

## Course Requirements and Registration Priorities Spring 2018

#	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 210	Foundations of Unit Operations	3	6							
2	ECHE 221	Engineering Fluid Mechanics	3	6							
3	ECHE 270	Transport Phenomena-I	3	6							
4	ECHE 323	Computational methods in Chemical Engineering-I	3	6	ECHE 333 Separation Processes-I (D and above)	ECHE 481 Chemical Reaction Engineering (D and above)					
5	ECHE 383	Separation Processes II	3	6	ECHE 126 Introduction to Chemical Engineering (D and above) AND ECHE 225 Heat and Mass Transfer Operations (D and above)						
6	ECHE 386	Chemical Plant Design and Optimization	3	6							
7	ECHE 387	Chemical Reaction Engineering 2	3	6							
8	ECHE 388	Process Dynamics and Control	3	6							
9	ECHE 420	Polymer Processing and Rheology	3	6							
10	ECHE 421	Tissue Engineering	3	6							
11	ECHE 478	Electrochemical Engineering and Corrosion Protection	3	6	ECHE 222 Chemistry I (D and above)						
12	ECHE 479	Capstone Project II	9	18	ECHE 418 Capstone project 1 (D and above)						
13	ECHE 483	Chemistry II	3	6	ECHE 222 Chemistry I (D and above)						
14	MCHE 601	Pipeline Engineering & Flow Assurance	3	6							
15	MCHE 602	Process Engineering and Simulation	3	6	MCHE 615 Advanced Unit Operations (D and above)						
16	MCHE 603	Crude Oil Processing	3	6							
17	MCHE 604	Natural Gas Processing	3	6							

18	MCHE 605	Petroleum Refining Water/Wastewater Use and Management	3	6							
<b>Civil Engineering</b>											
19	ECE 210	Soil Mechanics	3	6							
20	ECE 218	Environmental Chemistry	3	6							
21	ECE 219	Hydraulics	3	6							
22	ECE 306	Geotechnical Design	3	6	ECE 210 Soil Mechanics (D and above)						
23	ECE 319	Structural Design - Steel	3	6							
24	ECE 320	Engineering Hydrology	3	6							
25	ECE 405	Environmental Engineering	3	6	ECE 473 Environmental Systems (D and above) OR ECE 218 Environmental Chemistry (D and above)						
26	ECE 420	Modern Information Technology in Construction	3	6							
27	ECE 421	Behaviour and Design of Structural System	3	6	(ECE 318 Structural Design - Concrete (D and above) OR ECE 314 Structural Engineering Applications I (D and above)) AND (ECE 319 Structural Design - Steel (D and above) OR ECE 315 Structural Engineering Applications II (D and above))						
28	ECE 422	Prestressed Concrete Design	3	6							
29	ECE 423	Structure and Properties of Concrete Materials	3	6							
30	ECE 472	Water and Wastewater Treatment Processes	3	6	ECE 218 Environmental Chemistry (D and above)						
31	ECE 478	Capstone Project II	9	18	ECE 401 Capstone Project 1 (D and above)						
32	ECE 479	Structural Analysis II	3	6	ECE 217 Structural Analysis I (D and above)						
33	EMEM 510	Managerial Accounting	2	4							
34	EMEM 511	Business Strategy	2	4							
35	EMEM 512	Leading Change	2	4							
36	EMEM 513	Entrepreneurship	2	4							
37	EMEM 514	Finance	2	4							

38	EMEM 516	Management of Organizations	2	4						
39	EMEM 517	Marketing	2	4						
40	EMEM 529	Capstone Project	8	16						
41	EMEM 535	Managing Product and Service Development	3	6						
42	EMEM 543	Quality and Lean Management	3	6						
43	EMEM 545	Business Communication	2	4						
44	MCE 609	Contaminated Site Management and Soil Treatment Technologies	3	6						
45	MCE 610	Sustainable Transportation Systems	3	6						
46	MCE 611	Sustainable Infrastructure Systems	3	6						
47	MCE 612	Resilient Structural and Geotechnical Systems	3	6						
<b>Electrical and Electronic Engineering</b>										
48	EEE 210	Software Engineering	3	6	BENG 146 Programming for Engineers (D and above)					
49	EEE 211	Computer Systems Architecture	3	6	ECHE 126 Introduction to Chemical Engineering (D and above)					
50	EEE 239	Communication systems	3	6						
51	EEE 340	Data Communications	3	6						
52	EEE 341	Digital Electronic System Design	3	6						
53	EEE 343	Embedded Microcontrollers	3	6						
54	EEE 379	Power Systems Analysis	3	6						
55	EEE 381	Electrical Machines and Drives	3	6						
56	EEE 411	Special Topics in Signal Processing	3	6						
57	EEE 480	Capstone Project II	9	18						
58	EEE 484	Electric Power Generation	3	6						
59	EEE 485	Power System Operation and Control	3	6	EEE 379 Power Systems Analysis (D and above) OR EEE 452 Power Systems Protection (D and above)					
60	EEE 486	Photonics for Engineering	3	6	EEE 342 Electromagnetics (D and above)					

61	EEE 487	Intelligent Algorithms for Power Systems	3	6							
62	EEE 488	Numerical Optimization Techniques and Computer Applications	3	6							
63	EEE 489	Analog Circuit Design	3	6							
64	MEE 601	Industrial and Commercial Power System	3	6							
65	MEE 602	Advanced Power Electronics	3	6							
66	MEE 609	Internet of Things	3	6							
67	MEE 615	Wireless Communications	3	6							
68	MEE 618	Optical Communication	3	6							
69	MEE 620	RF and Microwave Communications Systems	3	6							
70	MEE 624	Pattern Recognition	3	6							
71	MEE 627	Switched Capacitor Converters (Special Topics in Power Engineering)	3	6							
72	MEE 629	System Design for Wireless	3	6							
<b>Mechanical Engineering</b>											
73	EME 275	Fluid Mechanics I	3	6							
74	EME 300	Research Project	3	6							
75	EME 352	Computational Fluid Dynamics	3	6							
76	EME 357	Fluid Mechanics 2	3	6							
77	EME 377	Mechanical Systems Design	3	6	EME 361 Machine Design (D and above)						
78	EME 414	Fire Engineering	3	6	BENG 226 Engineering Thermodynamics (D and above)						
79	EME 415	Flight Mechanics	3	6							
80	EME 464	Materials and Manufacturing 1	3	6							
81	EME 476	Materials and Manufacturing II	3	6							
82	EME 477	Capstone Project II	9	18							
83	EME 479	Particulate Technology	3	6							
84	EME 480	Industrial Automation	3	6							
85	EME 488	Structural Mechanics	3	6							
86	MME 622	Advanced Design and Manufacturing	3	6							
87	MME 623	Design and Manufacturing with Environmental Concern	3	6							
88	MME 624	Design Optimization	3	6							

89	MME 625	Advanced Computer Aided Engineering	3	6							
90	MME 626	Advanced Manufacturing Processes and Strategies	3	6							
<b>School of Engineering</b>											
91	BENG 114	Introduction to Electrical Systems	3	6							
92	BENG 147	Introduction to Fluid Mechanics and Thermodynamics	3	6	BENG 124 Engineering Mathematics I (D and above)						
93	BENG 148	Engineering Practice	3	6							
94	BENG 201	Engineering Economy	3	6							
95	BENG 219	Control Systems	3	6							
96	BENG 225	Engineering Mathematics II	3	6							
97	BENG 226	Engineering Thermodynamics	3	6							
98	BENG 304	Internship	2	4							
99	DENG 794	Dissertation Research	12	24	DENG 785 PhD proposal oral defence (C- and above)						
100	DENG 796	Thesis Completion	0	0							
101	DENG 797	Oral Defence of PhD Dissertation	0	0	DENG 785 PhD proposal oral defence (C- and above) AND DENG 789 Doctoral Seminar I (C- and above) AND DENG 790 Doctoral Seminar II (C- and above)						
<b>SST</b>											
<b>Biological Science</b>											
102	BIOL 101	Biology for non-Science majors	3	6				SHSS			
103	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	
104	BIOL 120	Modern Biology II with Lab	4	8	BIOL 110 Modern Biology I with Lab (C- and above)		BIOL 120 Modern Biology II (C- and above) OR BIOL 120 Modern Biology II Lab (C- and above)	Biological Sciences, Chemistry	SST	SHSS	
105	BIOL 231	Human Anatomy and Physiology II	4	8	BIOL 230 Human Anatomy and Physiology I (C- and above)			Biological Sciences	SST	SEng, SHSS	

106	BIOL 301	Molecular Biology of Cell with Lab	4	8	(BIOL 110 Modern Biology I with Lab (C- and above) OR PREM 110 Pre-med Biology I with lab (C- and above) OR BIOL 110 Modern Biology I (C- and above) OR BIOL 110 Modern Biology I Lab (C- and above)) AND (BIOL 120 Modern Biology II with Lab (C- and above) OR BIOL 120 Modern Biology II (C- and above) OR BIOL 120 Modern Biology II Lab (C- and above))			Biological Sciences	SST	SEng, SHSS	
107	BIOL 341	Biochemistry I	3	6	CHEM 211 Organic Chemistry I (C- and above) OR CHEM 291 Organic Chemistry for Biologists I (C- and above)			Biological Sciences	SST	SEng, SHSS	
108	BIOL 370	Genetics	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))			Biological Sciences	SST	SEng, SHSS	
109	BIOL 420	Bioethics	3	6	(BIOL 110 Modern Biology I (C- and above) OR BIOL 110 Modern Biology I Lab (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 Lab (C- and above) OR BIOL 120 Modern Biology II with Lab (C- and above))			Biological Sciences	SST	SEng, SHSS	
110	BIOL 430	Histology with laboratory	4	8	BIOL 230 Human Anatomy and Physiology I (C- and above) AND BIOL 231 Human Anatomy and Physiology II (C- and above)			Biological Sciences	SST	SEng, SHSS	
111	BIOL 440	Neuroscience	3	6	BIOL 231 Human Anatomy and Physiology II (C- and above)			Biological Sciences	SST	SEng, SHSS	
112	BIOL 456	Biology Research Design	3	6	BIOL 355 Critical Research Reasoning (C- and above)			Biological Sciences	SST	SEng, SHSS	

113	BIOL 491	Graduation Project 2	4	8	BIOL 490 Graduation Project 1 (C- and above)			Through Add form only			
114	BIOL 492	Directed study in Biology	3	6							
115	BIOL 530	Bioethics Principles and Practices	3	6				1 year Gr SST Biological Sciences			
116	BIOL 550	Structural and Molecular Biology in Health and Disease	3	6				1 year Gr SST Biological Sciences			
117	BIOL 560	Molecular Biology of Prokaryotic Cells	3	6				1 year Gr SST Biological Sciences			
118	BIOL 600	Graduate Seminar Series	3	6				1 year Gr SST Biological Sciences, 2 year Gr SST Biological Sciences			
119	BIOL 637	Fundamentals of Advanced Microscopy	3	6	BIOL 501 Fundamentals of Biological Sciences (C- and above)						
120	BIOL 699	Research Thesis II	6	12				2 year Gr SST Biological Sciences			
<b>Chemistry</b>											
121	CHEM 092	Survey of Environmental Sciences for Non-Science Majors	3	6				SHSS			
122	CHEM 101	General Chemistry I	3	6				Biological Sciences, Chemistry	SST	SHSS	
123	CHEM 102	General Chemistry II	3	6	CHEM 101 General Chemistry I (C and above)			Biological Sciences, Chemistry	SST	SHSS	
124	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)		Biological Sciences, Chemistry	SST	SHSS	
125	CHEM 211	Organic Chemistry I	3	6	CHEM 102 General Chemistry II (C and above)			2 year UG SST Biological Sciences, Chemistry	Biological Sciences	SST	
126	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)		2 year UG SST Biological Sciences, Chemistry	Biological Sciences	SST	
127	CHEM 212	Organic Chemistry II	3	6	CHEM 211 Organic Chemistry I (C and above) OR CHEM 191 Chemistry I for Engineers (C and above)			Chemistry	Biological Sciences	SST	

128	CHEM 212L	Organic Chemistry II Lab	2	4	CHEM 211L Organic Chemistry I Lab (C and above)	CHEM 212 Organic Chemistry II (C and above) OR CHEM 292 Organic Chemistry for Biologists II (C and above)		Chemistry	Biological Sciences	SST	
129	CHEM 320	Instrumental Analysis with Labs	4	8	CHEM 220 Quantitative Chemical Analysis with lab (C and above)			Chemistry	Biological Sciences	SST	
130	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)						
131	CHEM 332	Physical Chemistry II	3	6	CHEM 331 Physical Chemistry I (C and above) AND MATH 274 Introduction to Differential Equations (C- and above)			Chemistry	Biological Sciences	SST	
132	CHEM 332L	Physical Chemistry II Lab	1	2	CHEM 331L Physical Chemistry Lab (C and above)	CHEM 332 Physical Chemistry II (C and above)		Chemistry	Biological Sciences	SST	
133	CHEM 380	Research Methods	3	6				Chemistry	Biological Sciences	SST	
134	CHEM 442	Biochemistry II with Lab-Metabolic Biochemistry	3	6	CHEM 341 Biochemistry I (C and above) AND CHEM 212 Organic Chemistry II (C and above)			Chemistry	Biological Sciences	SST	
135	CHEM 451	Applied Homogenous Catalysis	3	6	CHEM 450 Advanced Inorganic Chemistry (C and above)			Chemistry	Biological Sciences	SST	
136	CHEM 490	Nanochemistry	3	6	CHEM 331 Physical Chemistry I (C and above) AND CHEM 350 Descriptive Inorganic Chemistry (C and above)			Chemistry	Biological Sciences	SST	
137	CHEM 491	Special Topics in Chemistry	3	6				Chemistry	Biological Sciences	SST	

**Computer Science**



138	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	
139	CSCI 152	Performance and Data Structures	4	8	CSCI 151 Programming for Scientists and Engineers (C- and above) OR CSCI 150 Fundamentals of Programming (C- and above) OR CSCI 261 Object Oriented Programming with Java I (C- and above) OR ROBT 102 Programming for robotics and physics (C- and above)			1 year UG SST	SST	SHSS	
140	CSCI 235	Programming Languages	4	8	CSCI 152 Performance and Data Structures (C and above)			3 year UG SST Computer Science	Computer Science	SEng, SHSS, SST	
141	CSCI 245	System Analysis and Design	3	6	CSCI 341 Database Systems (C- and above)			Computer Science	SST	SEng, SHSS	
142	CSCI 330	Mobile Computing	3	6	CSCI 332 Operating Systems (C- and above)			Computer Science	SST	SEng, SHSS	
143	CSCI 332	Operating Systems	3	6	CSCI 231 Computer Systems and Organization (C- and above)			2 year UG SST Computer Science	Computer Science	SEng, SHSS, SST	
144	CSCI 333	Computer Networks	3	6	CSCI 152 Performance and Data Structures (C- and above)			2 year UG SST Computer Science	Computer Science	SEng, SHSS, SST	
145	CSCI 336	Ubiquity and Sensing	3	6	CSCI 333 Computer Networks (C- and above)			Computer Science	SST	SEng, SHSS	
146	CSCI 361	Software Engineering	3	6	CSCI 152 Performance and Data Structures (C- and above)			3 year UG SST Computer Science	Computer Science	SEng, SHSS, SST	
147	CSCI 398	Directed Study	3	6				Through Add form only			
148	CSCI 399	Internship II	3	6				Through Add form only			
149	CSCI 408	Senior Project I	3	6				4 year UG SST Computer Science			
150	CSCI 409	Senior Project II	3	6	CSCI 408 Senior Project I (C- and above)			Through Add form only			
151	CSCI 462	Open Source Software	3	6	CSCI 361 Software Engineering (C- and above)			Computer Science	SST	SEng, SHSS	
152	CSCI 502	Hardware Software Co-Design	3	6	CSCI 501 Software Principles and Practice (C- and above)			1 year Gr SST Computer Science, 1 year Gr SST Robotics and Mechatronics			

153	CSCI 591	Advanced Artificial Intelligence	3	6	CSCI 501 Software Principles and Practice (C- and above)			1 year Gr SST Computer Science			
<b>Mathematics</b>											
154	MATH 161	Calculus I	4	8				Biological Sciences, Chemistry	SST	SHSS	
155	MATH 162	Calculus II	4	8	MATH 161 Calculus I (C and above)			1 year UG SST	SST	SHSS	
156	MATH 251	Discrete Mathematics	3	6	MATH 162 Calculus II (C and above)			Computer Science, Mathematics	SST	SHSS	
157	MATH 263	Calculus III	4	8	MATH 162 Calculus II (C and above)			2 year UG SST Undeclared, Mathematics	SST	SHSS	
158	MATH 273	Linear Algebra with Applications	4	8	MATH 161 Calculus I (C and above)	MATH 162 Calculus II (C and above)		Mathematics	SST	SHSS	
159	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)			2 year UG SST Undeclared, Mathematics	SST	SHSS	
160	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)	Mathematics	SST	SHSS	
161	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)	Mathematics	SST	SHSS	
162	MATH 322	Mathematical Statistics	3	6	MATH 321 Probability (C- and above)			Mathematics	SST	SHSS	
163	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	SST	SHSS	
164	MATH 361	Real Analysis I	3	6	MATH 263 Calculus III (C- and above)			Mathematics	SST	SHSS	

165	MATH 407	Graph Theory	3	6	MATH 301 Introduction to Number Theory (C- and above) OR (MATH 251 Discrete Mathematics (C- and above) AND MATH 273 Linear Algebra with Applications (C- and above))		Mathematics	SST	SHSS	
166	MATH 412	Nonlinear Optimization	3	6	MATH 273 Linear Algebra with Applications (C- and above) AND (MATH 263 Calculus III (C- and above) OR MATH 169 Accelerated Calculus (C- and above))		Mathematics	SST	SHSS	
167	MATH 417	Cryptography	3	6	MATH 273 Linear Algebra with Applications (C- and above) AND (MATH 251 Discrete Mathematics (C- and above) OR MATH 301 Introduction to Number Theory (C- and above) OR MATH 355 Introduction to Proofs (C- and above))		Mathematics	SST	SHSS	
168	MATH 423	Actuarial Mathematics II	3	6	MATH 321 Probability (C- and above)		Mathematics	SST	SHSS	
169	MATH 460	Topology	3	6	MATH 361 Real Analysis I (C- and above)		Mathematics	SST	SHSS	
170	MATH 461	Real Analysis II	3	6	MATH 361 Real Analysis I (C- and above)		Mathematics	SST	SHSS	
171	MATH 477	Applied Finite Element Methods	3	6	MATH 351 Numerical Methods with Applications (C and above)		Mathematics	SST	SHSS	
172	MATH 480	Complex Analysis	3	6	MATH 263 Calculus III (C- and above)		Mathematics	SST	SHSS	
173	MATH 482	Fourier Analysis	3	6	MATH 263 Calculus III (C- and above) AND MATH 274 Introduction to Differential Equations (C- and above)		Mathematics	SST	SHSS	
174	MATH 490	Special Topics in Mathematics	3	6			Mathematics	SST	SHSS	
175	MATH 499	Capstone Project	3	6			Through Add form only			
176	MATH 512	Optimization Methods and Techniques	3	6	MATH 517 Scientific Modeling and Simulation with Mathematics (B- and above)			1 year Gr SST Applied Mathematics		
177	MATH 541	Data Analysis and Statistical Learning	3	6	MATH 540 Statistical Learning I (B- and above)			1 year Gr SST Applied Mathematics		
178	MATH 551	Advanced Numerical Methods	3	6	MATH 517 Scientific Modeling and Simulation with Mathematics (B- and above)			1 year Gr SST Applied Mathematics		

**Physics**

179	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	SEng, SHSS		
180	PHYS 162	Physics II for Scientists and Engineers with Laboratory	4	8	PHYS 161 Physics I for Scientists and Engineers with Laboratory (C- and above) OR PHYS 151 Introductory Physics I with Lab (C- and above)		PHYS 172 Physics II for Physics Majors with Laboratory (C- and above)	SST	SEng, SHSS		
181	PHYS 202	Introductory Astrophysics	3	6	(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)) AND (MATH 161 Calculus I (C- and above) OR MATH 169 Accelerated Calculus (C- and above))			SST	SEng, SHSS		
182	PHYS 222	Classical Mechanics II	3	6	PHYS 221 Classical Mechanics I (C- and above)			Physics	SST		
183	PHYS 270	Computational Physics with Laboratory	3	6	(CSCI 150 Fundamentals of Programming (C- and above) OR CSCI 151 Programming for Scientists and Engineers (C- and above)) AND MATH 263 Calculus III (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))	MATH 273 Linear Algebra with Applications (D and above)		Physics	SST		
184	PHYS 280	Thermodynamics and Statistical Physics	3	6	MATH 263 Calculus III (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))			Physics	SST		
185	PHYS 362	Classical Electrodynamics II	3	6	PHYS 361 Classical Electrodynamics I (C- and above)			Physics	SST		
186	PHYS 370	Optics with Laboratory	4	8	PHYS 361 Classical Electrodynamics I (C- and above)			Physics	SST		

187	PHYS 395	Research Methods	3	6	PHYS 261 Modern Physics with laboratory (C- and above) OR PHYS 270 Computational Physics with Laboratory (C- and above)			Physics	SST		
188	PHYS 451	Quantum Mechanics I	3	6	(PHYS 315 Mathematical Methods of Physics (C- and above) OR PHYS 411 Advanced Mathematical Physics (C- and above)) AND PHYS 221 Classical Mechanics I (C- and above) AND PHYS 361 Classical Electrodynamics I (C- and above)			Physics	SST		
189	PHYS 483	Statistical Mechanics	3	6				Physics	SST		
190	PHYS 491	Directed Study of Advanced Physics Topics	3	6				Through Add form only			
191	PHYS 499	Graduation Project	3	6	PHYS 451 Quantum Mechanics I (C- and above)			Through Add form only			
192	PHYS 510	Quantum Mechanics	3	6				1 year Gr SST Physics			
193	PHYS 520	Statistical Physics	3	6				1 year Gr SST Physics			
194	SST 502	Teaching Practicum	3	6	SST 501 Teaching and Learning (C- and above)			1 year Gr SST Applied Mathematics, 1 year Gr SST Computer Science, 1 year Gr SST Physics, 1 year Gr SST Robotics and Mechatronics			
195	SST 504	Innovation & Entrepreneurship	3	6				1 year Gr SST Computer Science, 1 year Gr SST Physics, 1 year Gr SST Robotics and Mechatronics			
196	SST 592	Research Seminar	3	6				1 year Gr SST Applied Mathematics, 1 year Gr SST Computer Science, 1 year Gr SST Physics, 1 year Gr SST Robotics and Mechatronics			
197	SST 692	Thesis	15	30				2 year Gr SST Computer Science, 2 year Gr SST Physics, 2 year Gr SST Robotics and Mechatronics			

**Robotics and Mechatronics**

198	ROBT 202	System Dynamics and Modeling	3	6	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	SST	SHSS	
199	ROBT 204	Electrical and Electronic Circuits II with Lab	4	8	ROBT 203 Electrical and Electronic Circuits I with Lab (C- and above)			Physics, Robotics and Mechatronics	SST	SHSS	
200	ROBT 206	Microcontrollers with Lab	4	8	CSCI 151 Programming for Scientists and Engineers (C- and above) OR ROBT 102 Programming for robotics and physics (C- and above) OR CSCI 150 Fundamentals of Programming (C- and above)			Computer Science, Robotics and Mechatronics	SST	SHSS	
201	ROBT 302	Mechanical Design II with Machining Laboratory	4	8	ROBT 301 Mechanical Design I with CAD Laboratory (C- and above)			Robotics and Mechatronics	SST	SHSS	
202	ROBT 304	Electromechanical Systems with lab	4	8	ROBT 204 Electrical and Electronic Circuits II with Lab (C- and above)			Robotics and Mechatronics	SST	SHSS	
203	ROBT 308	Industrial Automation	3	6				Computer Science, Robotics and Mechatronics	SST	SHSS	
204	ROBT 310	Image Processing	3	6	MATH 162 Calculus II (C- and above) AND MATH 273 Linear Algebra with Applications (C- and above)			Computer Science, Robotics and Mechatronics	SST	SHSS	
205	ROBT 402	Robotic/Mechatronic System Design	3	6	ROBT 204 Electrical and Electronic Circuits II with Lab (C- and above) AND ROBT 206 Microcontrollers with Lab (C- and above) AND ROBT 302 Mechanical Design II with Machining Laboratory (C- and above)			Robotics and Mechatronics			
206	ROBT 414	Human-Robot Interaction	3	6	CSCI 152 Performance and Data Structures (C- and above)			Computer Science, Robotics and Mechatronics	SST	SHSS	
207	ROBT 491	Graduation Project	3	6				Robotics and Mechatronics			
208	ROBT 502	Robot Perception & Vision	3	6	ROBT 501 Robot Manipulation and Mobility (C- and above)			1 year Gr SST Robotics and Mechatronics			

**SHSS**

**Area Studies**

209	EAS 502	Disciplinary Methodology	4	8							
210	EAS 504	Thesis II	12.5	25	EAS 500 Introduction to Eurasia (C- and above) AND EAS 501 General Methodology (C- and above) AND EAS 502 Disciplinary Methodology (C- and above) AND EAS 503 Thesis I (C- and above)			Eurasian Studies			
211	EAS 511	Independent Study in Eurasian Studies	4	8				Through Add form only			
<b>Communication and Composition</b>											
212	COMM 202	Introduction to Public Speaking	3	6	SHSS 150 Rhetoric and Composition (C- and above)			3 year UG SEng Civil Engineering, SHSS, SST			
213	COMM 240	Health Communication	3	6				3 year UG SEng Civil Engineering, SHSS, SST			
214	COMM 325	Computer-Mediated Communication	3	6				3 year UG SEng Civil Engineering, SHSS, SST			
215	SHSS 150	Rhetoric and Composition	3	6				1 year UG SHSS	2 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST	
216	SHSS 230	Rhetoric & Style in Academic Writing	3	6	SHSS 150 Rhetoric and Composition (C- and above)			1 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST		
217	SHSS 300	SHSS Internship	3	6				Through Add form only			
218	SHSS 301	SHSS Internship Second Experience	3	6							
219	SHSS 391	Writing Fellows II - Practicum in Composition & Collaboration	3	6	SHSS 390 Writing Fellows I - Composition and Collaboration in Theory and Practice (C- and above)			Through Add form only			
<b>Communication and Composition, Languages, Literature and Linguistics</b>											
220	SHSS 260/WLL 235	Creative Writing: Introduction to Fiction Writing I	3	6	SHSS 150 Rhetoric and Composition (C- and above)			Through Add form only			
<b>Economics</b>											
221	ECON 101	Introduction to Microeconomics	3	6				1 year UG SHSS	SHSS	3 year UG SEng Civil Engineering, SST	
222	ECON 102	Introduction to Macroeconomics	3	6				1 year UG SHSS	SHSS	3 year UG SEng Civil Engineering, SST	

223	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))			Economics	SHSS	3 year UG SEng Civil Engineering, SST	
224	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))			Economics	SHSS	3 year UG SEng Civil Engineering, SST	
225	ECON 211	Economic Statistics	3	6	ECON 101 Introduction to Microeconomics (C and above) OR ECON 102 Introduction to Macroeconomics (C and above)			Economics	SHSS	3 year UG SEng Civil Engineering, SST	
226	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	SST	
227	ECON 321	Economic Growth	3	6	ECON 202 Intermediate Macroeconomics (C- and above)			Economics	SHSS	3 year UG SEng Civil Engineering, SST	
228	ECON 341	Economic Simulation Modeling	3	6	ECON 201 Intermediate Microeconomics (C- and above)			Economics	SHSS	3 year UG SEng Civil Engineering, SST	
229	ECON 345	The Economics of Family	3	6	ECON 201 Intermediate Microeconomics (C- and above)			Economics	SHSS	3 year UG SEng Civil Engineering, SST	
230	ECON 413	Econometrics II	3	6	ECON 301 Econometrics I (C- and above)			Economics	SHSS	3 year UG SEng Civil Engineering, SST	
231	ECON 428	Wages and the Labor Market	3	6	ECON 201 Intermediate Microeconomics (C- and above) AND ECON 301 Econometrics I (C- and above)			Economics	SHSS	3 year UG SEng Civil Engineering, SST	
232	ECON 451	Topics in Microeconomics	3	6	ECON 201 Intermediate Microeconomics (C- and above)			Through Add form only			
233	ECON 521	Microeconomic Theory II	4	8	ECON 501 Microeconomics I (C- and above) AND ECON 512 Mathematical Economics (C- and above)			Economics, Eurasian Studies, Political Science and International Relations			



234	ECON 522	Macroeconomics II	4	8	ECON 502 Macroeconomics I (C- and above) AND ECON 512 Mathematical Economics (C- and above)			Economics, Eurasian Studies, Political Science and International Relations			
235	ECON 524	Research Methodology	4	8	ECON 501 Microeconomics I (C- and above) AND ECON 502 Macroeconomics I (C- and above) AND ECON 511 Statistics (C- and above)	ECON 531 Econometrics (D and above)		Economics, Eurasian Studies, Political Science and International Relations			
236	ECON 528	Wages and the Labor Market	4	8	ECON 521 Microeconomic Theory II (C- and above) AND ECON 531 Econometrics (C- and above)			Economics, Eurasian Studies, Political Science and International Relations			
237	ECON 531	Econometrics	4	8	ECON 511 Statistics (C- and above) AND ECON 512 Mathematical Economics (C- and above)			Economics, Eurasian Studies, Political Science and International Relations			
238	ECON 590	Thesis II	8	16	ECON 589 Thesis I (P and above)						
<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 SHSS	SEng, SHSS, SST	
240	HST 132	European History II (from 1700)	3	6				History	1 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST	
241	HST 152	US History II (from 1877)	3	6				History	3 year UG SEng Civil Engineering, SHSS, SST		
242	HST 232	Russian History from Rurik to Catherine the Great	3	6				History	1 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST	
243	HST 239	Modernizing the Periphery: Crime, Community and Culture in Central Europe, 1790 - 1990	3	6	Subject "HST" BETWEEN 100 and 199			History	1 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST	
244	HST 272	Modern Turkey: from the Ottoman Empire to the Turkish Republic	3	6				1 year UG SENG, 1 year UG SHSS, 1 year UG SST	3 year UG SEng Civil Engineering, SHSS, SST		
245	HST 331	The Eurasian Enlightenment	3	6	HST 100 History of Kazakhstan (B and above) OR Subject "HST" BETWEEN 100 and 199			History	3 year UG SEng Civil Engineering, SHSS, SST		

246	HST 499	History Capstone: Undergraduate Dissertation	4	8	HST 498 Directed Reading (C- and above)				Through Add form only		
247	HST 524	Global Histories	4	8							
248	PHIL 101	Introduction to Philosophy	3	6				SHSS	3 year UG SEng Civil Engineering, SST		
249	PHIL 124	Knowledge and Reality	3	6				SHSS	3 year UG SEng Civil Engineering, SST		
250	PHIL 131	Introduction to Contemporary Political Philosophy	3	6				SHSS	3 year UG SEng Civil Engineering, SST		
251	PHIL 205	Introduction to Modern Philosophy	3	6				SHSS	3 year UG SEng Civil Engineering, SST		
252	PHIL 210	Ethics	3	6				Chemistry	SHSS	3 year UG SEng Civil Engineering, SST	
253	PHIL 223	Philosophy of Science	3	6				SHSS	3 year UG SEng Civil Engineering, SST		
254	PHIL 240	Formal Logic	3	6				SHSS	3 year UG SEng Civil Engineering, SST		
255	PHIL 320	Truth, Knowledge and Belief	3	6				SHSS	3 year UG SEng Civil Engineering, SST		
256	PHIL 321	Social Contract Theory	3	6	PLS 120 Introduction to Political Theory (C- and above)			SHSS	3 year UG SEng Civil Engineering, SST		
257	PHIL 352	Sex, Life, and Death: The Philosophy of Biology	3	6				SHSS	3 year UG SEng Civil Engineering, SST		
258	REL 212	Buddhist Religious Traditions	3	6				1 year UG SENG, 1 year UG SHSS, 1 year UG SST	3 year UG SEng Civil Engineering, SHSS, SST		

**History, Philosophy and Religious Studies, History, Philosophy and Religious Studies**

259	REL 263/HST 263	The History of Islam II: Islam in the Modern World	3	6	Subject "HST" BETWEEN 100 and 199		History	1 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST	
<b>History, Philosophy and Religious Studies, Languages, Literature and Linguistics</b>										
260	WLL 102 /PHIL 102	Language, Experience, Culture	3	6				3 year UG SEng Civil Engineering, SHSS, SST		
<b>History, Philosophy and Religious Studies, Languages, Literature and Linguistics, Political Science and International Relations</b>										
261	HST 342/WLL 342/PLS 322	Russian Intellectual History (1762 - 1905)	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	3 year UG SEng Civil Engineering, SHSS, SST		
<b>History, Philosophy and Religious Studies, Political Science and International Relations</b>										
262	PLS 328/REL 328	Confucianism and the Development of Chinese Politics	3	6				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
<b>History, Philosophy and Religious Studies, Sociology and Anthropology</b>										
263	ANT 313/REL 332	Islam and Politics in Eurasia	3	6				4 year UG SHSS Political Sciences and International Relations, Anthropology	3 year UG SHSS Political Sciences and International Relations	3 year UG SEng Civil Engineering, SHSS, SST
264	HST 223/ANT 287	Cannibalism and Civilization	3	6				Anthropology, History	1 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST
265	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, Sociology	1 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST
<b>Kazakh Language and Turkic Studies</b>										
266	KAZ 001	Kazakh Language Placement Test	0	0						
267	KAZ 101	Basic Kazakh I	3	6	KLL "Basic I"					SEng, SHSS, SST
268	KAZ 111	Intermediate Kazakh I	3	6	KLL "Intermediate I"					SEng, SHSS, SST
269	KAZ 121	Upper-Intermediate Kazakh	3	6	KLL "Upper-Intermediate"					SEng, SHSS, SST
270	KAZ 211	Academic Speaking in Kazakh	3	6	KAZ 202 Academic Kazakh II (C- and above)					SEng, SHSS, SST
271	KAZ 212	Academic Writing in Kazakh	3	6	KLL "Advanced" OR KLL "Upper-Intermediate"					SEng, SHSS, SST

272	KAZ 226	Kazakh for Medical School	3	6	KLL "Upper-Intermediate" OR KLL "Advanced"					SEng, SHSS, SST	
273	KAZ 263	Business Etiquette	3	6	KLL "Upper-Intermediate" OR KLL "Advanced"					SEng, SHSS, SST	
274	KAZ 313	Kazakh for Business	3	6	KLL "Advanced" OR KLL "Upper-Intermediate"					SEng, SHSS, SST	
275	KAZ 314	Speech Culture in Business	3	6	KLL "Upper-Intermediate" OR KLL "Advanced"					SEng, SHSS, SST	
276	KAZ 351	Kazakh Short Stories	3	6	KLL "Advanced" OR KLL "Upper-Intermediate"					SEng, SHSS, SST	
277	KAZ 354	Kazakh Drama	3	6	KLL "Advanced" OR KLL "Upper-Intermediate"					SEng, SHSS, SST	
278	KAZ 356	Kazakh Music History	3	6	KLL "Advanced"					SEng, SHSS, SST	
279	KAZ 357	Literature of Alash	3	6	KLL "Advanced" OR KLL "Upper-Intermediate"					SEng, SHSS, SST	
280	KAZ 362	Creative Writing in Kazakh Language	3	6	KLL "Upper-Intermediate" OR KLL "Advanced"					SEng, SHSS, SST	
281	KAZ 364	Kazakh for Civil Service	3	6	KLL "Advanced" OR KLL "Upper-Intermediate" OR KAZ 314 Speech Culture in Business (C- and above)					SEng, SHSS, SST	
282	KAZ 370	Kazakh for Career Development	3	6	KLL "Upper-Intermediate" OR KLL "Advanced"					SEng, SHSS, SST	
283	KAZ 371	Contemporary Kazakh Literature	3	6	KLL "Advanced"					SEng, SHSS, SST	
284	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)					SEng, SHSS, SST	
285	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)					SEng, SHSS, SST	
286	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"					SEng, SHSS, SST	

287	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)					SEng, SHSS, SST	
288	TUR 230	Literatures of Central Asia	3	6					3 year UG SEng Civil Engineering, SHSS, SST		
289	TUR 412	Advanced Turkish in Media and Politics	3	6					3 year UG SEng Civil Engineering, SHSS, SST		
290	TUR 451	The Turkish Novel	3	6					3 year UG SEng Civil Engineering, SHSS, SST		
<b>Languages, Literature and Linguistics</b>											
291	CHN 101	Beginning Mandarin I	4	8							
292	CHN 102	Beginning Mandarin II	4	8	CHN 101 Beginning Mandarin I (B- and above)				World Languages, Literature and Culture	SHSS	3 year UG SEng Civil Engineering, SST
293	CHN 202	Intermediate Mandarin II	4	8	CHN 201 Intermediate Mandarin I (B- and above)				World Languages, Literature and Culture	SHSS	3 year UG SEng Civil Engineering, SST
294	FRE 202	Intermediate French II	4	8	FRE 201 Intermediate French I (C- and above)				World Languages, Literature and Culture	SHSS	3 year UG SEng Civil Engineering, SST
295	FRE 322	Contemporary French Civilization	3	6	FRE 202 Intermediate French II (C- and above)				World Languages, Literature and Culture	SHSS	3 year UG SEng Civil Engineering, SST
296	GER 201	Intermediate German I	4	8	GER 102 Beginning German II (C- and above)				World Languages, Literature and Culture	SHSS	3 year UG SEng Civil Engineering, SST
297	GER 202	Intermediate German II	4	8	GER 201 Intermediate German I (C- and above)				World Languages, Literature and Culture	SHSS	3 year UG SEng Civil Engineering, SST
298	LING 130	Introduction to Language and Communication	3	6					World Languages, Literature and Culture	3 year UG SEng Civil Engineering, SHSS, SST	
299	LING 131	Introduction to Linguistics	3	6					World Languages, Literature and Culture	3 year UG SEng Civil Engineering, SHSS, SST	

300	LING 270	Languages of Eurasia	3	6				World Languages, Literature and Culture	SHSS	3 year UG SEng Civil Engineering, SST	
301	LING 272	Language and the Mind	3	6				SHSS	3 year UG SEng Civil Engineering, SST		
302	LING 278	Sounds of the World's Languages	3	6				World Languages, Literature and Culture	SHSS	3 year UG SEng Civil Engineering, SST	
303	LING 375	Psycholinguistics	3	6	LING 131 Introduction to Linguistics (C- and above) OR LING 272 Language and the Mind (C- and above) OR LING 273 Survey of Research Methods in Linguistics (C- and above)			World Languages, Literature and Culture	SHSS	3 year UG SEng Civil Engineering, SST	
304	SPA 102	Beginning Spanish II	4	8	SPA 101 Beginning Spanish I (C- and above)			World Languages, Literature and Culture	SHSS	3 year UG SEng Civil Engineering, SST	
305	SPA 202	Intermediate Spanish II	4	8	SPA 201 Intermediate Spanish I (C- and above)			World Languages, Literature and Culture	SHSS	3 year UG SEng Civil Engineering, SST	
306	SPA 320	The Hispanic Short Story	3	6	Subject "WLL" BETWEEN 100 and 199 AND SPA 202 Intermediate Spanish II (C- and above)			3 year UG SEng Civil Engineering, SHSS, SST			
307	WLL 101	Introduction to Critical Issues in the Humanities and Social Sciences	3	6							
308	WLL 110	Introduction to Literary Studies	3	6				1 year UG SENG, 1 year UG SHSS, 1 year UG SST	SHSS	3 year UG SEng Civil Engineering, SST	
309	WLL 121	Introduction to Cultural Studies	3	6				1 year UG SENG, 1 year UG SHSS, 1 year UG SST	SHSS	3 year UG SEng Civil Engineering, SST	
310	WLL 211	World Literature II: from the 18th to the 20th century	3	6				World Languages, Literature and Culture	SHSS	3 year UG SEng Civil Engineering, SST	
311	WLL 240	Introduction to the Novel	3	6				World Languages, Literature and Culture	SHSS	3 year UG SEng Civil Engineering, SST	

312	WLL 313	Dante's Inferno	3	6	Subject "WLL" BETWEEN 100 and 499 OR Subject "HST" BETWEEN 100 and 499			3 year UG SEng Civil Engineering, SHSS, SST			
313	WLL 399	Independent Study	3	6				Through Add form only			
314	WLL 499	Languages, Linguistics, and Literatures Capstone II	3	6	WLL 498 Languages, Linguistics, and Literatures Capstone I (C- and above)			Through Add form only			
<b>Political Science and International Relations</b>											
315	PLS 101	Introduction to Political Science	3	6				3 year UG SEng Civil Engineering, SST	Anthropology, Economics, History, Sociology, Undeclared, World Languages, Literature and Culture		
316	PLS 120	Introduction to Political Theory	3	6				1 year UG SHSS	4 year UG SHSS Political Sciences and International Relations	3 year UG SEng Civil Engineering, SHSS, SST	
317	PLS 140	Introduction to Comparative Politics	3	6				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	
318	PLS 210	Political Science Research Methods	3	6				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	
319	PLS 211	Quantitative Methods	3	6				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	
320	PLS 325	Ancient Political Theory	3	6	PLS 120 Introduction to Political Theory (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	
321	PLS 330	Politics and Governance of Eurasia	3	6	PLS 140 Introduction to Comparative Politics (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	

322	PLS 331	Nationalism and Multi-Ethnic Governance	3	6				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	
323	PLS 351	International Political Economy	3	6	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)			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	
324	PLS 352	International Relations Theory	3	6	PLS 150 Introduction to International Relations (C- and above) AND PLS 210 Political Science Research Methods (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	
325	PLS 354	Introduction to International Law	3	6	PLS 150 Introduction to International Relations (C- and above) AND PLS 210 Political Science Research Methods (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	
326	PLS 355	European Union: Institutions and Policies	3	6	PLS 150 Introduction to International Relations (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	
327	PLS 365	Civil-Military Relations	3	6	PLS 211 Quantitative Methods (C- and above) AND PLS 210 Political Science Research Methods (C- and above)			4 year UG SHSS Political Sciences and International Relations, Sociology	3 year UG SHSS Political Sciences and International Relations	3 year UG SEng Civil Engineering, SHSS, SST	
328	PLS 391	Intermediate Special Topics in Comparative Politics	3	6	PLS 140 Introduction to Comparative Politics (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	
329	PLS 395	Independent Study	3	6	PLS 210 Political Science Research Methods (C- and above) AND PLS 211 Quantitative Methods (C- and above)			Through Add form only			
330	PLS 431	Politics and Governance of the Russian Federation	3	6	PLS 140 Introduction to Comparative Politics (C- and above) OR PLS 150 Introduction to International Relations (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	



331	PLS 447	Comparative Political Parties	3	6	PLS 140 Introduction to Comparative Politics (C- and above) AND PLS 210 Political Science Research Methods (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	
332	PLS 455	The Politics of Arms in International Relations	3	6	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)			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	
333	PLS 457	International Security and Conflict	3	6	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)			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	
334	PLS 458	International Organization	3	6	PLS 150 Introduction to International Relations (C- and above) AND PLS 210 Political Science Research Methods (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	
335	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			
336	PLS 510	Advanced Research II	4	8	PLS 511 Advanced Research I (D and above)			1 year Gr SHSS Political Sciences and Int. Relations			
337	PLS 531	Politics and Governance of the Russian Federation	4	8	PLS 101 Introduction to Political Science (C- and above) AND PLS 140 Introduction to Comparative Politics (C- and above) AND (Subject "PLS" BETWEEN 200 and 299 OR Subject "" BETWEEN 200 and 299 OR Subject "" BETWEEN 200 and 299)			2 year Gr SHSS Political Sciences and Int. Relations	1 year Gr SHSS Political Sciences and Int. Relations		
338	PLS 540	Core Seminar in Comparative Politics	4	8				1 year Gr SHSS Political Sciences and Int. Relations			
339	PLS 547	Comparative Political Parties	4	8				2 year Gr SHSS Political Sciences and Int. Relations	1 year Gr SHSS Political Sciences and Int. Relations		

340	PLS 555	The Politics of Arms in International Relations	4	8				2 year Gr SHSS Political Sciences and Int. Relations	1 year Gr SHSS Political Sciences and Int. Relations		
341	PLS 558	International Organization	4	8	PLS 550 Core Seminar in IR (C- and above)			2 year Gr SHSS Political Sciences and Int. Relations	1 year Gr SHSS Political Sciences and Int. Relations		
342	PLS 598	MA Thesis for Political Science and International Relations	10	20				2 year Gr SHSS Political Sciences and Int. Relations			
<b>Political Science and International Relations, Sociology and Anthropology</b>											
343	SOC 120/PLS 195	Asian Community: Development in Asia	3	6				3 year UG SEng Civil Engineering, SHSS, SST			
<b>Sociology and Anthropology</b>											
344	ANT 101	Introduction to Sociocultural Anthropology	3	6				1 year UG SHSS, Anthropology, Sociology	2 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST	
345	ANT 140	World Prehistory	3	6				1 year UG SHSS, Anthropology, Sociology	2 year UG SHSS, 4 year UG SST	3 year UG SEng Civil Engineering, SHSS, SST	
346	ANT 160	Introduction to Biological Anthropology	3	6				1 year UG SHSS, Anthropology, Sociology	2 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST	
347	ANT 216	Marriage and Kinship	3	6				1 year UG SHSS, 2 year UG SHSS, Anthropology	4 year UG SST	3 year UG SEng Civil Engineering, SHSS, SST	
348	ANT 286	Nomads: Around the world and through time	3	6				Anthropology, Sociology	2 year UG SHSS, 3 year UG SHSS, 3 year UG SST, 4 year UG SST	3 year UG SEng Civil Engineering, SHSS, SST	
349	ANT 306	Anthropology of Performance	3	6				3 year UG SHSS, 4 year UG SHSS, Anthropology	1 year UG SHSS, 2 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST	
350	ANT 314	Politics of Identity in Eurasia	3	6	Subject "HST" BETWEEN 100 and 499 OR Subject "SOC" BETWEEN 100 and 499 OR Subject "ANT" BETWEEN 100 and 499 OR Subject "PLS" BETWEEN 100 and 499			Anthropology, Political Science and International Relations	2 year UG SHSS, 3 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST	
351	ANT 361	Human Evolution: Bones, Stones and Genomes	3	6				3 year UG SHSS, 4 year UG SHSS, Anthropology	1 year UG SHSS, 2 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST	

352	ANT 399	Special Topics in Anthropology	3	6						
353	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)			Through Add form only		
354	ANT 499	Capstone Seminar II	3	6	ANT 498 Capstone Seminar I (C- and above)			3 year UG SEng Civil Engineering, SHSS, SST		
355	ANT 520	Materiality in Eurasian Society	4	8						
356	SOC 101	Introduction to Sociology	3	6				1 year UG SHSS	2 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST
357	SOC 201	Social Science Research Methods	3	6				Anthropology, Sociology	3 year UG SEng Civil Engineering, SHSS, SST	
358	SOC 215	Sociology of Race and Ethnicity	3	6				Anthropology, Sociology	2 year UG SHSS, 3 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST
359	SOC 220	Science, Technology, and Society	3	6				Anthropology, Sociology	2 year UG SHSS, 3 year UG SHSS, 3 year UG SST, 4 year UG SST	3 year UG SEng Civil Engineering, SHSS, SST
360	SOC 223	Social Movements: How People Make Change	3	6				Anthropology, Sociology	2 year UG SHSS, 3 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST
361	SOC 227	Economy and Society	3	6				2 year UG SHSS, Sociology	3 year UG SHSS, Economics	3 year UG SEng Civil Engineering, SHSS, SST
362	SOC 302	Decolonizing Social Theory: Can Women and Non-Europeans Think?	3	6				Anthropology, Sociology	2 year UG SHSS, 3 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST
363	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)			Through Add form only		

364	SOC 404	Research Assistance in Sociology	3	6	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)			Through Add form only			
365	SOC 499	Capstone Seminar II	3	6	SOC 498 Capstone Seminar Part I (C- and above)			3 year UG SEng Civil Engineering, SHSS, SST			
<b>Sociology and Anthropology, Sociology and Anthropology</b>											
366	SOC 212/ANT 285	Food and Society	3	6				Anthropology, Sociology	2 year UG SHSS	3 year UG SEng Civil Engineering, SHSS, SST	
<b>CPS</b>											
<b>GSP</b>											
367	ZEST 061	Basic Economics and Statistics	0	0							
<b>Mathematics</b>											
368	MATH 500Z	Linear Algebra with Applications	0	0							
<b>NUFYP</b>											
369	FEAP 020	Foundation English for Academic Purposes	1	2							
370	FHUM 030	FOUNDATIONS OF HUMANITIES AND SOCIAL SCIENCE 2	0	0							
371	FMAT 020	Foundation Statistics	1	2							
372	FMAT 030	Mathematics for Life Sciences (Biology and Chemistry)	1	2							
373	FMAT 040	Mathematics for Physical Sciences	1	2							
374	FPHY 030	FOUNDATION PHYSICS 2	0	0							
375	FSCI 030	ESSENTIAL BIOLOGY & CHEMISTRY 2	0	0							
<b>NUZYP</b>											
376	ZCOM 041	Academic Communications for Graduate Studies II	0	0							
377	ZRDG 031	Academic Reading for Graduate Studies II	0	0							
378	ZWRT 021	Academic Writing for Graduate Studies II	0	0							
<b>Sociology and Anthropology</b>											
379	SOC 201Z	Social Science Research Methods	0	0							

GSB										
GSB										
380	GSBF 512	Principles of Finance	2	4						
381	GSBF 514	Corporate Finance	2	4						
382	GSBF 518	Risk Management	2	4						
383	GSBF 519	Financial Reporting and Analysis	2	4						
384	GSBF 521	Ethics, Governance and Regulation	2	4						
385	GSBF 541	Global Finance Experience Residency (I)	2	4						
386	MBA 10	Foundations of Strategy	2	4						
387	MBA 13	Macroeconomics	2	4						
388	MBA 14	Decision Models	2	4						
389	MBA 15	Corporate Finance	2	4						
390	MBA 17	Negotiations	2	4						
391	MBAE 13	Raising Capital	2	4						
392	MBAE 2	Emerging Markets Strategy	2	4						
393	MSF 01	Financial Modeling	2	4						
394	MSF 02	Thesis Preparation Seminar	2	4						
GSPP										
GSPP										
395	DPP 602	Macroeconomics in Public Sector	4	8						
396	DPP 613	Research Design (qualitative and quantitative)	4	8						
397	DPP 615	Governance and Public Policy	4	8						
398	DPP 631	Politics of Public Policy	4	8						
399	MPA 608	Strategic Management and Leadership	4	8						
400	MPA 610	National Identity and Public Policy	4	8					GSPP	
401	MPA 611	Benefit Cost Analysis	4	8					GSPP	
402	MPA 617	Institutions and development policies	4	8					GSPP	
403	MPA 624	Public Management Reforms in Transitional Countries	4	8					GSPP	
404	MPA 699	Master's Project with Overseas Component	0	0						
405	MPP 602	Macroeconomics and Public Policy	4	8						

406	MPP 613	Public Policy Research Design and Analysis	4	8							
407	MPP 623	International Political Economy	4	8				2 year GSPP Public Policy	GSPP		
408	MPP 627	Environmental Economics and Public Policy	4	8				2 year GSPP Public Policy	GSPP		
409	MPP 628	Economic Growth in Developing Asia	4	8				2 year GSPP Public Policy	GSPP		
410	MPP 641	Public Management and Leadership	4	8							
411	MPP 685	Urban Planning and Public Policy	4	8				2 year GSPP Public Policy	GSPP		
412	MPP 699	Policy Analysis Exercise with Singapore Component	4	8	MPP 601 Microeconomics and Public Policy (D and above) AND MPP 602 Macroeconomics and Public Policy (D and above) AND MPP 611 Statistical Techniques for Public Policy (D and above) AND MPP 612 Public Policy Research and Evaluation (D and above) AND MPP 613 Public Policy Research Design and Analysis (D and above) AND MPP 621 Introduction to Public Policy and Analysis (D and above) AND MPP 631 Politics and Public Policy (D and above)						
<b>GSE</b>											
<b>GSE</b>											
413	EDHE 610	Applying Educational Leadership in Kazakhstan	3	6							
414	EDHE 692	Thesis Seminar III	4	9							
415	EDIE 610	Applying Educational Leadership in Kazakhstan	3	6							
416	EDIE 692	Thesis Seminar III	4	9							
417	EDML 611	Plurilingual Individual	3	6				1 year GSE MA in Multil.Educ. (2-year program)			
418	EDML 612	Multilingual Society	3	6				1 year GSE MA in Multil.Educ. (2-year program)			
419	EDML 621	Principles and Methods of Language Education in Multilingual Contexts	3	6				2 year GSE MA in Multil.Educ. (2-year program)			
420	EDML 691	Thesis Research II	3	6							

421	EDSE 610	Applying Educational Leadership in Kazakhstan	3	6							
422	EDSE 620	Perspectives on Inclusive Education	3	6							
423	EDSE 692	Thesis Seminar III	4	9							
424	EDUC 506	Academic English II	1.5	3				1 year GSE Educ.Leadership (2-year program)			
425	EDUC 508	Academic English IV	1.5	3							
426	EDUC 511	Advanced English for Education Professionals II	3	6				1 year GSE MA in Multil.Educ. (2-year program)			
427	EDUC 513	English for Thesis Writing II	3	6							
428	EDUC 572	Kazakh for Professional Purposes	3	6				1 year GSE MA in Multil.Educ. (2-year program), 1 year GSE PhD Education			
429	EDUC 573	Academic Writing in Kazakh	3	6				1 year GSE Educ.Leadership (2-year program), 1 year GSE MA in Multil.Educ. (2-year program), 1 year GSE PhD Education			
430	EDUC 600	Research Methods II	3	6				1 year GSE Educ.Leadership (2-year program), 1 year GSE MA in Multil.Educ. (2-year program)			
431	EDUC 670	Internship Project	6	12				1 year GSE Educ.Leadership (2-year program)			
432	EDUC 671	Work-based project	6	12				1 year GSE Educ.Leadership (2-year program)			
433	EDUC 675	Learning to Work	4.5	9							
434	EDUC 703	Kazakh Language	3	6				1 year GSE PhD Education			
435	EDUC 704	Advanced Methods of Education Research	3	6				1 year GSE PhD Education			
436	EDUC 705	Advanced Methods of Education Research: Qualitative Methods	3	6				1 year GSE PhD Education			
437	EDUC 711	Globalisation and Education	3	6				1 year GSE PhD Education			
438	EDUC 730	Preparation for Proposal Defence I	6	12				1 year GSE PhD Education			

439	EDUC 740	Doctoral Seminar	3	6							
440	EDUC 750	Dissertation Research	9	18							
<b>Other</b>											
<b>Political Science and International Relations</b>											
441	T-PLSC 2003	American National GOVT	3	6							
<b>Robotics and Mechatronics</b>											
442	T-ELEG 3304	Energy Systems	4	8							
443	T-MEEG 4104	Machine Element Design	3	6							
<b>SHSS</b>											
444	T-THTR 1683	Acting I	3	6							
<b>SoM</b>											
<b>Applied Nursing</b>											
445	NUR 305	Research Methods for Nursing	3	6							
446	NUR 306	Medical-Surgical Nursing: Complex Medical Management for Acute and Chronic Patient	4	8							
447	NUR 307	Health Promotion and Disease Prevention in Culturally Diverse Populations	4	8							
448	NUR 308	Enhanced Communication in Professional Nursing	4	8							
<b>Biomedical Sciences</b>											
449	MMMM 507	Critical Analysis of the Contemporary Concepts in Molecular Medicine	3	6							
450	MMMM 508	Molecular Immunology	2	4							
451	MMMM 509	From the Bench to the Bedside: Drug Development and Clinical Trials	3	6							
452	MMMM 510	Natural Medicine	3	6							
453	MMMM 511	Research Methods in Molecular Biomedicine	3	6							
454	MMMM 512	Molecular Basis of Chronic Inflammation	1	2							
<b>Public Health</b>											
455	PUBH 512	Biostatistical Modeling and Sampling	3	6							



456	PUBH 522	Advanced Analytical Epidemiology	3	6							
457	PUBH 561	Graduate Research Seminar I	3	6							
458	PUBH 631	Social and Behavioral Sciences in Public Health	3	6							
459	PUBH 633	Methods in Public Health	3	6							
460	PUBH 682	Master's Project Implementation	12	24							
<b>SMG</b>											
<b>Mining Engineering</b>											
461	MINE 514	Advanced Surface Mine Design	3	6							
462	MINE 515	Advanced Underground Mine Design	3	6							
463	MINE 516	Advanced Mine Ventilation	3	6							
464	MINE 517	Mine Management and Sustainability	3	6							
<b>School of Mining and Geosciences</b>											
465	MSC 616	Research Methods	3	6							