

## Course Requirements and Registration Priorities Fall 2017

#	Abbr	Title	Cr(US)	Cr(ECTS)	PreRequisite	CoRequisite	AntiRequisite	1st priority registration	2nd priority registration	3rd priority registration	4th priority registration
<b>SEng</b>											
<b>Chemical Engineering</b>											
1	ECHE 126	Introduction to Chemical Engineering	3	6							
2	ECHE 222	Chemistry I	3	6							
3	ECHE 319	Chemical Engineering Thermodynamics	3	6							
4	ECHE 333	Separation Processes-I	3	6	ECHE 319 Chemical Engineering Thermodynamics (D and above)						
5	ECHE 369	Transport Phenomena-II	3	6							
6	ECHE 385	Research Practice	3	6							
7	ECHE 418	Capstone project 1	3	6	ECHE 323 Computational methods in Chemical Engineering-I (D and above)						
8	ECHE 419	Advanced Process Simulation	3	6	ECHE 323 Computational methods in Chemical Engineering-I (D and above)	ECHE 482 Computational Methods in Chemical Engineering-II (D and above)					
9	ECHE 481	Chemical Reaction Engineering	3	6	ECHE 126 Introduction to Chemical Engineering (D and above) AND BENG 124 Engineering Mathematics I (D and above) AND BENG 225 Engineering Mathematics II (D and above)						
10	ECHE 482	Computational Methods in Chemical Engineering-II	3	6	ECHE 319 Chemical Engineering Thermodynamics (D and above) AND ECHE 333 Separation Processes-I (D and above) AND ECHE 383 Separation Processes II (D and above) AND ECHE 481 Chemical Reaction Engineering (D and above) AND ECHE 323 Computational methods in Chemical Engineering-I (D and above)						

11	ECHE 484	Multi-Phase Flows	3	6	ECHE 319 Chemical Engineering Thermodynamics (D and above) AND ECHE 270 Transport Phenomena-1 (D and above)						
12	MCHE 600	MSc Thesis in Chemical Engineering	15	30							
13	MCHE 613	Physical Chemistry of Oil & Gas	1.5	3							
14	MCHE 614	Applied Chemical Engineering Thermodynamics	1.5	3							
15	MCHE 615	Advanced Unit Operations	1.5	3							
16	MCHE 616	Advanced Chemical Reactor Engineering	1.5	3	ECHE 481 Chemical Reaction Engineering (D and above)						
17	MCHE 618	Plant Economics and Planning	1.5	3							
18	MCHE 619	Safety Engineering and Loss Prevention	1.5	3							
<b>Civil Engineering</b>											
19	ECE 215	Surveying	3	6							
20	ECE 216	Civil Engineering CAD	3	6							
21	ECE 217	Structural Analysis I	3	6	BENG 117 Engineering Mechanics (D and above)						
22	ECE 302	Civil Engineering Materials	3	6	BENG 221 Engineering Materials (D and above)						
23	ECE 307	Engineering Geology and Rock Mechanics	3	6							
24	ECE 318	Structural Design - Concrete	3	6	ECE 479 Structural Analysis II (C- and above)						
25	ECE 401	Capstone Project 1	3	6							
26	ECE 404	Construction Technologies and Processes	3	6	BENG 148 Engineering Practice (D and above) AND ECE 302 Civil Engineering Materials (D and above)						
27	ECE 405	Environmental Engineering	3	6	ECE 473 Environmental Systems (D and above) OR ECE 218 Environmental Chemistry (D and above)						
28	ECE 416	Highway Engineering	3	6	ECE 302 Civil Engineering Materials (D and above)						
29	ECE 473	Environmental Systems	3	6							
30	EMEM 507	Project Management	3	6							

31	EMEM 523	Supply Chain Management	3	6						
32	EMEM 527	Globalization and Engineering	3	6						
33	EMEM 533	Engineering Management and Engineering Economy	3	6						
34	EMEM 537	Engineering Decision Tools	3	6						
35	EMEM 538	Knowledge and Innovation Management	3	6						
36	EMEM 539	Big Data and Information Management	3	6						
37	EMEM 542	Production and Service Operations Management	3	6						
38	MCE 600	MSc Thesis in Civil Engineering	15	30						
39	MCE 601	Sustainable Development	3	6						
40	MCE 604	Advanced Project Management	3	6						
41	MCE 606	Environmental Impacts and Assessments	3	6						
42	MSC 615	Advanced Statistics and Probability	3	6						
43	MSC 616	Research Methods	3	6						
<b>Electrical and Electronic Engineering</b>										
44	EEE 212	Signals and Systems	3	6	BENG 225 Engineering Mathematics II (D and above)					
45	EEE 238	Digital Signal and Image Processing	3	6						
46	EEE 250	Microelectronic Devices and Circuits	3	6	BENG 114 Introduction to Electrical Systems (D and above)					
47	EEE 251	Electronic Engineering Design Principles	3	6	BENG 114 Introduction to Electrical Systems (D and above)					
48	EEE 342	Electromagnetics	3	6						
49	EEE 345	Power Electronics	3	6						
50	EEE 382	Antennas and Propagation	3	6						
51	EEE 384	Digital Integrated Circuits Design	3	6	EEE 250 Microelectronic Devices and Circuits (C- and above)					
52	EEE 435	Digital Communications	3	6						
53	EEE 437	Capstone Project 1	3	6						
54	EEE 448	Power Transmission and Distribution plants	3	6						
55	EEE 450	RF and Microwave Circuit Design	3	6						

56	EEE 451	High Voltage Engineering	3	6						
57	EEE 452	Power Systems Protection	3	6						
58	EEE 482	Mobile Communications	3	6	EEE 239 Communication systems (C- and above)					
59	MEE 600	MSc Thesis in Electrical and Electronics Engineering	15	30						
60	MEE 607	Statistical Signal Processing	3	6						
61	MEE 608	Special Topics in Circuits Theory	3	6						
62	MEE 622	Modern Control Theory	3	6						
63	MEE 623	Random Processes	3	6						
<b>Mechanical Engineering</b>										
64	EME 253	Computer Aided Engineering	3	6						
65	EME 254	Mechanics of Materials	3	6						
66	EME 262	Machine Dynamics I	3	6						
67	EME 354	Advanced Control Systems	3	6	BENG 219 Control Systems (D and above)					
68	EME 358	Heat Transfer	3	6	BENG 226 Engineering Thermodynamics (D and above) AND EME 275 Fluid Mechanics I (D and above)					
69	EME 361	Machine Design	3	6						
70	EME 410	Aerodynamics	3	6	EME 357 Fluid Mechanics 2 (D and above)					
71	EME 412	Heating, Ventilating, and Air Conditioning	3	6						
72	EME 413	Computer Aided Geometric Design	3	6	EME 253 Computer Aided Engineering (C- and above)					
73	EME 451	Capstone project 1	3	6						
74	EME 456	Feasibility Analysis of Clean Energy Technologies	3	6						
75	EME 463	Machine Dynamics II	3	6						
76	EME 467	Vehicle Propulsion Systems	3	6			EME 456 Feasibility Analysis of Clean Energy Technologies (C- and above)			
77	EME 486	Oscillations of mechanical systems	3	6						
78	MME 600	MSc Thesis in Mechanical Engineering	15	30						
79	MME 604	Engineering Mathematics	3	6						

80	MME 605	Numerical Techniques for Engineers	3	6						
81	MME 606	Advanced Control Systems	3	6						
<b>School of Engineering</b>										
82	BENG 117	Engineering Mechanics	3	6						
83	BENG 124	Engineering Mathematics I	3	6						
84	BENG 145	Occupal & Environment Health and Safety	3	6						
85	BENG 146	Programming for Engineers	3	6						
86	BENG 215	Sensors and Actuators	3	6						
87	BENG 221	Engineering Materials	3	6						
88	BENG 228	Engineering Mathematics III	3	6	BENG 124 Engineering Mathematics I (D and above) AND BENG 225 Engineering Mathematics II (D and above)					
89	BENG 304	Internship	2	4						
90	BENG 308	Internship	4	8						
91	BENG 312	Internship	6	12						
92	BENG 405	Project Management	3	6						
93	DENG 782	Personal and Professional Skills Development	3	6						
94	DENG 783	Statistics	3	6						
95	DENG 794	Dissertation Research	12	24	DENG 785 PhD proposal oral defence (C- and above)					
<b>SST</b>										
<b>Biological Science</b>										
96	BIOL 101	Biology for non-Science majors	3	6				SHSS		
97	BIOL 110	Modern Biology I with Lab	4	8			BIOL 110 Modern Biology I (C- and above) OR BIOL 110 Modern Biology I Lab (C- and above)	Biological Sciences, Chemistry	SST	SHSS

98	BIOL 230	Human Anatomy and Physiology I	4	8	((BIOL 110 Modern Biology I (C- and above) AND BIOL 110 Modern Biology I Lab (C- and above)) OR BIOL 110 Modern Biology I with Lab (C- and above) OR PREM 110 Pre-med Biology I with lab (C- and above)) AND ((BIOL 120 Modern Biology II (C- and above) AND BIOL 120 Modern Biology II Lab (C- and above)) OR BIOL 120 Modern Biology II with Lab (C- and above))			Biological Sciences	SST	SHSS	
99	BIOL 305	Introduction to Microbiology with Lab	4	8	((BIOL 110 Modern Biology I (C- and above) AND BIOL 110 Modern Biology I Lab (C- and above)) OR BIOL 110 Modern Biology I with Lab (C- and above) OR PREM 110 Pre-med Biology I with lab (C- and above)) AND ((BIOL 120 Modern Biology II with Lab (C- and above) OR (BIOL 120 Modern Biology II (C- and above) AND BIOL 120 Modern Biology II Lab (C- and above)))			Biological Sciences	SST	SHSS	
100	BIOL 320	Developmental Biology	3	6	((BIOL 110 Modern Biology I (C- and above) OR BIOL 110 Modern Biology I with Lab (C- and above)) AND (BIOL 120 Modern Biology II (C- and above) OR BIOL 120 Modern Biology II with Lab (C- and above)) AND (BIOL 220 Molecular Biology of Cell (C- and above) OR BIOL 301 Molecular Biology of Cell with Lab (C- and above) OR BIOL 231 Human Anatomy and Physiology II (C- and above))			Biological Sciences	SST	SHSS	

101	BIOL 340	Introduction to Bioinformatics with Lab	4	8	((BIOL 110 Modern Biology I (C- and above) AND BIOL 110 Modern Biology I Lab (C- and above)) OR PREM 110 Pre-med Biology I with lab (C- and above) OR BIOL 110 Modern Biology I with Lab (C- and above)) AND (BIOL 120 Modern Biology II with Lab (C- and above) OR (BIOL 120 Modern Biology II (C- and above) AND BIOL 120 Modern Biology II Lab (C- and above))) AND ((BIOL 220 Molecular Biology of Cell (C- and above) AND BIOL 220 Molecular Biology of Cell Lab (C- and above)) OR BIOL 301 Molecular Biology of Cell with Lab (C- and above) OR BIOL 231 Human Anatomy and Physiology II (C- and above))			Biological Sciences	SST	SHSS	
102	BIOL 352	Biology of Cancer	3	6	(BIOL 110 Modern Biology I (C- and above) OR BIOL 110 Modern Biology I with Lab (C- and above) OR PREM 110 Pre-med Biology I with lab (C- and above)) AND (BIOL 120 Modern Biology II (C- and above) OR BIOL 120 Modern Biology II with Lab (C- and above)) AND (BIOL 220 Molecular Biology of Cell (C- and above) OR BIOL 301 Molecular Biology of Cell with Lab (C- and above) OR BIOL 231 Human Anatomy and Physiology II (C- and above))			Biological Sciences	SST	SHSS	
103	BIOL 355	Critical Research Reasoning	3	6	(BIOL 120 Modern Biology II with Lab (C- and above) OR (BIOL 120 Modern Biology II (C- and above) AND BIOL 120 Modern Biology II Lab (C- and above))) AND (BIOL 231 Human Anatomy and Physiology II (C- and above) OR BIOL 301 Molecular Biology of Cell with Lab (C- and above) OR (BIOL 220 Molecular Biology of Cell (C- and above) AND BIOL 220 Molecular Biology of Cell Lab (C- and above)))			Biological Sciences	SST	SHSS	
104	BIOL 399	Biology Internship - 2B	3	6				Biological Sciences	SST	SHSS	

105	BIOL 410	Introduction to Immunology	3	6	(BIOL 110 Modern Biology I (C- and above) OR BIOL 110 Modern Biology I with Lab (C- and above) OR PREM 110 Pre-med Biology I with lab (C- and above)) AND (BIOL 120 Modern Biology II (C- and above) OR BIOL 120 Modern Biology II with Lab (C- and above)) AND ((BIOL 220 Molecular Biology of Cell (C- and above) OR BIOL 301 Molecular Biology of Cell with Lab (C- and above)) OR BIOL 210 Introduction to Microbiology (C- and above) OR BIOL 231 Human Anatomy and Physiology II (C- and above))			Biological Sciences	SST	SHSS	
106	BIOL 455	Biotechnology	3	6	BIOL 301 Molecular Biology of Cell with Lab (C- and above)			Biological Sciences	SST	SHSS	
107	BIOL 470	Advanced Cell Biology	3	6	BIOL 301 Molecular Biology of Cell with Lab (C- and above) AND BIOL 341 Biochemistry I (C- and above)			Biological Sciences	SST	SHSS	
108	BIOL 490	Graduation Project 1	4	8				Biological Sciences	SST	SHSS	
109	BIOL 501	Fundamentals of Biological Sciences	3	6							
110	BIOL 520	Statistical Methods in Life Sciences	3	6							
111	BIOL 600	Graduate Seminar Series	3	6							
112	BIOL 635	Hot Topics in Life Sciences	3	6							
113	BIOL 670	Gene Therapy	3	6							
114	BIOL 690	Research Thesis I	6	12							
<b>Chemistry</b>											
115	CHEM 090	Chemistry for Non-Science majors	3	6				SHSS			
116	CHEM 091	Survey of Physical Science	3	6				SHSS			
117	CHEM 101	General Chemistry I	3	6				Biological Sciences, Chemistry	SST	SHSS	
118	CHEM 101L	General Chemistry I lab	1	2		CHEM 101 General Chemistry I (C and above)		Biological Sciences, Chemistry	SST	SHSS	
119	CHEM 102	General Chemistry II	3	6	CHEM 101 General Chemistry I (C and above)			Chemistry	Biological Sciences	SST	
120	CHEM 102L	General Chemistry II lab	1	2	CHEM 101L General Chemistry I lab (C and above)	CHEM 102 General Chemistry II (C and above)		Chemistry	Biological Sciences	SST	



121	CHEM 189c	Independent Study	3	6							
122	CHEM 211	Organic Chemistry I	3	6	CHEM 102 General Chemistry II (C and above)			Chemistry	Biological Sciences	SST	
123	CHEM 211L	Organic Chemistry I Lab	2	4	CHEM 102L General Chemistry II lab (C and above)	CHEM 211 Organic Chemistry I (C and above)		Chemistry	Biological Sciences	SST	
124	CHEM 220	Quantitative Chemical Analysis with lab	4	8	CHEM 102 General Chemistry II (C and above) AND CHEM 102L General Chemistry II lab (C and above)			Chemistry	Biological Sciences	SST	
125	CHEM 331	Physical Chemistry I	3	6	CHEM 220 Quantitative Chemical Analysis with lab (C and above) AND PHYS 162 Physics II for Scientists and Engineers with Laboratory (C and above)			Chemistry	Biological Sciences	SST	
126	CHEM 331L	Physical Chemistry Lab	1	2		CHEM 331 Physical Chemistry I (C and above)		Chemistry	Biological Sciences	SST	
127	CHEM 341	Biochemistry I	3	6	CHEM 211 Organic Chemistry I (C and above) AND BIOL 120 Modern Biology II with Lab (C- and above)			Chemistry	Biological Sciences	SST	
128	CHEM 341L	Biochemistry I Lab	1	2	CHEM 212L Organic Chemistry II Lab (C and above)	CHEM 341 Biochemistry I (C and above)		Chemistry	Biological Sciences	SST	
129	CHEM 350	Descriptive Inorganic Chemistry	3	6	CHEM 102 General Chemistry II (C and above)			Chemistry	Biological Sciences	SST	
130	CHEM 400	Chemistry Seminar	3	6	CHEM 380 Research Methods (C and above)			Chemistry	Biological Sciences	SST	
131	CHEM 410	Structural Spectroscopy	4	8	CHEM 212 Organic Chemistry II (C and above)			Chemistry	Biological Sciences	SST	
132	CHEM 431	Computational Chemistry	3	6	CHEM 332 Physical Chemistry II (C and above) AND (CSCI 111 Web Programming & Problem Solving (C- and above) OR CSCI 150 Fundamentals of Programming (C- and above) OR CSCI 151 Programming for Scientists and Engineers (C- and above))			Chemistry	Biological Sciences	SST	
133	CHEM 450	Advanced Inorganic Chemistry	4	8	CHEM 212 Organic Chemistry II (C and above) AND CHEM 212L Organic Chemistry II Lab (C and above) AND CHEM 350 Descriptive Inorganic Chemistry (C and above)			Chemistry	Biological Sciences	SST	

**Computer Science**

134	CSCI 151	Programming for Scientists and Engineers	4	8			ROBT 102 Programming for robotics and physics (C- and above) OR CSCI 150 Fundamentals of Programming (C- and above)	1 year UG SST	SST	SHSS	
135	CSCI 231	Computer Systems and Organization	3	6	CSCI 152 Performance and Data Structures (C- and above)			Computer Science			
136	CSCI 262	Software Project Management	3	6	CSCI 152 Performance and Data Structures (C- and above)			Computer Science	SST	SHSS	
137	CSCI 281	Human-Computer Interaction	3	6	CSCI 152 Performance and Data Structures (C- and above)			Computer Science	SST	SHSS	
138	CSCI 307	Research Methods	3	6				Computer Science			
139	CSCI 341	Database Systems	3	6	CSCI 152 Performance and Data Structures (C- and above)			Computer Science			
140	CSCI 344	Data Mining and Decision Support	3	6	CSCI 341 Database Systems (C- and above) AND MATH 273 Linear Algebra with Applications (C- and above)			Computer Science			
141	CSCI 390	Artificial Intelligence	3	6	CSCI 152 Performance and Data Structures (C- and above)			Computer Science			
142	CSCI 408	Senior Project I	3	6				Computer Science			
143	CSCI 434	Information Security	3	6		CSCI 333 Computer Networks (D and above)		Computer Science			
144	CSCI 471	Complexity and Computability	3	6	MATH 251 Discrete Mathematics (C- and above)			Computer Science			
145	CSCI 501	Software Principles and Practice	3	6							
146	CSCI 511	CS Track Core-Theory	3	6							
147	CSCI 525	Quantum Computing	3	6							
148	CSCI 545	Big Data Analytics	3	6							
<b>Mathematics</b>											
149	MATH 109	Mathematical Discovery	3	6				SHSS	SST		
150	MATH 161	Calculus I	4	8				1 year UG SST	SST	SHSS	
151	MATH 162	Calculus II	4	8	MATH 161 Calculus I (C and above)			3 year UG SHSS, 4 year UG SHSS, Economics, SST	SHSS		

152	MATH 251	Discrete Mathematics	3	6	MATH 162 Calculus II (C and above)			Computer Science, Mathematics	SST	SHSS	
153	MATH 263	Calculus III	4	8	MATH 162 Calculus II (C and above)			3 year UG SHSS, 4 year UG SHSS, SST	SHSS		
154	MATH 273	Linear Algebra with Applications	4	8	MATH 161 Calculus I (C and above)	MATH 162 Calculus II (C and above)		4 year UG SHSS, SST	SHSS		
155	MATH 274	Introduction to Differential Equations	3	6	MATH 162 Calculus II (C and above) AND MATH 273 Linear Algebra with Applications (C and above)			4 year UG SHSS, SST	SHSS		
156	MATH 301	Introduction to Number Theory	3	6	MATH 273 Linear Algebra with Applications (C- and above) AND MATH 162 Calculus II (C- and above)			Mathematics	SHSS, SST		
157	MATH 310	Applied Statistical Methods	3	6	MATH 161 Calculus I (C- and above)		SOC 203 Quantitative Methods in Sociology (C- and above) OR PLS 211 Quantitative Methods (C- 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, 5 year UG SST Biological Sciences, 5 year UG SST Computer Science	Mathematics, SHSS		
158	MATH 321	Probability	3	6	MATH 162 Calculus II (C and above)		ECON 211 Economic Statistics (C- and above) OR PLS 211 Quantitative Methods (C- and above)	4 year UG SHSS, Computer Science, Mathematics	SHSS, SST		
159	MATH 323	Actuarial Mathematics I	3	6	MATH 321 Probability (C- and above) OR MATH 162 Calculus II (C- and above) AND MATH 310 Applied Statistical Methods (C- and above)			Mathematics	SHSS, SST		
160	MATH 351	Numerical Methods with Applications	3	6	MATH 274 Introduction to Differential Equations (C- and above) AND MATH 263 Calculus III (C- and above)			Mathematics	SHSS, SST		
161	MATH 361	Real Analysis I	3	6	MATH 263 Calculus III (C- and above)			Mathematics	SHSS, SST		

162	MATH 402	Abstract Algebra I	3	6	MATH 273 Linear Algebra with Applications (C- and above)			Mathematics	SHSS, SST		
163	MATH 411	Linear Programming	3	6	MATH 273 Linear Algebra with Applications (C- and above) AND MATH 263 Calculus III (C- and above)			Mathematics	SHSS, SST		
164	MATH 425	Stochastic Processes	3	6	MATH 321 Probability (C- and above)			Mathematics	SHSS, SST		
165	MATH 440	Regression Analysis	3	6	MATH 273 Linear Algebra with Applications (C- and above) AND (MATH 310 Applied Statistical Methods (C- and above) OR MATH 322 Mathematical Statistics (C- and above))			Mathematics	SHSS, SST		
166	MATH 471	Nonlinear Differential Equations	3	6	MATH 273 Linear Algebra with Applications (C- and above) AND MATH 274 Introduction to Differential Equations (C- and above)			Mathematics	SHSS, SST		
167	MATH 481	Partial Differential Equations	3	6		MATH 274 Introduction to Differential Equations (C- and above) AND MATH 480 Complex Analysis (C- and above)		Mathematics	SHSS, SST		
168	MATH 517	Scientific Modeling and Simulation with Mathematics	3	6	MATH 273 Linear Algebra with Applications (C- and above) OR MATH 351 Numerical Methods with Applications (C- and above)						
169	MATH 540	Statistical Learning I	3	6	MATH 322 Mathematical Statistics (C- and above) OR (MATH 310 Applied Statistical Methods (C- and above) AND MATH 273 Linear Algebra with Applications (C- and above))						
<b>Physics</b>											
170	PHYS 161	Physics I for Scientists and Engineers with Laboratory	4	8		MATH 161 Calculus I (D and above) OR MATH 162 Calculus II (D and above)	PHYS 171 Physics I for Physics Majors with Laboratory (C- and above)	SST	SHSS		
171	PHYS 201	Introductory Astronomy I	3	6	MATH 162 Calculus II (C- and above)			SHSS, SST			

172	PHYS 221	Classical Mechanics I	3	6	PHYS 172 Physics II for Physics Majors with Laboratory (C- and above) OR PHYS 162 Physics II for Scientists and Engineers with Laboratory (C- and above)	MATH 263 Calculus III (D and above) AND MATH 274 Introduction to Differential Equations (D and above)		Physics	SHSS, SST		
173	PHYS 261	Modern Physics with laboratory	4	8	MATH 162 Calculus II (C- and above) AND (PHYS 152 Introductory Physics II with Lab (C- and above) OR PHYS 162 Physics II for Scientists and Engineers with Laboratory (C- and above) OR PHYS 172 Physics II for Physics Majors with Laboratory (C- and above))			Physics	SHSS, SST		
174	PHYS 315	Mathematical Methods of Physics	3	6	(PHYS 172 Physics II for Physics Majors with Laboratory (C- and above) OR PHYS 162 Physics II for Scientists and Engineers with Laboratory (C- and above)) AND MATH 274 Introduction to Differential Equations (C- and above)			Physics	SHSS, SST		
175	PHYS 361	Classical Electrodynamics I	3	6	(PHYS 172 Physics II for Physics Majors with Laboratory (C- and above) OR PHYS 162 Physics II for Scientists and Engineers with Laboratory (C- and above)) AND MATH 274 Introduction to Differential Equations (C- and above)	PHYS 315 Mathematical Methods of Physics (D and above) OR PHYS 411 Advanced Mathematical Physics (D and above)		SHSS, SST			
176	PHYS 452	Quantum Mechanics II	3	6	PHYS 451 Quantum Mechanics I (C- and above)			SHSS, SST			
177	PHYS 465	Advanced Experimental Physics	3	6				Physics			
178	PHYS 474	Lasers and Photonics	3	6	PHYS 370 Optics with Laboratory (C- and above)			SHSS, SST			
179	PHYS 491	Directed Study of Advanced Physics Topics	3	6				Through Add form only			
180	PHYS 505	Classical Mechanics	3	6							
181	PHYS 511	Computational Modeling and Simulation	3	6							
182	PHYS 515	Classical Electrodynamics	3	6							
183	PHYS 545	Advanced Instrumentation Methods	3	6							

184	PHYS 550	Advanced Mathematical Physics	3	6						
185	PHYS 574	Lasers and Photonics	3	6						
186	SST 501	Teaching and Learning	3	6						
187	SST 503	Laboratory Practicum	3	6	SST 501 Teaching and Learning (C- and above) AND SST 502 Teaching Practicum (C- and above)					
188	SST 591	Research Methods	3	6						
189	SST 693	Thesis Proposal	3	6	SST 591 Research Methods (C- and above)					
<b>Robotics and Mechatronics</b>										
190	ROBT 201	Mechanics: Statics and Dynamics	3	6	MATH 162 Calculus II (C- and above) AND (PHYS 161 Physics I for Scientists and Engineers with Laboratory (C- and above) OR PHYS 171 Physics I for Physics Majors with Laboratory (C- and above))			Robotics and Mechatronics	SHSS, SST	
191	ROBT 203	Electrical and Electronic Circuits I with Lab	4	8	MATH 162 Calculus II (C- and above) AND (PHYS 162 Physics II for Scientists and Engineers with Laboratory (C- and above) OR PHYS 172 Physics II for Physics Majors with Laboratory (C- and above) OR (PHYS 141 Physics I for non-majors with Lab (C- and above) AND PHYS 142 Physics II for non-majors with Lab (C- and above)))			Robotics and Mechatronics	SHSS, SST	
192	ROBT 205	Signals and Sensing with Lab	4	8	MATH 162 Calculus II (C- and above) AND (PHYS 162 Physics II for Scientists and Engineers with Laboratory (C- and above) OR PHYS 172 Physics II for Physics Majors with Laboratory (C- and above))			Robotics and Mechatronics	SHSS, SST	
193	ROBT 301	Mechanical Design I with CAD Laboratory	4	8	ROBT 201 Mechanics: Statics and Dynamics (C- and above)			Robotics and Mechatronics	SHSS, SST	
194	ROBT 303	Linear Control Theory with Lab	4	8	ROBT 202 System Dynamics and Modeling (C- and above) AND MATH 274 Introduction to Differential Equations (C- and above)			Robotics and Mechatronics	SHSS, SST	
195	ROBT 305	Embedded Systems	3	6	ROBT 206 Microcontrollers with Lab (C- and above)			Robotics and Mechatronics	SHSS, SST	
196	ROBT 307	Power Electronics	3	6	ROBT 204 Electrical and Electronic Circuits II with Lab (C- and above)			Robotics and Mechatronics	SHSS, SST	

197	ROBT 401	Robot Dynamics and Control	3	6	ROBT 303 Linear Control Theory with Lab (C- and above)			Robotics and Mechatronics	SHSS, SST		
198	ROBT 407	Statistical Methods and Machine Learning	3	6	MATH 273 Linear Algebra with Applications (C- and above)			Robotics and Mechatronics	SHSS, SST		
199	ROBT 414	Human-Robot Interaction	3	6	CSCI 152 Performance and Data Structures (C- and above)			Robotics and Mechatronics	SHSS, SST		
200	ROBT 501	Robot Manipulation and Mobility	3	6							
201	ROBT 503	Dynamic Systems and Control	3	6							
202	ROBT 611	Industrial Robotics	3	6	ROBT 501 Robot Manipulation and Mobility (C- and above) AND CSCI 501 Software Principles and Practice (C- and above)						
203	ROBT 613	Brain-Machine Interfaces	3	6							
<b>SHSS</b>											
<b>Area Studies</b>											
204	EAS 500	Introduction to Eurasia	4	8				Eurasian Studies	SHSS, SST		
205	EAS 501	General Methodology	4	8				Eurasian Studies	SHSS, SST		
206	EAS 503	Thesis I	7.5	15	EAS 500 Introduction to Eurasia (C- and above) AND EAS 501 General Methodology (C- and above) AND EAS 502 Disciplinary Methodology (C- and above)			2 year Gr SHSS Eurasian Studies			
<b>Area Studies, Political Science and International Relations, Sociology and Anthropology</b>											
207	SOC 514/PLS 514/EAS 506	Qualitative Research Methods	4	8				Eurasian Studies	SHSS, SST		
<b>Communication and Composition</b>											
208	COMM 202	Introduction to Public Speaking	3	6	SHSS 150 Rhetoric and Composition (C- and above)			SHSS	SST		
209	COMM 225	Science Writing for Popular Media	3	6				SST	SHSS		
210	SHSS 150	Rhetoric and Composition	3	6				1 year UG SHSS, 2 year UG SHSS	SHSS	SST	
211	SHSS 250	Advanced Rhetoric and Composition	3	6	SHSS 150 Rhetoric and Composition (C- and above)			2 year UG SHSS	SHSS	SST	
212	SHSS 301	SHSS Internship Second Experience	3	6				Through Add form only			
213	SHSS 390	Writing Fellows I - Composition and Collaboration in Theory and Practice	3	6	SHSS 150 Rhetoric and Composition (B and above)			Through Add form only			
<b>Economics</b>											

214	ECON 101	Introduction to Microeconomics	3	6			1 year UG SHSS	2 year UG SHSS	SHSS, SST	
215	ECON 102	Introduction to Macroeconomics	3	6			1 year UG SHSS	2 year UG SHSS	SHSS, SST	
216	ECON 201	Intermediate Microeconomics	3	6	ECON 101 Introduction to Microeconomics (C and above) AND (MATH 161 Calculus I (C and above) OR MATH 162 Calculus II (C and above))		2 year UG SHSS	SHSS	SST	
217	ECON 202	Intermediate Macroeconomics	3	6	ECON 102 Introduction to Macroeconomics (C and above) AND (MATH 161 Calculus I (C and above) OR MATH 162 Calculus II (C and above))		2 year UG SHSS	SHSS	SST	
218	ECON 211	Economic Statistics	3	6	ECON 101 Introduction to Microeconomics (C and above) OR ECON 102 Introduction to Macroeconomics (C and above)		2 year UG SHSS	SHSS	SST	
219	ECON 301	Econometrics I	3	6	ECON 211 Economic Statistics (C- and above) OR (MATH 321 Probability (C- and above) AND (MATH 322 Mathematical Statistics (C- and above) OR MATH 310 Applied Statistical Methods (C- and above)))		4 year UG SHSS	3 year UG SHSS	SHSS, SST	
220	ECON 302	Game Theory and Economic Analysis	3	6	ECON 201 Intermediate Microeconomics (C- and above)		4 year UG SHSS	3 year UG SHSS	SHSS, SST	
221	ECON 320	Money and Banking	3	6	ECON 201 Intermediate Microeconomics (C- and above)		4 year UG SHSS	3 year UG SHSS	SHSS, SST	
222	ECON 329	International Finance	3	6	ECON 202 Intermediate Macroeconomics (C- and above)		4 year UG SHSS	3 year UG SHSS	SHSS, SST	
223	ECON 341	Economic Simulation Modeling	3	6	ECON 201 Intermediate Microeconomics (C- and above)		4 year UG SHSS	3 year UG SHSS	SHSS, SST	
224	ECON 403	Introduction to Contract Theory and Auctions	3	6	ECON 201 Intermediate Microeconomics (C- and above) AND ECON 301 Econometrics I (C- and above)		4 year UG SHSS	3 year UG SHSS	SHSS, SST	
225	ECON 405	Behavioral and Experimental Economics	3	6	ECON 201 Intermediate Microeconomics (C- and above) AND ECON 301 Econometrics I (C- and above)		4 year UG SHSS	3 year UG SHSS	SHSS, SST	
226	ECON 413	Econometrics II	3	6	ECON 301 Econometrics I (C- and above)		4 year UG SHSS	3 year UG SHSS	SHSS, SST	
227	ECON 415	Industrial Organization	3	6	ECON 301 Econometrics I (C- and above)		4 year UG SHSS	3 year UG SHSS	SHSS, SST	
228	ECON 416	Empirical Industrial Organization	3	6	ECON 201 Intermediate Microeconomics (C- and above) AND ECON 301 Econometrics I (C- and above)		4 year UG SHSS	3 year UG SHSS	SHSS, SST	



229	ECON 501	Microeconomics I	4	8				1 year Gr SHSS Economics	SHSS, SST		
230	ECON 502	Macroeconomics I	4	8				1 year Gr SHSS Economics	SHSS, SST		
231	ECON 503	Introduction to Contract Theory and Auctions	4	8				2 year Gr SHSS Economics	SHSS, SST		
232	ECON 505	Behavioral and Experimental Economics	4	8				2 year Gr SHSS Economics	SHSS, SST		
233	ECON 511	Statistics	4	8				1 year Gr SHSS Economics	SHSS, SST		
234	ECON 512	Mathematical Economics	4	8				1 year Gr SHSS Economics	SHSS, SST		
235	ECON 515	Industrial Organization	4	8	ECON 531 Econometrics (C- and above)			2 year Gr SHSS Economics	SHSS, SST		
236	ECON 516	Empirical Industrial Organization	4	8	ECON 501 Microeconomics I (C- and above) AND ECON 531 Econometrics (C- and above)			2 year Gr SHSS Economics	SHSS, SST		
237	ECON 532	Applied Econometrics	4	8				2 year Gr SHSS Economics	SHSS, SST		
238	ECON 589	Thesis I	4	8				2 year Gr SHSS Economics	SHSS, SST		
<b>History, Philosophy and Religious Studies</b>											
239	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	
240	HST 123	Introduction to the History of Science and Technology	3	6				1 year UG SHSS, 2 year UG SHSS, History	SHSS, SST		
241	HST 124	Introduction to the History of Medicine	3	6				1 year UG SHSS, 2 year UG SHSS, History	SHSS, SST		
242	HST 131	European History I (to 1700)	3	6				SHSS, SST			
243	HST 182	East Asian History II (from 1500)	3	6				1 year UG SHSS, 2 year UG SHSS, History	SHSS, SST		
244	HST 240	Representations of Nature in the Early Modern World	3	6	HST 100 History of Kazakhstan (C- and above)			History	SHSS, SST		

245	HST 327	Global Cold War	3	6	HST 100 History of Kazakhstan (C- and above) OR HST 103 Central Asian History I (to 1700) (C- and above) OR HST 104 Central Asian History II (1700 - 1991) (C- and above) OR HST 121 World History I (to 1500) (C- and above) OR HST 122 World History II (from 1500) (C- and above) OR HST 131 European History I (to 1700) (C- and above) OR HST 132 European History II (from 1700) (C- and above) OR HST 151 US History I (to 1877) (C- and above) OR HST 152 US History II (from 1877) (C- and above) OR HST 172 Middle Eastern History II (from 1800) (C- and above) OR HST 182 East Asian History II (from 1500) (C- and above) OR HST 199 Freshman Seminar (C- and above)			History	SHSS, SST		
246	HST 328	History of the Anthropocene	3	6	Subject "HST" BETWEEN 100 and 199			History	SHSS, SST		
247	HST 335	European Nationalisms	3	6	HST 100 History of Kazakhstan (C- and above) OR HST 103 Central Asian History I (to 1700) (C- and above) OR HST 104 Central Asian History II (1700 - 1991) (C- and above) OR HST 121 World History I (to 1500) (C- and above) OR HST 122 World History II (from 1500) (C- and above) OR HST 131 European History I (to 1700) (C- and above) OR HST 132 European History II (from 1700) (C- and above) OR HST 151 US History I (to 1877) (C- and above) OR HST 152 US History II (from 1877) (C- and above) OR HST 172 Middle Eastern History II (from 1800) (C- and above) OR HST 182 East Asian History II (from 1500) (C- and above) OR HST 199 Freshman Seminar (C- and above)			History	SHSS, SST		
248	HST 423	Orthodox Christianity in Modern and Revolutionary Russia	3	6	Subject "HST" BETWEEN 200 and 299 OR Subject "HST" BETWEEN 300 and 399			History	SHSS, SST		
249	HST 498	Directed Reading	3	6							

250	HST 523	Orthodox Christianity in Modern and Revolutionary Russia	4	8				SHSS, SST			
251	PHIL 101	Introduction to Philosophy	3	6				1 year UG SHSS, 2 year UG SHSS	SHSS, SST		
252	PHIL 110	The Good Life in Practice	3	6				1 year UG SHSS, 2 year UG SHSS	SHSS, SST		
253	PHIL 124	Knowledge and Reality	3	6				1 year UG SHSS, 2 year UG SHSS	SHSS, SST		
254	PHIL 205	Introduction to Modern Philosophy	3	6				SHSS	SST		
255	PHIL 215	Bioethics	3	6				SHSS, SST			
256	PHIL 223	Philosophy of Science	3	6				SHSS, SST			
257	PHIL 240	Formal Logic	3	6				SHSS, SST			
258	PHIL 325	Truth, Lies, Media, and Propaganda	3	6				SHSS, SST			
259	PHIL 361	Philosophy of Language	3	6				SHSS, SST			
260	PHIL 399	Special Topics in Philosophy	3	6	PHIL 101 Introduction to Philosophy (C- and above) OR PHIL 210 Ethics (C- and above) OR PHIL 320 Truth, Knowledge and Belief (C- and above) OR PHIL 230/PLS 230 Religion and Democracy (C- and above)						
261	REL 410	Buddhism in Central Asia	3	6	Subject "REL" BETWEEN 100 and 199			SHSS, SST			
262	REL 510	Buddhism in Central Asia	4	8				Eurasian Studies	SHSS, SST		
<b>History, Philosophy and Religious Studies, History, Philosophy and Religious Studies</b>											
263	HST 261/REL 261	History of Islam (570s to 1258)	3	6	Subject "HST" BETWEEN 100 and 199 OR Subject "" BETWEEN 100 and 199 OR Subject "" BETWEEN 100 and 199 OR Subject "" BETWEEN 100 and 199			History	SHSS, SST		
264	HST 329/REL 329	Women in Islamic History	3	6				History	SHSS, SST		
<b>History, Philosophy and Religious Studies, Political Science and International Relations</b>											
265	PHIL 231/PLS 222	Global Justice	3	6				SHSS	SST		
<b>History, Philosophy and Religious Studies, Sociology and Anthropology</b>											
266	HST 381/SOC 319	AIDS and Society	3	6	Subject "HST" BETWEEN 100 and 199 OR HST 100 History of Kazakhstan (B- and above)			History	SHSS, SST		
<b>Kazakh Language and Turkic Studies</b>											

267	KAZ 001	Kazakh Language Placement Test	0	0						
268	KAZ 100	Elementary Kazakh	3	6						
269	KAZ 101	Basic Kazakh I	3	6	KLL "Basic I"				1 year UG SENG, 1 year UG SST, 4 year UG SENG, 4 year UG SST	1 year UG SHSS, 2 year UG SHSS, 3 year UG SHSS, 4 year UG SHSS, SEng, SST
270	KAZ 111	Intermediate Kazakh I	3	6	KLL "Intermediate I"				1 year UG SENG, 1 year UG SST, 4 year UG SENG, 4 year UG SST	1 year UG SHSS, 2 year UG SHSS, 3 year UG SHSS, 4 year UG SHSS, SEng, SST
271	KAZ 121	Upper-Intermediate Kazakh	3	6	KLL "Upper-Intermediate"				1 year UG SENG, 1 year UG SST, 4 year UG SENG, 4 year UG SST	1 year UG SHSS, 2 year UG SHSS, 3 year UG SHSS, 4 year UG SHSS, SEng, SST
272	KAZ 211	Academic Speaking in Kazakh	3	6	KAZ 202 Academic Kazakh II (C- and above)				1 year UG SENG, 1 year UG SST, 4 year UG SENG, 4 year UG SST	1 year UG SHSS, 2 year UG SHSS, 3 year UG SHSS, 4 year UG SHSS, SEng, SST
273	KAZ 212	Academic Writing in Kazakh	3	6	KLL "Advanced" OR KLL "Upper-Intermediate"				1 year UG SENG, 1 year UG SST, 4 year UG SENG, 4 year UG SST	1 year UG SHSS, 2 year UG SHSS, 3 year UG SHSS, 4 year UG SHSS, SEng, SST
274	KAZ 226	Kazakh for Medical School	3	6	KLL "Upper-Intermediate" OR KLL "Advanced"				1 year UG SENG, 1 year UG SST, 4 year UG SENG, 4 year UG SST	1 year UG SHSS, 2 year UG SHSS, 3 year UG SHSS, 4 year UG SHSS, SEng, SST
275	KAZ 263	Business Etiquette	3	6	KLL "Upper-Intermediate" OR KLL "Advanced"				1 year UG SENG, 1 year UG SST, 4 year UG SENG, 4 year UG SST	1 year UG SHSS, 2 year UG SHSS, 3 year UG SHSS, 4 year UG SHSS, SEng, SST

276	KAZ 313	Kazakh for Business	3	6	KLL "Advanced" OR KLL "Upper-Intermediate"				1 year UG SENG, 1 year UG SST, 4 year UG SENG, 4 year UG SST	1 year UG SHSS, 2 year UG SHSS, 3 year UG SHSS, 4 year UG SHSS, SEng, SST	
277	KAZ 314	Speech Culture in Business	3	6	KLL "Upper-Intermediate" OR KLL "Advanced"				1 year UG SENG, 1 year UG SST, 4 year UG SENG, 4 year UG SST	1 year UG SHSS, 2 year UG SHSS, 3 year UG SHSS, 4 year UG SHSS, SEng, SST	
278	KAZ 351	Kazakh Short Stories	3	6	KLL "Advanced" OR KLL "Upper-Intermediate"				1 year UG SENG, 1 year UG SST, 4 year UG SENG, 4 year UG SST	1 year UG SHSS, 2 year UG SHSS, 3 year UG SHSS, 4 year UG SHSS, SEng, SST	
279	KAZ 354	Kazakh Drama	3	6	KLL "Advanced" OR KLL "Upper-Intermediate"				1 year UG SENG, 1 year UG SST, 4 year UG SENG, 4 year UG SST	1 year UG SHSS, 2 year UG SHSS, 3 year UG SHSS, 4 year UG SHSS, SEng, SST	
280	KAZ 356	Kazakh Music History	3	6	KLL "Advanced"				1 year UG SENG, 1 year UG SST, 4 year UG SENG, 4 year UG SST	1 year UG SHSS, 2 year UG SHSS, 3 year UG SHSS, 4 year UG SHSS, SEng, SST	
281	KAZ 357	Literature of Alash	3	6	KLL "Advanced" OR KLL "Upper-Intermediate"				1 year UG SENG, 1 year UG SST, 4 year UG SENG, 4 year UG SST	1 year UG SHSS, 2 year UG SHSS, 3 year UG SHSS, 4 year UG SHSS, SEng, SST	
282	KAZ 358	Technique of Translation	3	6	KLL "Upper-Intermediate" OR KLL "Advanced"				1 year UG SENG, 1 year UG SST, 4 year UG SENG, 4 year UG SST	1 year UG SHSS, 2 year UG SHSS, 3 year UG SHSS, 4 year UG SHSS, SEng, SST	

283	KAZ 362	Creative Writing in Kazakh Language	3	6	KLL "Upper-Intermediate" OR KLL "Advanced"				1 year UG SENG, 1 year UG SST, 4 year UG SENG, 4 year UG SST	1 year UG SHSS, 2 year UG SHSS, 3 year UG SHSS, 4 year UG SHSS, SEng, SST	
284	KAZ 363	Language and Globalization	3	6	KLL "Upper-Intermediate" OR KLL "Advanced"				1 year UG SENG, 1 year UG SST, 4 year UG SENG, 4 year UG SST	1 year UG SHSS, 2 year UG SHSS, 3 year UG SHSS, 4 year UG SHSS, SEng, SST	
285	KAZ 364	Kazakh for Civil Service	3	6	KLL "Advanced" OR KLL "Upper-Intermediate" OR KAZ 314 Speech Culture in Business (C- and above)				1 year UG SENG, 1 year UG SST, 4 year UG SENG, 4 year UG SST	1 year UG SHSS, 2 year UG SHSS, 3 year UG SHSS, 4 year UG SHSS, SEng, SST	
286	KAZ 365	Abai's World	3	6	KLL "Advanced"						
287	KAZ 366	Kazakh Language for Engineers	3	6	KLL "Advanced" OR KLL "Upper-Intermediate"				1 year UG SENG, 1 year UG SST, 4 year UG SENG, 4 year UG SST	1 year UG SHSS, 2 year UG SHSS, 3 year UG SHSS, 4 year UG SHSS, SEng, SST	
288	KAZ 368	Onomastics: History and Function of Names	3	6	KLL "Advanced" OR KLL "Upper-Intermediate"				1 year UG SENG, 1 year UG SST, 4 year UG SENG, 4 year UG SST	1 year UG SHSS, 2 year UG SHSS, 3 year UG SHSS, 4 year UG SHSS, SEng, SST	
289	KAZ 370	Kazakh for Career Development	3	6	KLL "Upper-Intermediate" OR KLL "Advanced"				1 year UG SENG, 1 year UG SST, 4 year UG SENG, 4 year UG SST	1 year UG SHSS, 2 year UG SHSS, 3 year UG SHSS, 4 year UG SHSS, SEng, SST	
290	KAZ 371	Contemporary Kazakh Literature	3	6	KLL "Advanced"				1 year UG SENG, 1 year UG SST, 4 year UG SENG, 4 year UG SST	1 year UG SHSS, 2 year UG SHSS, 3 year UG SHSS, 4 year UG SHSS, SEng, SST	

291	KAZ 372	Language and ethnicity	3	6	KLL "Advanced" OR KAZ 211 Academic Speaking in Kazakh (C- and above) OR KAZ 212 Academic Writing in Kazakh (C- and above)				1 year UG SENG, 1 year UG SST, 4 year UG SENG, 4 year UG SST	1 year UG SHSS, 2 year UG SHSS, 3 year UG SHSS, 4 year UG SHSS, SEng, SST	
292	KAZ 373	Kazakh Terminology	3	6	KLL "Advanced" OR KAZ 202A Kazakh Literature 2/K(C) (C- and above) OR KAZ 211 Academic Speaking in Kazakh (C- and above) OR KAZ 212 Academic Writing in Kazakh (C- and above)				1 year UG SENG, 1 year UG SST, 4 year UG SENG, 4 year UG SST	1 year UG SHSS, 2 year UG SHSS, 3 year UG SHSS, 4 year UG SHSS, SEng, SST	
293	KAZ 374	Kazakh Diplomacy	3	6	KAZ 202A Kazakh Literature 2/K(C) (C- and above) OR KAZ 211 Academic Speaking in Kazakh (C- and above) OR KAZ 212 Academic Writing in Kazakh (C- and above) OR KLL "Advanced"				1 year UG SENG, 1 year UG SST, 4 year UG SENG, 4 year UG SST	1 year UG SHSS, 2 year UG SHSS, 3 year UG SHSS, 4 year UG SHSS, SEng, SST	
294	KAZ 375	Cultural Studies and Kazakh Culture	3	6	KLL "Advanced" OR KAZ 202A Kazakh Literature 2/K(C) (C- and above) OR KAZ 211 Academic Speaking in Kazakh (C- and above) OR KAZ 212 Academic Writing in Kazakh (C- and above)				1 year UG SENG, 1 year UG SST, 4 year UG SENG, 4 year UG SST	1 year UG SHSS, 2 year UG SHSS, 3 year UG SHSS, 4 year UG SHSS, SEng, SST	
295	TUR 231	Istanbul in Literature and Culture	3	6				SHSS	SST		
296	TUR 305	Introduction to Chagatay and Ottoman Turkish	3	6	KAZ 111 Intermediate Kazakh I (C- and above) OR KAZ 121 Upper-Intermediate Kazakh (C- and above) OR KLL "Advanced"			SHSS, SST			
297	TUR 411	Advanced Readings in Turkish Literature	3	6	KAZ 111 Intermediate Kazakh I (C- and above) OR KAZ 121 Upper-Intermediate Kazakh (C- and above) OR KLL "Advanced"			SHSS, SST			
<b>Languages, Literature and Linguistics</b>											
298	CHN 101	Beginning Mandarin I	4	8				World Languages, Literature and Culture	1 year UG SHSS	1 year UG SST	
299	CHN 201	Intermediate Mandarin I	4	8	CHN 102 Beginning Mandarin II (B- and above)			SHSS, SST			
300	CHN 202	Intermediate Mandarin II	4	8	CHN 201 Intermediate Mandarin I (B- and above)			SHSS, SST			
301	FRE 201	Intermediate French I	4	8	FRE 102 Beginning French II (C- and above)			World Languages, Literature and Culture	SHSS	SST	

302	FRE 312	Advanced Expression	3	6	FRE 201 Intermediate French I (C- and above)			SHSS, SST			
303	GER 102	Beginning German II	4	8	GER 101 Beginning German (C- and above)			World Languages, Literature and Culture	SHSS	SST	
304	GER 201	Intermediate German I	4	8	GER 102 Beginning German II (C- and above)			World Languages, Literature and Culture	SHSS	SST	
305	LING 131	Introduction to Linguistics	3	6				World Languages, Literature and Culture	SHSS	SST	
306	LING 272	Language and the Mind	3	6				World Languages, Literature and Culture	SHSS	SST	
307	LING 273	Survey of Research Methods in Linguistics	3	6				1 year UG SHSS	SHSS	SST	
308	LING 277	Language Diversity and Language Universals	3	6				World Languages, Literature and Culture	SHSS	SST	
309	LING 278	Sounds of the World's Languages	3	6				World Languages, Literature and Culture	SHSS	SST	
310	LING 374	Language Contact in Central Asia	3	6				World Languages, Literature and Culture	SHSS	SST	
311	SPA 101	Beginning Spanish I	4	8				World Languages, Literature and Culture	1 year UG SHSS	1 year UG SST, 2 year UG SHSS, 2 year UG SST	
312	SPA 201	Intermediate Spanish I	4	8	SPA 102 Beginning Spanish II (C- and above)			World Languages, Literature and Culture	SHSS	SST	
313	SPA 314	Advanced Spanish Grammar and Composition	3	6	SPA 202 Intermediate Spanish II (C- and above)			SHSS, SST			
314	WLL 101	Introduction to Critical Issues in the Humanities and Social Sciences	3	6				World Languages, Literature and Culture	SHSS	SST	
315	WLL 110	Introduction to Literary Studies	3	6				World Languages, Literature and Culture	SHSS	SST	
316	WLL 201	World Literature I	3	6				World Languages, Literature and Culture	SHSS	SST	
317	WLL 244	Survey of Nineteenth-Century Russian Literature	3	6				World Languages, Literature and Culture	SHSS	SST	



318	WLL 248	Survey of Soviet Literature and Culture	3	6			World Languages, Literature and Culture	SHSS	SST	
319	WLL 250	From Page to Screen	3	6			World Languages, Literature and Culture	SHSS	SST	
320	WLL 345	Modern Japanese Literature	3	6	Subject "WLL" BETWEEN 1 and 499 OR Subject "" BETWEEN 1 and 499 OR Subject "" BETWEEN 1 and 499 OR Subject "HST" BETWEEN 1 and 499 OR Subject "" BETWEEN 1 and 499 OR Subject "" BETWEEN 1 and 499		World Languages, Literature and Culture	SHSS	SST	
321	WLL 355	Graphic Narrative: Advanced Readings in Sequential Art	3	6	WLL 155 Introduction to the Comic Book (C- and above) OR WLL 255 The Comic Book in Japan and America (C- and above)		World Languages, Literature and Culture	SHSS	SST	
322	WLL 399	Independent Study	3	6			Through Add form only			
323	WLL 498	Languages, Linguistics, and Literatures Capstone I	3	6			4 year UG SHSS World Language and Literature			
<b>Languages, Literature and Linguistics, Languages, Literature and Linguistics</b>										
324	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	SST	
<b>Languages, Literature and Linguistics, Sociology and Anthropology</b>										
325	ANT 277/WLL 271	Language and Society	3	6			2 year UG SHSS, Anthropology	SHSS	SST	
326	ANT 385/WLL 385	Postcolonial Theory and its Applications in Eurasia	3	6	ANT 101 Introduction to Sociocultural Anthropology (C- and above) OR SOC 101 Introduction to Sociology (C- and above) OR WLL 121 Introduction to Cultural Studies (C- and above) OR WLL 102 /PHIL 102 Language, Experience, Culture (C- and above)		Anthropology, Sociology, World Languages, Literature and Culture	3 year UG SHSS, 4 year UG SHSS	SHSS, SST	
<b>Political Science and International Relations</b>										
327	PLS 101	Introduction to Political Science	3	6			SST	1 year UG SHSS	SHSS	
328	PLS 120	Introduction to Political Theory	3	6			1 year UG SHSS, Political Science and International Relations	SHSS	SST	

329	PLS 140	Introduction to Comparative Politics	3	6				1 year UG SHSS	Political Science and International Relations	SHSS, SST	
330	PLS 150	Introduction to International Relations	3	6						SHSS, SST	
331	PLS 210	Political Science Research Methods	3	6				Political Science and International Relations	SHSS		
332	PLS 211	Quantitative Methods	3	6				Political Science and International Relations	SHSS		
333	PLS 340	Politics of East Asia	3	6	PLS 140 Introduction to Comparative Politics (C- and above) OR PLS 150 Introduction to International Relations (C- and above)			Political Science and International Relations	SHSS		
334	PLS 359	United Nations	3	6	PLS 150 Introduction to International Relations (C- and above)			Political Science and International Relations	SHSS		
335	PLS 360	Foreign Policy Analysis	3	6	PLS 150 Introduction to International Relations (C- and above) AND PLS 211 Quantitative Methods (C- and above)			Political Science and International Relations	SHSS		
336	PLS 370	Law, Politics and Society	3	6	PLS 140 Introduction to Comparative Politics (C- and above)			Political Science and International Relations	SHSS		
337	PLS 391	Intermediate Special Topics in Comparative Politics	3	6	PLS 140 Introduction to Comparative Politics (C- and above)			Political Science and International Relations	SHSS		
338	PLS 412	Scientific Research in International Relations	0	0	PLS 150 Introduction to International Relations (C- and above) AND PLS 210 Political Science Research Methods (C- and above) AND PLS 211 Quantitative Methods (C- and above)			Political Science and International Relations	SHSS		
339	PLS 421	Theories of Political Obligations	3	6	PLS 325 Ancient Political Theory (C- and above) OR PLS 326 Modern Political Theory (C- and above)			Political Science and International Relations	SHSS, SST		
340	PLS 422	Just War Theory	3	6	PLS 120 Introduction to Political Theory (C- and above) AND PLS 210 Political Science Research Methods (C- and above)			Political Science and International Relations	SHSS, SST		

341	PLS 441	Advanced Topics in Comparative Politics	3	6	PLS 140 Introduction to Comparative Politics (C- and above) AND PLS 210 Political Science Research Methods (C- and above)			Political Science and International Relations	SHSS, SST		
342	PLS 445	Political Violence	3	6	(PLS 140 Introduction to Comparative Politics (C- and above) OR PLS 150 Introduction to International Relations (C- and above)) AND PLS 210 Political Science Research Methods (C- and above)			Political Science and International Relations	SHSS, SST		
343	PLS 465	Politics of International Finance	3	6	PLS 150 Introduction to International Relations (C- and above) AND PLS 210 Political Science Research Methods (C- and above)			Political Science and International Relations	SHSS, SST		
344	PLS 469	International Relations of Eurasia	3	6	PLS 150 Introduction to International Relations (C- and above) AND PLS 210 Political Science Research Methods (C- and above)			Political Science and International Relations	SHSS, SST		
345	PLS 495	Research Practicum in PSIR	1	2	PLS 210 Political Science Research Methods (C- and above) AND PLS 211 Quantitative Methods (C- and above)			Through Add form only			
346	PLS 511	Advanced Research I	4	8				1 year Gr SHSS Political Sciences and Int. Relations	SHSS, SST		
347	PLS 512	Scientific Research in International Relations	4	8	PLS 511 Advanced Research I (C- and above) AND PLS 510 Advanced Research II (C- and above) AND PLS 550 Core Seminar in IR (C- and above)			2 year Gr SHSS Political Sciences and Int. Relations	SHSS, SST		
348	PLS 521	Theories of Political Obligations	4	8				1 year Gr SHSS Political Sciences and Int. Relations	SHSS, SST		
349	PLS 522	Just War Theory	4	8				1 year Gr SHSS Political Sciences and Int. Relations	SHSS, SST		
350	PLS 541	Advanced Topics in Comparative Politics	4	8				2 year Gr SHSS Political Sciences and Int. Relations	SHSS, SST		
351	PLS 545	Political Violence	4	8				2 year Gr SHSS Political Sciences and Int. Relations	SHSS, SST		
352	PLS 550	Core Seminar in IR	4	8				1 year Gr SHSS Political Sciences and Int. Relations	SHSS, SST		

353	PLS 565	Politics of International Finance	4	8				2 year Gr SHSS Political Sciences and Int. Relations	SHSS, SST		
354	PLS 569	International Relations of Eurasia	4	8				2 year Gr SHSS Political Sciences and Int. Relations	SHSS, SST		
355	PLS 597	Research for Thesis	6	12				2 year Gr SHSS Political Sciences and Int. Relations			
<b>Sociology and Anthropology</b>											
356	ANT 101	Introduction to Sociocultural Anthropology	3	6				1 year UG SHSS, Anthropology	2 year UG SHSS	SHSS, SST	
357	ANT 140	World Prehistory	3	6				1 year UG SHSS, Anthropology	2 year UG SHSS	SHSS, SST	
358	ANT 160	Introduction to Biological Anthropology	3	6				1 year UG SHSS, Anthropology	2 year UG SHSS	SHSS, SST	
359	ANT 216	Marriage and Kinship	3	6				1 year UG SHSS, 2 year UG SHSS, Anthropology	SHSS	SST	
360	ANT 231	Frauds and Fallacies in Archaeology	3	6				2 year UG SHSS, Anthropology	SHSS	SST	
361	ANT 400	Research Assistance in Anthropology	1	2	SOC 201 Social Science Research Methods (C- and above) OR SOC 203 Quantitative Methods in Sociology (C- and above) OR SOC 214/ANT 214 Qualitative Methods (C- and above)						
362	ANT 403	Research Assistance in Anthropology	2	4	SOC 201 Social Science Research Methods (C- and above) OR SOC 203 Quantitative Methods in Sociology (C- and above) OR SOC 214/ANT 214 Qualitative Methods (C- and above)						
363	ANT 498	Capstone Seminar I	3	6				4 year UG SHSS Anthropology			
364	SOC 101	Introduction to Sociology	3	6				1 year UG SHSS, 2 year UG SHSS, Anthropology, Biological Sciences, Sociology		SHSS	
365	SOC 115	Global Social Problems	3	6				1 year UG SHSS	2 year UG SHSS	SHSS, SST	
366	SOC 203	Quantitative Methods in Sociology	3	6	SOC 201 Social Science Research Methods (C- and above) OR PLS 210 Political Science Research Methods (C- and above)			Anthropology, Sociology	SHSS	SST	
367	SOC 215	Sociology of Race and Ethnicity	3	6				Anthropology, Sociology	SHSS	SST	

368	SOC 301	Classical Sociological Theory	3	6	SOC 101 Introduction to Sociology (C- and above) OR SOC 115 Global Social Problems (C- and above)			Anthropology, Sociology	3 year UG SHSS, 4 year UG SHSS	SHSS, SST	
369	SOC 314	Organizations and Society	3	6	SOC 101 Introduction to Sociology (C- and above) OR SOC 115 Global Social Problems (C- and above)			Anthropology, Sociology	SHSS	SST	
370	SOC 318	Sexuality and Gender in a Transnational World	3	6	SOC 101 Introduction to Sociology (C- and above) OR SOC 115 Global Social Problems (C- and above) OR SOC 210 Gender and Society (C- and above)			Anthropology, Sociology	3 year UG SHSS, 4 year UG SHSS	SHSS, SST	
371	SOC 321	Applied Policy Analysis: Tools and Perspectives	3	6	SOC 201 Social Science Research Methods (C- and above) OR SOC 218 Introduction to Social Policy (C- and above) OR PLS 210 Political Science Research Methods (C- and above)			Anthropology, Sociology	3 year UG SHSS, 4 year UG SHSS	SHSS, SST	
372	SOC 400	Research Assistance in Sociology	1	2	SOC 201 Social Science Research Methods (C- and above) OR SOC 203 Quantitative Methods in Sociology (C- and above) OR SOC 214/ANT 214 Qualitative Methods (C- and above)						
373	SOC 403	Research Assistance in Sociology	2	4	SOC 201 Social Science Research Methods (C- and above) OR SOC 203 Quantitative Methods in Sociology (C- and above) OR SOC 214/ANT 214 Qualitative Methods (C- and above)						
374	SOC 498	Capstone Seminar Part I	3	6				Anthropology, Sociology	SHSS	SST	
<b>Sociology and Anthropology, Sociology and Anthropology</b>											
375	SOC 212/ANT 285	Food and Society	3	6				Anthropology, Sociology	1 year UG SHSS, 2 year UG SHSS	SHSS, SST	
<b>CPS</b>											
<b>NUFYP</b>											
376	FEAP 001	English for Academic Purposes	0	0							
377	FHUM 001	Humanities	0	0							
378	FMAT 020	Foundation Statistics	1	2							
379	FMAT 030	Mathematics for Life Sciences (Biology and Chemistry)	1	2							

380	FMAT 040	Mathematics for Physical Sciences	1	2							
381	FSCI 006	Foundation 'Chemistry & Biology'	0	0							
382	FSCI 008	Foundation 'Physics'	0	0							
<b>NUZYP</b>											
383	ZCOM 040	Academic Communications for Graduate Studies I	0	0							
384	ZRDG 030	Academic Reading for Graduate Studies I	0	0							
385	ZWRT 020	Academic Writing for Graduate Studies I	0	0							
<b>GSB</b>											
<b>GSB</b>											
386	EMBAE 700	Entrepreneurial Finance	2.5	5							
387	GSBF 501	Team Building and Business Communications	1	2							
388	GSBF 511	Statistical Methods	2	4							
389	GSBF 512	Principles of Finance	2	4							
390	GSBF 513	Financial Econometrics	2	4							
391	GSBF 515a	Investments I	2	4							
392	GSBF 516	Financial Markets and Institutions	2	4							
393	GSBF 517	Financial Economics	2	4							
394	MBA 01	Consequential Leadership	1	2							
395	MBA 02	Business Mathematics and Business Computer Application	1	2							
396	MBA 03	Financial Accounting	2	4							
397	MBA 04	Probability and Statistics	2	4							
398	MBA 05	Business Communication	2	4							
399	MBA 07	Managerial Effectiveness	2	4							
400	MBA 08	Managerial Economics	2	4							
401	MBA 09	Marketing Management	2	4							
402	MBA 17	Negotiations	2	4							
403	MBA 19	Distinguished Speaker Series	0	1							
404	MBA 20	Practicum Project	2.5	5							
405	MBAE 12	Data Analytics for Business	2	4							
406	MBAE 6	International Finance	2	4							
407	MBAE 9	Marketing Strategy	2	4							

**GSPP**

**GSPP**

408	DPP 601	Microeconomics in the Public Sector	4	8							
409	DPP 603	Public Administration and Management	4	8							
410	DPP 611	Statistics in Public Policy	4	8							
411	DPP 621	Public Policy and Analysis	4	8							
412	MPA 602	Public Administration in Theory and Practice	4	8							
413	MPA 603	Economic Applications for Public Managers	4	8							
414	MPA 605	Research Methods for Decision Making	4	8							
415	MPA 618	Current Issues in Macroeconomic Policy	4	8					-, 2 year GSPP Public Administration, 2 year GSPP Public Policy	Economics, Eurasian Studies, Political Science and International Relations	
416	MPA 619	Contemporary Issues in Foreign Policy	4	8					-, 2 year GSPP Public Administration, 2 year GSPP Public Policy	Economics, Eurasian Studies, Political Science and International Relations	
417	MPA 622	Public Policy and Economics of Health Systems	4	8					-, 2 year GSPP Public Administration, 2 year GSPP Public Policy	Economics, Eurasian Studies, Political Science and International Relations	
418	MPA 684	Selected Topics on Global Energy Policy	4	8					-, 2 year GSPP Public Administration, 2 year GSPP Public Policy	Economics, Eurasian Studies, Political Science and International Relations	
419	MPA 699	Master's Project with Overseas Component	0	0							
420	MPP 601	Microeconomics and Public Policy	4	8							
421	MPP 611	Statistical Techniques for Public Policy	4	8							

422	MPP 612	Public Policy Research and Evaluation	4	8						
423	MPP 621	Introduction to Public Policy and Analysis	4	8						
424	MPP 625	Central Asian politics: Comparative Analysis	4	8				-, 2 year GSPP Public Administration, 2 year GSPP Public Policy	Economics, Eurasian Studies, Political Science and International Relations	
425	MPP 626	International Political Economy of Energy and Climate Change	4	8				-, 2 year GSPP Public Administration, 2 year GSPP Public Policy	Economics, Eurasian Studies, Political Science and International Relations	
426	MPP 631	Politics and Public Policy	4	8						
427	MPP 632	Public International Law	4	8				-, 2 year GSPP Public Administration, 2 year GSPP Public Policy	Economics, Eurasian Studies, Political Science and International Relations	
428	MPP 636	Weapons of Mass Destruction Nonproliferation and Disarmament	4	8				-, 2 year GSPP Public Administration, 2 year GSPP Public Policy	Economics, Eurasian Studies, Political Science and International Relations	
429	MPP 671	Game Theory and Public Policy	4	8				-, 2 year GSPP Public Administration, 2 year GSPP Public Policy	Economics, Eurasian Studies, Political Science and International Relations	
430	MPP 682	Sustainable Development and Environmental Governance	4	8	MPP 601 Microeconomics and Public Policy (D and above)			-, 2 year GSPP Public Administration, 2 year GSPP Public Policy	Economics, Eurasian Studies, Political Science and International Relations	

**GSE**

**GSE**



431	EDHE 609	Introduction to Educational Leadership: Higher Education	3	6							
432	EDHE 621	Education Policy Analysis and Development	3	6							
433	EDHE 642	Globalisation and higher education	3	6							
434	EDHE 649	Fundamentals of Higher Education	3	6							
435	EDHE 691	Thesis Seminar II	3	6							
436	EDIE 609	Introduction to Educational Leadership: Inclusive Education	3	6							
437	EDIE 621	Education Policy Analysis and Development	3	6							
438	EDIE 624	Psychology of Learning (Children as Learners)	3	6							
439	EDIE 691	Thesis Seminar II	3	6							
440	EDML 601	Introduction to Linguistics	3	6							
441	EDML 610	Foundations of Multilingual Education	3	6							
442	EDML 613	The Multilingual School	3	6							
443	EDML 614	Multilingual curriculum development and assessment	3	6							
444	EDML 623	Globalization and Language Education	3	6							
445	EDML 630	Language Policy and Education Reform Across Contexts	3	6							
446	EDML 690	Thesis Research I	3	6							
447	EDSE 609	Introduction to Educational Leadership: School Education	3	6							
448	EDSE 620	Perspectives on Inclusive Education	3	6							
449	EDSE 632	School Improvement and Effectiveness	3	6							
450	EDSE 634	Assessment: Theories, policies, practices	3	6							
451	EDSE 636	Preparing Children for the Future: Skills and Employability	3	6							
452	EDSE 691	Thesis Seminar II	3	6							
453	EDUC 502	English for Research	3	6							

454	EDUC 505	Academic English 1	1.5	3							
455	EDUC 507	Academic English III	1.5	3							
456	EDUC 510	Advanced English for Education Professionals I	3	6							
457	EDUC 571	Basic Kazakh	3	6							
458	EDUC 590	Academic English Writing for Doctoral Students I	1.5	3							
459	EDUC 600	Research Methods (Part I)	1.5	3							
460	EDUC 600	Research Methods I	3	6							
461	EDUC 602	Educational Context and Reform in Kazakhstan	3	6							
462	EDUC 701	Education Research Methods	3	6							
463	EDUC 703	Kazakh Language	3	6							
464	EDUC 709	Introduction to Scholarship in Education	3	6							
465	EDUC 712	Educational Policy and Reform	3	6							
466	EDUC 720	Philosophy of Education	3	6							
467	EDUC 731	Proposal Defence	3	6							
468	EDUC 740	Doctoral Seminar	3	6							
469	EDUC 750	Dissertation Research	9	18							
470	EDUC 800	International Study	12	24							
<b>Other</b>											
<b>GSPP</b>											
471	T-PP 5178	Leadership and Decision-Making Skills	4	8							
472	T-PP 5196	Education Economics and Policy	4	8							
473	T-PP 5203	Behavioral Economics and Public Policy	4	8							
474	T-PP 5215	Changes in Singapore Political Economy	4	8							
475	T-PP 5267	Urban Transport Policy: A Global View	4	8							
476	T-PP 5269	Environmental Economics and Public Policy	4	8							
477	T-PP 5298	Singapore's Development Experience	4	8							
<b>SHSS</b>											
478	T-CMM 181	Introduction to Mass Communication	3	6							
479	T-ECN 332	Managerial Economics	3	6							

480	T-GOV 382	American Political Concepts	3	6						
481	T-PHI 104	Philosophy of Religion	3	6						
<b>SoM</b>										
<b>Applied Nursing</b>										
482	NUR 301	Nutrition for Clinical Practice	3	6						
483	NUR 302	Physical Assessment Across the Lifespan	4	8						
484	NUR 303	Nursing Care of Older Adults	4	8						
485	NUR 304	Introduction to Basic Statistics for Evidence Based Practice	3	6						
<b>Biomedical Sciences</b>										
486	MMMM 501	Molecular Basis of Infection	3	6						
487	MMMM 502	Molecular Pathology of Cancer	3	6						
488	MMMM 503	Bioethics in Research: Principles and Practice	3	6						
489	MMMM 504	Molecular Basis of Genetic Disease	3	6						
490	MMMM 505	Inferential Biostatistics	2	4						
491	MMMM 506	Biocomputing	1	2						
<b>Public Health</b>										
492	PUBH 501	Principles of Public Health Problem Solving	3	6						
493	PUBH 511	Inferential Biostatistics	3	6						
494	PUBH 521	Principles of Analytical Epidemiology	3	6						
495	PUBH 528	Qualitative Research Methods	3	6						
496	PUBH 531	Emerging Infectious Diseases	3	6						
497	PUBH 551	Health Services Management, Health Economic and Health Policy	3	6						
498	PUBH 601	Health Education and Promotion	3	6						
499	PUBH 641	Problem Investigations in Environmental Health	3	6						
500	PUBH 662	Graduate Research Seminar II	3	6						

501	PUBH 681	Master's Project Planning	3	6							
<b>SMG</b>											
<b>Mining Engineering</b>											
502	MINE 500	Foundations of Mining	3	6							
503	MINE 511	Applied Geostatistics	3	6							
504	MINE 512	Geology for Mining Engineers	3	6							
505	MINE 513	Rock Excavation Methods	3	6							
506	MINE 518	Advanced Rock Mechanics	3	6							