) OR KLL "Advanced"			SEDS, SMG, SSH, SoM			
325	KAZ 375	Cultural Studies and Kazakh Culture	3	6	KLL "Advanced" OR KAZ 202A Kazakh Literature 2/K(C) (228) (C- and above) OR KAZ 211 Academic Speaking in Kazakh (702) (C- and above) OR KAZ 212 Academic Writing in Kazakh (703) (C- and above)			SEDS, SMG, SSH, SoM			
326	TUR 231	Istanbul in Literature and Culture	3	6				SEDS, SMG, SSH, SoM			
327	TUR 305	Introduction to Chagatay and Ottoman Turkish	3	6	KAZ 111 Intermediate Kazakh I (743) (C- and above) OR KAZ 121 Upper-Intermediate Kazakh (744) (C- and above) OR KLL "Advanced"			SEDS, SMG, SSH, SoM			
328	TUR 375	Topics in Turkic Studies	3	6				SEDS, SMG, SSH, SoM			

329	TUR 575	Advanced Topics in Turkic Studies	4	8				GSB, GSE, GSPP, SEDS, SMG, SSH, SoM			
330	TUR 775	Doctoral Topic in Turkic Studies	4	8							
<b>Languages, Literature and Linguistics</b>											
331	CHN 101	Beginning Mandarin I	4	8				SEDS, SMG, SSH, SoM			
332	CHN 102	Beginning Mandarin II	4	8	CHN 101 Beginning Mandarin I (1384) (B- and above)			SEDS, SMG, SSH, SoM			
333	FRE 201	Intermediate French I	4	8	FRE 102 Beginning French II (454) (C- and above)			SEDS, SMG, SSH, SoM			
334	KOR 101	Beginning Korean I	4	8				SEDS, SMG, SSH, SoM			
335	KOR 201	Intermediate Korean I	4	8	KOR 102 Beginning Korean II (4791) (C- and above)			SEDS, SMG, SSH, SoM			
336	LING 131	Introduction to Linguistics	3	6				World Languages, Literature and Culture	Undeclared	SSH	
337	LING 140	Language Variation and Change: the Story of English	3	6				World Languages, Literature and Culture	Undeclared	SSH	
338	LING 272	Language and the Mind	3	6				SSH	SEDS, SMG, SoM		
339	LING 275	Second Language Acquisition Theory and Research I	3	6				SSH	SEDS, SMG, SoM		
340	LING 278	Sounds of the World's Languages	3	6				SSH	SEDS, SMG, SoM		
341	LING 472	Language Ideologies	3	6	LING 130 Introduction to Language and Communication (4014) (C- and above) OR LING 131 Introduction to Linguistics (1394) (C- and above) OR ANT 277/WLL 271 Language and Society (1027) (C- and above)			SSH	SEDS, SMG, SoM		
342	LING 572	Language Ideologies	4	8				Eurasian Studies	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
343	LING 772	Language Ideologies	4	8							
344	PER 201	Intermediate Persian 1	4	8	PER 102 Beginning Persian II (4790) (C- and above)			SEDS, SMG, SSH, SoM			

345	RFL 403	Advanced and Superior Composition and Conversation Russian	4	8				Instructor's permission required.			
346	SPA 101	Beginning Spanish I	4	8				World Languages, Literature and Culture	Undeclared	SSH	
347	SPA 201	Intermediate Spanish I	4	8	SPA 102 Beginning Spanish II (1128) (C- and above)			SEDS, SMG, SSH, SoM			
348	SPA 314	Advanced Spanish Grammar and Composition	3	6	SPA 202 Intermediate Spanish II (1842) (C- and above)			SEDS, SMG, SSH, SoM			
349	WLL 110	Introduction to Literary Studies	3	6				World Languages, Literature and Culture	Undeclared	SSH	
350	WLL 121	Introduction to Cultural Studies	3	6				World Languages, Literature and Culture	Undeclared	SSH	
351	WLL 201	World Literature I	3	6				World Languages, Literature and Culture	Undeclared	SSH	
352	WLL 212	Introduction to Poetry	3	6				World Languages, Literature and Culture	Undeclared	SSH	
353	WLL 244	Survey of Nineteenth-Century Russian Literature	3	6				World Languages, Literature and Culture	Undeclared	SSH	
354	WLL 450	Laughter	3	6				World Languages, Literature and Culture	Undeclared	SSH	
355	WLL 498	Languages, Linguistics, and Literatures Capstone I	3	6				4 year UG SSH World Language, Literature and Culture			
356	WLL 550	Laughter	4	8				Eurasian Studies	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
<b>Languages, Literature and Linguistics, Languages, Literature and Linguistics</b>											
357	FRE 361/WLL 361	Topics in French and Francophone film	3	6				SEDS, SMG, SSH, SoM			
358	SPA 351/WLL 351	Literature and Film of the Postcolonial World	3	6	Subject "WLL" BETWEEN 200 and 299			SEDS, SMG, SSH, SoM			
<b>Languages, Literature and Linguistics, Sociology and Anthropology</b>											
359	ANT 385/WLL 385	Postcolonial Theory and its Applications in Eurasia	3	6	ANT 101 Introduction to Sociocultural Anthropology (501) (C- and above) OR SOC 101 Introduction to Sociology (508) (C- and above) OR WLL 121 Introduction to Cultural Studies (243) (C- and above) OR WLL 102 /PHIL 102 Language, Experience, Culture (2481) (C- and above)			Anthropology, Sociology, World Languages, Literature and Culture	SSH	SEDS, SMG, SoM	

360	WLL 171/ANT 175	Introduction to Linguistic Anthropology	3	6			ANT 277/WLL 271 Language and Society (1027) (C- and above)	Anthropology, Sociology, World Languages, Literature and Culture	Undeclared	SSH	
<b>Mathematics</b>											
361	MATH 109	Mathematical Discovery	3	6			MATH 161 Calculus I (118) (C- and above)	Anthropology, History, Political Science and International Relations, Sociology, Undeclared, World Languages, Literature and Culture			
362	MATH 161	Calculus I	4	8				1 year UG SEDS, 1 year UG SMG, 1 year UG SSH Mathematics, 1 year UG SSH Physics	Biological Sciences, Chemistry, Mathematics, Physics, SEDS, SMG	SSH, SoM	
363	MATH 162	Calculus II	4	8	MATH 161 Calculus I (118) (C and above)			2 year UG SEDS, 2 year UG SMG, 2 year UG SSH Chemistry, 2 year UG SSH Mathematics, 2 year UG SSH Physics	SEDS, SMG, SSH, SoM		
364	MATH 251	Discrete Mathematics	3	6	MATH 162 Calculus II (170) (C and above)			Mathematics	Computer Science	SEDS, SMG, SSH, SoM	
365	MATH 263	Calculus III	4	8	MATH 162 Calculus II (170) (C and above)			Mathematics	Physics, SEDS	SMG, SSH, SoM	
366	MATH 273	Linear Algebra with Applications	4	8	MATH 161 Calculus I (118) (C and above)	MATH 162 Calculus II (170) (C and above)		2 year UG SSH Physics, Mathematics	Computer Science, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	
367	MATH 274	Introduction to Differential Equations	3	6	MATH 162 Calculus II (170) (C and above)			Mathematics	SEDS, SMG, SSH, SoM		
368	MATH 310	Applied Statistical Methods	3	6	MATH 161 Calculus I (118) (C and above)		MATH 322 Mathematical Statistics (1165) (D and above)	Biological Sciences, Computer Science	Mathematics	SEDS, SMG, SSH, SoM	
369	MATH 321	Probability	3	6	MATH 162 Calculus II (170) (C and above)		ECON 211 Economic Statistics (2280) (C- and above) OR PLS 211 Quantitative Methods (221) (C- and above)	Computer Science, Mathematics	SEDS, SMG, SSH, SoM		

370	MATH 323	Actuarial Mathematics I	3	6	MATH 321 Probability (482) (C and above) OR ECON 211 Economic Statistics (2280) (C and above) OR (MATH 162 Calculus II (170) (C and above) AND MATH 310 Applied Statistical Methods (82) (C and above))		Mathematics	SEDS, SMG, SSH, SoM		
371	MATH 351	Numerical Methods with Applications	3	6	MATH 274 Introduction to Differential Equations (484) (C and above) AND MATH 263 Calculus III (81) (C and above)	ENG 202 Numerical Methods in Engineering (5506) (C and above)	Mathematics	SEDS, SMG, SSH, SoM		
372	MATH 361	Real Analysis I	3	6	MATH 263 Calculus III (81) (C and above) AND MATH 251 Discrete Mathematics (85) (C and above)		Mathematics	SEDS, SMG, SSH, SoM		
373	MATH 425	Stochastic Processes	3	6	MATH 321 Probability (482) (C and above) OR ECON 211 Economic Statistics (2280) (C and above)		Mathematics	SEDS, SMG, SSH, SoM		
374	MATH 440	Regression Analysis	3	6	MATH 322 Mathematical Statistics (1165) (C and above)	SOC 203 Quantitative Methods in Sociology (1377) (C and above) OR PLS 211 Quantitative Methods (221) (C and above)	Mathematics	SEDS, SMG, SSH, SoM		
375	MATH 471	Nonlinear Differential Equations	3	6	MATH 273 Linear Algebra with Applications (84) (C and above) AND MATH 274 Introduction to Differential Equations (484) (C and above)		Mathematics	SEDS, SMG, SSH, SoM		
376	MATH 480	Complex Analysis	3	6	MATH 263 Calculus III (81) (C and above)		Mathematics	SEDS, SMG, SSH, SoM		
377	MATH 481	Partial Differential Equations	3	6	MATH 274 Introduction to Differential Equations (484) (C and above)	MATH 480 Complex Analysis (618) (C and above)	Mathematics	SEDS, SMG, SSH, SoM		
378	MATH 497	Directed Study in Mathematics I	3	6			Instructor's Permission Required			

379	MATH 514	Operations Research	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
380	MATH 517	Scientific Modeling and Simulation with Mathematics	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
381	MATH 519	Scientific Computing	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
382	MATH 540	Statistical Learning	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
383	MATH 542	Statistical Programming	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
384	MATH 576	Numerical Methods for Partial Differential Equations	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
385	MATH 700	Thesis Research	0	0							
386	MATH 714	Advanced Operations Research	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS, SSH	GSE, GSPP, SMG, SoM	
387	MATH 740	Advanced Statistical Learning	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS, SSH	GSE, GSPP, SMG, SoM	
388	MATH 776	Advanced numerical methods for partial differential equations	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS, SSH	GSE, GSPP, SMG, SoM	
<b>Physics</b>											
389	PHYS 161	Physics I for Scientists and Engineers with Laboratory	4	8		MATH 161 Calculus I (118) (C and above)	PHYS 171 Physics I for Physics Majors with Laboratory (1401) (C- and above)	1 year UG SEDS, 1 year UG SMG, 1 year UG SSH Mathematics, 1 year UG SSH Physics, 2 year UG SSH Chemistry		Biological Sciences, Chemistry, Mathematics, Physics, SEDS, SMG	SSH, SoM
390	PHYS 201	Introductory Astronomy I	3	6				SEDS, SMG, SSH, SoM			
391	PHYS 221	Classical Mechanics I	3	6	(PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above) OR PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above)) AND MATH 273 Linear Algebra with Applications (84) (C- and above)			Physics			SEDS, SMG, SSH, SoM

392	PHYS 261	Modern Physics with laboratory	4	8	MATH 162 Calculus II (170) (C- and above) AND (PHYS 152 Introductory Physics II with Lab (1176) (C- and above) OR PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above) OR PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above))		Physics	SEDS, SMG, SSH, SoM		
393	PHYS 315	Mathematical Methods of Physics	3	6	(PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above) OR PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above)) AND MATH 274 Introduction to Differential Equations (484) (C- and above)		Physics	SEDS, SMG, SSH, SoM		
394	PHYS 361	Classical Electrodynamics I	3	6		PHYS 315 Mathematical Methods of Physics (653) (D and above) OR PHYS 411 Advanced Mathematical Physics (3142) (D and above)	Physics	SEDS, SMG, SSH, SoM		
395	PHYS 452	Quantum Mechanics II	3	6	PHYS 451 Quantum Mechanics I (1415) (C- and above)		Physics	SEDS, SMG, SSH, SoM		
396	PHYS 465	Advanced Experimental Physics	3	6	PHYS 370 Optics with Laboratory (1405) (C- and above)		Physics	SEDS, SMG, SSH, SoM		
397	PHYS 473	Introduction to Solid State Physics	3	6	PHYS 280 Thermodynamics and Statistical Physics (1179) (C- and above) AND PHYS 451 Quantum Mechanics I (1415) (C- and above)		Physics	SEDS, SMG, SSH, SoM		
398	PHYS 505	Classical Mechanics	3	6			Physics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	

399	PHYS 511	Computational Modeling and Simulation	3	6				Physics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
400	PHYS 515	Classical Electrodynamics	3	6				Physics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
401	PHYS 530	Solid State Physics	3	6				Physics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
402	PHYS 550	Advanced Mathematical Physics	3	6				Physics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
403	PHYS 700	Thesis Research	0	0							
404	PHYS 711	Computational Modeling and Simulation	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS, SSH	GSE, GSPP, SMG, SoM	
405	PHYS 750	Advanced Mathematical Physics	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS, SSH	GSE, GSPP, SMG, SoM	
406	SST 503	Laboratory Practicum	3	6	SST 501 Teaching and Learning (2260) (C- and above) AND SST 502 Teaching Practicum (2824) (C- and above)			SEDS, SSH			
407	SST 591	Research Methods	3	6				SEDS, SSH			
408	SST 693	Thesis Proposal	3	6	SST 591 Research Methods (3184) (C- and above)			SEDS, SSH			
<b>Political Science and International Relations</b>											
409	PLS 100	Introduction to the Politics of Central Asia	3	6				SSH	SEDS, SMG, SoM		
410	PLS 101	Introduction to Political Science	3	6				SEDS, SMG	Biological Sciences, Chemistry, Mathematics, Physics	SSH	
411	PLS 120	Introduction to Political Theory	3	6				Political Science and International Relations	Undeclared	SEDS, SMG, SSH, SoM	
412	PLS 140	Introduction to Comparative Politics	3	6				Political Science and International Relations	Undeclared	SEDS, SMG, SSH, SoM	
413	PLS 150	Introduction to International Relations	3	6				Political Science and International Relations	Undeclared	SEDS, SMG, SSH, SoM	
414	PLS 210	Political Science Research Methods	3	6				Political Science and International Relations	SEDS, SMG, SSH, SoM		

415	PLS 211	Quantitative Methods	3	6			ECON 211 Economic Statistics (2280) (C- and above)	Political Science and International Relations	SEDS, SMG, SSH, SoM		
416	PLS 295	Asian Community	3	6				SSH	SEDS, SMG, SoM		
417	PLS 315	Political Game Theory	3	6	PLS 211 Quantitative Methods (221) (C- and above) OR ECON 211 Economic Statistics (2280) (C- and above)			Political Science and International Relations	SEDS, SMG, SSH, SoM		
418	PLS 326	Modern Political Theory	3	6	PLS 120 Introduction to Political Theory (512) (C- and above)			Political Science and International Relations	SEDS, SMG, SSH, SoM		
419	PLS 329	Anarchy	3	6	PLS 120 Introduction to Political Theory (512) (C- and above)			Political Science and International Relations	SEDS, SMG, SSH, SoM		
420	PLS 338	U.S. Government and Politics	3	6	(PLS 140 Introduction to Comparative Politics (223) (C- and above) OR PLS 101 Introduction to Political Science (513) (C- and above)) AND PLS 210 Political Science Research Methods (129) (C- and above)			Political Science and International Relations	SEDS, SMG, SSH, SoM		
421	PLS 341	Politics of Development	3	6	PLS 210 Political Science Research Methods (129) (C- and above)			Political Science and International Relations	SEDS, SMG, SSH, SoM		
422	PLS 342	Political Corruption	3	6	PLS 210 Political Science Research Methods (129) (C- and above)			Political Science and International Relations	SEDS, SMG, SSH, SoM		
423	PLS 365	Civil-Military Relations	3	6	PLS 211 Quantitative Methods (221) (C- and above) AND PLS 210 Political Science Research Methods (129) (C- and above)			Political Science and International Relations	SEDS, SMG, SSH, SoM		
424	PLS 370	Law, Politics and Society	3	6	PLS 210 Political Science Research Methods (129) (C- and above)			Political Science and International Relations	SEDS, SMG, SSH, SoM		
425	PLS 431	Politics and Governance of the Russian Federation	3	6	PLS 210 Political Science Research Methods (129) (C- and above)			Political Science and International Relations	SEDS, SMG, SSH, SoM		
426	PLS 446	The Politics of Immigration Control	3	6	PLS 140 Introduction to Comparative Politics (223) (C- and above) AND PLS 210 Political Science Research Methods (129) (C- and above)			Political Science and International Relations	SEDS, SMG, SSH, SoM		

427	PLS 448	Comparative Electoral System	3	6	PLS 140 Introduction to Comparative Politics (223) (C- and above)			Political Science and International Relations	SEDS, SMG, SSH, SoM		
428	PLS 455	The Politics of Arms in International Relations	3	6	PLS 150 Introduction to International Relations (511) (C- and above) AND PLS 210 Political Science Research Methods (129) (C- and above) AND PLS 211 Quantitative Methods (221) (C- and above)			Political Science and International Relations	SEDS, SMG, SSH, SoM		
429	PLS 465	Politics of International Finance	3	6	PLS 150 Introduction to International Relations (511) (C- and above) AND PLS 210 Political Science Research Methods (129) (C- and above)			Political Science and International Relations	SEDS, SMG, SSH, SoM		
430	PLS 511	Advanced Research I	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
431	PLS 531	Politics and Governance of the Russian Federation	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
432	PLS 540	Core Seminar in Comparative Politics	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
433	PLS 546	The Politics of Immigration Control	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
434	PLS 550	Core Seminar in IR	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
435	PLS 555	The Politics of Arms in International Relations	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
436	PLS 565	Politics of International Finance	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
437	PLS 598	MA Thesis I	6	12				Political Science and International Relations			
<b>Sociology and Anthropology</b>											
438	ANT 101	Introduction to Sociocultural Anthropology	3	6				Anthropology, Sociology, Undeclared	2 year UG SSH	SEDS, SMG, SSH, SoM	

439	ANT 140	World Prehistory	3	6				Anthropology, Sociology, Undeclared	2 year UG SSH, 4 year UG SEDS Computer Science, 4 year UG SEDS Robotics and Mechatronics, 4 year UG SSH Biological Sciences, 4 year UG SSH Chemistry, 4 year UG SSH Mathematics, 4 year UG SSH Physics	SEDS, SMG, SSH, SoM	
440	ANT 233	Cavemen, Mammoths, and Sabertooths: Stone Age Archaeology in Eurasia	3	6				Anthropology, Sociology, Undeclared	2 year UG SSH	SEDS, SMG, SSH, SoM	
441	ANT 361	Human Evolution: Bones, Stones and Genomes	3	6				Anthropology, Biological Sciences, Sociology	SSH	SEDS, SMG, SoM	
442	ANT 382	Anthropology of Global Health: The Global in the Local	3	6				Anthropology, Sociology	SSH	SEDS, SMG, SoM	
443	ANT 400	Research Assistance in Anthropology	1	2							
444	ANT 401	Research Assistance in Anthropology	1	2							
445	ANT 498	Capstone Seminar I	3	6				4 year UG SSH Anthropology			
446	SOC 101	Introduction to Sociology	3	6				Anthropology, Sociology, Undeclared	2 year UG SSH, 3 year UG SSH Biological Sciences	SEDS, SMG, SSH, SoM	
447	SOC 115	Global Social Problems	3	6				Anthropology, Sociology, Undeclared	2 year UG SSH	SEDS, SMG, SSH, SoM	
448	SOC 201	Social Science Research Methods	3	6				Anthropology, Sociology	SSH	SEDS, SMG, SoM	
449	SOC 210	Gender and Society	3	6				Anthropology, Sociology	SSH	SEDS, SMG, SoM	
450	SOC 213	Work and Society	3	6				Anthropology, Sociology	SSH	SEDS, SMG, SoM	
451	SOC 215	Sociology of Race and Ethnicity	3	6				Anthropology, Sociology	SSH	SEDS, SMG, SoM	
452	SOC 221	International Migration	3	6				Anthropology, Sociology	SSH	SEDS, SMG, SoM	

453	SOC 301	Classical Sociological Theory	3	6	SOC 101 Introduction to Sociology (508) (C- and above) OR SOC 115 Global Social Problems (1032) (C- and above)		Anthropology, Sociology	SSH	SEDS, SMG, SoM	
454	SOC 310	Social Inequality	3	6	SOC 101 Introduction to Sociology (508) (C- and above) OR SOC 115 Global Social Problems (1032) (C- and above)		Anthropology, Sociology	SSH	SEDS, SMG, SoM	
455	SOC 322	Digital Media Research Methods	3	6	SOC 201 Social Science Research Methods (1341) (C- and above) OR SOC 203 Quantitative Methods in Sociology (1377) (C- and above) OR ECON 211 Economic Statistics (2280) (C- and above) OR PLS 210 Political Science Research Methods (129) (C- and above)		Anthropology, Sociology	SSH	SEDS, SMG, SoM	
456	SOC 401	Research Assistance in Sociology	1	2			Instructor's permission required			
457	SOC 403	Research Assistance in Sociology	2	4			Instructor's permission required			
458	SOC 498	Capstone Seminar Part I	3	6			4 year UG SSH Sociology			
<b>Sociology and Anthropology, Sociology and Anthropology</b>										
459	ANT 216/SOC 216	Marriage and Kinship	3	6			Anthropology, Sociology	2 year UG SSH	SEDS, SMG, SSH, SoM	
<b>SEDS</b>										
<b>Chemical Engineering/Mechanical Engineering</b>										
460	MBME 602	Anatomy and Physiology for Biomedical Engineers	3	6			1 year Gr SEDS Biomedical Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	

461	MBME 603	Biomaterials Science & Engineering	3	6				1 year Gr SEDS Biomedical Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	
462	MBME 604	Biosensors	3	6				1 year Gr SEDS Biomedical Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	
<b>Chemical and Materials Engineering</b>											
463	CHME 200	Basic Principles and Calculations in Chemical Engineering	3	6				2 year UG SEDS Chemical Engineering, 2 year UG SEDS Chemical and Materials Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared	SEDS, SMG, SSH, SoM	

464	CHME 201	Chemical Engineering Thermodynamics	3	6				2 year UG SEDS Chemical Engineering, 2 year UG SEDS Chemical and Materials Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared	SEDS, SMG, SSH, SoM	
465	CHME 222	Inorganic and Analytical Chemistry	3	6				2 year UG SEDS Chemical Engineering, 2 year UG SEDS Chemical and Materials Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared	SEDS, SMG, SSH, SoM	

466	DCHME 700	Thesis Research	0	0				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	
467	DCHME 755	Integrated Computational Materials Engineering	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	
468	DCHME 761	Advanced Chemical Reaction Engineering	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	

469	DCHME 762	Advanced Materials Processing	4	8				Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	
470	ECHE 333	Separation Processes-I	3	6	ECHE 319 Chemical Engineering Thermodynamics (1218) (D and above)			Registration by School Administration			
471	ECHE 369	Transport Phenomena-II	3	6				Registration by School Administration			
472	ECHE 385	Research Practice	3	6				Registration by School Administration			
473	ECHE 418	Capstone project 1	3	6	ECHE 323 Computational methods in Chemical Engineering-I (1272) (D and above)			Registration by School Administration			
474	ECHE 463	Introduction to Molecular Modeling Methods	3	6				4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared	SEDS, SMG, SSH, SoM	

475	ECHE 478	Electrochemical Engineering and Corrosion Protection	3	6	ECHE 222 Chemistry I (731) (D and above)			4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared	SEDS, SMG, SSH, SoM	
476	ECHE 481	Chemical Reaction Engineering	3	6	ECHE 126 Introduction to Chemical Engineering (33) (D and above) AND BENG 124 Engineering Mathematics I (101) (D and above) AND BENG 225 Engineering Mathematics II (48) (D and above)			Registration by School Administration			
477	ECHE 484	Multi-Phase Flows	3	6	ECHE 319 Chemical Engineering Thermodynamics (1218) (D and above) AND ECHE 270 Transport Phenomena-I (735) (D and above)			4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared	SEDS, SMG, SSH, SoM	
478	ECHE 486	Chemical Process Safety	3	6				Registration by School Administration			

479	ECHE 487	Soft Matter, Foods and Colloids	3	6				4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared	SEDS, SMG, SSH, SoM	
480	ECHE 488	Atmospheric Chemistry and Physics	3	6				4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared	SEDS, SMG, SSH, SoM	
481	MCHME 601	Master Thesis I	12	24				2 year Gr SEDS Chemical Engineering, 2 year Gr SEDS Chemical and Materials Engineering			

482	MCHME 603	Advanced Materials Processing	3	6				1 year Gr SEDS Chemical Engineering, 1 year Gr SEDS Chemical and Materials Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology
483	MCHME 604	Advanced Materials Characterization Methods	3	6				1 year Gr SEDS Chemical Engineering, 1 year Gr SEDS Chemical and Materials Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology
484	MCHME 605	Advanced Chemical Reaction Engineering	3	6				1 year Gr SEDS Chemical Engineering, 1 year Gr SEDS Chemical and Materials Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology

485	MCHME 714	Computational Materials Engineering	3	6				2 year Gr SEDS Chemical Engineering, 2 year Gr SEDS Chemical and Materials Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	
<b>Civil Engineering</b>											
486	CEE 200	Structural Mechanics I	3	6				2 year UG SEDS Civil Engineering, 2 year UG SEDS Civil and Environmental Engineering, 2 year UG SEDS Mechanical Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared	SEDS, SMG, SSH, SoM	

487	CEE 201	Environmental Chemistry	3	6				2 year UG SEDS Civil Engineering, 2 year UG SEDS Civil and Environmental Engineering, 2 year UG SEDS Mechanical Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared	SEDS, SMG, SSH, SoM	
488	CEE 204	Civil Engineering CAD and Surveying	3	6				2 year UG SEDS Civil Engineering, 2 year UG SEDS Civil and Environmental Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared	SEDS, SMG, SSH, SoM	

489	DCEE 700	Thesis Research	0	0				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	
490	DCEE 750	Finite Element Methods	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Public Policy	
491	DCEE 753	Structural Evaluation and Rehabilitation	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Public Policy	

492	DCEE 756	Environmental Modeling Development	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology		
493	DCEE 757	Advanced Environmental Chemistry	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Public Policy	
494	ECE 303	Construction Management and Practice	3	6	BENG 148 Engineering Practice (1073) (D and above)			Registration by School Administration			
495	ECE 307	Engineering Geology and Rock Mechanics	3	6				Registration by School Administration			
496	ECE 318	Structural Design - Concrete	3	6	ECE 479 Structural Analysis II (2460) (C- and above)			Registration by School Administration			
497	ECE 401	Capstone Project 1	3	6				Registration by School Administration			
498	ECE 404	Construction Technologies and Processes	3	6	BENG 148 Engineering Practice (1073) (D and above) AND ECE 302 Civil Engineering Materials (1040) (D and above)			Registration by School Administration			
499	ECE 405	Environmental Engineering	3	6	ECE 473 Environmental Systems (1953) (D and above) OR ECE 218 Environmental Chemistry (3296) (D and above)			Registration by School Administration			
500	ECE 416	Highway Engineering	3	6	ECE 302 Civil Engineering Materials (1040) (D and above)			Registration by School Administration			

501	ECE 421	Behaviour and Design of Structural System	3	6	(ECE 318 Structural Design - Concrete (3709) (D and above) OR ECE 314 Structural Engineering Applications I (1042) (D and above)) AND (ECE 319 Structural Design - Steel (4038) (D and above) OR ECE 315 Structural Engineering Applications II (1041) (D and above))			4 year UG SEDS Civil Engineering, 4 year UG SEDS Civil and Environmental Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared	SEDS, SMG, SSH, SoM	
502	ECE 481	Individual Research Projects in Civil Engineering	3	6				Registration by School Administration			
503	ECE 482	Solid and Hazardous Waste Management	3	6	ECE 405 Environmental Engineering (1265) (C- and above)			4 year UG SEDS Civil Engineering, 4 year UG SEDS Civil and Environmental Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared	SEDS, SMG, SSH, SoM	

504	EMEM 507	Project Management	3	6				1 year Gr SEDS Engineering Management	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology
505	EMEM 509	Systems Engineering	3	6				2 year Gr SEDS Engineering Management	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology
506	EMEM 523	Supply Chain Management	3	6				2 year Gr SEDS Engineering Management	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology

507	EMEM 533	Engineering Management and Engineering Economy	3	6				1 year Gr SEDS Engineering Management	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology
508	EMEM 537	Engineering Decision Tools	3	6				2 year Gr SEDS Engineering Management	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology
509	EMEM 538	Knowledge and Innovation Management	3	6				1 year Gr SEDS Engineering Management	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology

510	EMEM 539	Big Data and Information Management	3	6				2 year Gr SEDS Engineering Management	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology
511	EMEM 542	Production and Service Operations Management	3	6				2 year Gr SEDS Engineering Management	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology
512	MCEE 601	Master Thesis I	12	24	MCEE 600 Research Seminar (4692) (P)			2 year Gr SEDS Civil Engineering, 2 year Gr SEDS Civil and Environmental Engineering		
513	MCEE 603	Finite Element Methods	3	6				1 year Gr SEDS Civil Engineering, 1 year Gr SEDS Civil and Environmental Engineering, 1 year Gr SEDS Mechanical Engineering, 1 year Gr SEDS Mechanical and Aerospace Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology

514	MCEE 604	Advanced Soil Mechanics	3	6				1 year Gr SEDS Civil Engineering, 1 year Gr SEDS Civil and Environmental Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology
515	MCEE 605	Advanced Environmental Chemistry	3	6				1 year Gr SEDS Civil Engineering, 1 year Gr SEDS Civil and Environmental Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology
516	MCEE 702	Structural Evaluation and Rehabilitation	3	6				2 year Gr SEDS Civil Engineering, 2 year Gr SEDS Civil and Environmental Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology

517	MCEE 705	Environmental Modeling Development	3	6				2 year Gr SEDS Civil Engineering, 2 year Gr SEDS Civil and Environmental Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology
518	MSC 600	Research methods and ethics	3	6				1 year Gr SEDS Biomedical Engineering, 1 year Gr SEDS Engineering Management	1 year Gr SMG, 2 year Gr SMG	
519	MSC 601	Technical Communication	3	6				1 year Gr SEDS Chemical Engineering, 1 year Gr SEDS Chemical and Materials Engineering, 1 year Gr SEDS Civil Engineering, 1 year Gr SEDS Civil and Environmental Engineering, 1 year Gr SEDS Computer Science, 1 year Gr SEDS Electrical and Computer Engineering, 1 year Gr SEDS Electrical and Electronic Engineering, 1 year Gr SEDS Mechanical Engineering, 1 year Gr SEDS Mechanical and Aerospace Engineering, 1 year Gr SEDS Robotics and Mechatronics	1 year Gr SMG, 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology

520	MSC 602	Advanced Applied Mathematics	3	6				1 year Gr SEDS Biomedical Engineering, 1 year Gr SEDS Chemical Engineering, 1 year Gr SEDS Chemical and Materials Engineering, 1 year Gr SEDS Civil Engineering, 1 year Gr SEDS Civil and Environmental Engineering, 1 year Gr SEDS Electrical and Computer Engineering, 1 year Gr SEDS Electrical and Electronic Engineering, 1 year Gr SEDS Mechanical Engineering, 1 year Gr SEDS Mechanical and Aerospace Engineering	1 year Gr SMG, 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year UG SEDS (pending graduation)	
521	MSC 615	Advanced Statistics and Probability	3	6				1 year Gr SEDS Engineering Management	1 year Gr SMG, 2 year Gr SMG		

**Civil and Environmental Engineering**

522	MAE 201	Computer Aided Design	3	6				2 year UG SEDS Mechanical Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared	SEDS, SMG, SSH, SoM	
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**Computer Science**

523	CSCI 111	Web Programming & Problem Solving	3	6			CSCI 100 Computation and Problem Solving (1078) (C- and above)	Anthropology, Economics, History, Political Science and International Relations, Sociology, Undeclared, World Languages, Literature and Culture			
524	CSCI 115	Programming Fundamentals	4	8			CSCI 151 Programming for Scientists and Engineers (192) (C- and above)	Biological Sciences, Chemistry	Computer Science, Mathematics, Physics, Robotics and Mechatronics, Undeclared	SSH	
525	CSCI 151	Programming for Scientists and Engineers	4	8			ROBT 102 Programming for robotics and physics (188) (C- and above) OR CSCI 150 Fundamentals of Programming (1501) (C- and above)	Computer Science, Mathematics, Physics, Robotics and Mechatronics	Biological Sciences, Chemistry, Undeclared	SSH	
526	CSCI 231	Computer Systems and Organization	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science			
527	CSCI 235	Programming Languages	4	8	CSCI 152 Performance and Data Structures (489) (C and above)			Computer Science			
528	CSCI 262	Software Project Management	3	6	CSCI 152 Performance and Data Structures (489) (C and above)			Computer Science	Biological Sciences, Chemistry, Mathematics, Physics, Robotics and Mechatronics, Undeclared	SSH	
529	CSCI 341	Database Systems	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science			
530	CSCI 344	Data Mining and Decision Support	3	6	CSCI 341 Database Systems (195) (C- and above) AND MATH 273 Linear Algebra with Applications (84) (C- and above)			Computer Science			
531	CSCI 361	Software Engineering	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science			

532	CSCI 390	Artificial Intelligence	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science			
533	CSCI 398	Directed Study	3	6				Instructor's permission required			
534	CSCI 399	Internship II	3	6				Instructor's Permission Required			
535	CSCI 399A	Internship II - A	1	2				Instructor's permission required			
536	CSCI 399F	Internship II - F	6	12				Instructor's Permission Required			
537	CSCI 408	Senior Project I	3	6				Computer Science			
538	CSCI 434	Information Security	3	6		CSCI 333 Computer Networks (1145) (D and above)		Computer Science	Biological Sciences, Chemistry, Mathematics, Physics, Robotics and Mechatronics, Undeclared		
539	CSCI 471	Complexity and Computability	3	6	MATH 251 Discrete Mathematics (85) (C- and above)			Computer Science			
540	CSCI 490	Brain Computer Interface	3	6	MATH 273 Linear Algebra with Applications (84) (C and above) AND MATH 321 Probability (482) (C and above)			Computer Science	Biological Sciences, Chemistry, Mathematics, Physics, Robotics and Mechatronics, Undeclared	SSH	
541	CSCI 494	Deep Learning	3	6	CSCI 390 Artificial Intelligence (643) (C and above) AND MATH 273 Linear Algebra with Applications (84) (C and above)			Computer Science	Biological Sciences, Chemistry, Mathematics, Physics, Robotics and Mechatronics, Undeclared		
542	CSCI 501	Software Principles and Practice	3	6				Computer Science, Robotics	SEDS	SSH	
543	CSCI 511	CS Track Core-Theory	3	6				Computer Science	SEDS	SSH	
544	CSCI 525	Quantum Computing	3	6				Computer Science, Physics	SEDS	SSH	
545	CSCI 545	Big Data Analytics	3	6				Computer Science	SEDS	SSH	
546	CSCI 575	Formal Methods and Applications	3	6				Computer Science	SEDS	SSH	
547	CSCI 594	Deep Learning	3	6				Computer Science	SEDS	SSH	
548	CSCI 700	Thesis Research	0	0							

549	CSCI 725	Advanced Quantum Computing	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS	SSH	
550	CSCI 745	Advanced Big Data Analytics	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS	SSH	
551	CSCI 794	Advanced Deep Learning	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS	SSH	
552	DS 501	Fundamentals of Data Science - I	3	6				Data Science	SEDS	SSH	
553	DS 507	Database Management Systems	3	6				Data Science	SEDS	SSH	
554	DS 551	Process and Project Management	3	6				Data Science	SEDS	SSH	
<b>Electrical and Computer Engineering</b>											
555	DELCE 700	Thesis Research	0	0				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	
556	DELCE 750	Advanced Biomedical Imaging Devices and Technologies	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	

557	DELCE 752	Optical Wireless Communications	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	
558	DELCE 753	Stochastic Processes	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	
559	DELCE 754	Optimal and Robust Control	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	

560	DELCE 755	Advanced Electromagnetics	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	
561	ELCE 200	Introduction to Electrical Circuits	3	6				2 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Electronic Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared	SEDS, SMG, SSH, SoM	

562	ELCE 202	Digital Logic Design	3	6				2 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Electronic Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared	SEDS, SMG, SSH, SoM	
563	ELCE 203	Signals and Systems	3	6				2 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Electronic Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared	SEDS, SMG, SSH, SoM	
564	MECE 601	Master Thesis I	12	24				2 year Gr SEDS Electrical and Computer Engineering, 2 year Gr SEDS Electrical and Electronic Engineering			

565	MECE 603	Advanced Data Structures and Algorithms	3	6				1 year Gr SEDS Electrical and Computer Engineering, 1 year Gr SEDS Electrical and Electronic Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology
566	MECE 605	Statistics and Probability for Electrical and Computer Engineers	3	6				1 year Gr SEDS Electrical and Computer Engineering, 1 year Gr SEDS Electrical and Electronic Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology
567	MECE 606	Embedded Systems and Applications	3	6				1 year Gr SEDS Electrical and Computer Engineering, 1 year Gr SEDS Electrical and Electronic Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology

568	MECE 725	Smart Grids and Energy Systems	3	6	MECE 700 Industrial and Commercial Power System (4810) (D and above)			2 year Gr SEDS Electrical and Computer Engineering, 2 year Gr SEDS Electrical and Electronic Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year UG SEDS (pending graduation)	
569	MECE 726	Modern Semiconductor Devices and Systems	3	6				2 year Gr SEDS Electrical and Computer Engineering, 2 year Gr SEDS Electrical and Electronic Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year UG SEDS (pending graduation)	
<b>Electrical and Electronic Engineering</b>											
570	EEE 238	Digital Signal and Image Processing	3	6				Registration by School Administration			
571	EEE 342	Electromagnetics	3	6				Registration by School Administration			
572	EEE 345	Power Electronics	3	6				Registration by School Administration			
573	EEE 382	Antennas and Propagation	3	6				Registration by School Administration			
574	EEE 384	Digital Integrated Circuits Design	3	6	EEE 250 Microelectronic Devices and Circuits (3152) (C- and above)			Registration by School Administration			
575	EEE 437	Capstone Project 1	3	6				Registration by School Administration			
576	EEE 448	Power Transmission and Distribution plants	3	6				Registration by School Administration			
577	EEE 450	RF and Microwave Circuit Design	3	6				Registration by School Administration			
578	EEE 452	Power Systems Protection	3	6				Registration by School Administration			

579	EEE 490	Introduction to Big Data	3	6				Registration by School Administration			
580	EEE 493	Industry 4.0	3	6				Registration by School Administration			
581	EEE 494	Modern Characterizations for Semiconductor Industry	3	6				Registration by School Administration			
582	EEE 497	Signal Processing for Communications	3	6				Registration by School Administration			
583	EEE 498	Computer Networks	3	6				Registration by School Administration			
<b>Mechanical Engineering</b>											
584	EME 354	Advanced Control Systems	3	6	BENG 219 Control Systems (728) (D and above)			Registration by School Administration			
585	EME 358	Heat Transfer	3	6	BENG 226 Engineering Thermodynamics (1553) (D and above) AND EME 275 Fluid Mechanics I (1988) (D and above)			Registration by School Administration			
586	EME 361	Machine Design	3	6				Registration by School Administration			
587	EME 410	Aerodynamics	3	6	EME 357 Fluid Mechanics 2 (1280) (D and above)			Registration by School Administration			
588	EME 412	Heating, Ventilating, and Air Conditioning	3	6				4 year UG SEDS Mechanical Engineering, 4 year UG SEDS Mechanical and Aerospace Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared	SEDS, SMG, SSH, SoM	

589	EME 413	Computer Aided Geometric Design	3	6	EME 253 Computer Aided Engineering (1050) (C- and above)			4 year UG SEDS Mechanical Engineering, 4 year UG SEDS Mechanical and Aerospace Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared	SEDS, SMG, SSH, SoM	
590	EME 451	Capstone project 1	3	6				Registration by School Administration			
591	EME 456	Feasibility Analysis of Clean Energy Technologies	3	6				4 year UG SEDS Mechanical Engineering, 4 year UG SEDS Mechanical and Aerospace Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared	SEDS, SMG, SSH, SoM	
592	EME 463	Machine Dynamics II	3	6				Registration by School Administration			

593	EME 467	Vehicle Propulsion Systems	3	6				4 year UG SEDS Mechanical Engineering, 4 year UG SEDS Mechanical and Aerospace Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared	SEDS, SMG, SSH, SoM	
<b>Mechanical and Aerospace Engineering</b>											
594	DMAE 700	Thesis Research	0	0				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	
595	DMAE 701	Advanced Applied Mathematics	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	

596	DMAE 765	Advanced Manufacturing Processes and Strategies	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	
597	ENG 100	Introduction to Engineering	3	6				1 year UG SEDS Chemical Engineering, 1 year UG SEDS Chemical and Materials Engineering, 1 year UG SEDS Civil Engineering, 1 year UG SEDS Civil and Environmental Engineering, 1 year UG SEDS Electrical and Computer Engineering, 1 year UG SEDS Electrical and Electronic Engineering, 1 year UG SEDS Mechanical Engineering, 1 year UG SEDS Mechanical and Aerospace Engineering, 1 year UG SEDS Undeclared	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared	SEDS, SMG, SSH, SoM	

598	ENG 101	Programming for Engineers	3	6				1 year UG SEDS Chemical Engineering, 1 year UG SEDS Chemical and Materials Engineering, 1 year UG SEDS Civil Engineering, 1 year UG SEDS Civil and Environmental Engineering, 1 year UG SEDS Electrical and Computer Engineering, 1 year UG SEDS Electrical and Electronic Engineering, 1 year UG SEDS Mechanical Engineering, 1 year UG SEDS Mechanical and Aerospace Engineering, 1 year UG SEDS Undeclared	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared		
599	ENG 200	Engineering Mathematics III (Differential Equations & Linear Algebra)	3	6	MATH 162 Calculus II (170) (C and above)			2 year UG SEDS Chemical Engineering, 2 year UG SEDS Chemical and Materials Engineering, 2 year UG SEDS Civil Engineering, 2 year UG SEDS Civil and Environmental Engineering, 2 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Electronic Engineering, 2 year UG SEDS Mechanical Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering, 2 year UG SEDS Undeclared	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared	SEDS, SMG, SSH, SoM	
600	MMAE 601	Master Thesis I	12	24	MMAE 600 Research Seminar (4703) (P)			2 year Gr SEDS Mechanical Engineering, 2 year Gr SEDS Mechanical and Aerospace Engineering			

601	MMAE 603	Modern Control Engineering	3	6				1 year Gr SEDS Mechanical Engineering, 1 year Gr SEDS Mechanical and Aerospace Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology
602	MMAE 605	Advanced Manufacturing Processes & Strategies	3	6				1 year Gr SEDS Mechanical Engineering, 1 year Gr SEDS Mechanical and Aerospace Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology
603	MMAE 710	Space Structures Design	3	6				2 year Gr SEDS Mechanical Engineering, 2 year Gr SEDS Mechanical and Aerospace Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology

604	MMAE 713	Computational Fluid Structure Interaction	3	6				2 year Gr SEDS Mechanical Engineering, 2 year Gr SEDS Mechanical and Aerospace Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology	
<b>Robotics and Mechatronics</b>											
605	ROBT 201	Mechanics: Statics and Dynamics	3	6	MATH 162 Calculus II (170) (C- and above) AND (PHYS 161 Physics I for Scientists and Engineers with Laboratory (116) (C- and above) OR PHYS 171 Physics I for Physics Majors with Laboratory (1401) (C- and above))			Robotics and Mechatronics, SMG	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared		
606	ROBT 203	Electrical and Electronic Circuits I with Lab	4	8	MATH 162 Calculus II (170) (C- and above) AND (PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above) OR PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above) OR (PHYS 141 Physics I for non-majors with Lab (1437) (C- and above) AND PHYS 142 Physics II for non-majors with Lab (1438) (C- and above)))			Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared		
607	ROBT 205	Signals and Sensing with Lab	4	8	MATH 162 Calculus II (170) (C- and above) AND (PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above) OR PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above))			Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared		

608	ROBT 301	Mechanical Design with CAD and Machining Laboratory	4	8	ROBT 201 Mechanics: Statics and Dynamics (475) (C- and above)			Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared		
609	ROBT 303	Linear Control Theory with Lab	4	8	ROBT 202 System Dynamics and Modeling (68) (C- and above) AND MATH 274 Introduction to Differential Equations (484) (C- and above)			Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared		
610	ROBT 305	Embedded Systems	3	6	ROBT 206 Microcontrollers with Lab (476) (C- and above)			Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared		
611	ROBT 307	Power Electronics	3	6	ROBT 204 Electrical and Electronic Circuits II with Lab (491) (C- and above)			Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared		
612	ROBT 308	Industrial Automation	3	6				Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared		
613	ROBT 401	Robot Dynamics and Control	3	6	ROBT 303 Linear Control Theory with Lab (623) (C- and above)			Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared		
614	ROBT 407	Machine Learning with Applications	3	6	MATH 273 Linear Algebra with Applications (84) (C and above) AND MATH 321 Probability (482) (C and above) AND CSCI 152 Performance and Data Structures (489) (C and above)			Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared		

615	ROBT 414	Human-Robot Interaction	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared		
616	ROBT 501	Robot Manipulation and Mobility	3	6				Robotics	SEDS		
617	ROBT 503	Dynamic Systems and Control	3	6				Robotics	SEDS		
618	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	SEDS		
619	ROBT 613	Brain-Machine Interfaces	3	6				Robotics	SEDS		
620	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	SEDS		
621	ROBT 700	Thesis Research	0	0							
622	ROBT 701	Advanced Robot Manipulation and Mobility	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS		
623	ROBT 703	Advanced Optimal Control and Planning	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS		
624	ROBT 709	Advanced Robot Dynamics and Control	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS		
<b>School of Engineering</b>											
625	BENG 405	Project Management	3	6				Registration by School Administration			
626	DENG 782	Research Methods and Ethics	3	6				1 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy, Science, Engineering and Technology		
627	DENG 783	Statistics	3	6				1 year PhD SEDS Science, Engineering and Technology	Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	

628	DENG 784	Doctoral Proposal I	0	6				Science, Engineering and Technology			
629	DENG 785	PhD proposal oral defence	0	0				Science, Engineering and Technology			
630	DENG 787	Doctoral Proposal II	3	6	DENG 784 Doctoral Proposal I (1774) (C- and above)	DENG 785 PhD proposal oral defence (2604) (D and above)		Science, Engineering and Technology			
631	DENG 789	Doctoral Seminar I	3	6	DENG 785 PhD proposal oral defence (2604) (C- and above)			Science, Engineering and Technology			
632	DENG 790	Doctoral Seminar II	3	6	DENG 789 Doctoral Seminar I (4598) (C- and above)			Science, Engineering and Technology			
633	DENG 791	Doctoral Seminar III	3	6	DENG 790 Doctoral Seminar II (4599) (C- and above)			Science, Engineering and Technology			
634	DENG 794	Dissertation Research	12	24	DENG 785 PhD proposal oral defence (2604) (C- and above)			Science, Engineering and Technology			
635	DENG 795	Research at Host University	6	12	DENG 785 PhD proposal oral defence (2604) (C- and above)			Science, Engineering and Technology			
636	DENG 796	Thesis Completion	0	0				Science, Engineering and Technology			
637	DENG 797	Oral Defence of PhD Dissertation	0	0	DENG 785 PhD proposal oral defence (2604) (C- and above) AND DENG 789 Doctoral Seminar I (4598) (C- and above) AND DENG 790 Doctoral Seminar II (4599) (C- and above)			Science, Engineering and Technology			