

Course Requirements and Registration Priorities Spring 2019

#	Abbr	Title	Cr(US)	Cr(ECTS)	PreRequisite	CoRequisite	AntiRequisite	1st priority registration	2nd priority registration	3rd priority registration	4th priority registration
SHSS											
Kazakh Language and Turkic Studies											
1	KAZ 358	Technique of Translation	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"						
CPS											
GSPP											
2	ZEST 061	Basic Economics and Statistics	0	0							
Mathematics											
3	MATH 500Z	Linear Algebra with Applications	0	0							
NUFYP											
4	FBIO 011	Introduction to Biology	0	0							
5	FBUS 011	Introduction to Business	0	0							
6	FCHM 011	Introduction to Chemistry	0	0							
7	FEAP 020	Foundation English for Academic Purposes 2	0	0							
8	FGEO 011	Introduction to Geography	0	0							
9	FHUM 011	Introduction to Humanities and Social Science	0	0							
10	FMAT 020	Foundation 'Statistics'	0	0							
11	FMAT 030	Mathematics for Life Sciences (Biology And Chemistry)	0	0							
12	FMAT 040	Mathematics for Physical Sciences	0	0							
13	FPHY 011	Introduction to Physics	0	0							
NUZYP											
14	ZCOM 041	Academic Communications for Graduate Studies II	0	0							
15	ZRDG 031	Academic Reading for Graduate Studies II	0	0							
16	ZWRT 021	Academic Writing for Graduate Studies II	0	0							
Sociology and Anthropology											
17	SOC 201Z	Social Science Research Methods	0	0							
GSB											
GSB											
18	GSBF 512	Principles of Finance	2.5	5							
19	GSBF 513	Financial Data Analytics II	2.5	5							
20	GSBF 514	Corporate Finance	2.5	5							
21	GSBF 515a	Investments I	2.5	5							

22	GSBF 515b	Investments II	2.5	5	GSBF 515a Investments I (4106) (C- and above)						
23	GSBF 517	Macroeconomics for Finance	2.5	5							
24	GSBF 520	Empirical Asset Pricing	2	4							
25	GSBF 541	Global Finance Experience Residency (I)	2	4							
26	MBA 08	Managerial Economics	2	4							
27	MBA 10	Foundations of Strategy	2	4							
28	MBA 11	Managerial Accounting	2	4							
29	MBA 12	Operations Management	2	4							
30	MBA 13	Macroeconomics	2	4							
31	MBA 15	Corporate Finance	2	4							
32	MBA 16	Entrepreneurship	2	4							
33	MBA 17	Negotiations	2	4							
34	MBAE 13	Raising Capital	2	4							
35	MSF 06	Credit Modeling	2.5	5							
GSPP											
Master in Public Administration											
36	MPA 608	Strategic Management and Leadership	4	8				Public Administration			
37	MPA 699	Master's Project with Overseas Component	0	0				Public Administration			
38	MPE 610	National Identity and Public Policy	4	8				Public Administration	Public Policy	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM	
39	MPE 611	Benefit Cost Analysis	4	8				Public Administration	Public Policy	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM	
40	MPE 638	Contemporary Security Challenges in Central Asia and Beyond	4	8				Public Administration	Public Policy	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM	
41	MPE 643	Marketing Public Policy	4	8				Public Administration	Public Policy	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM	
42	MPE 648	Environmental Economics and Public Policy	4	8				Public Administration	Public Policy	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM	
43	MPE 663	Applied Public Economics and Finance	4	8	MPP 601 Microeconomics and Public Policy (1449) (B- and above) OR MPA 603 Economic Applications for Public Managers (2074) (B- and above)			GSPP	GSB, GSE, SEng, SHSS, SMG, SST, SoM		
44	MPE 671	Game Theory and Public Policy	4	8				GSPP	GSB, GSE, SEng, SHSS, SMG, SST, SoM		
45	MPE 681	Natural Resource Management and Policy	4	8				Public Administration	Public Policy	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM	
46	MPE 682	Sustainable Development and Environmental Governance	4	8				GSPP	GSB, GSE, SEng, SHSS, SMG, SST, SoM		
Master in Public Policy											
47	MPP 602	Macroeconomics and Public Policy	4	8				Public Policy			
48	MPP 613	Policy Research Design and Methods	4	8				Public Policy			
49	MPP 641	Public Management and Leadership	4	8				Public Policy			
50	MPP 685	Urban Planning and Public Policy	4	8				Public Administration	Public Policy	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM	

51	MPP 699	Policy Analysis Exercise with Overseas Component	8	16	MPP 601 Microeconomics and Public Policy (1449) (C- and above) AND MPP 611 Statistics for Public Policy (1450) (C- and above) AND MPP 613 Policy Research Design and Methods (1301) (C- and above) AND MPP 621 Public Policy and Analysis (1451) (C- and above)			Public Policy		
PhD in Public Policy										
52	DPP 602	Macroeconomics in Public Sector	4	8				Public Policy		
53	DPP 613	Research Design (qualitative and quantitative)	4	8				Public Policy		
54	DPP 615	Law, Governance and Public Policy	4	8				Public Policy		
55	DPP 631	Politics of Public Policy	4	8				Public Policy		
56	DPP 689	PhD Qualifying Examinations	0	0				Public Policy		
57	DPP 699	Thesis Design and Written Proposal	6	12				Public Policy		
GSE										
MA in Multilingual Education										
58	EDML 611	Plurilingual Individual	3	6				1 year GSE MA in Multil.Education		
59	EDML 612	Multilingual Society	3	6				1 year GSE MA in Multil.Education		
60	EDML 614	Multilingual curriculum development and assessment	3	6				2 year GSE MA in Multil.Education		
61	EDML 620	Language and Literacy Development	3	6				Multilingual Education		
62	EDML 691	Thesis Research II	6	12				2 year GSE MA in Multil.Education		
MSc Educational Leadership HE										
63	EDHE 665	Comparative Higher Education	3	6				Retake Course		
64	EDHE 692	Thesis Seminar III	4.5	9				2 year GSE Educ.Leadership		
65	EDUC 506	Academic English II	1.5	3				1 year GSE Educ.Leadership		
66	EDUC 508	Academic English IV	1.5	3				2 year GSE Educ.Leadership		
67	EDUC 511	Advanced English for Education Professionals II	3	6				1 year GSE MA in Multil.Education		
68	EDUC 513	English for Thesis Writing II	3	6				2 year GSE MA in Multil.Education		
69	EDUC 571	Basic Kazakh	3	6				1 year GSE MA in Multil.Education, 1 year GSE PhD Education		
70	EDUC 572	Kazakh for Professional Purposes	3	6				GSE		
71	EDUC 573	Academic Writing in Kazakh	3	6				Education, Multilingual Education		
72	EDUC 600	Research Methods II	3	6				1 year GSE Educ.Leadership, 1 year GSE MA in Multil.Education		
73	EDUC 670	Internship Project	6	12				1 year GSE Educ.Leadership		
74	EDUC 671	Work-based project	6	12				1 year GSE Educ.Leadership		
75	EDUC 675	Learning to Work	4.5	9				2 year GSE Educ.Leadership		
76	EDUC 704	Advanced Methods of Education Research	3	6				1 year GSE PhD Education		
77	EDUC 705	Advanced Methods of Education Research: Qualitative Methods	3	6				1 year GSE PhD Education		

78	EDUC 711	Globalisation and Education	3	6				1 year GSE PhD Education			
79	EDUC 730	Preparation for Proposal Defence	0	0				1 year GSE PhD Education			
80	EDUC 731	Proposal Defence	3	6				2 Year PhD in Education only. Registration by School Office			
81	EDUC 740	Doctoral Seminar	3	6				2 Yr PhD in Education only. Registration by School Office			
82	EDUC 750	Dissertation Research	9	18				Yr 2, 3 PhD in Education only. Registration by School Office			
MSc Educational Leadership IE											
83	EDIE 692	Thesis Seminar III	4.5	9				2 year GSE Educ.Leadership			
MSc Educational Leadership SE											
84	EDSE 620	Perspectives on Inclusive Education	3	6				2 year GSE MA in Multil.Education			
85	EDSE 692	Thesis Seminar III	4.5	9				2 year GSE Educ.Leadership			
Other											
Other											
86	T - 19020	History of America	3	6							
87	T - 19185	Human Rights: Contemporary issues	3	6							
88	T - 19186	Seminar in Geopolitics	3	6							
89	T - 19405	Language Teaching (English)	3	6							
90	T - 009AM 16	Managerial Decision Making	3	6							
91	T - 032AM 16	Project Management: Managerial Approach	3	6							
92	T - UES 15	Political Analysis	3	6							
93	T-EE 4220	Problstc Sig and Sys	3	6							
94	T-EE 4360	VLSI Design	3	6							
95	T-EE 4390	Microprocessors	3	6							
96	T-EE 4621	Auto Control Systems	3	6							
97	T-PO 323	Urban & Metropolitan Politics	3	6							
98	T-PO 407	Contemporary Political Thought	3	6							
99	T-SO 101	Introduction to Sociology	3	6							
100	T-SO 202	Social Problems	3	6							
SoM											
MMM											
101	MMMM 507	Critical Analysis of the Contemporary Concepts in Molecular Medicine	3	6							
102	MMMM 508	Molecular Immunology	3	6							

103	MMMM 509	From the Bench to the Bedside: Drug Development and Clinical Trials	3	6							
104	MMMM 510	Natural Medicine	3	6							
105	MMMM 511	Research Methods in Molecular Biomedicine	3	6							
106	MMMM 512	Molecular Basis of Chronic Inflammation	1	2							
107	MMMM 690	Master Research Project	15	30							
Medicine											
108	MHPW 200	Health, Physical Fitness, and Well Being	3	6							
Nursing											
109	NUR 402	Principles of Healthcare Administration	4	8							
110	NUR 405	Issues and Trends in Nursing	4	8							
111	NUR 406.2	Medical-Surgical Nursing: Complex Management	4	8							
112	NUR 407	Capstone: Clinical and EBP Quality Improvement Research	4	8							
Public Health											
113	PUBH 512	Biostatistical Modeling and Sampling	3	6							
114	PUBH 522	Advanced Analytical Epidemiology	3	6							
115	PUBH 551	Health Services Management, Health Economic and Health Policy	3	6							
116	PUBH 552	Principles of Health Economics and Policy	3	6	PUBH 551 Health Services Management, Health Economic and Health Policy (3696) (C and above)						
117	PUBH 561	Graduate Research Seminar I	3	6							
118	PUBH 631	Social and Behavioral Sciences in Public Health	3	6							
119	PUBH 682	Master's Project Implementation	12	24							
SMG											
Mining Engineering											
120	MINE 507	Rock Excavation Methods	3	6				1 year Gr SMG Mining Engineering	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM		
121	MINE 508	Advanced Rock Mechanics	3	6				1 year Gr SMG Mining Engineering	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM		
122	MINE 509	Advanced Surface Mine Design	3	6				1 year Gr SMG Mining Engineering	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM		
123	MINE 510	Advanced Underground Mine Design	3	6				1 year Gr SMG Mining Engineering	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM		
124	MINE 691	Thesis II	15	30	MINE 690 Thesis I (4531) (P)			2 year Gr SMG Mining Engineering	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM		
Petroleum Engineering											
125	PETE 500	Research Methods	3	6				1 year Gr SMG Petroleum Engineering	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM		
126	PETE 506	Advanced Reservoir Simulation	3	6				1 year Gr SMG Petroleum Engineering	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM		
127	PETE 507	Advanced Reservoir Engineering	3	6				1 year Gr SMG Petroleum Engineering	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM		
128	PETE 508	Advanced Production Engineering	3	6				1 year Gr SMG Petroleum Engineering	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM		

129	PETE 606	Advanced Enhanced Oil Recovery	3	6				1 year Gr SMG Petroleum Engineering	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM		
School of Mining and Geosciences											
130	GEOL 101	Fundamentals of Geology	3	6				1 year UG SMG	SEng, SST	SHSS	
131	GEOL 102	Fundamentals of Geology	3	6				1 year UG SMG	SEng, SST	SHSS	
132	SMG 100	Introduction to Natural Resources Extraction	3	6				1 year UG SMG	SEng, SST	SHSS	
133	SMG 520	Research Methods	3	6				1 year Gr SMG Mining Engineering	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM		
SSH											
Area Studies											
134	EAS 502	Disciplinary Methodology	4	8				1 year Gr SHSS Eurasian Studies, 2 year Gr SHSS Eurasian Studies	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM		
135	EAS 504	Thesis II	12.5	25	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) AND EAS 503 Thesis I (2141) (C- and above)			1 year Gr SHSS Eurasian Studies, 2 year Gr SHSS Eurasian Studies	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM		
136	EAS 511	Independent Study in Eurasian Studies	4	8				1 year Gr SHSS Eurasian Studies, 2 year Gr SHSS Eurasian Studies	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM		
Biological Science											
137	BIOL 101	Biology for non-Science majors	3	6			BIOL 110 Modern Biology I (1070) (C- and above)	SHSS			
138	BIOL 120	Modern Biology II	3	6	BIOL 110 Modern Biology I (1070) (C and above)			Biological Sciences, Chemistry	SST	SHSS	
139	BIOL 231	Human Anatomy and Physiology II	4	8	BIOL 230 Human Anatomy and Physiology I (72) (C and above)			Biological Sciences	SST	SEng, SHSS, SMG	
140	BIOL 301	Molecular Biology of Cell with Lab	4	8	BIOL 120 Modern Biology II (177) (C and above) OR BIOL 120 Modern Biology II Lab (1445) (C and above) OR BIOL 120L Modern Biology II Laboratory (5443) (C and above)			Biological Sciences	SST	SEng, SHSS, SMG	
141	BIOL 321	Bioethics	3	6	BIOL 120 Modern Biology II (1195) (C and above)			3 year UG SST Biological Sciences, 3 year UG SST Chemistry, 4 year UG SST Biological Sciences, 4 year UG SST Chemistry			
142	BIOL 341	Biochemistry I	3	6	CHEM 211 Organic Chemistry I (154) (C and above)			Biological Sciences	SST	SEng, SHSS, SMG	
143	BIOL 341L	Biochemistry I Lab	1	2		BIOL 341 Biochemistry I (2002) (C and above)		Biological Sciences	SST	SEng, SHSS, SMG	
144	BIOL 370	Genetics	3	6	BIOL 120 Modern Biology II (1195) (C and above)			Biological Sciences	SST	SEng, SHSS, SMG	
145	BIOL 392	Directed Study in Biology	3	6				Biological Sciences	SST	SEng, SHSS, SMG	
146	BIOL 430	Histology with Laboratory	4	8	BIOL 230 Human Anatomy and Physiology I (72) (C and above) OR BIOL 230 Human Anatomy and Physiology I (6217) (C and above)			Biological Sciences	SST	SEng, SHSS, SMG	
147	BIOL 440	Neuroscience	3	6	BIOL 230 Human Anatomy and Physiology I (72) (C and above) OR BIOL 230 Human Anatomy and Physiology I (6217) (C and above)			Biological Sciences	SST	SEng, SHSS, SMG	
148	BIOL 450	Food Microbiology	3	6	BIOL 305 Introduction to Microbiology with Lab (1642) (C and above) OR BIOL 305 Introduction to Microbiology (5789) (C and above)			Biological Sciences	SST	SEng, SHSS, SMG	

149	BIOL 450L	Food Microbiology Lab	1	2	BIOL 305 Introduction to Microbiology with Lab (1642) (C and above) OR BIOL 305 Introduction to Microbiology (5789) (C and above)	BIOL 450 Food Microbiology (4609) (C and above)		Biological Sciences	SST	SEng, SHSS, SMG	
150	BIOL 456	Biology Research Design	3	6		BIOL 355 Critical Research Reasoning (1000) (C and above)		Biological Sciences	SST	SEng, SHSS, SMG	
151	BIOL 471	Light and Electron microscopy concepts and techniques	3	6	BIOL 110 Modern Biology I (1070) (C and above) AND BIOL 120 Modern Biology II (1195) (C and above) AND CHEM 101 General Chemistry I (113) (C and above) AND PHYS 161 Physics I for Scientists and Engineers with Laboratory (116) (C and above)			Biological Sciences	SST	SEng, SHSS, SMG	
152	BIOL 471L	Light and Electron Microscopy Concepts and Techniques-Lab	1	2		BIOL 471 Light and Electron microscopy concepts and techniques (4686) (C and above)		Biological Sciences	SST	SEng, SHSS, SMG	
153	BIOL 480	Molecular Immunology	3	6	BIOL 341 Biochemistry I (2002) (C and above) AND BIOL 310 Immunology (628) (C and above)			Biological Sciences	SST	SEng, SHSS, SMG	
154	BIOL 491	Honors Thesis	9	18	BIOL 490 Honors Thesis Research (1581) (P)			Through Add Course form only			
155	BIOL 570	Advanced Biotechnology	3	6				Biological Sciences	SST	GSE, GSE, GSPP, SEng, SHSS, SMG, SoM	
156	BIOL 580	Applied Bioinformatics	3	6	BIOL 520 Statistical Methods in Life Sciences (1203) (C and above)			Biological Sciences	SST	GSE, GSE, GSPP, SEng, SHSS, SMG, SoM	
157	BIOL 591	Cellular Biophysics	3	6				Biological Sciences	SST	GSE, GSE, GSPP, SEng, SHSS, SMG, SoM	
158	BIOL 600	Graduate Seminar Series	3	6				Biological Sciences			
159	BIOL 699	Research Thesis II	6	12				Instructor's permission required. Registration by Add Course form only			
Chemistry											
160	CHEM 090	Chemistry for Non-Science majors	3	6				SHSS			
161	CHEM 092	Survey of Environmental Sciences for Non-Science Majors	3	6				SHSS			
162	CHEM 101	General Chemistry I	3	6				Biological Sciences, Chemistry	SST	SHSS	
163	CHEM 102	General Chemistry II	3	6	CHEM 101 General Chemistry I (113) (C and above)			Biological Sciences, Chemistry, SMG	SST	SHSS	
164	CHEM 102L	General Chemistry II lab	1	2	CHEM 101L General Chemistry I lab (179) (C and above)	CHEM 102 General Chemistry II (232) (C and above)		Biological Sciences, Chemistry, SMG	SST	SHSS	
165	CHEM 211	Organic Chemistry I	3	6	CHEM 102 General Chemistry II (232) (C and above)			Chemistry	Biological Sciences	SST	
166	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)		Chemistry	Biological Sciences	SST	

167	CHEM 212	Organic Chemistry II	3	6	CHEM 211 Organic Chemistry I (154) (C and above) OR CHEM 191 Chemistry I for Engineers (1908) (C and above)		Chemistry	Biological Sciences	SST	
168	CHEM 212L	Organic Chemistry II Lab	1	2	CHEM 211L Organic Chemistry I Lab (156) (C and above)	CHEM 212 Organic Chemistry II (443) (C and above) OR CHEM 292 Organic Chemistry for Biologists II (1901) (C and above)	Chemistry	Biological Sciences	SST	
169	CHEM 320	Instrumental Analysis	3	6	CHEM 220 Quantitative Chemical Analysis (555) (C and above)		Chemistry	Biological Sciences	SST	
170	CHEM 332	Physical Chemistry II	3	6	CHEM 331 Physical Chemistry I (634) (C and above)	MATH 274 Introduction to Differential Equations (484) (C and above)	Chemistry	Biological Sciences	SST	
171	CHEM 332L	Physical Chemistry II Lab	1	2		CHEM 332 Physical Chemistry II (1056) (C and above) AND CHEM 331L Physical Chemistry Lab (1060) (C and above)	Chemistry	Biological Sciences	SST	
172	CHEM 380	Research Methods	3	6			Chemistry	Biological Sciences	SST	
173	CHEM 411	Advanced Organic Chemistry I	3	6	CHEM 212 Organic Chemistry II (443) (C and above) AND MATH 161 Calculus I (118) (C and above)		Chemistry			
174	CHEM 442	Biochemistry II with Lab-Metabolic Biochemistry	3	6	CHEM 341 Biochemistry I (1058) (C and above) AND CHEM 212 Organic Chemistry II (443) (C and above)		Chemistry	Biological Sciences	SST	
175	CHEM 451	Applied Homogenous Catalysis	3	6	CHEM 350 Advanced Inorganic Chemistry (1905) (C and above)		Chemistry	Biological Sciences	SST	
176	CHEM 490	Nanochemistry	3	6	CHEM 331 Physical Chemistry I (634) (C and above) AND CHEM 250 Descriptive Inorganic Chemistry (445) (C and above)		Chemistry			
Communication and Composition										
177	WCS 150	Rhetoric and Composition	3	6			1 year UG SENG, 1 year UG SHSS, 1 year UG SMG, 1 year UG SST			
178	WCS 200	Introduction to Public Speaking	3	6	WCS 150 Rhetoric and Composition (2183) (C- and above)		SEng, SHSS, SMG, SST			
179	WCS 240	Writing for Digital Media	3	6	WCS 150 Rhetoric and Composition (2183) (C- and above)		SHSS	SEng, SMG, SST		
180	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 WCS 220 Science Writing (5686) (B+ 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))		Through Add Course form only			
181	WCS 391	Writing Fellows II - Practicum in Composition & Collaboration	3	6	WCS 390 Writing Fellows I - Composition and Collaboration in Theory and Practice (1969) (B and above)		Through Add Course form only			
Communication and Composition, Languages, Literature and Linguistics										

182	WCS 260/WLL 235	Creative Writing: Introduction to Fiction Writing I	3	6	WCS 150 Rhetoric and Composition (2183) (C- and above)			SHSS	SEng, SMG, SST		
Economics											
183	ECON 101	Introduction to Microeconomics	3	6				1 year UG SHSS	2 year UG SHSS	SEng, SHSS, SMG, SST	
184	ECON 102	Introduction to Macroeconomics	3	6				1 year UG SHSS	2 year UG SHSS	SEng, SHSS, SMG, SST	
185	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	SHSS	SEng, SMG, SST	
186	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	SHSS	SEng, SMG, SST	
187	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	SHSS	SEng, SMG, SST	
188	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)			Through Add Form Only			
189	ECON 321	Economic Growth	3	6	ECON 202 Intermediate Macroeconomics (207) (C- and above)			Economics	SHSS	SEng, SMG, SST	
190	ECON 332	Urban Economics	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above)			Economics	SHSS	SEng, SMG, SST	
191	ECON 345	The Economics of Family	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above)			Economics	SHSS	SEng, SMG, SST	
192	ECON 413	Econometrics II Time Series	3	6	ECON 301 Econometrics I (664) (C- and above)			Economics	SHSS	SEng, SMG, SST	
193	ECON 415	Industrial Organization	3	6	ECON 301 Econometrics I (664) (C- and above)			Economics	SHSS	SEng, SMG, SST	
194	ECON 428	Wages and the Labor Market	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above) AND ECON 301 Econometrics I (664) (C- and above)			Economics	SHSS	SEng, SMG, SST	
195	ECON 515	Industrial Organization	4	8	ECON 531 Econometrics (2505) (C- and above)			1 year Gr SHSS Economics, 2 year Gr SHSS Economics	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM		
196	ECON 521	Microeconomic Theory II	4	8	ECON 501 Microeconomics I (2187) (C- and above) AND ECON 512 Mathematical Economics (2154) (C- and above)			1 year Gr SHSS Economics, 2 year Gr SHSS Economics	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM		
197	ECON 522	Macroeconomics II	4	8	ECON 502 Macroeconomics I (2186) (C- and above) AND ECON 512 Mathematical Economics (2154) (C- and above)			1 year Gr SHSS Economics, 2 year Gr SHSS Economics	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM		
198	ECON 524	Research Methodology	4	8	ECON 501 Microeconomics I (2187) (C- and above) AND ECON 502 Macroeconomics I (2186) (C- and above) AND ECON 511 Statistics (2188) (C- and above)	ECON 531 Econometrics (2505) (D and above)		1 year Gr SHSS Economics, 2 year Gr SHSS Economics	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM		
199	ECON 531	Econometrics	4	8	ECON 511 Statistics (2188) (C- and above) AND ECON 512 Mathematical Economics (2154) (C- and above)			1 year Gr SHSS Economics, 2 year Gr SHSS Economics	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM		
200	ECON 590	Thesis II	8	16	ECON 589 Thesis I (3714) (P)			1 year Gr SHSS Economics, 2 year Gr SHSS Economics	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM		
History, Philosophy and Religious Studies											
201	HST 100	History of Kazakhstan	3	6				4 year UG SENG, 4 year UG SHSS, 4 year UG SST	1 year UG SENG, 1 year UG SMG, 1 year UG SST	SEng, SHSS, SMG, SST	
202	HST 151	US History I (to 1877)	3	6				1 year UG SHSS, 2 year UG SHSS, History	SEng, SHSS, SMG, SST		
203	HST 214	An Introduction to Comparative History: The Eurasian Steppes and Great Plains of North America	3	6				SHSS	SEng, SMG, SST		

204	HST 233	The Russian Empire from Catherine the Great to the Bolshevik Revolution	3	6	Subject "HST" BETWEEN 100 and 199			SHSS	SEng, SMG, SST		
205	HST 235	Peter the Great (1682-1725): First Emperor of Russia and "Father of the Fatherland"	3	6				SHSS	SEng, SMG, SST		
206	HST 236	Eurasian revolutions, 1905-1949	3	6				SHSS	SEng, SMG, SST		
207	HST 239	Modernizing the Periphery: Nationalism, Communism, and Empire in Central Europe, 1890-Present	3	6	Subject "HST" BETWEEN 100 and 199			SHSS	SEng, SMG, SST		
208	HST 331	The Eurasian Enlightenment	3	6	HST 100 History of Kazakhstan (172) (B and above) OR Subject "HST" BETWEEN 100 and 199			SHSS	SEng, SMG, SST		
209	HST 411	Exploring Eurasian Environmental History	3	6	HST 100 History of Kazakhstan (172) (D and above)			SHSS	SEng, SMG, SST		
210	HST 499	History Capstone: Undergraduate Dissertation	4	8	HST 498 Directed Reading (1365) (C- and above)			4 year UG SHSS			
211	HST 511	Exploring Eurasian Environmental History	4	8				1 year Gr SHSS Eurasian Studies, 2 year Gr SHSS Eurasian Studies	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM		
212	PHIL 124	Knowledge and Reality	3	6				SEng, SHSS, SMG, SST			
213	PHIL 141	Critical Thinking	3	6				SEng, SHSS, SMG, SST			
214	PHIL 215	Bioethics	3	6				SEng, SHSS, SMG, SST			
215	PHIL 223	Philosophy of Science	3	6				SEng, SHSS, SMG, SST			
216	PHIL 320	Truth, Knowledge and Belief	3	6				SEng, SHSS, SMG, SST			
217	PHIL 361	Philosophy of Language	3	6				SEng, SHSS, SMG, SST			
218	REL 212	Buddhist Religious Traditions	3	6				SEng, SHSS, SMG, SST			
History, Philosophy and Religious Studies, History, Philosophy and Religious Studies											
219	HST 329/REL 329	Women in Islamic History	3	6				SHSS	SEng, SMG, SST		
220	PHIL 266/HST 266	Sunzi's Art of War and Unorthodox Military Strategy in Ancient China	3	6				SEng, SHSS, SMG, SST			
221	PHIL 267/REL 267	Chinese Roots of Martial Arts	3	6				SEng, SHSS, SMG, SST			
222	REL 273/HST 273	History of Sufism in the Middle East and Central Asia	3	6	Subject "HST" BETWEEN 100 and 199			SHSS	SEng, SMG, SST		
History, Philosophy and Religious Studies, Sociology and Anthropology											
223	HST 223/ANT 287	Cannibalism and Civilization	3	6				SHSS	SEng, SMG, SST		
224	HST 381/SOC 319	AIDS and Society	3	6	Subject "HST" BETWEEN 101 and 199 OR HST 100 History of Kazakhstan (172) (B- and above)			3 year UG SST, 4 year UG SST, SHSS	SEng, SMG, SST		
Kazakh Language and Turkic Studies											
225	KAZ 201	Academic Kazakh I	3	6	KAZ 150 Basic Kazakh (1215) (C- and above) OR KLL "[B1.2] Intermediate"				1 year UG SENG, 1 year UG SHSS, 1 year UG SMG, 1 year UG SST, 4 year UG SENG, 4 year UG SHSS, 4 year UG SST	SEng, SHSS, SMG, SST	
226	KAZ 202	Academic Kazakh II	3	6	KAZ 201 Academic Kazakh I (4561) (C- and above) OR KLL "[B2.2] Upper-Interm."				1 year UG SENG, 1 year UG SHSS, 1 year UG SMG, 1 year UG SST, 4 year UG SENG, 4 year UG SHSS, 4 year UG SST	SEng, SHSS, SMG, SST	

227	KAZ 211	Academic Speaking in Kazakh	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"		KAZ 212 Academic Writing in Kazakh (703) (C- and above)		1 year UG SENG, 1 year UG SHSS, 1 year UG SMG, 1 year UG SST, 4 year UG SENG, 4 year UG SHSS, 4 year UG SST	SEng, SHSS, SMG, SST	
228	KAZ 212	Academic Writing in Kazakh	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"		KAZ 211 Academic Speaking in Kazakh (702) (C- and above)		1 year UG SENG, 1 year UG SHSS, 1 year UG SMG, 1 year UG SST, 4 year UG SENG, 4 year UG SHSS, 4 year UG SST	SEng, SHSS, SMG, SST	
229	KAZ 226	Kazakh for Medical School	3	6	KLL "[B1.2] Intermediate"				1 year UG SENG, 1 year UG SHSS, 1 year UG SMG, 1 year UG SST, 4 year UG SENG, 4 year UG SHSS, 4 year UG SST	SEng, SHSS, SMG, SST	
230	KAZ 313	Kazakh for Business	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"				1 year UG SENG, 1 year UG SHSS, 1 year UG SMG, 1 year UG SST, 4 year UG SENG, 4 year UG SHSS, 4 year UG SST	SEng, SHSS, SMG, SST	
231	KAZ 349	Kazakh Mythology	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"				1 year UG SENG, 1 year UG SHSS, 1 year UG SMG, 1 year UG SST, 4 year UG SENG, 4 year UG SHSS, 4 year UG SST	SEng, SHSS, SMG, SST	
232	KAZ 351	Kazakh Short Stories	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"				1 year UG SENG, 1 year UG SHSS, 1 year UG SMG, 1 year UG SST, 4 year UG SENG, 4 year UG SHSS, 4 year UG SST	SEng, SHSS, SMG, SST	
233	KAZ 354	Kazakh Drama	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"				1 year UG SENG, 1 year UG SHSS, 1 year UG SMG, 1 year UG SST, 4 year UG SENG, 4 year UG SHSS, 4 year UG SST	SEng, SHSS, SMG, SST	
234	KAZ 356	Kazakh Music History	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"				1 year UG SENG, 1 year UG SHSS, 1 year UG SMG, 1 year UG SST, 4 year UG SENG, 4 year UG SHSS, 4 year UG SST	SEng, SHSS, SMG, SST	
235	KAZ 357	Literature of Alash	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"				1 year UG SENG, 1 year UG SHSS, 1 year UG SMG, 1 year UG SST, 4 year UG SENG, 4 year UG SHSS, 4 year UG SST	SEng, SHSS, SMG, SST	
236	KAZ 362	Creative Writing in Kazakh Language	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"				1 year UG SENG, 1 year UG SHSS, 1 year UG SMG, 1 year UG SST, 4 year UG SENG, 4 year UG SHSS, 4 year UG SST	SEng, SHSS, SMG, SST	
237	KAZ 363	Language and Globalization	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"				1 year UG SENG, 1 year UG SHSS, 1 year UG SMG, 1 year UG SST, 4 year UG SENG, 4 year UG SHSS, 4 year UG SST	SEng, SHSS, SMG, SST	
238	KAZ 364	Kazakh for Civil Service	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"				1 year UG SENG, 1 year UG SHSS, 1 year UG SMG, 1 year UG SST, 4 year UG SENG, 4 year UG SHSS, 4 year UG SST	SEng, SHSS, SMG, SST	
239	KAZ 366	Kazakh Language for Engineers	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"				1 year UG SENG, 1 year UG SHSS, 1 year UG SMG, 1 year UG SST, 4 year UG SENG, 4 year UG SHSS, 4 year UG SST	SEng, SHSS, SMG, SST	
240	KAZ 368	Onomastics: History and Function of Names	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"				1 year UG SENG, 1 year UG SHSS, 1 year UG SMG, 1 year UG SST, 4 year UG SENG, 4 year UG SHSS, 4 year UG SST	SEng, SHSS, SMG, SST	
241	KAZ 371	Contemporary Kazakh Literature	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"				1 year UG SENG, 1 year UG SHSS, 1 year UG SMG, 1 year UG SST, 4 year UG SENG, 4 year UG SHSS, 4 year UG SST	SEng, SHSS, SMG, SST	
242	KAZ 372	Language and ethnicity	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"				1 year UG SENG, 1 year UG SHSS, 1 year UG SMG, 1 year UG SST, 4 year UG SENG, 4 year UG SHSS, 4 year UG SST	SEng, SHSS, SMG, SST	

243	KAZ 373	Kazakh Terminology	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"				1 year UG SENG, 1 year UG SHSS, 1 year UG SMG, 1 year UG SST, 4 year UG SENG, 4 year UG SHSS, 4 year UG SST	SEng, SHSS, SMG, SST	
244	KAZ 374	Kazakh Diplomacy	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"				1 year UG SENG, 1 year UG SHSS, 1 year UG SMG, 1 year UG SST, 4 year UG SENG, 4 year UG SHSS, 4 year UG SST	SEng, SHSS, SMG, SST	
245	KAZ 375	Cultural Studies and Kazakh Culture	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"				1 year UG SENG, 1 year UG SHSS, 1 year UG SMG, 1 year UG SST, 4 year UG SENG, 4 year UG SHSS, 4 year UG SST	SEng, SHSS, SMG, SST	
246	TUR 230	Literatures of Central Asia	3	6				SHSS	SEng, SMG, SST		
Kazakh Language and Turkic Studies, Languages, Literature and Linguistics											
247	LING 280/TUR 280	Introduction to Turkic Historical and Comparative Linguistics	3	6				SHSS	SEng, SMG, SST		
Languages, Literature and Linguistics											
248	CHN 101	Beginning Mandarin I	4	8				World Languages, Literature and Culture	1 year UG SHSS, 2 year UG SHSS	SEng, SHSS, SMG, SST	
249	CHN 201	Intermediate Mandarin I	4	8	CHN 102 Beginning Mandarin II (1844) (C and above)			SEng, SHSS, SMG, SST			
250	FRE 102	Beginning French II	4	8	FRE 101 Beginning French I (246) (C- and above)			SEng, SHSS, SMG, SST			
251	FRE 314	Advanced French Grammar and Composition	3	6	FRE 202 Intermediate French II (1122) (C- and above)			SEng, SHSS, SMG, SST			
252	GER 101	Beginning German	4	8				World Languages, Literature and Culture	1 year UG SHSS, 2 year UG SHSS	SEng, SHSS, SMG, SST	
253	GER 102	Beginning German II	4	8	GER 101 Beginning German (3173) (C- and above)			SEng, SHSS, SMG, SST			
254	KOR 102	Beginning Korean II	4	8	KOR 101 Beginning Korean I (4672) (C- and above)			SEng, SHSS, SMG, SST			
255	LING 130	Introduction to Language and Communication	3	6				World Languages, Literature and Culture	SHSS	SEng, SMG, SST	
256	LING 131	Introduction to Linguistics	3	6				World Languages, Literature and Culture	SHSS	SEng, SMG, SST	
257	LING 270	Languages of Eurasia	3	6				SHSS	SEng, SMG, SST		
258	LING 277	Language Diversity and Language Universals	3	6	LING 131 Introduction to Linguistics (1394) (C and above)			SHSS	SEng, SMG, SST		
259	LING 278	Sounds of the World's Languages	3	6				SHSS	SEng, SMG, SST		
260	LING 370	Methods of Teaching Foreign Languages	3	6				SHSS	SEng, SMG, SST		
261	LING 372	Discourse Analysis	3	6	Subject "LLL" BETWEEN 100 and 199 OR Subject "WLL" BETWEEN 100 and 199 OR WLL 171/ANT 175 Introduction to Linguistic Anthropology (4417) (C- and above) OR Subject "LING" BETWEEN 100 and 199 OR Subject "LING" BETWEEN 100 and 199			SHSS	SEng, SMG, SST		
262	PER 102	Beginning Persian II	4	8	PER 101 Beginning Persian I (4474) (C- and above)			SEng, SHSS, SMG, SST			
263	SPA 102	Beginning Spanish II	4	8	SPA 101 Beginning Spanish I (685) (C- and above)			SEng, SHSS, SMG, SST			
264	SPA 202	Intermediate Spanish II	4	8	SPA 201 Intermediate Spanish I (1475) (C- and above)			SEng, SHSS, SMG, SST			
265	SPA 320	The Hispanic Short Story	3	6	Subject "WLL" BETWEEN 100 and 199 AND SPA 202 Intermediate Spanish II (1842) (C- and above)			SEng, SHSS, SMG, SST			
266	WLL 110	Introduction to Literary Studies	3	6				World Languages, Literature and Culture	SHSS	SEng, SMG, SST	

267	WLL 121	Introduction to Cultural Studies	3	6			World Languages, Literature and Culture	SHSS	SEng, SMG, SST	
268	WLL 211	World Literature II: from the 18th to the 20th century	3	6			World Languages, Literature and Culture	SHSS	SEng, SMG, SST	
269	WLL 212	Introduction to Poetry	3	6			World Languages, Literature and Culture	SHSS	SEng, SMG, SST	
270	WLL 241	Survey of Folk Tales	3	6			World Languages, Literature and Culture	SHSS	SEng, SMG, SST	
271	WLL 246	Survey of Contemporary Russian Literature and Culture	3	6	Subject "WLL" BETWEEN 100 and 199 OR WCS 150 Rhetoric and Composition (2183) (C- and above)		2 year UG SHSS	SHSS	SEng, SMG, SST	
272	WLL 349	Terrible Perfection: Women in 19th-Century Russian Literature	3	6	WLL 101 Introduction to Critical Issues in the Humanities and Social Sciences (234) (C and above) OR WLL 102 /PHIL 102 Language, Experience, Culture (2481) (C and above) OR WLL 110 Introduction to Literary Studies (244) (C and above) OR WLL 111 Introduction to Theatre (2160) (C and above) OR WLL 121 Introduction to Cultural Studies (243) (C and above) OR WLL 155 Introduction to the Comic Book (3046) (C and above) OR WLL 171/ANT 175 Introduction to Linguistic Anthropology (4417) (C and above) OR WLL 201 World Literature I (686) (C and above) OR WLL 209 Introduction to Translation Studies (2178) (C and above) OR WLL 210 Migrants, Nomads and Exiles (217) (C and above) OR WLL 211 World Literature II: from the 18th to the 20th century (492) (C and above) OR WLL 212 Introduction to Poetry (2167) (C and above) OR WLL 213/SPA 211 Introduction to the Hispanic World (1030) (C and above) OR WLL 218 Renaissance in Italy and Beyond (6573) (C and above) OR WLL 219 Myth and Adaptation (2489) (C and above) OR WLL 220 Ancient World Literature (to 1650) (218) (C and above) OR WLL 221 Creative Writing/Theatre (245) (C and above) OR WLL 222 Acting: Praxis, Theory and History (3336) (C and above) OR WLL 231 Beginning and Intermediate Playwriting (1625) (C and above) OR WLL 240 Introduction to the Novel (687) (C and above) OR WLL 241 Survey of Folk Tales (466) (C and above) OR WLL 243 Western Theatre, Literature and History From Ancient Greece to 1800 (1082) (C and above) OR WLL 244 Survey of Nineteenth-Century Russian Literature (1395) (C and above) OR WLL 246 Survey of Contemporary Russian Literature and Culture (3604) (C and above) OR WLL 247 Survey of East Asian Literature (1382) (C and above) OR WLL 248 Survey of Soviet Literature and Culture (3842) (C and above) OR WLL 250 From Page to Screen (472) (C and above) OR WLL 251 Hong Kong Cinema (3337) (C and above) OR WLL 253 Western Theatre Literature and History: 1800-Present (1396) (C and above) OR WLL 254/SPA 254 Superstition, Magical Realism, and Horror in Hispanic Culture (1851) (C and above) OR WLL 255 The Comic Book in Japan and America (1849) (C and above) OR WLL 257 Fan Culture in the Age of Convergence (2487) (C and above) OR WLL 291 Theatre Practicum (2168) (C and above)		World Languages, Literature and Culture	SHSS	SEng, SMG, SST	
273	WLL 442	Contemporary Russian and Russophone Literature	3	6	Subject "WLL" BETWEEN 100 and 199		World Languages, Literature and Culture	4 year UG SHSS	SEng, SMG, SST	

274	WLL 499	Languages, Linguistics, and Literatures Capstone II	3	6	WLL 498 Languages, Linguistics, and Literatures Capstone I (3048) (C- and above)			4 year UG SHSS World Language and Literature		
275	WLL 542	Contemporary Russian and Russophone Literature	4	8				1 year Gr SHSS Eurasian Studies, 2 year Gr SHSS Eurasian Studies	GSE, GSE, GSPP, SEng, SHSS, SMG, SST, SoM	
Languages, Literature and Linguistics, Languages, Literature and Linguistics										
276	WLL 254/SPA 254	Superstition, Magical Realism, and Horror in Hispanic Culture	3	6	Subject "WLL" BETWEEN 100 and 499 OR Subject "HST" BETWEEN 100 and 499			World Languages, Literature and Culture	SHSS	SEng, SMG, SST
Mathematics										
277	MATH 161	Calculus I	4	8				Biological Sciences, Chemistry	1 year UG SENG, 1 year UG SHSS, 1 year UG SMG, 1 year UG SST	SEng, SHSS, SMG, SST
278	MATH 162	Calculus II	4	8	MATH 161 Calculus I (118) (C and above)			1 year UG SENG, 1 year UG SMG, 1 year UG SST	SST	SHSS
279	MATH 251	Discrete Mathematics	3	6	MATH 161 Calculus I (118) (C and above)			Computer Science, Mathematics	SST	SHSS
280	MATH 263	Calculus III	4	8	MATH 162 Calculus II (170) (C and above)			Mathematics	SST	SHSS
281	MATH 273	Linear Algebra with Applications	4	8	MATH 161 Calculus I (118) (C and above)	MATH 162 Calculus II (170) (C and above)		Mathematics	SST	SHSS
282	MATH 274	Introduction to Differential Equations	3	6	MATH 162 Calculus II (170) (C and above)			Mathematics	SST	SHSS
283	MATH 302	Abstract Algebra I	3	6	MATH 273 Linear Algebra with Applications (84) (C and above) AND MATH 251 Discrete Mathematics (85) (C and above)			3 year UG SST Mathematics	SST	SHSS
284	MATH 310	Applied Statistical Methods	3	6	MATH 161 Calculus I (118) (C and above)		MATH 321 Probability (482) (C and above)	Biological Sciences	SST	SHSS
285	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	SST	SHSS
286	MATH 322	Mathematical Statistics	3	6	MATH 321 Probability (482) (C and above) OR ECON 211 Economic Statistics (2280) (C and above)			3 year UG SST Mathematics	SST	SHSS
287	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	SST	SHSS
288	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	SST	SHSS
289	MATH 371	Introduction to Mathematical Biology	3	6	MATH 273 Linear Algebra with Applications (84) (C and above) AND MATH 274 Introduction to Differential Equations (484) (C and above)			3 year UG SST Mathematics	Mathematics	SST
290	MATH 407	Graph Theory	3	6	(MATH 301 Introduction to Number Theory (613) (C and above) OR MATH 251 Discrete Mathematics (85) (C and above)) AND MATH 273 Linear Algebra with Applications (84) (C and above)			Mathematics	SST	SHSS
291	MATH 412	Nonlinear Optimization	3	6	MATH 273 Linear Algebra with Applications (84) (C and above) AND MATH 263 Calculus III (81) (C and above)			Mathematics	SST	SHSS

292	MATH 417	Cryptography	3	6	MATH 273 Linear Algebra with Applications (84) (C and above) AND (MATH 251 Discrete Mathematics (85) (C and above) OR MATH 301 Introduction to Number Theory (613) (C and above) OR MATH 355 Introduction to Proofs (86) (C and above))		Mathematics	SST	SHSS	
293	MATH 423	Actuarial Mathematics II	3	6	MATH 321 Probability (482) (C and above) OR ECON 211 Economic Statistics (2280) (C and above)		Mathematics	SST	SHSS	
294	MATH 449	Statistical Programming	3	6	MATH 322 Mathematical Statistics (1165) (C and above)		4 year UG SST Mathematics	Mathematics		
295	MATH 477	Applied Finite Element Methods	3	6	MATH 351 Numerical Methods with Applications (1166) (C and above)		Mathematics	SST	SHSS	
296	MATH 480	Complex Analysis	3	6	MATH 263 Calculus III (81) (C and above)		Mathematics	SST	SHSS	
297	MATH 482	Fourier Analysis	3	6	MATH 263 Calculus III (81) (C and above) AND MATH 274 Introduction to Differential Equations (484) (C and above)		Mathematics	SST	SHSS	
298	MATH 490	Special Topics in Mathematics I	3	6			Mathematics	SST	SHSS	
299	MATH 499	Capstone Project	3	6			Through Add Course form only			
300	MATH 512	Optimization Methods and Techniques	3	6			Applied Mathematics	SST	GSB, GSE, GSPP, SEng, SHSS, SMG, SoM	
301	MATH 519	Scientific Computing	3	6			Applied Mathematics	SST	GSB, GSE, GSPP, SEng, SHSS, SMG, SoM	
302	MATH 541	Data Analysis and Statistical Learning	3	6	MATH 540 Statistical Learning (2340) (B- and above)		Applied Mathematics	SST	GSB, GSE, GSPP, SEng, SHSS, SMG, SoM	
303	MATH 551	Advanced Numerical Methods	3	6			Applied Mathematics	SST	GSB, GSE, GSPP, SEng, SHSS, SMG, SoM	
Physics										
304	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 SENG, 1 year UG SMG, 1 year UG SST	SST	SHSS
305	PHYS 162	Physics II for Scientists and Engineers with Laboratory	4	8	PHYS 161 Physics I for Scientists and Engineers with Laboratory (116) (C- and above) OR PHYS 151 Introductory Physics I with Lab (649) (C- and above)		PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above)	1 year UG SENG, 1 year UG SMG, 1 year UG SST	SST	SHSS
306	PHYS 202	Introductory Astrophysics	3	6	PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above)			SST	SHSS	
307	PHYS 222	Classical Mechanics II	3	6	PHYS 221 Classical Mechanics I (652) (C- and above)	MATH 274 Introduction to Differential Equations (484) (D and above)		Physics	SST	
308	PHYS 270	Computational Physics with Laboratory	3	6	(CSCI 150 Fundamentals of Programming (1501) (C- and above) OR CSCI 151 Programming for Scientists and Engineers (192) (C- and above)) AND MATH 263 Calculus III (81) (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))	MATH 273 Linear Algebra with Applications (84) (D and above)		Physics	SST	

309	PHYS 280	Thermodynamics and Statistical Physics	3	6	MATH 263 Calculus III (81) (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))		Physics	SST		
310	PHYS 362	Classical Electrodynamics II	3	6	PHYS 361 Classical Electrodynamics I (651) (C- and above)		Physics	SST		
311	PHYS 370	Optics with Laboratory	4	8	PHYS 361 Classical Electrodynamics I (651) (C- and above)		Physics	SST		
312	PHYS 451	Quantum Mechanics I	3	6	PHYS 221 Classical Mechanics I (652) (C- and above) AND PHYS 361 Classical Electrodynamics I (651) (C- and above)		Physics	SST		
313	PHYS 463	Astrophysics and General Relativity	3	6	MATH 162 Calculus II (170) (C- and above) AND PHYS 221 Classical Mechanics I (652) (C- and above) AND MATH 274 Introduction to Differential Equations (484) (C- and above)		Physics	SST		
314	PHYS 473	Introduction to Solid State Physics	4	8	PHYS 261 Modern Physics with laboratory (125) (C- and above) OR CHEM 331 Physical Chemistry I (634) (C- and above) OR MAE 301 Engineering Thermodynamics (5927) (C- and above) OR CHME 201 Chemical Engineering Thermodynamics (5007) (C- and above) OR ELCE 204 Solid State Devices (5508) (C- and above)		Physics	SST		
315	PHYS 483	Statistical Mechanics	3	6	PHYS 280 Thermodynamics and Statistical Physics (1179) (C- and above)		Physics	SST		
316	PHYS 491	Directed Study of Advanced Physics Topics	3	6			Physics			
317	PHYS 495	Physics Colloquium	0	0			Physics			
318	PHYS 499	Honors Thesis	3	6			Physics			
319	PHYS 510	Quantum Mechanics	3	6			Physics	SST	GSB, GSE, GSPP, SEng, SHSS, SMG, SoM	
320	PHYS 520	Statistical Physics	3	6			Physics	SST	GSB, GSE, GSPP, SEng, SHSS, SMG, SoM	
Political Science and International Relations										
321	PLS 101	Introduction to Political Science	3	6			SEng, SMG, SST	SHSS		
322	PLS 140	Introduction to Comparative Politics	3	6			1 year UG SHSS, Political Science and International Relations	SHSS	SEng, SMG, SST	
323	PLS 150	Introduction to International Relations	3	6			1 year UG SHSS, Political Science and International Relations	SHSS	SEng, SMG, SST	
324	PLS 210	Political Science Research Methods	3	6			Political Science and International Relations	SHSS	SEng, SMG, SST	
325	PLS 211	Quantitative Methods	3	6		ECON 211 Economic Statistics (2280) (C- and above)	Political Science and International Relations	SHSS	SEng, SMG, SST	
326	PLS 341	Politics of Development	3	6	PLS 210 Political Science Research Methods (129) (C- and above)		Political Science and International Relations	SHSS	SEng, SMG, SST	
327	PLS 351	International Political Economy	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	SHSS	SEng, SMG, SST	
328	PLS 354	Introduction to International Law	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	SHSS	SEng, SMG, SST	

329	PLS 355	European Union: Institutions and Policies	3	6	PLS 210 Political Science Research Methods (129) (C- and above)			Political Science and International Relations	SHSS	SEng, SMG, SST	
330	PLS 356	International Politics of the Korean Peninsula	3	6	PLS 210 Political Science Research Methods (129) (C- and above) AND PLS 150 Introduction to International Relations (511) (C- and above)			Political Science and International Relations	SHSS	SEng, SMG, SST	
331	PLS 360	Foreign Policy Analysis	3	6	PLS 150 Introduction to International Relations (511) (C- and above) AND PLS 211 Quantitative Methods (221) (C- and above)			Political Science and International Relations	SHSS	SEng, SMG, SST	
332	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	SHSS	SEng, SMG, SST	
333	PLS 391	Intermediate Special Topics in Comparative Politics	3	6	PLS 210 Political Science Research Methods (129) (C- and above)			Political Science and International Relations	SHSS	SEng, SMG, SST	
334	PLS 392	Politics of China	3	6	PLS 210 Political Science Research Methods (129) (C- and above)			Political Science and International Relations	SHSS	SEng, SMG, SST	
335	PLS 395	Independent Study	3	6	PLS 210 Political Science Research Methods (129) (C- and above) AND PLS 211 Quantitative Methods (221) (C- and above)			Through Add Course form only			
336	PLS 441	Advanced Topics in Comparative Politics	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	SHSS	SEng, SMG, SST	
337	PLS 445	Political Violence	3	6	(PLS 140 Introduction to Comparative Politics (223) (C- and above) OR 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	SHSS	SEng, SMG, SST	
338	PLS 447	Comparative Political Parties	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	SHSS	SEng, SMG, SST	
339	PLS 457	International Security and Conflict	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)						
340	PLS 495	Research Practicum in PSIR	1	2	PLS 210 Political Science Research Methods (129) (C- and above) AND PLS 211 Quantitative Methods (221) (C- and above)			Through Add Course form only			
341	PLS 510	Advanced Research I	4	8				1 year Gr SHSS Political Sciences and Int. Relations, 2 year Gr SHSS Political Sciences and Int. Relations	GSE, GSB, GSPP, SEng, SHSS, SMG, SST, SoM		
342	PLS 522	Just War Theory	4	8				1 year Gr SHSS Political Sciences and Int. Relations, 2 year Gr SHSS Political Sciences and Int. Relations	GSE, GSB, GSPP, SEng, SHSS, SMG, SST, SoM		
343	PLS 541	Advanced Topics in Comparative Politics	4	8				1 year Gr SHSS Political Sciences and Int. Relations, 2 year Gr SHSS Political Sciences and Int. Relations	GSE, GSB, GSPP, SEng, SHSS, SMG, SST, SoM		
344	PLS 545	Political Violence	4	8				1 year Gr SHSS Political Sciences and Int. Relations, 2 year Gr SHSS Political Sciences and Int. Relations	GSE, GSB, GSPP, SEng, SHSS, SMG, SST, SoM		
345	PLS 547	Comparative Political Parties	4	8				1 year Gr SHSS Political Sciences and Int. Relations, 2 year Gr SHSS Political Sciences and Int. Relations	GSE, GSB, GSPP, SEng, SHSS, SMG, SST, SoM		
346	PLS 551	Advanced Topics in International Relations	4	8				1 year Gr SHSS Political Sciences and Int. Relations, 2 year Gr SHSS Political Sciences and Int. Relations	GSE, GSB, GSPP, SEng, SHSS, SMG, SST, SoM		

347	PLS 557	International Security and Conflict	4	8				1 year Gr SHSS Political Sciences and Int. Relations, 2 year Gr SHSS Political Sciences and Int. Relations	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM		
348	PLS 598	MA Thesis I	6	12				1 year Gr SHSS Political Sciences and Int. Relations, 2 year Gr SHSS Political Sciences and Int. Relations	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM		
SSH											
349	SSH 300	School of Sciences and Humanities Internship	3	6				Through Add Course form only			
350	SSH 301	School of Sciences and Humanities Internship: Second Experience	3	6				Through Add Course form only			
Sociology and Anthropology											
351	ANT 110	Introduction to Sociocultural Anthropology	3	6				1 year UG SHSS, 2 year UG SHSS, Anthropology, Sociology	SHSS	SEng, SMG, SST	
352	ANT 140	World Prehistory	3	6				1 year UG SHSS, 2 year UG SHSS, Anthropology, Sociology	SHSS	SEng, SMG, SST	
353	ANT 160	Introduction to Biological Anthropology	3	6			ANT 361 Human Evolution: Bones, Stones and Genomes (160) (C- and above)	1 year UG SHSS, 2 year UG SHSS, Anthropology, Sociology	Biological Sciences, SHSS	SEng, SMG, SST	
354	ANT 232	Life, Death and Economy: Archaeology of Central Asia	3	6				1 year UG SHSS, 2 year UG SHSS, Anthropology	SHSS	SEng, SMG, SST	
355	ANT 280	Introduction to Medical Anthropology	3	6				1 year UG SHSS, 2 year UG SHSS, Anthropology, Sociology	Biological Sciences, SHSS	SEng, SMG, SST	
356	ANT 286	Nomads: Around the world and through time	3	6				1 year UG SHSS, 2 year UG SHSS, Anthropology	SHSS	SEng, SMG, SST	
357	ANT 306	Anthropology of Performance	3	6				Anthropology, Sociology	SHSS	SEng, SMG, SST	
358	ANT 314	Politics of Identity in Eurasia	3	6			Subject "HST" BETWEEN 100 and 499 OR Subject "SOC" BETWEEN 100 and 499 OR Subject "ANT" BETWEEN 100 and 499 OR Subject "PLS" BETWEEN 100 and 499 OR Subject "SOC" BETWEEN 100 and 499 OR Subject "ANT" BETWEEN 100 and 499	Anthropology, Political Science and International Relations, Sociology	SHSS	SEng, SMG, SST	
359	ANT 333	Anthropology of Space	3	6				3 year UG SHSS, 4 year UG SHSS, Anthropology, Sociology	SHSS	SEng, SMG, SST	
360	ANT 400	Research Assistance in Anthropology	1	2				Through Add Course form only			
361	ANT 475	Digital Ethnographies	3	6			ANT 110 Introduction to Sociocultural Anthropology (501) (C- and above) OR PLS 210 Political Science Research Methods (129) (C- and above) OR SOC 201 Social Science Research Methods (1341) (C- and above) OR ANT 214/SOC 214 Qualitative Methods (1033) (C- and above)	Anthropology, Sociology	SHSS	SEng, SMG, SST	
362	SOC 101	Introduction to Sociology	3	6				Anthropology, Sociology	1 year UG SHSS, 2 year UG SHSS, 3 year UG SST Biological Sciences	SEng, SHSS, SMG, SST	
363	SOC 201	Social Science Research Methods	3	6				Anthropology, Sociology	SHSS	SEng, SMG, SST	
364	SOC 203	Quantitative Methods in Sociology	3	6				Anthropology, Sociology	SHSS	SEng, SMG, SST	
365	SOC 215	Sociology of Race and Ethnicity	3	6				Anthropology, Sociology	SHSS	SEng, SMG, SST	
366	SOC 221	International Migration	3	6				Anthropology, Sociology	SHSS	SEng, SMG, SST	
367	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) OR ANT 110 Introduction to Sociocultural Anthropology (501) (C- and above)	Anthropology, Sociology	SHSS	SEng, SMG, SST	
368	SOC 320	Organized Crime and Corruption	3	6			SOC 101 Introduction to Sociology (508) (C- and above)				
369	SOC 400	Research Assistance in Sociology	1	2				Through add form only			

370	SOC 499	Capstone Seminar II	3	6	SOC 498 Capstone Seminar Part I (3043) (C- and above)			4 year UG SHSS Sociology			
371	SOC 521	Informal Practices and Social Order in Eurasia	4	8				1 year Gr SHSS Eurasian Studies, 2 year Gr SHSS Eurasian Studies	GSB, GSE, GSPP, SEng, SHSS, SMG, SST, SoM		
Sociology and Anthropology, Sociology and Anthropology											
372	ANT 214/SOC 214	Qualitative Methods	3	6				Anthropology, Sociology	SHSS	SEng, SMG, SST	
373	ANT 222/SOC 222	Approaches to Global Development	3	6			ANT 222/SOC 222 Approaches to Global Development (158) (C- and above)	Anthropology, Sociology	SHSS	SEng, SMG, SST	
374	ANT 281/SOC 281	Health, Illness and Society	3	6				Anthropology, Sociology	SHSS	SEng, SMG, SST	
SEDS											
Chemical Engineering											
375	MCHE 600	MSc Thesis in Chemical Engineering	15	30							
Chemical and Materials Engineering											
376	CHME 421	Tissue Engineering	3	6				4 year UG SEng Chemical Engineering	4 year UG SENG	SEng, SHSS, SMG, SST	
377	ECHE 210	Foundations of Unit Operations	3	6				Registration by School Office			
378	ECHE 221	Engineering Fluid Mechanics	3	6				Registration by School Office			
379	ECHE 270	Transport Phenomena-I	3	6				Registration by School Office			
380	ECHE 323	Computational methods in Chemical Engineering-I	3	6	ECHE 333 Separation Processes-I (1271) (D and above)	ECHE 481 Chemical Reaction Engineering (1985) (D and above)		Registration by School Office			
381	ECHE 383	Separation Processes II	3	6	ECHE 126 Introduction to Chemical Engineering (33) (D and above) AND ECHE 225 Heat and Mass Transfer Operations (541) (D and above)			Registration by School Office			
382	ECHE 386	Chemical Plant Design and Optimization	3	6				Registration by School Office			
383	ECHE 387	Chemical Reaction Engineering 2	3	6				Registration by School Office			
384	ECHE 388	Process Dynamics and Control	3	6				Registration by School Office			
385	ECHE 420	Polymer Processing and Rheology	3	6				4 year UG SEng Chemical Engineering	4 year UG SENG	SEng, SHSS, SMG, SST	
386	ECHE 479	Capstone Project II	9	18	ECHE 418 Capstone project 1 (1278) (D and above)			Registration by School Office			
387	ECHE 483	Chemistry II	3	6	ECHE 222 Chemistry I (731) (D and above)			Registration by School Office			
388	ECHE 485	Introduction to Biochemical Engineering	3	6				4 year UG SEng Chemical Engineering	4 year UG SENG	SEng, SHSS, SMG, SST	

389	MCHME 600	Research Seminar	3	6				1 year Gr SEng Chemical and Materials Engineering	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		
390	MCHME 606	Advanced Heat and Mass Transfer	3	6				1 year Gr SEng Chemical and Materials Engineering	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		
391	MCHME 704	Advanced Safety, Reliability and Risk Engineering in Process Industries	3	6				1 year Gr SEng Chemical and Materials Engineering	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		
392	MCHME 712	Advanced Tissue Engineering	3	6				1 year Gr SEng Chemical and Materials Engineering	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		
Civil Engineering											
393	MSC 600	Research Methods and Ethics	3	6				1 year Gr SEng Chemical and Materials Engineering, 1 year Gr SEng Civil and Environmental Engineering, 1 year Gr SEng Electrical and Computer Engineering, 1 year Gr SEng Mechanical and Aerospace Engineering	Science, Engineering and Technology		
Civil and Environmental Engineering											
394	CEE 464	Individual Research Project in Civil and Environmental Engineering II	3	6	CEE 463 Individual Research Project in Civil & Environmental Engineering 1 (6594) (C and above)			4 year UG SEng Civil Engineering	4 year UG SENG	SEng, SHSS, SMG, SST	
395	ECE 210	Soil Mechanics	3	6				Registration by School Office			
396	ECE 218	Environmental Chemistry	3	6				Registration by School Office			
397	ECE 219	Hydraulics	3	6				Registration by School Office			
398	ECE 306	Geotechnical Design	3	6	ECE 210 Soil Mechanics (862) (D and above)			Registration by School Office			
399	ECE 319	Structural Design - Steel	3	6				Registration by School Office			
400	ECE 320	Engineering Hydrology	3	6				Registration by School Office			
401	ECE 420	Modern Information Technology in Construction	3	6				4 year UG SEng Civil Engineering	4 year UG SENG	SEng, SHSS, SMG, SST	
402	ECE 422	Prestressed Concrete Design	3	6				3 year UG SEng Civil Engineering	3 year UG SENG, 4 year UG SENG	SEng, SHSS, SMG, SST	
403	ECE 423	Structure and Properties of Concrete Materials	3	6				3 year UG SEng Civil Engineering	3 year UG SENG, 4 year UG SENG	SEng, SHSS, SMG, SST	

404	ECE 472	Water and Wastewater Treatment Processes	3	6	ECE 218 Environmental Chemistry (3296) (D and above)			Registration by School Office			
405	ECE 473	Environmental Systems	3	6				4 year UG SEng Civil Engineering	4 year UG SENG	SEng, SHSS, SMG, SST	
406	ECE 478	Capstone Project II	9	18	ECE 401 Capstone Project 1 (1270) (D and above)			Registration by School Office			
407	ECE 479	Structural Analysis II	3	6	ECE 217 Structural Analysis I (3156) (D and above)			Registration by School Office			
408	EMEM 510	Managerial Accounting	2	4				1 year Gr SENG Engineering Management	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		
409	EMEM 511	Business Strategy	2	4				1 year Gr SENG Engineering Management	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		
410	EMEM 512	Leading Change	2	4				1 year Gr SENG Engineering Management	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		
411	EMEM 513	Entrepreneurship	2	4				1 year Gr SENG Engineering Management	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		
412	EMEM 514	Finance	2	4				1 year Gr SENG Engineering Management	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		
413	EMEM 516	Management of Organizations	2	4				1 year Gr SENG Engineering Management	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		

414	EMEM 517	Marketing	2	4				1 year Gr SENG Engineering Management	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		
415	EMEM 527	Globalization and Engineering	3	6				2 year Gr SENG Engineering Management	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		
416	EMEM 529	Capstone Project	8	16				2 year Gr SENG Engineering Management	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		
417	EMEM 535	Managing Product and Service Development	3	6				2 year Gr SENG Engineering Management	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		
418	EMEM 543	Quality and Lean Management	3	6				2 year Gr SENG Engineering Management	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		
419	EMEM 545	Business Communication	2	4				1 year Gr SENG Engineering Management	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		

420	MCEE 600	Research Seminar	3	6				1 year Gr SEng Civil and Environmental Engineering	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		
421	MCEE 606	Advanced Project Management	3	6				1 year Gr SEng Civil and Environmental Engineering	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		
422	MCEE 700	Structural Dynamics and Earthquake Engineering	3	6				1 year Gr SEng Civil and Environmental Engineering	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		
423	MCEE 701	Advanced Concrete Technology	3	6				1 year Gr SEng Civil and Environmental Engineering	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		
424	MCEE 703	Theory of Physico-Chemical Treatment Processes	3	6				1 year Gr SEng Civil and Environmental Engineering	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		
425	MCEE 704	Contaminated Site Management and Soil Treatment Technologies	3	6				1 year Gr SEng Civil and Environmental Engineering	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		
Computer Science											
426	CSCI 101	Introduction to Computational Sciences	3	6				1 year UG SHSS	SHSS		

427	CSCI 111	Web Programming and Problem Solving	3	6		CSCI 101 Introduction to Computational Sciences (147) (D and above) OR CSCI 115 Programming Fundamentals (5257) (D and above) OR CSCI 151 Programming for Scientists and Engineers (192) (D and above) OR ENG 101 Programming for Engineers (4517) (D and above)	1 year UG SHSS	SHSS		
428	CSCI 151	Programming for Scientists and Engineers	4	8		CSCI 111 Web Programming and Problem Solving (110) (D and above) OR CSCI 115 Programming Fundamentals (5257) (D and above) OR ENG 101 Programming for Engineers (4517) (B- and above)	1 year UG SST, SMG	SST	SHSS	
429	CSCI 152	Performance and Data Structures	4	8	CSCI 151 Programming for Scientists and Engineers (192) (C- and above) OR ENG 101 Programming for Engineers (4517) (B- and above)		1 year UG SST	SST	SHSS	
430	CSCI 245	System Analysis and Design	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)		Computer Science	SST	SEng, SHSS, SMG	
431	CSCI 270	Algorithms	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)	MATH 251 Discrete Mathematics (85) (D and above)	2 year UG SST Computer Science	Computer Science	SEng, SHSS, SMG, SST	
432	CSCI 272	Formal Languages	3	6	CSCI 151 Programming for Scientists and Engineers (192) (C- and above) OR ENG 101 Programming for Engineers (4517) (B- and above)	MATH 251 Discrete Mathematics (85) (D and above)	2 year UG SST Computer Science	Computer Science	SEng, SHSS, SMG, SST	
433	CSCI 307	Research Methods	3	6			Computer Science			
434	CSCI 325	Introduction to Parallel Systems and Graphics Processing Unit Programming	3	6	CSCI 332 Operating Systems (490) (C- and above)		Computer Science	SST	SEng, SHSS, SMG	
435	CSCI 330	Mobile Computing	3	6	CSCI 332 Operating Systems (490) (C- and above)		Computer Science	SST	SEng, SHSS, SMG	
436	CSCI 332	Operating Systems	3	6	CSCI 231 Computer Systems and Organization (194) (C- and above)		2 year UG SST Computer Science	Computer Science	SEng, SHSS, SMG, SST	
437	CSCI 399A	Internship II - A	1	2						
438	CSCI 409	Senior Project II	3	6	CSCI 408 Senior Project I (1481) (C- and above)		4 year UG SST Computer Science			
439	CSCI 447	Machine Learning: Theory and Practice	3	6	MATH 273 Linear Algebra with Applications (84) (C and above) AND MATH 321 Probability (482) (C and above)		Computer Science	SST	SEng, SHSS, SMG	
440	CSCI 462	Open Source Software	3	6	CSCI 361 Software Engineering (640) (C- and above)		Computer Science	SST	SEng, SHSS, SMG	

441	CSCI 502	Hardware Software Co-Design	3	6	CSCI 501 Software Principles and Practice (2408) (C- and above)			Computer Science, Robotics	SST	GSB, GSE, GSPP, SEng, SHSS, SMG, SoM	
442	CSCI 515	Modeling and Simulation for Computer Science	3	6				Computer Science, Robotics	SST	GSB, GSE, GSPP, SEng, SHSS, SMG, SoM	
443	CSCI 591	Advanced Artificial Intelligence	3	6	CSCI 501 Software Principles and Practice (2408) (C- and above) OR DS 501 Fundamentals of Data Science (5218) (C- and above)			Computer Science	SST	GSB, GSE, GSPP, SEng, SHSS, SMG, SoM	
444	CSCI 694	Thesis	15	30				Registration by SST School Office			
445	SEDS 502	Teaching Practicum	3	6				Registration by SST School Office			
446	SEDS 504	Innovation and Entrepreneurship	3	6				Registration by SST School Office			
447	SEDS 592	Research Seminar	3	6				Registration by SST School Office			
Electrical and Computer Engineering											
448	EEE 210	Software Engineering	3	6	BENG 146 Programming for Engineers (2234) (D and above)			Registration by School Office			
449	EEE 211	Computer Systems Architecture	3	6	ECHE 126 Introduction to Chemical Engineering (33) (D and above)			Registration by School Office			
450	EEE 239	Communication systems	3	6				Registration by School Office			
451	EEE 340	Data Communications	3	6				Registration by School Office			
452	EEE 341	Digital Electronic System Design	3	6				Registration by School Office			
453	EEE 343	Embedded Microcontrollers	3	6				Registration by School Office			
454	EEE 379	Power Systems Analysis	3	6				Registration by School Office			
455	EEE 381	Electrical Machines and Drives	3	6				Registration by School Office			
456	EEE 411	Special Topics in Signal Processing	3	6				4 year UG SEng Electrical and Electronic Engineering	4 year UG SENG	SEng, SHSS, SMG, SST	
457	EEE 480	Capstone Project II	9	18				Registration by School Office			
458	EEE 484	Electric Power Generation	3	6				4 year UG SEng Electrical and Electronic Engineering	4 year UG SENG	SEng, SHSS, SMG, SST	
459	EEE 485	Power System Operation and Control	3	6	EEE 379 Power Systems Analysis (1956) (D and above) OR EEE 452 Power Systems Protection (2652) (D and above)			4 year UG SEng Electrical and Electronic Engineering	4 year UG SENG	SEng, SHSS, SMG, SST	
460	EEE 486	Photonics for Engineering	3	6	EEE 342 Electromagnetics (533) (D and above)			4 year UG SEng Electrical and Electronic Engineering	4 year UG SENG	SEng, SHSS, SMG, SST	
461	EEE 489	Analog Circuit Design	3	6				Registration by School Office			
462	EEE 494	Modern Characterizations for Semiconductor Industry	3	6				4 year UG SEng Electrical and Electronic Engineering	4 year UG SENG	SEng, SHSS, SMG, SST	
463	EEE 495	Fundamentals of Biomedical Engineering and Biophysics	3	6				4 year UG SEng Electrical and Electronic Engineering	4 year UG SENG	SEng, SHSS, SMG, SST	
464	MECE 600	Research Seminar	3	6				1 year Gr SEng Electrical and Computer Engineering	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		

465	MECE 700	Industrial and Commercial Power System	3	6				1 year Gr SEng Electrical and Computer Engineering	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		
466	MECE 703	Advanced Photonics	3	6				1 year Gr SEng Electrical and Computer Engineering	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		
467	MECE 705	Advanced Mixed Signal Circuit Design	3	6				1 year Gr SEng Electrical and Computer Engineering	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		
468	MECE 717	Pattern Recognition and Machine Learning	3	6				1 year Gr SEng Electrical and Computer Engineering	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		
469	MECE 718	Deep Learning for Internet of Things	3	6				1 year Gr SEng Electrical and Computer Engineering	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		
470	MECE 724	System Modelling and Control	3	6				1 year Gr SEng Electrical and Computer Engineering	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		
Mechanical Engineering											
471	MME 600	Master Thesis in Mechanical Engineering	15	30							
Mechanical and Aerospace Engineering											
472	EME 275	Fluid Mechanics I	3	6				Registration by School Office			
473	EME 300	Research Project	3	6				Registration by School Office			

474	EME 352	Computational Fluid Dynamics	3	6				Registration by School Office			
475	EME 357	Fluid Mechanics II	3	6				Registration by School Office			
476	EME 377	Mechanical Systems Design	3	6	EME 361 Machine Design (1051) (D and above)			Registration by School Office			
477	EME 414	Fire Engineering	3	6	BENG 226 Engineering Thermodynamics (1553) (D and above)			4 year UG SEng Mechanical Engineering	4 year UG SENG	SEng, SHSS, SMG, SST	
478	EME 415	Flight Mechanics	3	6				4 year UG SEng Mechanical Engineering	4 year UG SENG	SEng, SHSS, SMG, SST	
479	EME 464	Materials and Manufacturing I	3	6				Registration by School Office			
480	EME 476	Materials and Manufacturing II	3	6				Registration by School Office			
481	EME 477	Capstone Project II	9	18				Registration by School Office			
482	EME 480	Industrial Automation	3	6				Registration by School Office			
483	EME 489	Advanced Engineering Mathematics	3	6	BENG 228 Engineering Mathematics III (3154) (D and above)			4 year UG SEng Mechanical Engineering	4 year UG SENG	SEng, SHSS, SMG, SST	
484	ENG 102	Engineering Materials I	3	6				1 year UG SEng Civil and Environmental Engineering, 1 year UG SEng Mechanical and Aerospace Engineering, 1 year UG SMG	1 year UG SHSS, 1 year UG SST, 2 year UG SENG, 3 year UG SENG, 4 year UG SENG	SEng, SHSS, SMG, SST	
485	ENG 103	Engineering Materials II	3	6				1 year UG SEng Chemical and Materials Engineering, 1 year UG SEng Electrical and Computer Engineering, 1 year UG SMG	1 year UG SHSS, 1 year UG SST, 2 year UG SENG, 3 year UG SENG, 4 year UG SENG	SEng, SHSS, SMG, SST	
486	MMAE 600	Research Seminar	3	6				1 year Gr SEng Mechanical and Aerospace Engineering	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		
487	MMAE 604	Advanced Computational Fluid Dynamics and Heat Transfer in Mechanical Engineering	3	6				1 year Gr SEng Mechanical and Aerospace Engineering	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		
488	MMAE 700	Advanced Statistics and Probability	3	6				1 year Gr SEng Mechanical and Aerospace Engineering	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		

489	MMAE 701	Numerical Techniques for Engineers	3	6				1 year Gr SEng Mechanical and Aerospace Engineering	1 year PhD SENG Science, Engineering and Technology, 2 year PhD SENG Science, Engineering and Technology, 3 year PhD SENG Science, Engineering and Technology, 4 year PhD SENG Science, Engineering and Technology, 5 year PhD SENG Science, Engineering and Technology		
Robotics and Mechatronics											
490	ROBT 202	System Dynamics and Modeling	3	6	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	SST		
491	ROBT 204	Electrical and Electronic Circuits II with Lab	4	8	ROBT 203 Electrical and Electronic Circuits I with Lab (62) (C- and above)			Physics, Robotics and Mechatronics	SST		
492	ROBT 206	Microcontrollers with Lab	4	8	CSCI 150 Fundamentals of Programming (1501) (C and above) OR CSCI 151 Programming for Scientists and Engineers (192) (C and above) OR ENG 101 Programming for Engineers (4517) (C and above)			Computer Science, Robotics and Mechatronics	SST		
493	ROBT 302	Mechanical Design II with Machining Laboratory	4	8	ROBT 301 Mechanical Design I with CAD Laboratory (622) (C- and above)			Robotics and Mechatronics	SST		
494	ROBT 304	Electromechanical Systems with lab	4	8	ROBT 204 Electrical and Electronic Circuits II with Lab (491) (C- and above)			Robotics and Mechatronics	SST		
495	ROBT 310	Image Processing	3	6	MATH 162 Calculus II (170) (C- and above) AND MATH 273 Linear Algebra with Applications (84) (C- and above)			Computer Science, Robotics and Mechatronics	SST		
496	ROBT 402	Robotic/Mechatronic System Design	3	6	ROBT 204 Electrical and Electronic Circuits II with Lab (491) (C- and above) AND ROBT 206 Microcontrollers with Lab (476) (C- and above)			Robotics and Mechatronics			
497	ROBT 407	Statistical Methods and Machine Learning	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)			Computer Science, Robotics and Mechatronics	SST		
498	ROBT 414	Human-Robot Interaction	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science, Robotics and Mechatronics	SST		
499	ROBT 491	Graduation Project	3	6				4 year UG SST Robotics and Mechatronics			
500	ROBT 502	Robot Perception & Vision	3	6	ROBT 501 Robot Manipulation and Mobility (2263) (C- and above)			Robotics	SST	GSB, GSE, GSPP, SEng, SHSS, SMG, SoM	
School of Engineering											
501	BENG 114	Introduction to Electrical Systems	3	6				Registration by School Office			
502	BENG 219	Control Systems	3	6				Registration by School Office			
503	BENG 226	Engineering Thermodynamics	3	6				Registration by School Office			
504	BENG 343	Interdisciplinary Design Project	3	6							
505	DENG 784	Doctoral Proposal I	0	6				Science, Engineering and Technology			
506	DENG 785	PhD Proposal Oral Defence	0	0				Science, Engineering and Technology			

507	DENG 787	Doctoral Proposal II	3	6	DENG 784 Doctoral Proposal I (1774) (P)	DENG 785 PhD Proposal Oral Defence (2604) (P)		Science, Engineering and Technology			
508	DENG 789	Doctoral Seminar I	3	6	DENG 785 PhD Proposal Oral Defence (2604) (P)			Science, Engineering and Technology			
509	DENG 790	Doctoral Seminar II	3	6	DENG 789 Doctoral Seminar I (4598) (P)			Science, Engineering and Technology			
510	DENG 794	Dissertation Research	12	24	DENG 785 PhD Proposal Oral Defence (2604) (P)			Science, Engineering and Technology			
511	DENG 795	Research at Host University	6	12	DENG 785 PhD Proposal Oral Defence (2604) (P)			Science, Engineering and Technology			
512	DENG 796	Thesis Completion	0	0				Science, Engineering and Technology			
513	DENG 797	Oral Defence of PhD Dissertation	0	0	DENG 785 PhD Proposal Oral Defence (2604) (P) AND DENG 789 Doctoral Seminar I (4598) (P) AND DENG 790 Doctoral Seminar II (4599) (P)			Science, Engineering and Technology			