

Course Requirements and Registration Priorities Fall 2016

#	Abbr	Title	Cr(US)	Cr(ECTS)	PreRequisite	CoRequisite	AntiRequisite	1st priority registration	2nd priority registration	3rd priority registration	4th priority registration
SST											
Mathematics											
1	MATH 355	Introduction to Proofs	3	6	MATH 162 Calculus II (170) (C and above) AND MATH 273 Linear Algebra with Applications (84) (C and above)			Mathematics	SHSS, SST		
CPS											
NUFYP											
2	FEAP 001	English for Academic Purposes	0	0							
3	FHUM 001	Humanities	0	0							
4	FMATH 001	Mathematics	1	2							
5	FSCIEN 001	Sciences	0	0							
GSB											
GSB											
6	MBA 01	Consequential Leadership	1	2							
7	MBA 02	Business Mathematics and Business Computer Application	1	2							
8	MBA 03	Financial Accounting	2	4							
9	MBA 04	Probability and Statistics	2	4							
10	MBA 05	Business Communication	2	4							
11	MBA 07	Managerial Effectiveness	2	4							
12	MBA 08	Managerial Economics	2	4							
13	MBA 09	Marketing Management	2	4							
14	MBA 18	Financial Statement Analysis	2	4							
15	MBA 19	Distinguished Speaker Series	0	1							
16	MBA 20	Practicum Project	2.5	5							
17	MBAE 1	Investments	2	4							
18	MBAE 6	International Finance	2	4							
19	MBAE 7	Supply Chain Management	2	4							
20	MBAE 8	Leadership	2	4							
21	MBAE 9	Marketing Strategy	2	4							
GSP											
GSP											

22	MPA 602	Public Administration in Theory and Practice	4	8							
23	MPA 603	Economic Applications for Public Managers	4	8							
24	MPA 605	Research Methods for Decision Making	4	8							
25	MPA 608	Strategic Management and Leadership	4	8							
26	MPA 609	Human Resource Management	4	8							
27	MPA 611	Benefit Cost Analysis	4	8							
28	MPA 613	Economic and Social Policy	3	6							
29	MPA 614	Comparative Economic Development	3	6							
30	MPA 699	Master's Project with Overseas Component	0	0							
31	MPE 671	Game Theory and Public Policy	4	8							
32	MPP 601	Microeconomics and Public Policy	4	8							
33	MPP 611	Statistical Techniques for Public Policy	4	8							
34	MPP 612	Public Policy Research and Evaluation	4	8							
35	MPP 621	Introduction to Public Policy and Analysis	4	8							
36	MPP 625	Central Asian politics: Comparative Analysis	4	8							
37	MPP 631	Politics and Public Policy	4	8							
38	MPP 636	Weapons of Mass Destruction Nonproliferation and Disarmament	4	8							
39	MPP 639	International Financial Policy	4	8							
40	MPP 683	Energy Systems and Climate Policy	4	8							
GSE											
GSE											
41	EDHE 609	Introduction to Educational Leadership: Higher Education	3	6							
42	EDIE 609	Introduction to Educational Leadership: Inclusive Education	3	6							
43	EDML 601	Introduction to Linguistics	3	6							

44	EDML 610	Foundations of Multilingual Education	3	6							
45	EDML 613	The Multilingual School	3	6							
46	EDML 620	Language and Literacy Development	3	6							
47	EDML 621	Principles and Methods of Language Education in Multilingual Contexts	3	6							
48	EDML 623	Globalization and Language Education	3	6							
49	EDML 690	Thesis Research I	3	6							
50	EDSE 609	Introduction to Educational Leadership: School Education	3	6							
51	EDSE 620	Perspectives on Inclusive Education	3	6							
52	EDSE 621	Education Policy Analysis and Development	3	6							
53	EDSE 624	Psychology of Learning (Children as Learners)	3	6							
54	EDSE 630	Professional Identity	3	6							
55	EDSE 634	Assessment: Theories, policies, practices	3	6							
56	EDSE 636	Preparing Children for the Future: Skills and Employability	3	6							
57	EDUC 500	English Language Preparation	0	0							
58	EDUC 502	English for Research	3	6							
59	EDUC 505	Academic English 1	1.5	3							
60	EDUC 510	Advanced English for Education Professionals I	3	6							
61	EDUC 512	English for Thesis Writing I	3	6							
62	EDUC 573	Academic Writing in Kazakh	3	6							
63	EDUC 590	Academic English Writing for Doctoral Students I	1.5	3							
64	EDUC 600	Research Methods I	3	6							
65	EDUC 600	Research Methods II	3	6							

66	EDUC 602	Educational Context and Reform in Kazakhstan	3	6							
67	EDUC 640	Thesis Seminar (Part I)	1.5	3							
68	EDUC 640	Thesis Seminar (Part II)	3	6							
69	EDUC 701	Education Research Methods	3	6							
70	EDUC 710	Educational Studies in Context	3	6							
71	EDUC 712	Educational Policy and Reform	3	6							
72	EDUC 720	Philosophy of Education	3	6							
73	EDUC 731	Proposal Defence	3	6							
74	EDUC 740	Doctoral Seminar	3	6							
75	EDUC 750	Dissertation Research	9	18							
76	EDUC 800	International Study	12	24							
Other											
Other											
77	T- 17191	Artists, Patrons and Academies in Early Modern Europe	3	6							
78	T- 17266	Literature and Culture of English Speaking Countries: The 19th Century I	3	6							
79	T- 17319	Techniques and Languages in English Narrative	3	6							
80	T- 205512	Narrativa Espanola actual: novela y cuento	3	6							
81	T- 205514	El espanol y su cultura	3	6							
82	T-HIST 1228	Survey of US History Since 1865	3	6							
83	T-PLSI 3250	Electoral Behavior/Political Parties	3	6							
84	T-PLSI 3320	Government and Politics: China	3	6							
85	T-PP 5136	Applied Public Sector Economics	4	8							
86	T-PP 5147	Asian Global Cities	4	8							

87	T-PP 5168	Public Service Leadership	4	8						
88	T-PP 5178	Leadership and Decision-Making Skills	4	8						
89	T-PPA 2008	American Government and Public Administration	3	6						
90	T-SCI 1600	Physics for Liberal Studies	3	6						
SoM										
Public Health										
91	PUBH 501	Principles of Public Health Problem Solving	3	6						
92	PUBH 511	Inferential Biostatistics	3	6						
93	PUBH 521	Principles of Analytical Epidemiology	3	6						
94	PUBH 528	Qualitative Research Methods	3	6						
95	PUBH 531	Emerging Infectious Diseases	3	6						
SSH										
Area Studies										
96	EAS 500	Introduction to Eurasia	4	8						
97	EAS 501	General Methodology	4	8						
98	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)					
Area Studies, Political Science and International Relations, Sociology and Anthropology										
99	SOC 514/PLS 514/EAS 506	Qualitative Research Methods	4	8						
Biological Science										
100	BIOL 101	Biology for non-Science majors	3	6			BIOL 110 Modern Biology I (1070) (C- and above)			
101	BIOL 110	Modern Biology I	3	6				1 year UG SST	SST	SHSS
102	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	SST	SHSS

103	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	SST	SHSS	
104	BIOL 320	Developmental Biology with Lab	4	8	((BIOL 110 Modern Biology I (107) (C- and above) AND BIOL 110 Modern Biology I Lab (1444) (C- and above)) OR PREM 110 Pre-med Biology I with lab (1071) (C- and above) OR BIOL 110 Modern Biology I (1070) (C- and above)) AND (BIOL 120 Modern Biology II (1195) (C- and above) OR (BIOL 120 Modern Biology II (177) (C- and above) AND BIOL 120 Modern Biology II Lab (1445) (C- and above))) AND ((BIOL 220 Molecular Biology of Cell (477) (C- and above) AND BIOL 220Arc Molecular Biology of Cell Lab (478) (C- and above)) OR BIOL 301 Molecular Biology of Cell with Lab (1197) (C- and above) OR BIOL 231 Human Anatomy and Physiology II (479) (C- and above))		Biological Sciences	SST	SHSS	
105	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	SST	SHSS	
106	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	SST	SHSS	
107	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	SST	SHSS	
108	BIOL 399	Biology Internship	3	6			Through Add form only			
109	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	SST	SHSS	
110	BIOL 455	Biotechnology	3	6	BIOL 301 Molecular Biology of Cell with Lab (1197) (C- and above)		Biological Sciences	SST	SHSS	

111	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	SST	SHSS	
112	BIOL 490	Graduation Project 1	4	8			Through Add form only			
113	BIOL 501	Fundamentals of Biological Sciences	3	6						
114	BIOL 520	Statistical Methods in Life Sciences	3	6						
115	BIOL 600	Graduate Seminar Series	3	6						
116	BIOL 635	Hot Topics in Life Sciences	3	6						
117	BIOL 670	Gene Therapy	3	6						
118	BIOL 690	Research Thesis I	6	12						
Chemistry										
119	CHEM 090	Chemistry for Non-Science majors	3	6						
120	CHEM 091	Survey of Physical Science	3	6						
121	CHEM 101	General Chemistry I	3	6			1 year UG SST	SST	SHSS	
122	CHEM 101L	General Chemistry I lab	1	2		CHEM 101 General Chemistry I (113) (C and above)	1 year UG SST	SST	SHSS	
123	CHEM 102	General Chemistry II	3	6	CHEM 101 General Chemistry I (113) (C and above)		Chemistry	SST	SHSS	
124	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)	Chemistry	SST	SHSS	
125	CHEM 189c	Independent Study	3	6						
126	CHEM 211	Organic Chemistry I	3	6	CHEM 102 General Chemistry II (232) (C and above)		Chemistry	SST	SHSS	

127	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	SST	SHSS	
128	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	SST	SHSS	
129	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	SST	SHSS	
130	CHEM 220	Quantitative Chemical Analysis	3	6	CHEM 102 General Chemistry II (232) (C and above)			Chemistry	SST	SHSS	
131	CHEM 250	Descriptive Inorganic Chemistry	3	6	CHEM 102 General Chemistry II (232) (C and above)			Chemistry	SST	SHSS	
132	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	SST	SHSS	
133	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	SST	SHSS	
134	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	SST	SHSS	
135	CHEM 410	Structural Spectroscopy	4	8	CHEM 212 Organic Chemistry II (443) (C and above)			Chemistry	SST	SHSS	

136	CHEM 431	Computational Chemistry	3	6	CHEM 332 Physical Chemistry II (1056) (C and above) AND (CSCI 111 Web Programming & Problem Solving (110) (C- and above) OR CSCI 150 Fundamentals of Programming (1501) (C- and above) OR CSCI 151 Programming for Scientists and Engineers (192) (C- and above))			SST			
137	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	SST	SHSS	
Communication and Composition											
138	COMM 220	Media History	3	6							
139	COMM 270	Introduction to Public Relations	3	6							
140	SHSS 301	SHSS Internship Second Experience	3	6				Through Add form only			
141	WCS 150	Rhetoric and Composition	3	6				1 year UG SHSS, 2 year UG SHSS	SST	3 year UG SEng Civil Engineering, SHSS	
142	WCS 230	Say What you Mean: Clarity, Precision, and Style in Academic Writing	3	6	WCS 150 Rhetoric and Composition (2183) (C- and above)						
143	WCS 250	Advanced Rhetoric and Composition	3	6	WCS 150 Rhetoric and Composition (2183) (C- and above)			SHSS	SST	3 year UG SEng Civil Engineering	
144	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))			Through Add form only			
Economics											

145	ECON 101	Introduction to Microeconomics	3	6				1 year UG SHSS	2 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST	
146	ECON 102	Introduction to Macroeconomics	3	6				1 year UG SHSS	2 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST	
147	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))			2 year UG SHSS Economics	3 year UG SEng Civil Engineering, SHSS, SST		
148	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))			4 year UG SHSS Economics	3 year UG SHSS Economics	3 year UG SEng Civil Engineering, SHSS, SST	
149	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			
150	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))			3 year UG SHSS Economics, 4 year UG SHSS Economics	2 year UG SHSS Economics	3 year UG SEng Civil Engineering, SHSS, SST	
151	ECON 305	Advanced Microeconomics	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above)	ECON 211 Economic Statistics (2280) (D and above)	ECON 398 General Special Topics in Economics (2184) (C- and above)	4 year UG SHSS Economics	3 year UG SHSS Economics	3 year UG SEng Civil Engineering, SHSS, SST	
152	ECON 320	Money and Banking	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above)			4 year UG SHSS Economics	3 year UG SHSS Economics	3 year UG SEng Civil Engineering, SHSS, SST	
153	ECON 321	Economic Growth	3	6	ECON 202 Intermediate Macroeconomics (207) (C- and above)			4 year UG SHSS Economics	3 year UG SHSS Economics	3 year UG SEng Civil Engineering, SHSS, SST	

154	ECON 327	Energy Economics	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above)			4 year UG SHSS Economics	3 year UG SHSS Economics	3 year UG SEng Civil Engineering, SHSS, SST	
155	ECON 329	International Finance	3	6	ECON 202 Intermediate Macroeconomics (207) (C- and above)						
156	ECON 341	Economic Simulation Modeling	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above)			4 year UG SHSS Economics	3 year UG SHSS Economics	3 year UG SEng Civil Engineering, SHSS, SST	
157	ECON 345	The Economics of Family	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above)			4 year UG SHSS Economics	3 year UG SHSS Economics	3 year UG SEng Civil Engineering, SHSS, SST	
158	ECON 399	Independent Study in Economics	3	6							
159	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)			4 year UG SHSS Economics	3 year UG SHSS Economics	3 year UG SEng Civil Engineering, SHSS, SST	
160	ECON 415	Industrial Organization	3	6	ECON 301 Econometrics I (664) (C- and above)			4 year UG SHSS Economics	3 year UG SHSS Economics	3 year UG SEng Civil Engineering, SHSS, SST	
161	ECON 416	Empirical Industrial Organization	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above) AND ECON 301 Econometrics I (664) (C- and above)			4 year UG SHSS Economics	3 year UG SHSS Economics	3 year UG SEng Civil Engineering, SHSS, SST	
162	ECON 443	Topics in Macroeconomic Theory	3	6	ECON 202 Intermediate Macroeconomics (207) (C- and above) AND ECON 301 Econometrics I (664) (C- and above)			4 year UG SHSS Economics	3 year UG SEng Civil Engineering, SHSS, SST		
163	ECON 445	Public Finance	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above) AND ECON 301 Econometrics I (664) (C- and above)			4 year UG SHSS Economics	3 year UG SHSS Economics	3 year UG SEng Civil Engineering, SHSS, SST	
164	ECON 451	Topics in Microeconomics	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above)			4 year UG SHSS Economics	3 year UG SEng Civil Engineering, SHSS, SST		
165	ECON 501	Microeconomics I	4	8							
166	ECON 502	Macroeconomics I	4	8							

167	ECON 503	Introduction to Contract Theory and Auctions	4	8							
168	ECON 511	Statistics	4	8							
169	ECON 512	Mathematical Economics	4	8							
170	ECON 516	Empirical Industrial Organization	4	8	ECON 501 Microeconomics I (2187) (C- and above) AND ECON 531 Econometrics (2505) (C- and above)						
171	ECON 532	Applied Econometrics	4	8							
172	ECON 543	Topics in Macroeconomic Theory	4	8	ECON 502 Macroeconomics I (2186) (C- and above)						
173	ECON 545	Public Finance	4	8	ECON 501 Microeconomics I (2187) (C- and above) OR ECON 413 Econometrics II (1037) (C- and above) OR ECON 531 Econometrics (2505) (C- and above)						
174	ECON 551	Topics in Microeconomic Theory	4	8	ECON 501 Microeconomics I (2187) (C- and above)						
History, Philosophy and Religious Studies											
175	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 SHSS, 1 year UG SST	SEng, SHSS, SST	
176	HST 123	Introduction to the History of Science and Technology	3	6				1 year UG SHSS, History	1 year UG SST	3 year UG SEng Civil Engineering, SHSS, SST	
177	HST 124	Introduction to the History of Medicine	3	6				1 year UG SHSS, History	1 year UG SST	3 year UG SEng Civil Engineering, SHSS, SST	
178	HST 182	East Asian History II (from 1500)	3	6				1 year UG SHSS, History	3 year UG SEng Civil Engineering, SHSS, SST		
179	HST 199	Freshman Seminar	3	6				History	3 year UG SEng Civil Engineering, SHSS, SST		
180	HST 212	Coins, cotton, and cocoons: Global trade and Eurasian materiality (ca. 1500-1850)	3	6	Subject "HST" BETWEEN 100 and 199			History	3 year UG SEng Civil Engineering, SHSS, SST		

181	HST 232	Russian History from Riurik to Catherine the Great	3	6				History	3 year UG SEng Civil Engineering, SHSS, SST		
182	HST 313	From Columbus to AIDS: Sex and Disease in the Modern World	3	6				History	3 year UG SEng Civil Engineering, SHSS, SST		
183	HST 322	Technology and Modernity	3	6				3 year UG SHSS, History	4 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST	
184	HST 498	Directed Reading	3	6				Through Add form only			
185	PHIL 110	The Good Life in Practice	3	6				1 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST		
186	PHIL 240	Formal Logic	3	6				SHSS	3 year UG SEng Civil Engineering, SST		
187	PHIL 320	Truth, Knowledge and Belief	3	6				SHSS	3 year UG SEng Civil Engineering, SST		
188	PHIL 360	Philosophy of Artificial Intelligence	3	6				SHSS	3 year UG SEng Civil Engineering, SST		
189	REL 410	Buddhism in Central Asia	3	6	Subject "REL" BETWEEN 100 and 199			History	3 year UG SEng Civil Engineering, SHSS, SST		
190	REL 510	Buddhism in Central Asia	4	8							
History, Philosophy and Religious Studies, History, Philosophy and Religious Studies											
191	HST 341/REL 341	Eastern Christianity	3	6			REL 240 Christian Religious Traditions (1348) (C- and above)	History	3 year UG SEng Civil Engineering, SHSS, SST		
192	REL 320/HST 320	The Crusades	3	6	Subject "HST" BETWEEN 100 and 199			History	3 year UG SEng Civil Engineering, SHSS, SST		
History, Philosophy and Religious Studies, Languages, Literature and Linguistics											

193	WLL 102 /PHIL 102	Language, Experience, Culture	3	6				1 year UG SHSS	SHSS	3 year UG SEng Civil Engineering, SST	
History, Philosophy and Religious Studies, Political Science and International Relations											
194	PLS 328/REL 328	Confucianism and the Development of Chinese Politics	3	6				Political Science and International Relations	3 year UG SEng Civil Engineering, SHSS, SST		
History, Philosophy and Religious Studies, Sociology and Anthropology											
195	ANT 313/REL 332	Islam and Politics in Eurasia	3	6				3 year UG SHSS, 4 year UG SHSS, Anthropology, Sociology	SHSS	3 year UG SEng Civil Engineering, SST	
Kazakh Language and Turkic Studies											
196	KAZ 101	Basic Kazakh I	3	6	KLL "Basic"						
197	KAZ 111	Intermediate Kazakh I	3	6	KLL "Intermediate"						
198	KAZ 114	Intermediate Kazakh II	3	6	KLL ""						
199	KAZ 121	Upper-Intermediate Kazakh	3	6	KLL "Upper-Intermediate"						
200	KAZ 150	Basic Kazakh	3	6	KLL "Basic"						
201	KAZ 211	Academic Speaking in Kazakh	3	6	KAZ 201 Academic Kazakh I (4561) (C- and above) OR KLL "Upper-Intermediate" OR KLL "Advanced"						
202	KAZ 212	Academic Writing in Kazakh	3	6	KLL "Advanced" OR KLL "Upper-Intermediate"						
203	KAZ 263	Business Etiquette	3	6	KLL "Upper-Intermediate" OR KLL "Advanced"						
204	KAZ 313	Kazakh for Business	3	6	KLL "Advanced" OR KLL "Upper-Intermediate"						
205	KAZ 314	Speech Culture in Business	3	6	KLL "Upper-Intermediate" OR KLL "Advanced"						
206	KAZ 351	Kazakh Short Stories	3	6	KLL "Advanced" OR KLL "Upper-Intermediate"						
207	KAZ 356	Kazakh Music History	3	6	KLL "Advanced"						
208	KAZ 357	Literature of Alash	3	6	KLL "Advanced" OR KLL "Upper-Intermediate"						
209	KAZ 358	Technique of Translation	3	6	KLL "Upper-Intermediate" OR KLL "Advanced"						
210	KAZ 362	Creative Writing in Kazakh Language	3	6	KLL "Upper-Intermediate" OR KLL "Advanced"						
211	KAZ 363	Language and Globalization	3	6	KLL "Upper-Intermediate" OR KLL "Advanced"						

212	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)						
213	KAZ 365	Abai's World	3	6	KLL "Advanced"						
214	KAZ 366	Kazakh Language for Engineers	3	6	KLL "Advanced" OR KLL "Upper-Intermediate"						
215	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)						
216	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"						
217	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)						
Kazakh Language and Turkic Studies, Languages, Literature and Linguistics											
218	LING 280/TUR 280	Introduction to Turkic Historical and Comparative Linguistics	3	6				SHSS	3 year UG SEng Civil Engineering, SST		
Languages, Literature and Linguistics											
219	CHN 101	Beginning Mandarin I	4	8				1 year UG SHSS, World Languages, Literature and Culture	1 year UG SST, 2 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST	
220	CHN 102	Beginning Mandarin II	4	8	CHN 101 Beginning Mandarin I (1384) (B- and above)			2 year UG SHSS	SHSS	3 year UG SEng Civil Engineering, SST	
221	FRE 101	Beginning French I	4	8				1 year UG SHSS, World Languages, Literature and Culture	1 year UG SST, 2 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST	

222	FRE 201	Intermediate French I	4	8	FRE 102 Beginning French II (454) (C- and above)			SHSS	3 year UG SEng Civil Engineering, SST		
223	GER 101	Beginning German	4	8				1 year UG SHSS, World Languages, Literature and Culture	1 year UG SST, 2 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST	
224	LING 131	Introduction to Linguistics	3	6				1 year UG SHSS	SHSS	3 year UG SEng Civil Engineering, SST	
225	LING 273	Survey of Research Methods in Linguistics	3	6				SHSS	3 year UG SEng Civil Engineering, SST		
226	LING 374	Language Contact in Central Asia	3	6				SHSS	3 year UG SEng Civil Engineering, SST		
227	SPA 101	Beginning Spanish I	4	8				1 year UG SHSS, World Languages, Literature and Culture	1 year UG SST, 2 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST	
228	SPA 201	Intermediate Spanish I	4	8	SPA 102 Beginning Spanish II (1128) (C- and above)			SHSS	SEng, SST		
229	WLL 101	Introduction to Critical Issues in the Humanities and Social Sciences	3	6				SHSS	SEng, SST		
230	WLL 110	Introduction to Literary Studies	3	6				1 year UG SHSS	SHSS	3 year UG SEng Civil Engineering, SST	
231	WLL 111	Introduction to Theatre	3	6				1 year UG SHSS	SHSS	3 year UG SEng Civil Engineering, SST	
232	WLL 155	Introduction to the Comic Book	3	6				1 year UG SHSS	SHSS	3 year UG SEng Civil Engineering, SST	
233	WLL 201	World Literature I	3	6				SHSS	3 year UG SEng Civil Engineering, SST		

234	WLL 247	Survey of East Asian Literature	3	6				SHSS	3 year UG SEng Civil Engineering, SST		
235	WLL 321	Creative Writing/Theatre - Intermediate/Advanced	3	6				SHSS	3 year UG SEng Civil Engineering, SST		
236	WLL 333	Literary Modernism: Writing the Futility and Anarchy of Contemporary History	3	6	Subject "WLL" BETWEEN 200 and 299			SHSS	3 year UG SEng Civil Engineering, SST		
237	WLL 498	Languages, Linguistics, and Literatures Capstone I	3	6				Through Add form only			
Languages, Literature and Linguistics, Languages, Literature and Linguistics											
238	SPA 258/WLL 258	Literature and The Spanish Civil War	3	6				SHSS	3 year UG SEng Civil Engineering, SST		
239	SPA 260/WLL 260	The Spanish American Short Story	3	6	Subject "WLL" BETWEEN 100 and 199			SHSS	3 year UG SEng Civil Engineering, SST		
240	SPA 281/WLL 281	Survey of 20th Century Spanish Literature	3	6				SHSS	3 year UG SEng Civil Engineering, SST		
241	SPA 351/WLL 351	Literature and Film of the Postcolonial World	3	6	Subject "WLL" BETWEEN 200 and 299			SHSS	3 year UG SEng Civil Engineering, SST		
Languages, Literature and Linguistics, Sociology and Anthropology											
242	ANT 277/WLL 271	Language and Society	3	6				1 year UG SHSS, 2 year UG SHSS, Anthropology	SHSS	3 year UG SEng Civil Engineering, SST	
Mathematics											
243	MATH 109	Mathematical Discovery	3	6			MATH 161 Calculus I (118) (C- and above)	SHSS	SST		
244	MATH 161	Calculus I	4	8				1 year UG SST	SST	SHSS	
245	MATH 162	Calculus II	4	8	MATH 161 Calculus I (118) (C and above)			3 year UG SHSS, 4 year UG SHSS, SST	SHSS		

246	MATH 251	Discrete Mathematics	3	6	MATH 162 Calculus II (170) (C and above)			Computer Science, Physics, Robotics and Mechatronics, Undeclared	Mathematics, SHSS		
247	MATH 263	Calculus III	4	8	MATH 162 Calculus II (170) (C and above)			4 year UG SHSS, SST	SHSS		
248	MATH 273	Linear Algebra with Applications	4	8	MATH 161 Calculus I (118) (C and above)	MATH 162 Calculus II (170) (C and above)		4 year UG SHSS, SST	SHSS		
249	MATH 274	Introduction to Differential Equations	3	6	MATH 162 Calculus II (170) (C and above)			4 year UG SHSS, SST	SHSS		
250	MATH 301	Introduction to Number Theory	3	6	MATH 273 Linear Algebra with Applications (84) (C and above) AND MATH 251 Discrete Mathematics (85) (C and above)			Mathematics	SHSS, SST		
251	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)			Mathematics	SHSS, SST		
252	MATH 310	Applied Statistical Methods	3	6	MATH 161 Calculus I (118) (C and above)		MATH 322 Mathematical Statistics (1165) (D and above)	2 year UG SST Biological Sciences, 2 year UG SST Computer Science, 3 year UG SST Biological Sciences, 3 year UG SST Computer Science, 4 year UG SST Biological Sciences, 4 year UG SST Computer Science	Mathematics, SHSS		
253	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)	4 year UG SHSS, Computer Science, Mathematics	SHSS, SST		

254	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	SHSS, SST		
255	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	SHSS, SST		
256	MATH 399	Internship	3	6							
257	MATH 411	Linear Programming	3	6	MATH 273 Linear Algebra with Applications (84) (C and above) AND MATH 263 Calculus III (81) (C and above)			Mathematics	SHSS, SST		
258	MATH 425	Stochastic Processes	3	6	MATH 321 Probability (482) (C and above) OR ECON 211 Economic Statistics (2280) (C and above)			Mathematics	SHSS, SST		
259	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	SHSS, SST		
260	MATH 449	Statistical Programming	3	6	MATH 322 Mathematical Statistics (1165) (C and above)			Mathematics	SHSS, SST		
261	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	SHSS, SST		
262	MATH 480	Complex Analysis	3	6	MATH 263 Calculus III (81) (C and above)			Mathematics	SHSS, SST		
263	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	SST	SHSS	
Physics											
264	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 SST	SST	SHSS	

265	PHYS 201	Introductory Astronomy I	3	6				Physics	SHSS, SST		
266	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	SHSS, SST		
267	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	SHSS, SST		
268	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	SHSS, SST		
269	PHYS 411	Advanced Mathematical Physics	3	6	MATH 274 Introduction to Differential Equations (484) (C- and above) AND PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above)			Physics	SST	SHSS	
270	PHYS 452	Quantum Mechanics II	3	6	PHYS 451 Quantum Mechanics I (1415) (C- and above)			Physics	SHSS, SST		
271	PHYS 465	Advanced Experimental Physics	3	6	PHYS 370 Optics with Laboratory (1405) (C- and above)			Physics	SHSS, SST		
272	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	SHSS, SST		
273	PHYS 491	Directed Study of Advanced Physics Topics	3	6				Through Add form only			
274	PHYS 505	Classical Mechanics	3	6							

275	PHYS 511	Computational Modeling and Simulation	3	6							
276	PHYS 515	Classical Electrodynamics	3	6							
277	PHYS 530	Solid State Physics	3	6							
278	PHYS 545	Advanced Instrumentation Methods	3	6							
279	PHYS 550	Advanced Mathematical Physics	3	6							
280	SST 501	Teaching and Learning	3	6							
281	SST 503	Laboratory Practicum	3	6	SST 501 Teaching and Learning (2260) (C- and above) AND SST 502 Teaching Practicum (2824) (C- and above)						
282	SST 591	Research Methods	3	6							
283	SST 693	Thesis Proposal	3	6	SST 591 Research Methods (3184) (C- and above)						
Political Science and International Relations											
284	PLS 101	Introduction to Political Science	3	6				1 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST		
285	PLS 120	Introduction to Political Theory	3	6				1 year UG SHSS	Political Science and International Relations	3 year UG SEng Civil Engineering, SHSS, SST	
286	PLS 140	Introduction to Comparative Politics	3	6				1 year UG SHSS	Political Science and International Relations	3 year UG SEng Civil Engineering, SHSS, SST	
287	PLS 150	Introduction to International Relations	3	6				1 year UG SHSS	Political Science and International Relations	3 year UG SEng Civil Engineering, SHSS, SST	
288	PLS 210	Political Science Research Methods	3	6				Political Science and International Relations	3 year UG SEng Civil Engineering, SHSS, SST		
289	PLS 211	Quantitative Methods	3	6			ECON 211 Economic Statistics (2280) (C- and above)	Political Science and International Relations	3 year UG SEng Civil Engineering, SHSS, SST		
290	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	3 year UG SEng Civil Engineering, SHSS, SST		

291	PLS 325	Ancient Political Theory	3	6	PLS 120 Introduction to Political Theory (512) (C- and above)			Political Science and International Relations	3 year UG SEng Civil Engineering, SHSS, SST		
292	PLS 340	Politics of East Asia	3	6	PLS 210 Political Science Research Methods (129) (C- and above)			Political Science and International Relations	3 year UG SEng Civil Engineering, SHSS, SST		
293	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	3 year UG SEng Civil Engineering, SHSS, SST		
294	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	3 year UG SEng Civil Engineering, SHSS, SST		
295	PLS 412	Scientific Research 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	3 year UG SEng Civil Engineering, SHSS, SST		
296	PLS 415	Maximum Likelihood Models	3	6	PLS 210 Political Science Research Methods (129) (C- and above) OR PLS 211 Quantitative Methods (221) (C- and above)			Political Science and International Relations	3 year UG SEng Civil Engineering, SHSS, SST		
297	PLS 432	Comparative Democratization	3	6	PLS 210 Political Science Research Methods (129) (C- and above)			4 year UG SHSS Political Sciences and International Relations	3 year UG SHSS Political Sciences and International Relations	3 year UG SEng Civil Engineering, SHSS, SST	
298	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)			4 year UG SHSS Political Sciences and International Relations	3 year UG SHSS Political Sciences and International Relations	3 year UG SEng Civil Engineering, SHSS, SST	
299	PLS 458	International Organization	3	6	PLS 150 Introduction to International Relations (511) (C- and above) AND PLS 210 Political Science Research Methods (129) (C- and above)			4 year UG SHSS Political Sciences and International Relations	3 year UG SHSS Political Sciences and International Relations	3 year UG SEng Civil Engineering, SHSS, SST	

300	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)			4 year UG SHSS Political Sciences and International Relations	3 year UG SHSS Political Sciences and International Relations	3 year UG SEng Civil Engineering, SHSS, SST	
301	PLS 469	International Relations of Eurasia	3	6	PLS 150 Introduction to International Relations (511) (C- and above) AND PLS 210 Political Science Research Methods (129) (C- and above)			4 year UG SHSS Political Sciences and International Relations	3 year UG SHSS Political Sciences and International Relations	3 year UG SEng Civil Engineering, SHSS, SST	
302	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)						
303	PLS 511	Advanced Research I	4	8							
304	PLS 512	Scientific Research in International Relations	4	8	PLS 511 Advanced Research I (1631) (C- and above) AND PLS 510 Advanced Research II (1946) (C- and above) AND PLS 550 Core Seminar in IR (1372) (C- and above)						
305	PLS 515	Maximum Likelihood Models	4	8	PLS 510 Advanced Research II (1946) (C- and above)						
306	PLS 532	Comparative Democratization	4	8	PLS 540 Core Seminar in Comparative Politics (1374) (C- and above)						
307	PLS 540	Core Seminar in Comparative Politics	4	8							
308	PLS 541	Advanced Topics in Comparative Politics	4	8							
309	PLS 550	Core Seminar in IR	4	8							
310	PLS 551	Advanced Topics in International Relations	4	8							
311	PLS 565	Politics of International Finance	4	8							
312	PLS 569	International Relations of Eurasia	4	8							
313	PLS 597	Research for Thesis	6	12							
Sociology and Anthropology											
314	ANT 101	Introduction to Sociocultural Anthropology	3	6				1 year UG SHSS, Anthropology	2 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST	
315	ANT 140	World Prehistory	3	6				1 year UG SHSS, Anthropology	2 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST	

316	ANT 160	Introduction to Biological Anthropology	3	6			ANT 361 Human Evolution: Bones, Stones and Genomes (160) (C- and above)	1 year UG SHSS, Anthropology	2 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST	
317	ANT 180	Being Human: An Introduction to Four Field Anthropology	3	6			ANT 101 Introduction to Sociocultural Anthropology (501) (C- and above) OR ANT 140 World Prehistory (227) (C- and above) OR ANT 160 Introduction to Biological Anthropology (161) (C- and above)	1 year UG SHSS, Anthropology	2 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST	
318	ANT 232	Life, Death and Economy: Archaeology of Central Asia	3	6				2 year UG SHSS, Anthropology	1 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST	
319	ANT 399	Special Topics in Anthropology	3	6				3 year UG SHSS, 4 year UG SHSS, Anthropology, Sociology	SHSS	3 year UG SEng Civil Engineering, SST	
320	ANT 400	Research Assistance in Anthropology	1	2				Through Add form only			
321	SOC 101	Introduction to Sociology	3	6				1 year UG SHSS, 2 year UG SHSS	SHSS	3 year UG SEng Civil Engineering, SST	
322	SOC 115	Global Social Problems	3	6				1 year UG SHSS, Sociology	2 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST	
323	SOC 203	Quantitative Methods in Sociology	3	6				Anthropology, Sociology	SHSS	3 year UG SEng Civil Engineering, SST	
324	SOC 221	International Migration	3	6				Sociology	SHSS	3 year UG SEng Civil Engineering, SST	

325	SOC 227	Economy and Society	3	6				Sociology	Economics	3 year UG SEng Civil Engineering, SHSS, SST
326	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	3 year UG SHSS, 4 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST
327	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	3 year UG SHSS, 4 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST
328	SOC 314	Organizations and Society	3	6	SOC 101 Introduction to Sociology (508) (and above) OR SOC 115 Global Social Problems (1032) (and above)			Anthropology, Sociology	SHSS	3 year UG SEng Civil Engineering, SST
329	SOC 399	Special Topics in Sociology	3	6				Anthropology, Sociology	3 year UG SHSS, 4 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST
330	SOC 400	Research Assistance in Sociology	1	2				Through Add form only		
Sociology and Anthropology, Sociology and Anthropology										
331	ANT 216/SOC 216	Marriage and Kinship	3	6				1 year UG SHSS, 2 year UG SHSS, Anthropology	SHSS	3 year UG SEng Civil Engineering, SST
332	SOC 212/ANT 285	Food and Society	3	6				Anthropology, Sociology	1 year UG SHSS, 2 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST
SEDS										
Chemical Engineering										
333	MCHE 613	Physical Chemistry of Oil & Gas	1.5	3						
334	MCHE 614	Applied Chemical Engineering Thermodynamics	1.5	3						
335	MCHE 615	Advanced Unit Operations	1.5	3						
336	MCHE 616	Advanced Chemical Reactor Engineering	1.5	3	ECHE 481 Chemical Reaction Engineering (1985) (D and above)					
337	MCHE 618	Plant Economics and Planning	1.5	3						
338	MCHE 619	Safety Engineering and Loss Prevention	1.5	3						
Chemical and Materials Engineering										

339	ECHE 126	Introduction to Chemical Engineering	3	6						
340	ECHE 222	Chemistry I	3	6						
341	ECHE 319	Chemical Engineering Thermodynamics	3	6						
342	ECHE 321	Chemistry II	3	6						
343	ECHE 331	Process Control and Optimization	3	6						
344	ECHE 333	Separation Processes-I	3	6	ECHE 319 Chemical Engineering Thermodynamics (1218) (D and above)					
345	ECHE 369	Transport Phenomena-II	3	6						
346	ECHE 418	Capstone project 1	3	6	ECHE 323 Computational methods in Chemical Engineering-I (1272) (D and above)					
347	ECHE 419	Advanced Process Simulation	3	6	ECHE 323 Computational methods in Chemical Engineering-I (1272) (D and above)	ECHE 482 Computational Methods in Chemical Engineering-II (1984) (and above)				
348	ECHE 482	Computational Methods in Chemical Engineering-II	3	6	ECHE 319 Chemical Engineering Thermodynamics (1218) (D and above) AND ECHE 333 Separation Processes-I (1271) (D and above) AND ECHE 383 Separation Processes II (1982) (D and above) AND ECHE 481 Chemical Reaction Engineering (1985) (D and above) AND ECHE 323 Computational methods in Chemical Engineering-I (1272) (D and above)					
349	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)					

Civil Engineering

350	ECE 215	Surveying	3	6						
351	ECE 216	Civil Engineering CAD	3	6						

352	ECE 217	Structural Analysis I	3	6	BENG 117 Engineering Mechanics (740) (D and above)						
353	ECE 300	Hydraulic Systems	3	6							
354	ECE 303	Construction Management and Practice	3	6	BENG 148 Engineering Practice (1073) (D and above)						
355	ECE 307	Engineering Geology and Rock Mechanics	3	6							
356	ECE 314	Structural Engineering Applications I	3	6	ECE 213 Structural Engineering Analysis (863) (D and above) OR ECE 217 Structural Analysis I (3156) (D and above)						
357	ECE 401	Capstone Project 1	3	6							
358	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)						
359	ECE 416	Highway Engineering	3	6	ECE 302 Civil Engineering Materials (1040) (D and above)						
360	ECE 473	Environmental Systems	3	6							
361	EMEM 502	Decision Models	1.5	3							
362	EMEM 505	Operations Management	1.5	3							
363	EMEM 507	Project Management	3	6							
364	EMEM 509	Systems Engineering	3	6							
365	EMEM 513	Entrepreneurship	2	4							
366	EMEM 519	Product Development	1.5	3							
367	EMEM 522	Quality Management	1.5	3							
368	EMEM 523	Supply Chain Management	3	6							
369	EMEM 528	Information Systems Mananagement	1.5	3							
370	EMEM 530	Technology Assessment	1.5	3							
371	EMEM 533	Engineering Management and Engineering Economy	3	6							
372	MCE 601	Sustainable Development	3	6							
373	MCE 604	Advanced Project Management	3	6							

374	MCE 606	Environmental Impacts and Assessments	3	6							
375	MSC 615	Advanced Statistics and Probability	3	6							
376	MSC 616	Research Methods	3	6							
Computer Science											
377	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)	1 year UG SST	SST	SHSS	
378	CSCI 231	Computer Systems and Organization	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science	SST	SHSS	
379	CSCI 262	Software Project Management	3	6	CSCI 152 Performance and Data Structures (489) (C and above)			Computer Science	SST	SHSS	
380	CSCI 281	Human-Computer Interaction	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science	SST	SHSS	
381	CSCI 325	Introduction to Parallel Systems and GPU Programming	3	6	CSCI 332 Operating Systems (490) (C- and above)			Computer Science	SST	SHSS	
382	CSCI 330	Mobile Computing	3	6	CSCI 332 Operating Systems (490) (C- and above)			Computer Science	SST	SHSS	
383	CSCI 341	Database Systems	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science	SST	SHSS	
384	CSCI 361	Software Engineering	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science	SST	SHSS	
385	CSCI 390	Artificial Intelligence	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science	SST	SHSS	
386	CSCI 398	Directed Study	3	6							
387	CSCI 408	Senior Project I	3	6				CS major only			
388	CSCI 434	Information Security	3	6		CSCI 333 Computer Networks (1145) (D and above)		Computer Science	SST	SHSS	

389	CSCI 471	Complexity and Computability	3	6	MATH 251 Discrete Mathematics (85) (C- and above)			Computer Science	SST	SHSS	
390	CSCI 501	Software Principles and Practice	3	6							
391	CSCI 512	Information Theory	3	6							
392	CSCI 525	Quantum Computing	3	6							
393	CSCI 531	Distributed Systems	3	6							
394	CSCI 545	Big Data Analytics	3	6							
Electrical and Electronic Engineering											
395	EEE 238	Digital Signal and Image Processing	3	6							
396	EEE 250	Microelectronic Devices and Circuits	3	6	BENG 114 Introduction to Electrical Systems (1076) (D and above)						
397	EEE 251	Electronic Engineering Design Principles	3	6	BENG 114 Introduction to Electrical Systems (1076) (D and above)						
398	EEE 341	Digital Electronic System Design	3	6							
399	EEE 342	Electromagnetics	3	6							
400	EEE 343	Embedded Microcontrollers	3	6							
401	EEE 345	Power Electronics	3	6							
402	EEE 382	Antennas and Propagation	3	6							
403	EEE 435	Digital Communications	3	6							
404	EEE 437	Capstone Project 1	3	6							
405	EEE 448	Power Transmission and Distribution plants	3	6							
406	EEE 450	RF and Microwave Circuit Design	3	6							
407	EEE 451	High Voltage Engineering	3	6							
408	EEE 452	Power Systems Protection	3	6							
409	MEE 600	MSc Thesis in Electrical and Electronics Engineering	15	30							
410	MEE 607	Statistical Signal Processing	3	6							
411	MEE 608	Special Topics in Circuits Theory	3	6							
Information and Communication Technologies											
412	EICT 754	Information Theory for Communications	3	6							

Mechanical Engineering

413	EME 253	Computer Aided Engineering	3	6							
414	EME 254	Mechanics of Materials	3	6							
415	EME 352	Computational Fluid Dynamics	3	6							
416	EME 357	Fluid Mechanics 2	3	6							
417	EME 358	Heat Transfer	3	6	BENG 226 Engineering Thermodynamics (1553) (D and above) AND EME 275 Fluid Mechanics I (1988) (D and above)						
418	EME 361	Machine Design	3	6							
419	EME 451	Capstone project 1	3	6							
420	EME 464	Materials and Manufacturing 1	3	6							
421	EME 467	Vehicle Propulsion Systems	3	6							
422	EME 485	Applied Statistics and Probability	3	6	EME 485 Applied Statistics and Probability (2236) (D and above)						
423	EME 486	Oscillations of mechanical systems	3	6							
424	MME 600	MSc Thesis in Mechanical Engineering	15	30							
425	MME 604	Engineering Mathematics	3	6							
426	MME 605	Numerical Techniques for Engineers	3	6							
427	MME 606	Advanced Control Systems	3	6							

Robotics and Mechatronics

428	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	SST	SHSS	
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429	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	SST	SHSS	
430	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	SST	SHSS	
431	ROBT 301	Mechanical Design with CAD and Machining Laboratory	4	8	ROBT 201 Mechanics: Statics and Dynamics (475) (C- and above)			Robotics and Mechatronics	SST	SHSS	
432	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	SST	SHSS	
433	ROBT 305	Embedded Systems	3	6	ROBT 206 Microcontrollers with Lab (476) (C- and above)			Robotics and Mechatronics	SST	SHSS	
434	ROBT 307	Power Electronics	3	6	ROBT 204 Electrical and Electronic Circuits II with Lab (491) (C- and above)			Robotics and Mechatronics	SST	SHSS	
435	ROBT 401	Robot Dynamics and Control	3	6	ROBT 303 Linear Control Theory with Lab (623) (C- and above)			Robotics and Mechatronics	SST	SHSS	
436	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	SST	SHSS	
437	ROBT 501	Robot Manipulation and Mobility	3	6							
438	ROBT 503	Dynamic Systems and Control	3	6							

439	ROBT 605	Robotic Motion Planning	3	6	ROBT 501 Robot Manipulation and Mobility (2263) (C- and above) AND CSCI 501 Software Principles and Practice (2408) (C- and above)						
440	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)						
School of Engineering											
441	BENG 117	Engineering Mechanics	3	6							
442	BENG 124	Engineering Mathematics I	3	6							
443	BENG 145	Occupal & Environment Health and Safety	3	6							
444	BENG 146	Programming for Engineers	3	6							
445	BENG 201	Engineering Economy	3	6							
446	BENG 215	Sensors and Actuators	3	6							
447	BENG 221	Engineering Materials	3	6							
448	BENG 228	Engineering Mathematics III	3	6	BENG 124 Engineering Mathematics I (101) (D and above) AND BENG 225 Engineering Mathematics II (48) (D and above)						
449	BENG 405	Project Management	3	6							
450	DENG 782	Research Methods and Ethics	3	6							
451	DENG 784	Doctoral Proposal I	0	6							
452	DENG 785	PhD proposal oral defence	0	0							
453	DENG 794	Dissertation Research	12	24	DENG 785 PhD proposal oral defence (2604) (C- and above)						