Course Requirements and Registration Priorities
Fall 2019

#	Abbr	Title	Cr(US)	Cr(ECTS)	PreRequisite	CoRequisite	AntiRequisite	1st priority registration	2nd priority registration	3rd priority registration	4th priority registration
CPS											
NUFYP											
1	FBIO 011	Introduction to Biology	0	0							
2	FBUS 011	Introduction to Business	0	0							
3	FCHM 011	Introduction to Chemistry	0	0							
4	FEAP 001	English for Academic Purposes	0	0				The course is already added to your schedule			
5	FGEO 011	Introduction to Geography	0	0							
6	FHUM 011	Introduction to Humanities and Social Science	0	0							
7	FMATH 001	Mathematics	0	0				The course is already added to your schedule			
8	FPHY 011	Introduction to Physics	0	0							
NUZYP											
9	ZCOM 040	Academic Communications for Graduate Studies I	0	0							
10	ZRDG 030	Academic Reading for Graduate Studies I	0	0							
11	ZWRT 020	Academic Writing for Graduate Studies I	0	0							
GSB											
Economics											
12	ECON 101	Introduction to Microeconomics	3	6				SEDS, SMG, SSH, SoM			
13	ECON 102	Introduction to Macroeconomics	3	6				SEDS, SMG, SSH, SoM			
14	ECON 201	Intermediate Microeconomics	3	6	ECON 101 Introduction to Microeconomics (379) (B- and above) AND (MATH 161 Calculus I (118) (B- and above) OR MATH 162 Calculus II (170) (B- and above))			Economics		SSH	

15	ECON 202	Intermediate Macroeconomics	3	6	ECON 102 Introduction to Macroeconomics (503) (B- and above) AND (MATH 161 Calculus I (118) (B- and above) OR MATH 162 Calculus II (170) (B- and above))			Economics		SSH	
16	ECON 211	Economic Statistics	3	6	ECON 101 Introduction to Microeconomics (379) (C and above) OR ECON 102 Introduction to Macroeconomics (503) (C and above)			Economics		SSH	
17	ECON 300	Research Assistance in Economics	1	2	ECON 101 Introduction to Microeconomics (379) (C- and above) AND ECON 102 Introduction to Macroeconomics (503) (C- and above) OR CSCI 151 Programming for Scientists and Engineers (192) (C- and above) OR CSCI 235 Programming Languages (638) (C- and above) OR CSCI 390 Artificial Intelligence (643) (C- and above) OR MATH 321 Probability (482) (C- and above) OR MATH 322 Mathematical Statistics (1165) (C- and above)			Instructor permission required			
18	ECON 301	Econometrics I	3	6	ECON 211 Economic Statistics (2280) (C- and above) OR (MATH 321 Probability (482) (C- and above) AND (MATH 322 Mathematical Statistics (1165) (C- and above) OR MATH 310 Applied Statistical Methods (82) (C- and above)))			Economics		SSH	

19	ECON 317	East Asian Economic Development	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above)			Economics		SSH	
20	ECON 322	Natural Resources and Environmental Economics	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above)		ECON 331 Environmental Economics (1687) (C- and above)	Economics		SSH	
21	ECON 325	International Trade	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above)			Economics		SSH	
22	ECON 326	The Economics of Financial Markets	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above)			Economics		SSH	
23	ECON 399	Independent Study in Economics	3	6				Economics		SSH	
24	ECON 403	Introduction to Contract Theory and Auctions	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above) AND ECON 301 Econometrics I (664) (C- and above)			Economics		SSH	
25	ECON 405	Behavioral and Experimental Economics	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above) AND ECON 301 Econometrics I (664) (C- and above)			Economics		SSH	
26	ECON 413	Econometrics II	3	6	ECON 301 Econometrics I (664) (C- and above)			Economics		SSH	
27	ECON 417	Development Economics	3	6	ECON 301 Econometrics I (664) (C- and above)			Economics		SSH	
28	ECON 501	Microeconomics I	4	8				Economics	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
29	ECON 502	Macroeconomics I	4	8				Economics	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
30	ECON 503	Introduction to Contract Theory and Auctions	4	8				Economics	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		

31	ECON 505	Behavioral and Experimental Economics	4	8				Economics	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
32	ECON 511	Statistics	4	8				Economics	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
33	ECON 512	Mathematical Economics	4	8				Economics	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
34	ECON 517	Development Economics	4	8				Economics	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
35	ECON 532	Applied Econometrics	4	8				Economics	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
36	ECON 589	Thesis I	4	8				2 year Gr SSH Economics			
GSB											
37	GSBF 501	Team Building and Business Communications	1	2							
38	GSBF 511	Statistical Methods	2	4							
39	GSBF 512	Principles of Finance	2	4							
40	GSBF 515a	Investments I	2	4							
41	GSBF 516	Financial Markets and Institutions	2	4							
42	GSBF 533	Islamic Banking and Finance	2	4							
43	GSBF 535	Insurance and Actuarial Science	2	4							
44	GSBF 550A	Master’s Thesis	3	6							
45	MBA 01	Consequential Leadership	1	2							
46	MBA 02	Business Mathematics and Business Computer Application	1	2							
47	MBA 03	Financial Accounting	2	4							
48	MBA 04	Probability and Statistics	2	4							
49	MBA 05	Business Communication	2	4							
50	MBA 07	Managerial Effectiveness	2	4							
51	MBA 08	Managerial Economics	2	4							
52	MBA 16	Entrepreneurship	2	4							
53	MBA 16A	Introduction to Entrepreneurship	1	2							

54	MBA 19	Distinguished Speaker Series	0	1							
55	MBA 20	Practicum Project	2.5	5							
56	MBA 20A	Internship	6	12							
57	MBAE 14	Innovation Process	2	4							
58	MBAE 15	Advanced Corporate Finance	2	4							
59	MBAE 16	Project Management	2	4							
60	MBAE 17	China Business Environment	2	4							
61	MBAE 18	Consumer Behavior	2	4							
62	MBAE 3	Valuation	2	4							
63	MBAE 4	Pricing	2	4							
64	MBAE 8	Leadership	2	4							
65	MSF 02	Thesis Preparation Seminar	2	4							
66	MSF 03	Advanced Econometrics	2	4							
67	MSF 04	Private Equity	2	4							
GSPP											
Master in Public Administration											
68	MPA 602	Public Administration in Theory and Practice	4	8				1 year GSPP Public Administration			
69	MPA 603	Economic Applications for Public Managers	4	8				1 year GSPP Public Administration			
70	MPA 605	Research Methods for Decision Making	4	8				1 year GSPP Public Administration			
71	MPA 609	Human Resource Management	4	8				2 year GSPP Public Administration, GSPP		GSE, SEDS, SMG, SSH, SoM	
72	MPA 617	Institutions and development policies	4	8				2 year GSPP Public Administration	GSPP	GSB, GSE, SEDS, SMG, SSH, SoM	
73	MPA 624	Public Management Reforms in Transitional Countries	4	8				2 year GSPP Public Policy	GSPP	GSB, GSE, SEDS, SMG, SSH, SoM	
74	MPA 625	Ethics and Public Policy	4	8				2 year GSPP Public Administration	GSPP	GSB, GSE, SEDS, SMG, SSH, SoM	
75	MPA 627	Population Health and Social Policy	4	8				2 year GSPP Public Policy	GSPP	GSB, GSE, SEDS, SMG, SSH, SoM	
76	MPA 628	Good Governance and Corruption	4	8				2 year GSPP Public Administration	GSPP	GSB, GSE, SEDS, SMG, SSH, SoM	
77	MPA 637	Comparative Policy-Making and Public Policy	4	8				2 year GSPP Public Administration	GSPP	GSB, GSE, SEDS, SMG, SSH, SoM	
78	MPA 685	Water Resources Policy and Management	4	8				2 year GSPP Public Administration	GSPP	GSB, GSE, SEDS, SMG, SSH, SoM	

79	MPA 699	Master's Project with Overseas Component	6	12				2 year GSPP Public Administration			
80	MPP 626	Open Government and Open Data Politics	4	8				2 year GSPP Public Policy	GSPP	GSB, GSE, SEDS, SMG, SSH, SoM	
Master in Public Policy											
81	MPP 601	Microeconomics and Public Policy	4	8				1 year GSPP Public Policy			
82	MPP 611	Statistical Techniques for Public Policy	4	8				1 year GSPP Public Policy			
83	MPP 612	Public Policy Research and Evaluation	4	8				1 year GSPP Public Policy			
84	MPP 621	Introduction to Public Policy and Analysis	4	8				1 year GSPP Public Policy			
85	MPP 631	Politics and Public Policy	4	8				2 year GSPP Public Policy			
PhD in Public Policy											
86	DPP 601	Microeconomics in the Public Sector	4	8				1 year GSPP PhD Public Policy			
87	DPP 603	Public Administration and Management	4	8				1 year GSPP PhD Public Policy			
88	DPP 609	Human Resource Management	4	8							
89	DPP 611	Statistics in Public Policy	4	8				1 year GSPP PhD Public Policy			
90	DPP 614	Advanced Quantitative Methods	4	8				2 year GSPP PhD Public Policy			
91	DPP 615	Governance and Public Policy	4	8				1 year GSPP PhD Public Policy			
92	DPP 616	Advanced Qualitative Methods	4	8				2 year GSPP PhD Public Policy			
93	DPP 627	Population Health and Social Policy	4	8				2 year GSPP PhD Public Policy			
94	DPP 628	Good Governance and Corruption	4	8				2 year GSPP PhD Public Policy			
95	DPP 637	Comparative Policy-Making and Public Policy	4	8				2 year GSPP PhD Public Policy			
96	DPP 685	Water Resources Policy and Management	4	8				2 year GSPP PhD Public Policy			
97	DPP 690-0	Thesis Preparation and Writing	0	0							
GSE											
MA in Multilingual Education											
98	EDML 601	Introduction to Linguistics	3	6				1 year GSE MA in Multil.Education			
99	EDML 610	Foundations of Multilingual Education	3	6				1 year GSE MA in Multil.Education			

100	EDML 614	Multilingual curriculum development and assessment	3	6				2 year GSE MA in Multil.Education			
101	EDML 627	Application of CLIL in Teaching	3	6				2 year GSE MA in Multil.Education			
102	EDML 630	Language Policy and Education Reform Across Contexts	3	6				2 year GSE MA in Multil.Education			
103	EDML 690	Thesis Research I	3	6				2 year GSE MA in Multil.Education			
MSc Educational Leadership HE											
104	EDHE 609	Introduction to Educational Leadership: Higher Education	3	6				1 year GSE Educ.Leadership			
105	EDHE 610	Applying Educational Leadership in Kazakhstan	3	6				1 year GSE Educ.Leadership			
106	EDHE 623	Transformations of Higher Education in Eurasia/Post-Soviet States	3	6				1 year GSE Educ.Leadership			
107	EDHE 691	Thesis Seminar II	3	6				2 year GSE Educ.Leadership			
108	EDUC 505	Academic English 1	1.5	3				1 year GSE Educ.Leadership			
109	EDUC 507	Academic English III	1.5	3				2 year GSE Educ.Leadership			
110	EDUC 510	Advanced English for Education Professionals I	3	6				1 year GSE MA in Multil.Education			
111	EDUC 512	English for Thesis Writing I	3	6				2 year GSE MA in Multil.Education			
112	EDUC 571	Basic Kazakh	3	6				1 year GSE Educ.Leadership			
113	EDUC 590	Academic English Writing for Doctoral Students I	1.5	3				1 year GSE PhD Education			
114	EDUC 600	Research Methods I	3	6				1 year GSE Educ.Leadership, 1 year GSE MA in Multil.Education			
115	EDUC 602	Educational Context and Reform in Kazakhstan	3	6				1 year GSE Educ.Leadership, 1 year GSE MA in Multil.Education			
116	EDUC 701	Education Research Methods	3	6				1 year GSE PhD Education			
117	EDUC 709	Introduction to Scholarship in Education	3	6				1 year GSE PhD Education			

118	EDUC 712	Educational Policy and Reform	3	6				1 year GSE PhD Education			
119	EDUC 720	Philosophy of Education	3	6				1 year GSE PhD Education			
120	EDUC 730	Preparation for Proposal Defence I	6	12				2 year GSE PhD Education			
121	EDUC 731	Proposal Defence	3	6				3 year GSE PhD Education			
122	EDUC 740	Doctoral Seminar	3	6				3 year GSE PhD Education			
123	EDUC 750	Dissertation Research	9	18				3 year GSE PhD Education			
124	EDUC 800	International Study	12	24				2 year GSE PhD Education			
MSc Educational Leadership IE											
125	EDIE 609	Introduction to Educational Leadership: Inclusive Education	3	6				1 year GSE Educ.Leadership			
126	EDIE 651	Inclusive Education: Policy Perspectives	3	6				1 year GSE Educ.Leadership			
127	EDIE 652	Curriculum Design: perspectives on Addressing Barriers to Teaching and Learning (Including SEN)	3	6				1 year GSE Educ.Leadership			
128	EDIE 691	Thesis Seminar II	3	6				2 year GSE Educ.Leadership			
MSc Educational Leadership SE											
129	EDSE 609	Introduction to Educational Leadership: School Education	3	6				1 year GSE Educ.Leadership			
130	EDSE 632	School Improvement and Effectiveness	3	6				1 year GSE Educ.Leadership			
131	EDSE 637	Student Discourse and Argumentation: Theories, Practices and Policies	3	6				1 year GSE Educ.Leadership			
132	EDSE 690	Thesis Seminar I	3	6				Registration by School Administration			
133	EDSE 691	Thesis Seminar II	3	6				2 year GSE Educ.Leadership			
Other											
Other											
134	T - 17352	Cross Cultural Communication	3	6							
135	T - 17443	Literary Criticism	3	6							
136	T - 17567	Latin American Spanish	3	6							

137	T - 18053	Language C General Translation C2: English	3	6							
138	T - 18297	Business Economics	3	6							
139	T - 18299	Organizations Sociology	3	6							
140	T - 18905	Gender Equality in Contemporary Society	3	6							
141	T - 18981	Political Actors and Collective Action	3	6							
142	T - 19483	Communication Strategies in Spanish (informal contexts)	1.5	3							
143	T - 19484	Communication Strategies in Spanish (formal contexts)	1.5	3							
144	T-03SM BOEC0275	A primer in Entrepreneurship	1.5	3							
145	T-03SM BOEC0330	International Management	1.5	3							
146	T-03SM BOEC0343	Development Economics	3	6							
147	T-03SM BOEC0392	Consumer Behavior in the Digital Age	1.5	3							
148	T-03SM BOEC0397	HRM and Organizational Behavior	3	6							
149	T-03SM BOEC0406	Personal Branding and Digital Marketing	3	6							
150	T-ACCOUNTG 597	Financial Statements ANLY	3	6							
151	T-CE 500	The Chinese Economy	2.5	5.5							
152	T-COM 110	Communication as Critical Inquiry	3	6							
153	T-CSER 500	Contemporary Sino-European Relations	2.5	5.5							
154	T-DECISION 618	Data Analytics for Business	3	6							
155	T-FINANCE 652	Project Finance	3	6							
156	T-IC 500	Introduction of China	2.5	5.5							
157	T-MAT 147	Calculus III	4	8							
158	T-MAT 260	Discrete Mathematics	3	6							
159	T-MMC:HSP 500	The Making of Modern China: Historical and Social Perspectives	2.5	5.5							
160	T-MSH 021	Labor Economics and Public Policy	4	8							

161	T-MSI 064	Topic in North Korean Economy	4	8							
162	T-MSN 026	Korean Economic Development	4	8							
163	T-MSN 048	Input/Output Analysis	4	8							
164	T-MSR 044	Urbanization for Economic Development	4	8							
165	T-MSR 060	Smart Cities	4	8							
166	T-OPERATNS 823	OPERATIONS STRATEGY	3	6							
167	T-PM:TP 500	Public Management: Theory and Practice	2.5	5.5							
168	T-POL 106	U.S. Government and Civic Practices	3	6							
169	T-PP 5196	Education Economics and Policy	4	8							
170	T-PP 5212	Financial Issues, Trade and Investment in Asia	4	8							
171	T-PP 5257	Urban Water Governance	4	8							
172	T-PP 5267	Urban Transport Policy: A Global View	4	8							
173	T-PP 5510	Governing Cities of Tomorrow	4	8							
174	T-RMPA 500	Research Methods in Public Administration	2.5	5.5							
175	T-STRATEGY 627	Sustainable Business Strategy	3	6							
SoM											
Biological Science											
176	BIOL 101	Biology for non-Science majors	3	6			BIOL 110 Modern Biology I (1070) (C- and above)	Anthropology, Economics, History, Nursing, Political Science and International Relations, SEDS, SMG, Sociology, Undeclared SSH, World Languages, Literature and Culture			

177	BIOL 110	Modern Biology I with Laboratory	4	8				Biological Sciences, Chemistry	Computer Science, Mathematics, Physics, Robotics and Mechatronics	Anthropology, Economics, History, Political Science and International Relations, Sociology, Undeclared SSH, World Languages, Literature and Culture	
178	BIOL 230	Human Anatomy and Physiology I	4	8	BIOL 110 Modern Biology I (107) (C and above) OR BIOL 110 Modern Biology I (1070) (C and above)			Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM	
179	BIOL 305	Introduction to Microbiology with Lab	4	8	BIOL 110 Modern Biology I (1070) (C and above) AND BIOL 120 Modern Biology II (1195) (C and above)			Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM	
180	BIOL 320	Developmental Biology	3	6	BIOL 230 Human Anatomy and Physiology I (72) (C and above) OR BIOL 230 Human Anatomy and Physiology I (6217) (C and above)			Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM	
181	BIOL 340	Introduction to Bioinformatics with Lab	4	8	(BIOL 120 Modern Biology II (1195) (C and above) OR (BIOL 120 Modern Biology II (1195) (C and above) AND BIOL 120L Modern Biology II Laboratory (5443) (C and above))) AND MATH 310 Applied Statistical Methods (82) (C and above)			Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM	
182	BIOL 341	Biochemistry I	3	6	CHEM 211 Organic Chemistry I (154) (C and above)			Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM	

183	BIOL 352	Biology of Cancer	3	6	BIOL 231 Human Anatomy and Physiology II (479) (C and above) OR BIOL 301 Molecular Biology of Cell with Lab (1197) (C and above) OR BIOL 331 Human Anatomy and Physiology II (6218) (C and above) OR BIOL 301 Molecular Cell Biology (5809) (C and above)			Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM	
184	BIOL 355	Critical Research Reasoning	3	6	BIOL 120 Modern Biology II (1195) (C and above)			Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM	
185	BIOL 370	Genetics	3	6	BIOL 120 Modern Biology II (1195) (C and above)			Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM	
186	BIOL 385	Cell signaling: principles and mechanisms	3	6	BIOL 120 Modern Biology II (1195) (C and above)			Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM	
187	BIOL 410	Introduction to Immunology	3	6	BIOL 301 Molecular Biology of Cell with Lab (1197) (C and above) OR BIOL 305 Introduction to Microbiology with Lab (1642) (C and above) OR BIOL 301 Molecular Cell Biology (5809) (C and above) OR BIOL 305 Introduction to Microbiology (5789) (C and above)			Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM	
188	BIOL 425	Biomedical Research Methods	3	6	BIOL 110 Modern Biology I Lab (1444) (C and above) OR BIOL 110 Modern Biology I (1070) (C and above) AND BIOL 341 Biochemistry I (2002) (C and above) OR CHEM 341 Biochemistry I (1058) (C and above)			Biological Sciences			

189	BIOL 455	Biotechnology	3	6	BIOL 301 Molecular Biology of Cell with Lab (1197) (C- and above) OR (BIOL 301 Molecular Cell Biology (5809) (C- and above) AND BIOL 301L Molecular Cell Biology Laboratory (5678) (C- and above))			Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM	
190	BIOL 470	Advanced Cell Biology	3	6	BIOL 120 Modern Biology II (1195) (C and above) AND BIOL 110L Modern Biology I Laboratory (5448) (C and above) AND (BIOL 341 Biochemistry I (2002) (C and above) OR CHEM 341 Biochemistry I (1058) (C and above))			Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM	
191	BIOL 490	Graduation Project 1	4	8	BIOL 355 Critical Research Reasoning (1000) (B and above)			Instructor's Permission Required			
192	BIOL 492	Directed Study in Biology	3	6				Instructor's Permission Required			
193	BIOL 520	Statistical Methods in Life Sciences	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
194	BIOL 550	Structural and Molecular Biology in Health and Disease	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
195	BIOL 560	Molecular Biology of Prokaryotic Cells	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
196	BIOL 631	Synthetic Biology	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
197	BIOL 632	Drug Discovery and Design	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
198	BIOL 635	Hot Topics in Life Sciences	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
199	BIOL 670	Gene Therapy	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
200	BIOL 720	Statistical Methods in Life Sciences	3	6				1 year PhD SEDS Science, Engineering and Technology	SSH	GSE, GSPP, SEDS, SMG	

201	BIOL 731	Synthetic Biology	4	8				1 year PhD SEDS Science, Engineering and Technology	SSH	GSE, GSPP, SEDS, SMG	
202	BIOL 732	Drug Discovery and Design	4	8				1 year PhD SEDS Science, Engineering and Technology	SSH	GSE, GSPP, SEDS, SMG	
203	BIOL 750	Structural and Molecular Biology in Health and Disease	4	8				1 year PhD SEDS Science, Engineering and Technology	SSH	GSE, GSPP, SEDS, SMG	
204	BIOL 800-0	Thesis Research	0	0				1 year PhD SEDS Science, Engineering and Technology	SSH	GSE, GSPP, SEDS, SMG	
MMM											
205	MMMM 501	Molecular Basis of Infection	3	6				For MMMM Yr 1 Only. Registration by School Admin.			
206	MMMM 503	Bioethics in Research: Principles and Practice	3	6				For MMMM Yr 2 Only. Registration by School Admin.			
207	MMMM 506	Biocomputing	1	2				For MMMM Yr 1 Only. Registration by School Admin.			
208	MMMM 604	Nutrigenomics	1.5	3				For MMMM Yr 2 Only. Registration by School Admin.			
209	MMMM 607	Basics and Applied Precision Medicine	3	6				For MMMM Yr 2 Only. Registration by School Admin.			
Master of Sciences in Biomedicine											
210	MMMM 502	Molecular Pathology of Cancer	3	6				For MMMM Yr 1 Only. Registration by School Admin.			
211	MMMM 504	Molecular Basis of Genetic Disease	3	6				For MMMM Yr 1 Only. Registration by School Admin.			
212	MMMM 603	Recombinant Drugs	3	6				For MMMM Yr 2 Only. Registration by School Admin.			
Nursing											
213	NUR 101	Human Anatomy and Physiology I and Lab	4	8				Nursing			
214	NUR 112	Introduction to Professional Nursing	2	4				Nursing			
215	NUR 301	Nutrition for Clinical Practice	3	6				For Applied Nursing program only			
216	NUR 302	Physical Assessment Across the Lifespan	4	8				For Applied Nursing program only			

217	NUR 303	Nursing Care of Older Adults	4	8				For Applied Nursing program only			
218	NUR 304	Introduction to Basic Statistics for Evidence Based Practice	3	6				For Applied Nursing program only			
Public Health											
219	PUBH 501	Principles of Public Health Problem Solving	3	6				For PUBH Yr 1 Only. Registration by School Admin.			
220	PUBH 510	Inferential Biostatistics	1.5	3	MMMM 505 Inferential Biostatistics (3839) (C and above)						
221	PUBH 511	Inferential Biostatistics	3	6				For PUBH Yr 1 Only. Registration by School Admin.			
222	PUBH 521	Principles of Analytical Epidemiology	3	6				For PUBH Yr 1 Only. Registration by School Admin.			
223	PUBH 528	Qualitative Research Methods	3	6				For PUBH Yr 1 Only. Registration by School Admin.			
224	PUBH 531	Emerging Infectious Diseases	3	6				For PUBH Yr 1 Only. Registration by School Admin.			
225	PUBH 552	Principles of Heath Economics and Policy	3	6	PUBH 551 Health Services Management, Health Economic and Health Policy (3696) (C and above)			For PUBH Yr 2 Only. Registration by School Admin.			
226	PUBH 601	Health Education and Promotion	3	6				For PUBH Yr 2 Only. Registration by School Admin.			
227	PUBH 633	Methods in Public Health	3	6				For PUBH Yr 2 Only. Registration by School Admin.			
228	PUBH 641	Problem Investigations in Environmental Health	3	6				For PUBH Yr 2 Only. Registration by School Admin.			
229	PUBH 681	Master’s Project Planning	3	6				For PUBH Yr 2 Only. Registration by School Admin.			
SSH											
Academic Success Centre, Communication and Composition											
230	SHSS 150	Rhetoric and Composition	3	6				SEDS, SMG, SSH, SoM			

231	SHSS 210	Technical and Professional Writing	3	6	ASC 100 Advanced English for Academic Purposes (9234) (C- and above) OR Test "IELTS" BETWEEN 6.5 and 9 OR WCS 150/ASC 100 Advanced English for Academic Purposes (2183) (C- and above)		WCS 200 Introduction to Public Speaking (175) (D and above) OR WCS 220 Science Writing (5686) (D and above) OR WCS 230 Say What you Mean: Clarity, Precision, and Style in Academic Writing (3026) (D and above) OR WCS 240 Writing for Digital Media (4421) (D and above) OR WCS 250 Advanced Rhetoric and Composition (3027) (D and above) OR WCS 260/WLL 235 Creative Writing: Introduction to Fiction Writing I (4000) (D and above) OR WCS 270 Academic and Professional Presentations (8409) (D and above)	SEDS, SMG, SSH, SoM			
Area Studies											
232	EAS 500	Introduction to Eurasia	4	8				Eurasian Studies	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
233	EAS 501	General Methodology	4	8				Eurasian Studies	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		

234	EAS 503	Thesis I	7.5	15	EAS 500 Introduction to Eurasia (1632) (C- and above) AND EAS 501 General Methodology (1633) (C- and above) AND EAS 502 Disciplinary Methodology (1379) (C- and above)			2 year Gr SSH Eurasian Studies			
235	EAS 511	Independent Study in Eurasian Studies	4	8				Instructor's permission required			
236	EAS 700	Introduction to Eurasia	4	8				Eurasian Studies	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
237	EAS 701	Critical Issues in Eurasian Studies	2	4				Eurasian Studies	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
238	EAS 702	Elective in Eurasian Humanities	4	8							
239	EAS 703	Elective in Eurasian Social Sciences	4	8							
Area Studies, Political Science and International Relations, Sociology and Anthropology											
240	PLS 514/EAS 506/SOC 514	Qualitative Research Methods	4	8				Eurasian Studies, Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
Chemistry											
241	CHEM 090	Chemistry for Non-Science majors	3	6				Anthropology, Economics, History, Nursing, Political Science and International Relations, Sociology, Undeclared SSH, World Languages, Literature and Culture			
242	CHEM 091	Survey of Physical Science	3	6				Anthropology, Economics, History, Political Science and International Relations, Sociology, Undeclared SSH, World Languages, Literature and Culture			
243	CHEM 101	General Chemistry I	3	6				Biological Sciences, Chemistry	Mathematics, Physics	SMG	
244	CHEM 101L	General Chemistry I lab	1	2		CHEM 101 General Chemistry I (113) (C and above)		Biological Sciences, Chemistry		SMG	

245	CHEM 102	General Chemistry II	3	6	CHEM 101 General Chemistry I (113) (C and above)			SMG	Biological Sciences, Chemistry	SEDS, SSH, SoM	
246	CHEM 211	Organic Chemistry I	3	6	CHEM 102 General Chemistry II (232) (C and above)			Biological Sciences, Chemistry	SEDS, SMG, SSH, SoM		
247	CHEM 211L	Organic Chemistry I Lab	2	4	CHEM 101L General Chemistry I lab (179) (C and above)	CHEM 211 Organic Chemistry I (154) (C and above)		Biological Sciences, Chemistry	SEDS, SMG, SSH, SoM		
248	CHEM 220	Quantitative Chemical Analysis	3	6	CHEM 102 General Chemistry II (232) (C and above)			Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
249	CHEM 220L	Quantitative Chemical Analysis Lab	1	2	CHEM 101L General Chemistry I lab (179) (C and above)	CHEM 220 Quantitative Chemical Analysis (555) (C and above)		Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
250	CHEM 331	Physical Chemistry I	3	6	CHEM 220 Quantitative Chemical Analysis (555) (C and above) AND PHYS 161 Physics I for Scientists and Engineers with Laboratory (116) (C and above)			Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
251	CHEM 331L	Physical Chemistry Lab	1	2		CHEM 331 Physical Chemistry I (634) (C and above)		Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
252	CHEM 341	Biochemistry I	3	6	CHEM 211 Organic Chemistry I (154) (C and above)			Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
253	CHEM 341L	Biochemistry I Lab	1	2	CHEM 212L Organic Chemistry II Lab (444) (C and above)	CHEM 341 Biochemistry I (1058) (C and above)		Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
254	CHEM 400	Chemistry Seminar	3	6	CHEM 380 Research Methods (636) (C and above)			Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
255	CHEM 410	Structural Spectroscopy	4	8	CHEM 212 Organic Chemistry II (443) (C and above)			Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	

256	CHEM 450	Advanced Inorganic Chemistry	3	6	CHEM 212 Organic Chemistry II (443) (C and above) AND CHEM 212L Organic Chemistry II Lab (444) (C and above) AND CHEM 250 Descriptive Inorganic Chemistry (445) (C and above)			Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
257	CHEM 450L	Advanced Inorganic Chemistry Laboratory	1	2	CHEM 212 Organic Chemistry II (443) (C and above) AND CHEM 212L Organic Chemistry II Lab (444) (C and above) AND CHEM 250 Descriptive Inorganic Chemistry (445) (C and above)	CHEM 350 Advanced Inorganic Chemistry (1905) (C and above)		Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
258	CHEM 471	Environmental Chemistry	3	6	CHEM 102 General Chemistry II (232) (C and above)			Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
259	CHEM 510	Principles of Physical Chemistry	3	6				Chemistry	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
260	CHEM 520	Applied Analytical Chemistry	3	6				Chemistry	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
261	CHEM 530	Inorganic Structures and Reaction Mechanisms	3	6				Chemistry	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
Communication and Composition											
262	COMM 202	Introduction to Public Speaking	3	6	WCS 150/ASC 100 Advanced English for Academic Purposes (2183) (C- and above)			2 year UG SSH		2 year UG SEDS, 2 year UG SMG	
263	SHSS 230	Say What you Mean: Clarity, Precision, and Style in Academic Writing	3	6	WCS 150/ASC 100 Advanced English for Academic Purposes (2183) (C- and above)			SEDS, SMG, SSH, SoM			
264	SHSS 240	Writing for Digital Media	3	6	WCS 150/ASC 100 Advanced English for Academic Purposes (2183) (C- and above)			SEDS, SMG, SSH, SoM			

265	SHSS 390	Writing Fellows I – Composition and Collaboration in Theory and Practice	3	6	WCS 150/ASC 100 Advanced English for Academic Purposes (2183) (B and above) AND (WCS 220 Science Writing (5686) (B+ and above) OR WCS 230 Say What you Mean: Clarity, Precision, and Style in Academic Writing (3026) (B+ and above) OR WCS 250 Advanced Rhetoric and Composition (3027) (B+ and above))			Instructor's Permission Required			
266	SHSS 730	From Genre to Style and Back: Writing for PhD Students	4	8				Instructor's Permission Required			
Communication and Composition, Languages, Literature and Linguistics											
267	WLL 235/SHSS 260	Creative Writing: Introduction to Fiction Writing I	3	6	WCS 150/ASC 100 Advanced English for Academic Purposes (2183) (C- and above)			SEDS, SMG, SSH, SoM			
History, Philosophy and Religious Studies											
268	HST 100	History of Kazakhstan	3	6				4 year UG SEDS, 4 year UG SEDS (pending graduation), 4 year UG SSH, 4 year UG SSH (pending graduation)	1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 1 year UG SSH	SEDS, SMG, SSH, SoM	
269	HST 104	Central Asian History II (1700 - 1991)	3	6				History, Undeclared SSH	SEDS, SMG, SSH, SoM		
270	HST 105	Introduction to Eurasian Environmental History	3	6				History, Undeclared SSH	SEDS, SMG, SSH, SoM		
271	HST 124	Introduction to the History of Medicine	3	6				History, Undeclared SSH	SEDS, SMG, SSH, SoM		
272	HST 151	US History I (to 1877)	3	6				History, Undeclared SSH	SEDS, SMG, SSH, SoM		
273	HST 232	Russian History from Riurik to Catherine the Great	3	6				SSH	SEDS, SMG, SoM		
274	HST 235	Peter the Great (1682-1725): First Emperor of Russia and “Father of the Fatherland”	3	6				SSH	SEDS, SMG, SoM		

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

282	PHIL 124	Knowledge and Reality	3	6				SEDS, SMG, SSH, SoM			
283	PHIL 141	Critical Thinking	3	6				SEDS, SMG, SSH, SoM			
284	PHIL 210	Ethics	3	6				2 year UG SEDS Chemical Engineering, 2 year UG SEDS Chemical and Materials Engineering, 2 year UG SEDS Civil Engineering, 2 year UG SEDS Civil and Environmental Engineering, 2 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Electronic Engineering, 2 year UG SEDS Mechanical Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering, 2 year UG SMG	SEDS, SMG, SSH, SoM		
285	PHIL 215	Bioethics	3	6				SEDS, SMG, SSH, SoM			
286	PHIL 223	Philosophy of Science	3	6				SEDS, SMG, SSH, SoM			
287	PHIL 240	Formal Logic	3	6				SEDS, SMG, SSH, SoM			
288	PHIL 320	Truth, Knowledge and Belief	3	6				SEDS, SMG, SSH, SoM			
289	PHIL 325	Truth, Lies, Media, and Propaganda	3	6				SEDS, SMG, SSH, SoM			
290	PHIL 352	Sex, Life, and Death: The Philosophy of Biology	3	6				SEDS, SMG, SSH, SoM			
History, Philosophy and Religious Studies, History, Philosophy and Religious Studies											
291	HST 261/REL 261	History of Islam (570s to 1258)	3	6	Subject "HST" BETWEEN 100 and 199 OR Subject "REL" BETWEEN 100 and 199			SSH	SEDS, SMG, SoM		
History, Philosophy and Religious Studies, Kazakh Language and Turkic Studies, Sociology and Anthropology, Sociology and Anthropology											
292	TUR 375	Topics in Turkic Studies	3	6				SEDS, SMG, SSH, SoM			
History, Philosophy and Religious Studies, Political Science and International Relations											
293	HST 312/PLS 333	Comparative Colonialism	3	6	Subject "HST" BETWEEN 100 and 199 OR Subject "WLL" BETWEEN 100 and 199 OR Subject "PLS" BETWEEN 100 and 199			SSH	SEDS, SMG, SoM		
History, Philosophy and Religious Studies, Political Science and International Relations, Sociology and Anthropology											

294	REL 332/ANT 313	Islam and Politics in Eurasia	3	6				Anthropology, Sociology	SSH	SEDS, SMG, SoM	
History, Philosophy and Religious Studies, Sociology and Anthropology											
295	HST 223/ANT 287	Cannibalism and Civilization	3	6				SSH	SEDS, SMG, SoM		
Kazakh Language and Turkic Studies											
296	KAZ 201	Academic Kazakh I	3	6	KAZ 150 Basic Kazakh (1215) (C- and above) OR KLL "[B1.2] Intermediate"			SEDS, SMG, SSH, SoM			
297	KAZ 202	Academic Kazakh II	3	6	KAZ 201 Academic Kazakh I (4561) (C- and above) OR KLL "[B2.2] Upper-Interm."			SEDS, SMG, SSH, SoM			
298	KAZ 211	Academic Speaking in Kazakh	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"		KAZ 303 Academic Speaking in Kazakh (702) (C- and above) OR KAZ 304 Academic Writing in Kazakh (703) (C- and above)	SEDS, SMG, SSH, SoM			
299	KAZ 212	Academic Writing in Kazakh	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"		KAZ 304 Academic Writing in Kazakh (703) (C- and above) OR KAZ 303 Academic Speaking in Kazakh (702) (C- and above)	SEDS, SMG, SSH, SoM			
300	KAZ 226	Kazakh for Medical School	3	6	KLL "[B1.2] Intermediate"			SEDS, SMG, SSH, SoM			
301	KAZ 313	Kazakh for Business	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			SEDS, SMG, SSH, SoM			
302	KAZ 349	Kazakh Mythology	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			SEDS, SMG, SSH, SoM			
303	KAZ 351	Kazakh Short Stories	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			SEDS, SMG, SSH, SoM			

304	KAZ 354	Kazakh Drama	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			SEDS, SMG, SSH, SoM			
305	KAZ 356	Kazakh Music History	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			SEDS, SMG, SSH, SoM			
306	KAZ 357	Literature of Alash	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			SEDS, SMG, SSH, SoM			
307	KAZ 362	Creative Writing in Kazakh Language	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			SEDS, SMG, SSH, SoM			
308	KAZ 363	Language and Globalization	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			SEDS, SMG, SSH, SoM			
309	KAZ 364	Kazakh for Civil Service	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			SEDS, SMG, SSH, SoM			
310	KAZ 366	Kazakh Language for Engineers	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			SEDS, SMG, SSH, SoM			
311	KAZ 368	Onomastics: History and Function of Names	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			SEDS, SMG, SSH, SoM			
312	KAZ 371	Contemporary Kazakh Literature	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			SEDS, SMG, SSH, SoM			
313	KAZ 372	Language and ethnicity	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			SEDS, SMG, SSH, SoM			
314	KAZ 373	Kazakh Terminology	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			SEDS, SMG, SSH, SoM			
315	KAZ 374	Kazakh Diplomacy	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			SEDS, SMG, SSH, SoM			

316	KAZ 375	Cultural Studies and Kazakh Culture	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			SEDS, SMG, SSH, SoM			
317	TUR 231	Istanbul in Literature and Culture	3	6				SEDS, SMG, SSH, SoM			
318	TUR 305	Introduction to Chagatay and Ottoman Turkish	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			SEDS, SMG, SSH, SoM			
319	TUR 575	Advanced Topics in Turkic Studies	4	8				GSB, GSE, GSPP, SEDS, SMG, SSH, SoM			
320	TUR 775	Doctoral Topic in Turkic Studies	4	8							
Languages, Literature and Linguistics											
321	CHN 101	Beginning Mandarin I	4	8				SEDS, SMG, SSH, SoM			
322	CHN 102	Beginning Mandarin II	4	8	CHN 101 Beginning Mandarin I (1384) (C and above)			SEDS, SMG, SSH, SoM			
323	FRE 201	Intermediate French I	4	8	FRE 102 Beginning French II (454) (C- and above)			SEDS, SMG, SSH, SoM			
324	KOR 101	Beginning Korean I	4	8				SEDS, SMG, SSH, SoM			
325	KOR 201	Intermediate Korean I	4	8	KOR 102 Beginning Korean II (4791) (C- and above)			SEDS, SMG, SSH, SoM			
326	LING 131	Introduction to Linguistics	3	6				World Languages, Literature and Culture	Undeclared SSH	SSH	
327	LING 140	Language Variation and Change: the Story of English	3	6				World Languages, Literature and Culture	Undeclared SSH	SSH	
328	LING 272	Language and the Mind	3	6				SSH	SEDS, SMG, SoM		
329	LING 275	Second Language Acquisition Theory and Research I	3	6				SSH	SEDS, SMG, SoM		
330	LING 278	Sounds of the World’s Languages	3	6				SSH	SEDS, SMG, SoM		
331	LING 472	Language Ideologies	3	6	LING 131 Introduction to Linguistics (1394) (C- and above)			SSH	SEDS, SMG, SoM		
332	LING 572	Language Ideologies	4	8				Eurasian Studies	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
333	LING 772	Language Ideologies	4	8							
334	PER 201	Intermediate Persian 1	4	8	PER 102 Beginning Persian II (4790) (C- and above)			SEDS, SMG, SSH, SoM			

335	RFL 403	Intensive Advanced and Superior Composition and Conversation Russian	4	8				Instructor's permission required.			
336	SPA 101	Beginning Spanish I	4	8				World Languages, Literature and Culture	Undeclared SSH	SSH	
337	SPA 201	Intermediate Spanish I	4	8	SPA 102 Beginning Spanish II (1128) (C- and above)			SEDS, SMG, SSH, SoM			
338	SPA 314	Advanced Spanish Grammar and Composition	3	6	SPA 202 Intermediate Spanish II (1842) (C- and above)			SEDS, SMG, SSH, SoM			
339	WLL 110	Introduction to Literary Studies	3	6				World Languages, Literature and Culture	Undeclared SSH	SSH	
340	WLL 121	Introduction to Cultural Studies	3	6				World Languages, Literature and Culture	Undeclared SSH	SSH	
341	WLL 201	World Literature I	3	6				World Languages, Literature and Culture	Undeclared SSH	SSH	
342	WLL 212	Introduction to Poetry	3	6				World Languages, Literature and Culture	Undeclared SSH	SSH	
343	WLL 244	Survey of Nineteenth-Century Russian Literature	3	6				World Languages, Literature and Culture	Undeclared SSH	SSH	
344	WLL 450	Laughter	3	6				World Languages, Literature and Culture	Undeclared SSH	SSH	
345	WLL 498	Languages, Linguistics, and Literatures Capstone I	3	6				4 year UG SSH World Languages, Literatures and Cultures			
346	WLL 550	Laughter	4	8				Eurasian Studies	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
Languages, Literature and Linguistics, Languages, Literature and Linguistics											
347	SPA 351/WLL 351	Literature and Film of the Postcolonial World	3	6	Subject "WLL" BETWEEN 200 and 299			SEDS, SMG, SSH, SoM			
348	WLL 361/FRE 361	Topics in French and Francophone film	3	6	FRE 101 Beginning French I (246) (C- and above) OR FRE 102 Beginning French II (454) (C- and above) OR FRE 201 Intermediate French I (667) (C- and above) OR FRE 202 Intermediate French II (1122) (C- and above)			SEDS, SMG, SSH, SoM			
Languages, Literature and Linguistics, Sociology and Anthropology											

349	WLL 171/ANT 175	Introduction to Linguistic Anthropology	3	6			ANT 277/WLL 271 Language and Society (1027) (C- and above)	Anthropology, Sociology, World Languages, Literature and Culture	Undeclared SSH	SSH	
350	WLL 385/ANT 385	Postcolonial Theory and its Applications in Eurasia	3	6	ANT 110 Introduction to Sociocultural Anthropology (501) (C- and above) OR SOC 101 Introduction to Sociology (508) (C- and above) OR WLL 121 Introduction to Cultural Studies (243) (C- and above) OR WLL 102 /PHIL 102 Language, Experience, Culture (2481) (C- and above)			Anthropology, Sociology, World Languages, Literature and Culture	SSH	SEDS, SMG, SoM	
Physics											
351	PHYS 161	Physics I for Scientists and Engineers with Laboratory	4	8		MATH 161 Calculus I (118) (C and above)	PHYS 171 Physics I for Physics Majors with Laboratory (1401) (C- and above)	1 year UG SEDS, 1 year UG SMG, 1 year UG SSH Mathematics, 1 year UG SSH Physics, 2 year UG SSH Chemistry	Biological Sciences, Chemistry, Mathematics, Physics, SEDS, SMG	SSH, SoM	
352	PHYS 201	Introductory Astronomy I	3	6				SEDS, SMG, SSH, SoM			
353	PHYS 221	Classical Mechanics I	3	6	(PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above) OR PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above)) AND MATH 273 Linear Algebra with Applications (84) (C- and above)			Physics		SEDS, SMG, SSH, SoM	

354	PHYS 261	Modern Physics with laboratory	4	8	MATH 162 Calculus II (170) (C- and above) AND (PHYS 152 Introductory Physics II with Lab (1176) (C- and above) OR PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above) OR PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above))			Physics	SEDS, SMG, SSH, SoM		
355	PHYS 315	Mathematical Methods of Physics	3	6	(PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above) OR PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above)) AND MATH 274 Introduction to Differential Equations (484) (C- and above)			Physics	SEDS, SMG, SSH, SoM		
356	PHYS 361	Classical Electrodynamics I	3	6		PHYS 315 Applied Mathematical Methods (653) (D and above) OR PHYS 411 Advanced Mathematical Physics (3142) (D and above)		Physics	SEDS, SMG, SSH, SoM		
357	PHYS 452	Quantum Mechanics II	3	6	PHYS 451 Quantum Mechanics I (1415) (C- and above)			Physics	SEDS, SMG, SSH, SoM		
358	PHYS 465	Advanced Experimental Physics	3	6	PHYS 370 Optics with Laboratory (1405) (C- and above)			Physics	SEDS, SMG, SSH, SoM		

359	PHYS 473	Introduction to Solid State Physics	3	6	PHYS 261 Modern Physics with laboratory (125) (C- and above) OR CHEM 331 Physical Chemistry I (634) (C- and above) OR MAE 301 Engineering Thermodynamics (5927) (C- and above) OR CHME 201 Chemical Engineering Thermodynamics (5007) (C- and above) OR ELCE 204 Solid State Devices (5508) (C- and above)			Physics	SEDS, SMG, SSH, SoM		
360	PHYS 505	Classical Mechanics	3	6				Physics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
361	PHYS 511	Computational Modeling and Simulation	3	6				Physics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
362	PHYS 515	Classical Electrodynamics	3	6				Physics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
363	PHYS 530	Solid State Physics	3	6				Physics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
364	PHYS 550	Advanced Mathematical Physics	3	6				Physics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
365	PHYS 700-0	Thesis Research	0	0							
366	PHYS 711	Computational Modeling and Simulation	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS, SSH	GSE, GSPP, SMG, SoM	
367	PHYS 750	Advanced Mathematical Physics	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS, SSH	GSE, GSPP, SMG, SoM	
Political Science and International Relations											
368	PLS 100	Introduction to the Politics of Central Asia	3	6				SSH	SEDS, SMG, SoM		
369	PLS 101	Introduction to Political Science	3	6				SEDS, SMG	Biological Sciences, Chemistry, Mathematics, Physics	SSH	
370	PLS 120	Introduction to Political Theory	3	6				Political Science and International Relations	Undeclared SSH	SEDS, SMG, SSH, SoM	
371	PLS 140	Introduction to Comparative Politics	3	6				Political Science and International Relations	Undeclared SSH	SEDS, SMG, SSH, SoM	
372	PLS 150	Introduction to International Relations	3	6				Political Science and International Relations	Undeclared SSH	SEDS, SMG, SSH, SoM	
373	PLS 210	Political Science Research Methods	3	6				Political Science and International Relations	SEDS, SMG, SSH, SoM		

374	PLS 211	Quantitative Methods	3	6			ECON 211 Economic Statistics (2280) (C- and above)	Political Science and International Relations	SEDS, SMG, SSH, SoM		
375	PLS 295	Asian Community	3	6				SSH	SEDS, SMG, SoM		
376	PLS 315	Political Game Theory	3	6	PLS 211 Quantitative Methods (221) (C- and above) OR ECON 101 Introduction to Microeconomics (379) (C and above)			Political Science and International Relations	SEDS, SMG, SSH, SoM		
377	PLS 326	Modern Political Theory	3	6	PLS 120 Introduction to Political Theory (512) (C- and above)			Political Science and International Relations	SEDS, SMG, SSH, SoM		
378	PLS 329	Anarchy	3	6	PLS 120 Introduction to Political Theory (512) (C- and above)			Political Science and International Relations	SEDS, SMG, SSH, SoM		
379	PLS 338	U.S. Government and Politics	3	6	(PLS 140 Introduction to Comparative Politics (223) (C- and above) OR PLS 101 Introduction to Political Science (513) (C- and above)) AND PLS 210 Political Science Research Methods (129) (C- and above)			Political Science and International Relations	SEDS, SMG, SSH, SoM		
380	PLS 341	Politics of Development	3	6	PLS 210 Political Science Research Methods (129) (C- and above)			Political Science and International Relations	SEDS, SMG, SSH, SoM		
381	PLS 342	Political Corruption	3	6	PLS 210 Political Science Research Methods (129) (C- and above)			Political Science and International Relations	SEDS, SMG, SSH, SoM		
382	PLS 365	Civil-Military Relations	3	6	PLS 211 Quantitative Methods (221) (C- and above) AND PLS 210 Political Science Research Methods (129) (C- and above)			Political Science and International Relations	SEDS, SMG, SSH, SoM		
383	PLS 370	Law, Politics and Society	3	6	PLS 210 Political Science Research Methods (129) (C- and above)			Political Science and International Relations	SEDS, SMG, SSH, SoM		
384	PLS 431	Politics and Governance of the Russian Federation	3	6	PLS 210 Political Science Research Methods (129) (C- and above)			Political Science and International Relations	SEDS, SMG, SSH, SoM		

385	PLS 446	The Politics of Immigration Control	3	6	PLS 140 Introduction to Comparative Politics (223) (C- and above) AND PLS 210 Political Science Research Methods (129) (C- and above)			Political Science and International Relations	SEDS, SMG, SSH, SoM		
386	PLS 448	Comparative Electoral System	3	6	PLS 140 Introduction to Comparative Politics (223) (C- and above)			Political Science and International Relations	SEDS, SMG, SSH, SoM		
387	PLS 455	The Politics of Arms in International Relations	3	6	PLS 150 Introduction to International Relations (511) (C- and above) AND PLS 210 Political Science Research Methods (129) (C- and above) AND PLS 211 Quantitative Methods (221) (C- and above)			Political Science and International Relations	SEDS, SMG, SSH, SoM		
388	PLS 465	Politics of International Finance	3	6	PLS 150 Introduction to International Relations (511) (C- and above) AND PLS 210 Political Science Research Methods (129) (C- and above)			Political Science and International Relations	SEDS, SMG, SSH, SoM		
389	PLS 511	Advanced Research I	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
390	PLS 531	Politics and Governance of the Russian Federation	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
391	PLS 540	Core Seminar in Comparative Politics	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
392	PLS 546	The Politics of Immigration Control	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
393	PLS 550	Core Seminar in IR	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
394	PLS 555	The Politics of Arms in International Relations	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
395	PLS 565	Politics of International Finance	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		

396	PLS 598	MA Thesis I	6	12				Political Science and International Relations			
SSH											
397	SSH 300	School of Sciences and Humanities Internship	3	6				Instructor permission required			
398	SSH 301	School of Sciences and Humanities Internship: Second Experience	3	6				Instructor's permission only			
Sociology and Anthropology											
399	ANT 110	Introduction to Sociocultural Anthropology	3	6				Anthropology, Sociology, Undeclared SSH	2 year UG SSH	SEDS, SMG, SSH, SoM	
400	ANT 140	World Prehistory	3	6				Anthropology, Sociology, Undeclared SSH	2 year UG SSH, 4 year UG SEDS Computer Science, 4 year UG SEDS Robotics and Mechatronics, 4 year UG SSH Biological Sciences, 4 year UG SSH Chemistry, 4 year UG SSH Mathematics, 4 year UG SSH Physics	SEDS, SMG, SSH, SoM	
401	ANT 233	Cavemen, Mammoths, and Sabertooths: Stone Age Archaeology in Eurasia	3	6				Anthropology, Sociology, Undeclared SSH	2 year UG SSH	SEDS, SMG, SSH, SoM	
402	ANT 361	Human Evolution: Bones, Stones and Genomes	3	6				Anthropology, Biological Sciences, Sociology	SSH	SEDS, SMG, SoM	
403	ANT 382	Anthropology of Global Health: The Global in the Local	3	6				Anthropology, Sociology	SSH	SEDS, SMG, SoM	
404	ANT 400	Research Assistance in Anthropology	1	2							
405	ANT 401	Research Assistance in Anthropology	1	2							
406	ANT 498	Capstone Seminar I	3	6				4 year UG SSH Anthropology			
407	SOC 101	Introduction to Sociology	3	6				Anthropology, Sociology, Undeclared SSH	2 year UG SSH, 3 year UG SSH Biological Sciences	SEDS, SMG, SSH, SoM	
408	SOC 115	Global Social Problems	3	6				Anthropology, Sociology, Undeclared SSH	2 year UG SSH	SEDS, SMG, SSH, SoM	
409	SOC 201	Social Science Research Methods	3	6				Anthropology, Sociology	SSH	SEDS, SMG, SoM	

410	SOC 210	Gender and Society	3	6				Anthropology, Sociology	SSH	SEDS, SMG, SoM	
411	SOC 213	Work and Society	3	6				Anthropology, Sociology	SSH	SEDS, SMG, SoM	
412	SOC 215	Sociology of Race and Ethnicity	3	6				Anthropology, Sociology	SSH	SEDS, SMG, SoM	
413	SOC 221	International Migration	3	6				Anthropology, Sociology	SSH	SEDS, SMG, SoM	
414	SOC 301	Classical Sociological Theory	3	6	SOC 101 Introduction to Sociology (508) (C- and above) OR SOC 115 Global Social Problems (1032) (C- and above) OR ANT 110 Introduction to Sociocultural Anthropology (501) (C- and above)			Anthropology, Sociology	SSH	SEDS, SMG, SoM	
415	SOC 310	Social Inequality	3	6	SOC 101 Introduction to Sociology (508) (C- and above) OR SOC 115 Global Social Problems (1032) (C- and above)			Anthropology, Sociology	SSH	SEDS, SMG, SoM	
416	SOC 322	Digital Media Research Methods	3	6	SOC 201 Social Science Research Methods (1341) (C- and above) OR SOC 203 Quantitative Methods in Sociology (1377) (C- and above) OR ECON 211 Economic Statistics (2280) (C- and above) OR PLS 210 Political Science Research Methods (129) (C- and above)			Anthropology, Sociology	SSH	SEDS, SMG, SoM	
417	SOC 401	Research Assistance in Sociology	1	2				Instructor's permission required			
418	SOC 403	Research Assistance in Sociology	2	4				Instructor's permission required			
419	SOC 498	Capstone Seminar Part I	3	6				4 year UG SSH Sociology			
Sociology and Anthropology, Sociology and Anthropology											
420	ANT 216/SOC 216	Marriage and Kinship	3	6				Anthropology, Sociology	2 year UG SSH	SEDS, SMG, SSH, SoM	
SoE											
Chemical and Materials Engineering											

421	CHME 200	Basic Principles and Calculations in Chemical Engineering	3	6				2 year UG SEDS Chemical Engineering, 2 year UG SEDS Chemical and Materials Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared SEDS	SEDS, SMG, SSH, SoM	
422	CHME 201	Chemical Engineering Thermodynamics	3	6				2 year UG SEDS Chemical Engineering, 2 year UG SEDS Chemical and Materials Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared SEDS	SEDS, SMG, SSH, SoM	

423	CHME 222	Inorganic and Analytical Chemistry	3	6				2 year UG SEDS Chemical Engineering, 2 year UG SEDS Chemical and Materials Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared SEDS	SEDS, SMG, SSH, SoM	
424	DCHME 700-0	Thesis Research	0	0				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology (pending graduation)	Education, Eurasian Studies, Public Policy	
425	DCHME 755	Integrated Computational Materials Engineering	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology (pending graduation)	Education, Eurasian Studies, Public Policy	

426	DCHME 761	Advanced Chemical Reaction Engineering	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology (pending graduation)	Education, Eurasian Studies, Public Policy	
427	DCHME 762	Advanced Materials Processing	4	8				Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology (pending graduation)	Education, Eurasian Studies, Public Policy	
428	ECHE 333	Separation Processes-I	3	6	ECHE 319 Chemical Engineering Thermodynamics (1218) (D and above)			Registration by School Administration			
429	ECHE 369	Transport Phenomena-II	3	6				Registration by School Administration			
430	ECHE 385	Research Practice	3	6				Registration by School Administration			
431	ECHE 418	Capstone project 1	3	6	ECHE 323 Computational methods in Chemical Engineering-I (1272) (D and above)			Registration by School Administration			

432	ECHE 463	Introduction to Molecular Modeling Methods	3	6				4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared SEDS	SEDS, SMG, SSH, SoM	
433	ECHE 478	Electrochemical Engineering and Corrosion Protection	3	6	ECHE 222 Chemistry I (731) (D and above)			4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared SEDS	SEDS, SMG, SSH, SoM	
434	ECHE 481	Chemical Reaction Engineering	3	6	ECHE 126 Introduction to Chemical Engineering (33) (D and above) AND BENG 124 Engineering Mathematics I (101) (D and above) AND BENG 225 Engineering Mathematics II (48) (D and above)			Registration by School Administration			

435	ECHE 484	Multi-Phase Flows	3	6	ECHE 319 Chemical Engineering Thermodynamics (1218) (D and above) AND ECHE 270 Transport Phenomena-l (735) (D and above)			4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared SEDS	SEDS, SMG, SSH, SoM	
436	ECHE 486	Chemical Process Safety	3	6				Registration by School Administration			
437	ECHE 487	Soft Matter, Foods and Colloids	3	6				4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared SEDS	SEDS, SMG, SSH, SoM	

438	ECHE 488	Atmospheric Chemistry and Physics	3	6				4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared SEDS	SEDS, SMG, SSH, SoM	
439	MBME 603	Biomaterials Science & Engineering	3	6				1 year Gr SEDS Biomedical Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology (pending graduation)	

440	MBME 604	Biosensors	3	6				1 year Gr SEDS Biomedical Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology (pending graduation)	
441	MBME 610	Anatomy and Physiology for Biomedical Engineers	3	6				1 year Gr SEDS Biomedical Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology (pending graduation)	
442	MCHME 601	Master Thesis I	12	24				2 year Gr SEDS Chemical Engineering, 2 year Gr SEDS Chemical and Materials Engineering			

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

446	MCHME 714	Computational Materials Engineering	3	6				2 year Gr SEDS Chemical Engineering, 2 year Gr SEDS Chemical and Materials Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology (pending graduation)	
Civil Engineering											
447	MSC 600	Research Methods and Ethics	3	6				1 year Gr SEDS Biomedical Engineering, 1 year Gr SEDS Engineering Management	1 year Gr SMG, 2 year Gr SMG		
448	MSC 602	Advanced Applied Mathematics	3	6				1 year Gr SEDS Biomedical Engineering, 1 year Gr SEDS Chemical Engineering, 1 year Gr SEDS Chemical and Materials Engineering, 1 year Gr SEDS Civil Engineering, 1 year Gr SEDS Civil and Environmental Engineering, 1 year Gr SEDS Electrical and Computer Engineering, 1 year Gr SEDS Electrical and Electronic Engineering, 1 year Gr SEDS Mechanical Engineering, 1 year Gr SEDS Mechanical and Aerospace Engineering	1 year Gr SMG, 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year UG SEDS (pending graduation)	
449	MSC 615	Advanced Statistics and Probability	3	6				1 year Gr SEDS Engineering Management	1 year Gr SMG, 2 year Gr SMG		
Civil Engineering, Communication and Composition											

450	MSC 601	Technical Communication	3	6				1 year Gr SEDS Chemical Engineering, 1 year Gr SEDS Chemical and Materials Engineering, 1 year Gr SEDS Civil Engineering, 1 year Gr SEDS Civil and Environmental Engineering, 1 year Gr SEDS Computer Science, 1 year Gr SEDS Electrical and Computer Engineering, 1 year Gr SEDS Electrical and Electronic Engineering, 1 year Gr SEDS Mechanical Engineering, 1 year Gr SEDS Mechanical and Aerospace Engineering, 1 year Gr SEDS Robotics	1 year Gr SMG, 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology (pending graduation)	
Civil and Environmental Engineering											
451	CEE 200	Structural Mechanics I	3	6				2 year UG SEDS Civil Engineering, 2 year UG SEDS Civil and Environmental Engineering, 2 year UG SEDS Mechanical Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared SEDS	SEDS, SMG, SSH, SoM	

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

454	DCEE 700-0	Thesis Research	0	0				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology (pending graduation)	Education, Eurasian Studies, Public Policy	
455	DCEE 750	Finite Element Methods	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology (pending graduation)	Education, Public Policy	
456	DCEE 753	Structural Evaluation and Rehabilitation	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology (pending graduation)	Education, Public Policy	

457	DCEE 756	Environmental Modeling Development	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology		
458	DCEE 757	Advanced Environmental Chemistry	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology (pending graduation)	Education, Public Policy	
459	ECE 303	Construction Management and Practice	3	6	BENG 148 Engineering Practice (1073) (D and above)			Registration by School Administration			
460	ECE 307	Engineering Geology and Rock Mechanics	3	6				Registration by School Administration			
461	ECE 318	Structural Design - Concrete	3	6	ECE 479 Structural Analysis II (2460) (C- and above)			Registration by School Administration			
462	ECE 401	Capstone Project 1	3	6				Registration by School Administration			
463	ECE 404	Construction Technologies and Processes	3	6	BENG 148 Engineering Practice (1073) (D and above) AND ECE 302 Civil Engineering Materials (1040) (D and above)			Registration by School Administration			
464	ECE 405	Environmental Engineering	3	6	ECE 473 Environmental Systems (1953) (D and above) OR ECE 218 Environmental Chemistry (3296) (D and above)			Registration by School Administration			
465	ECE 416	Highway Engineering	3	6	ECE 302 Civil Engineering Materials (1040) (D and above)			Registration by School Administration			

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

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

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

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

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

482	MCEE 705	Environmental Modeling Development	3	6				2 year Gr SEDS Civil Engineering, 2 year Gr SEDS Civil and Environmental Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology (pending graduation)	
Electrical and Computer Engineering											
483	DELCE 700-0	Thesis Research	0	0				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology (pending graduation)	Education, Eurasian Studies, Public Policy	
484	DELCE 750	Advanced Biomedical Imaging Devices and Technologies	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology (pending graduation)	Education, Eurasian Studies, Public Policy	

485	DELCE 752	Optical Wireless Communications	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology (pending graduation)	Education, Eurasian Studies, Public Policy	
486	DELCE 753	Stochastic Processes	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology (pending graduation)	Education, Eurasian Studies, Public Policy	
487	DELCE 754	Optimal and Robust Control	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology (pending graduation)	Education, Eurasian Studies, Public Policy	

488	DELCE 755	Advanced Electromagnetics	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology (pending graduation)	Education, Eurasian Studies, Public Policy	
489	EEE 238	Digital Signal and Image Processing	3	6				Registration by School Administration			
490	EEE 342	Electromagnetics	3	6				Registration by School Administration			
491	EEE 345	Power Electronics	3	6	ELCE 201 Circuit Theory (5507) (D and above)			Registration by School Administration			
492	EEE 382	Antennas and Propagation	3	6				Registration by School Administration			
493	EEE 384	Digital Integrated Circuits Design	3	6	EEE 250 Microelectronic Devices and Circuits (3152) (C- and above)			Registration by School Administration			
494	EEE 437	Capstone Project 1	3	6				Registration by School Administration			
495	EEE 448	Power Transmission and Distribution plants	3	6				Registration by School Administration			
496	EEE 450	RF and Microwave Circuit Design	3	6				Registration by School Administration			
497	EEE 452	Power Systems Protection	3	6	ELCE 303 Power System Analysis (6180) (D and above)			Registration by School Administration			
498	EEE 490	Introduction to Big Data	3	6				Registration by School Administration			
499	EEE 493	Industry 4.0	3	6				Registration by School Administration			
500	EEE 494	Modern Characterizations for Semiconductor Industry	3	6				Registration by School Administration			
501	EEE 497	Signal Processing for Communications	3	6				Registration by School Administration			
502	EEE 498	Computer Networks	3	6				Registration by School Administration			

503	ELCE 200	Introduction to Electrical Circuits	3	6	MATH 162 Calculus II (170) (C- and above) AND PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above)			2 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Electronic Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared SEDS	SEDS, SMG, SSH, SoM	
504	ELCE 202	Digital Logic Design	3	6	MATH 162 Calculus II (170) (C- and above) AND PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above) AND ENG 101 Programming for Engineers (4517) (C- and above)			2 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Electronic Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared SEDS	SEDS, SMG, SSH, SoM	

505	ELCE 203	Signals and Systems	3	6	MATH 162 Calculus II (170) (C- and above) AND PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above)			2 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Electronic Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared SEDS	SEDS, SMG, SSH, SoM	
506	ENG 101	Programming for Engineers	3	6			CSCI 151 Programming for Scientists and Engineers (192) (F) OR CSCI 111 Web Programming and Problem Solving (110) (F) OR CSCI 115 Programming Fundamentals (5257) (F) OR CSCI 152 Performance and Data Structures (489) (F) OR CSCI 408 Senior Project I (1481) (F) OR CSCI 409 Senior Project II (1483) (F)	1 year UG SEDS Chemical Engineering, 1 year UG SEDS Chemical and Materials Engineering, 1 year UG SEDS Civil Engineering, 1 year UG SEDS Civil and Environmental Engineering, 1 year UG SEDS Electrical and Computer Engineering, 1 year UG SEDS Electrical and Electronic Engineering, 1 year UG SEDS Mechanical Engineering, 1 year UG SEDS Mechanical and Aerospace Engineering, 1 year UG SEDS Undeclared	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared SEDS		
507	MECE 601	Master Thesis I	12	24				2 year Gr SEDS Electrical and Computer Engineering, 2 year Gr SEDS Electrical and Electronic Engineering			

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

511	MECE 725	Smart Grids and Energy Systems	3	6	MECE 700 Industrial and Commercial Power System (4810) (D and above)			2 year Gr SEDS Electrical and Computer Engineering, 2 year Gr SEDS Electrical and Electronic Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year UG SEDS (pending graduation)	
512	MECE 726	Modern Semiconductor Devices and Systems	3	6				2 year Gr SEDS Electrical and Computer Engineering, 2 year Gr SEDS Electrical and Electronic Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year UG SEDS (pending graduation)	
Geosciences											
513	GEOL 201	Mineralogy	3	6	GEOL 101 Fundamentals of Geology (4774) (C- and above)			SMG	SEDS, SSH, SoM		
514	GEOL 202	Geologic Maps and Cross-Sections	3	6	GEOL 101 Fundamentals of Geology (4774) (D and above) OR GEOL 102 Fundamentals of Geology (4772) (D and above)			SMG	SEDS, SSH, SoM		
Mechanical and Aerospace Engineering											

515	DMAE 700-0	Thesis Research	0	0				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology (pending graduation)	Education, Eurasian Studies, Public Policy	
516	DMAE 701	Advanced Applied Mathematics	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology (pending graduation)	Education, Eurasian Studies, Public Policy	
517	DMAE 765	Advanced Manufacturing Processes and Strategies	4	8				1 year PhD SEDS Science, Engineering and Technology	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology (pending graduation)	Education, Eurasian Studies, Public Policy	
518	EME 354	Advanced Control Systems	3	6	BENG 219 Control Systems (728) (D and above)			Registration by School Administration			

519	EME 358	Heat Transfer	3	6	BENG 226 Engineering Thermodynamics (1553) (D and above) AND EME 275 Fluid Mechanics I (1988) (D and above)			Registration by School Administration			
520	EME 361	Machine Design	3	6				Registration by School Administration			
521	EME 410	Aerodynamics	3	6	EME 357 Fluid Mechanics II (1280) (D and above)			Registration by School Administration			
522	EME 412	Heating, Ventilating and Air Conditioning	3	6	MAE 301 Engineering Thermodynamics (5927) (D and above)			4 year UG SEDS Mechanical Engineering, 4 year UG SEDS Mechanical and Aerospace Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared SEDS	SEDS, SMG, SSH, SoM	
523	EME 413	Computer Aided Geometric Design	3	6	EME 253 Computer Aided Engineering (1050) (C- and above)			4 year UG SEDS Mechanical Engineering, 4 year UG SEDS Mechanical and Aerospace Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared SEDS	SEDS, SMG, SSH, SoM	

524	EME 451	Capstone Project 1	3	6				Registration by School Administration			
525	EME 456	Feasibility Analysis of Clean Energy Technologies	3	6				4 year UG SEDS Mechanical Engineering, 4 year UG SEDS Mechanical and Aerospace Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared SEDS	SEDS, SMG, SSH, SoM	
526	EME 463	Machine Dynamics II	3	6				Registration by School Administration			
527	EME 467	Vehicle Propulsion Systems	3	6				4 year UG SEDS Mechanical Engineering, 4 year UG SEDS Mechanical and Aerospace Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared SEDS	SEDS, SMG, SSH, SoM	

528	ENG 100	Introduction to Engineering	3	6				1 year UG SEDS Chemical Engineering, 1 year UG SEDS Chemical and Materials Engineering, 1 year UG SEDS Civil Engineering, 1 year UG SEDS Civil and Environmental Engineering, 1 year UG SEDS Electrical and Computer Engineering, 1 year UG SEDS Electrical and Electronic Engineering, 1 year UG SEDS Mechanical Engineering, 1 year UG SEDS Mechanical and Aerospace Engineering, 1 year UG SEDS Undeclared	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared SEDS	SEDS, SMG, SSH, SoM	
529	ENG 200	Engineering Mathematics III (Differential Equations and Linear Algebra)	3	6	MATH 162 Calculus II (170) (C and above)			2 year UG SEDS Chemical Engineering, 2 year UG SEDS Chemical and Materials Engineering, 2 year UG SEDS Civil Engineering, 2 year UG SEDS Civil and Environmental Engineering, 2 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Electronic Engineering, 2 year UG SEDS Mechanical Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering, 2 year UG SEDS Undeclared	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared SEDS	SEDS, SMG, SSH, SoM	

530	MAE 201	Computer Aided Design	3	6				2 year UG SEDS Mechanical Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering	Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, Undeclared SEDS	SEDS, SMG, SSH, SoM	
531	MMAE 601	Master Thesis I	12	24	MMAE 600 Research Seminar (4703) (P)			2 year Gr SEDS Mechanical Engineering, 2 year Gr SEDS Mechanical and Aerospace Engineering			
532	MMAE 603	Modern Control Engineering	3	6				1 year Gr SEDS Mechanical Engineering, 1 year Gr SEDS Mechanical and Aerospace Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology (pending graduation)	

533	MMAE 605	Advanced Manufacturing Processes and Strategies	3	6				1 year Gr SEDS Mechanical Engineering, 1 year Gr SEDS Mechanical and Aerospace Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology (pending graduation)	
534	MMAE 710	Space Structures Design	3	6				2 year Gr SEDS Mechanical Engineering, 2 year Gr SEDS Mechanical and Aerospace Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology (pending graduation)	
535	MMAE 713	Computational Fluid Structure Interaction	3	6				2 year Gr SEDS Mechanical Engineering, 2 year Gr SEDS Mechanical and Aerospace Engineering	1 year Gr SEDS, 1 year Gr SMG, 2 year Gr SEDS, 2 year Gr SEDS (pending graduation), 2 year Gr SMG	2 year PhD SEDS Science, Engineering and Technology, 3 year PhD SEDS Science, Engineering and Technology, 4 year PhD SEDS Science, Engineering and Technology, 5 year PhD SEDS Science, Engineering and Technology (pending graduation)	

Mining Engineering											
536	MINE 501	Foundations of Mining	3	6				Mining Engineering			
537	MINE 502	Geology for Mining Engineers	3	6				Mining Engineering			
538	MINE 503	Applied Geostatistics	3	6				Mining Engineering			
539	MINE 504	Mine Geomechanics	3	6				Mining Engineering			
540	MINE 505	Advanced Mine Ventilation	3	6				Mining Engineering			
541	MINE 601	Mine Management and Sustainability	3	6				Mining Engineering			
542	MINE 602	Mine Automation and Maintenance	3	6	MINE 502 Geology for Mining Engineers (3691) (C- and above)			Mining Engineering			
543	MINE 603	Multivariate Geostatistics	3	6	MINE 503 Applied Geostatistics (3692) (C- and above)			Mining Engineering			
544	MINE 606	Underground Hard Rock Geotechnical Engineering	3	6				Mining Engineering			
545	MINE 690	Thesis I	6	12				Mining Engineering			
546	MINE 701	Advanced Mine Geomechanics	4	8				1 year PhD SEDS Science, Engineering and Technology	Eurasian Studies		
547	MINE 804	Unconventional Mining Systems	4	8	MINE 501 Foundations of Mining (3693) (C and above)			1 year PhD SEDS Science, Engineering and Technology	Eurasian Studies		
548	MINE 890-0	Thesis Research	0	0				1 year PhD SEDS Science, Engineering and Technology			
Petroleum Engineering											
549	PETE 201	Fluid Mechanics and Thermodynamics	3	6	MATH 161 Calculus I (118) (C- and above)			SMG	SEDS, SSH, SoM		
550	PETE 501	Foundations of Petroleum Engineering	3	6				Petroleum Engineering	2 year Gr SMG Petroleum Engineering	SEDS, SSH	
551	PETE 502	Petroleum Geology	3	6				Petroleum Engineering	SEDS, SSH		
552	PETE 503	Fluid Flow Through Porous Media	3	6				Petroleum Engineering	SEDS, SSH		
553	PETE 504	Advanced Formation Evaluation	3	6				Petroleum Engineering	SEDS, SSH		
554	PETE 505	Advanced Drilling Engineering	3	6				Petroleum Engineering	SEDS, SSH		
555	PETE 511	Advanced Well Testing and Evaluation	3	6				Petroleum Engineering	SEDS, SSH		
556	PETE 600	MSc Thesis	6	12				Petroleum Engineering			
557	PETE 601	Petroleum Data Analytics	3	6				Petroleum Engineering			

558	PETE 612	Research Proposal Preparation	3	6				Petroleum Engineering			
559	PETE 802	Fluid Flow Through Porous Media	4	8				1 year PhD SEDS Science, Engineering and Technology	Eurasian Studies		
560	PETE 890-0	Thesis Research	0	0				1 year PhD SEDS Science, Engineering and Technology			
SMG											
561	DENG 783	Statistics	4	8				1 year PhD SEDS Science, Engineering and Technology	Science, Engineering and Technology	Education, Eurasian Studies, Public Policy	
School of Engineering											
562	BENG 405	Project Management	3	6				Registration by School Administration			
563	DENG 782	Research Methods and Ethics	3	6				1 year PhD SEDS Science, Engineering and Technology	Education, Eurasian Studies, Public Policy, Science, Engineering and Technology		
564	DENG 784	Doctoral Proposal I	0	6				Science, Engineering and Technology			
565	DENG 785	PhD Proposal Oral Defence	0	0				Science, Engineering and Technology			
566	DENG 787	Doctoral Proposal II	3	6	DENG 784 Doctoral Proposal I (1774) (P)	DENG 785 PhD Proposal Oral Defence (2604) (P)		Science, Engineering and Technology			
567	DENG 789	Doctoral Seminar I	3	6	DENG 785 PhD Proposal Oral Defence (2604) (P)			Science, Engineering and Technology			
568	DENG 790	Doctoral Seminar II	3	6	DENG 789 Doctoral Seminar I (4598) (P)			Science, Engineering and Technology			
569	DENG 791	Doctoral Seminar III	3	6	DENG 790 Doctoral Seminar II (4599) (P)			Science, Engineering and Technology			
570	DENG 794	Dissertation Research	12	24	DENG 785 PhD Proposal Oral Defence (2604) (P)			Science, Engineering and Technology			
571	DENG 795	Research at Host University	6	12	DENG 785 PhD Proposal Oral Defence (2604) (P)			Science, Engineering and Technology			
572	DENG 796	Thesis Completion	0	0				Science, Engineering and Technology			

573	DENG 797	Oral Defence of PhD Dissertation	0	0	DENG 785 PhD Proposal Oral Defence (2604) (P) AND DENG 789 Doctoral Seminar I (4598) (P) AND DENG 790 Doctoral Seminar II (4599) (P)			Science, Engineering and Technology			
SCAI											
Computer Science											
574	CSCI 111	Web Programming and Problem Solving	3	6			CSCI 101 Introduction to Computational Sciences (147) (D and above) OR CSCI 115 Programming Fundamentals (5257) (D and above) OR CSCI 151 Programming for Scientists and Engineers (192) (D and above) OR ENG 101 Programming for Engineers (4517) (D and above)	Anthropology, Economics, History, Political Science and International Relations, Sociology, Undeclared SSH, World Languages, Literature and Culture			
575	CSCI 115	Programming Fundamentals	4	8			CSCI 101 Introduction to Computational Sciences (147) (D and above) OR CSCI 111 Web Programming and Problem Solving (110) (D and above) OR CSCI 151 Programming for Scientists and Engineers (192) (D and above) OR ENG 101 Programming for Engineers (4517) (D and above)	Biological Sciences, Chemistry	Computer Science, Mathematics, Physics, Robotics and Mechatronics, Undeclared SEDS, Undeclared SSH	SSH	

576	CSCI 151	Programming for Scientists and Engineers	4	8			CSCI 111 Web Programming and Problem Solving (110) (D and above) OR CSCI 115 Programming Fundamentals (5257) (D and above) OR ENG 101 Programming for Engineers (4517) (B- and above)	Computer Science, Mathematics, Physics, Robotics and Mechatronics	Biological Sciences, Chemistry, Undeclared SEDS, Undeclared SSH	SSH	
577	CSCI 231	Computer Systems and Organization	3	6	CSCI 151 Programming for Scientists and Engineers (192) (C- and above)			Computer Science			
578	CSCI 235	Programming Languages	4	8	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science			
579	CSCI 262	Software Project Management	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science	Biological Sciences, Chemistry, Mathematics, Physics, Robotics and Mechatronics, Undeclared SEDS, Undeclared SSH	SSH	
580	CSCI 341	Database Systems	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science			
581	CSCI 344	Data Mining and Decision Support	3	6	CSCI 341 Database Systems (195) (C- and above) AND MATH 273 Linear Algebra with Applications (84) (C- and above)			Computer Science			
582	CSCI 361	Software Engineering	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science			
583	CSCI 390	Artificial Intelligence	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science			
584	CSCI 398	Directed Study	3	6				Instructor's permission required			

585	CSCI 399	Internship II	3	6				Instructor's Permission Required			
586	CSCI 399A	Internship II - A	1	2				Instructor's permission required			
587	CSCI 399F	Internship II - F	6	12				Instructor's Permission Required			
588	CSCI 408	Senior Project I	3	6				Computer Science			
589	CSCI 434	Information Security	3	6		CSCI 333 Computer Networks (1145) (D and above)		Computer Science	Biological Sciences, Chemistry, Mathematics, Physics, Robotics and Mechatronics, Undeclared SEDS, Undeclared SSH		
590	CSCI 471	Complexity and Computability	3	6	MATH 251 Discrete Mathematics (85) (C- and above)			Computer Science			
591	CSCI 490	Brain Computer Interface	3	6	MATH 273 Linear Algebra with Applications (84) (C and above) AND MATH 321 Probability (482) (C and above)			Computer Science	Biological Sciences, Chemistry, Mathematics, Physics, Robotics and Mechatronics, Undeclared SEDS, Undeclared SSH	SSH	
592	CSCI 494	Deep Learning	3	6	CSCI 390 Artificial Intelligence (643) (C and above) AND MATH 273 Linear Algebra with Applications (84) (C and above)			Computer Science	Biological Sciences, Chemistry, Mathematics, Physics, Robotics and Mechatronics, Undeclared SEDS, Undeclared SSH		
593	CSCI 501	Software Principles and Practice	3	6				Computer Science, Robotics	SEDS	SSH	
594	CSCI 511	Theory of Computation	3	6				Computer Science	SEDS	SSH	
595	CSCI 525	Quantum Computing	3	6				Computer Science, Physics	SEDS	SSH	
596	CSCI 545	Big Data Analytics	3	6				Computer Science	SEDS	SSH	
597	CSCI 575	Formal Methods and Applications	3	6				Computer Science	SEDS	SSH	
598	CSCI 594	Deep Learning	3	6				Computer Science	SEDS	SSH	
599	CSCI 700-0	Thesis Research	0	0							
600	CSCI 725	Advanced Quantum Computing	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS	SSH	
601	CSCI 745	Advanced Big Data Analytics	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS	SSH	

602	CSCI 794	Advanced Deep Learning	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS	SSH	
603	DS 501	Fundamentals of Data Science – I	3	6				Data Science	SEDS	SSH	
604	DS 507	Database Management Systems	3	6				Data Science	SEDS	SSH	
605	DS 551	Process and Project Management	3	6				Data Science	SEDS	SSH	
606	SST 503	Laboratory Practicum	3	6	SEDS 502 Teaching Practicum (2824) (P)			SEDS, SSH			
607	SST 591	Research Methods	3	6				SEDS, SSH			
608	SST 693	Thesis Proposal	3	6	SEDS 591 Research Methods (3184) (C- and above)			SEDS, SSH			
Mathematics											
609	MATH 109	Mathematical Discovery	3	6			MATH 161 Calculus I (118) (C- and above)	Anthropology, History, Political Science and International Relations, Sociology, Undeclared SSH, World Languages, Literature and Culture			
610	MATH 161	Calculus I	4	8				1 year UG SEDS, 1 year UG SMG, 1 year UG SSH Mathematics, 1 year UG SSH Physics	Biological Sciences, Chemistry, Mathematics, Physics, SEDS, SMG	SSH, SoM	
611	MATH 162	Calculus II	4	8	MATH 161 Calculus I (118) (C and above)			2 year UG SEDS, 2 year UG SMG, 2 year UG SSH Chemistry, 2 year UG SSH Mathematics, 2 year UG SSH Physics	SEDS, SMG, SSH, SoM		
612	MATH 251	Discrete Mathematics	3	6	MATH 161 Calculus I (118) (C and above)			Mathematics	Computer Science	SEDS, SMG, SSH, SoM	
613	MATH 263	Calculus III	4	8	MATH 162 Calculus II (170) (C and above)			Mathematics	Physics, SEDS	SMG, SSH, SoM	
614	MATH 273	Linear Algebra with Applications	4	8	MATH 161 Calculus I (118) (C and above)	MATH 162 Calculus II (170) (C and above)		2 year UG SSH Physics, Mathematics	Computer Science, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	
615	MATH 274	Introduction to Differential Equations	3	6	MATH 162 Calculus II (170) (C and above)			Mathematics	SEDS, SMG, SSH, SoM		
616	MATH 310	Applied Statistical Methods	3	6	MATH 161 Calculus I (118) (C and above)		MATH 321 Probability (482) (C and above)	Biological Sciences, Computer Science	Mathematics	SEDS, SMG, SSH, SoM	

617	MATH 321	Probability	3	6	MATH 162 Calculus II (170) (C and above)		ECON 211 Economic Statistics (2280) (C- and above) OR PLS 211 Quantitative Methods (221) (C- and above)	Computer Science, Mathematics	SEDS, SMG, SSH, SoM		
618	MATH 323	Actuarial Mathematics I	3	6	MATH 321 Probability (482) (C and above) OR ECON 211 Economic Statistics (2280) (C and above) OR (MATH 162 Calculus II (170) (C and above) AND MATH 310 Applied Statistical Methods (82) (C and above))			Mathematics	SEDS, SMG, SSH, SoM		
619	MATH 351	Numerical Methods with Applications	3	6	MATH 274 Introduction to Differential Equations (484) (C and above) AND MATH 263 Calculus III (81) (C and above)		ENG 202 Numerical Methods in Engineering (5506) (C and above)	Mathematics	SEDS, SMG, SSH, SoM		
620	MATH 361	Real Analysis I	3	6	MATH 263 Calculus III (81) (C and above) AND MATH 251 Discrete Mathematics (85) (C and above)			Mathematics	SEDS, SMG, SSH, SoM		
621	MATH 425	Stochastic Processes	3	6	MATH 321 Probability (482) (C and above) OR ECON 211 Economic Statistics (2280) (C and above)			Mathematics	SEDS, SMG, SSH, SoM		
622	MATH 440	Regression Analysis	3	6	MATH 322 Mathematical Statistics (1165) (C and above)		SOC 203 Quantitative Methods in Sociology (1377) (C and above) OR PLS 211 Quantitative Methods (221) (C and above)	Mathematics	SEDS, SMG, SSH, SoM		

623	MATH 471	Nonlinear Differential Equations	3	6	MATH 273 Linear Algebra with Applications (84) (C and above) AND MATH 274 Introduction to Differential Equations (484) (C and above)			Mathematics	SEDS, SMG, SSH, SoM		
624	MATH 480	Complex Analysis	3	6	MATH 263 Calculus III (81) (C and above)			Mathematics	SEDS, SMG, SSH, SoM		
625	MATH 481	Partial Differential Equations	3	6	MATH 274 Introduction to Differential Equations (484) (C and above)	MATH 480 Complex Analysis (618) (C and above)		Mathematics	SEDS, SMG, SSH, SoM		
626	MATH 497	Directed Study in Mathematics	3	6				Instructor's Permission Required			
627	MATH 514	Operations Research	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
628	MATH 517	Scientific Modeling and Simulation with Mathematics	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
629	MATH 519	Scientific Computing	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
630	MATH 540	Statistical Learning	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
631	MATH 542	Statistical Programming	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
632	MATH 576	Numerical Methods for Partial Differential Equations	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
633	MATH 700-0	Thesis Research	0	0							
634	MATH 714	Advanced Operations Research	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS, SSH	GSE, GSPP, SMG, SoM	
635	MATH 740	Advanced Statistical Learning	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS, SSH	GSE, GSPP, SMG, SoM	
636	MATH 776	Advanced numerical methods for partial differential equations	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS, SSH	GSE, GSPP, SMG, SoM	
Robotics and Mechatronics											

637	ROBT 201	Mechanics: Statics and Dynamics	3	6	MATH 162 Calculus II (170) (C- and above) AND (PHYS 161 Physics I for Scientists and Engineers with Laboratory (116) (C- and above) OR PHYS 171 Physics I for Physics Majors with Laboratory (1401) (C- and above))			Robotics and Mechatronics, SMG	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
638	ROBT 203	Electrical and Electronic Circuits I with Lab	4	8	MATH 162 Calculus II (170) (C- and above) AND (PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above) OR PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above) OR (PHYS 141 Physics I for non-majors with Lab (1437) (C- and above) AND PHYS 142 Physics II for non-majors with Lab (1438) (C- and above)))			Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
639	ROBT 205	Signals and Sensing with Lab	4	8	MATH 162 Calculus II (170) (C- and above) AND (PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above) OR PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above))			Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
640	ROBT 301	Mechanical Design with CAD and Machining Laboratory	4	8	ROBT 201 Mechanics: Statics and Dynamics (475) (C- and above)			Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		

641	ROBT 303	Linear Control Theory with Lab	4	8	ROBT 202 System Dynamics and Modeling (68) (C- and above)			Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
642	ROBT 305	Embedded Systems	3	6	ROBT 206 Microcontrollers with Lab (476) (C- and above)			Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
643	ROBT 307	Power Electronics	3	6	ROBT 204 Electrical and Electronic Circuits II with Lab (491) (C- and above)			Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
644	ROBT 308	Industrial Automation	3	6				Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
645	ROBT 401	Robot Dynamics and Control	3	6	ROBT 303 Linear Control Theory with Lab (623) (C- and above)			Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
646	ROBT 407	Machine Learning with Applications	3	6	MATH 273 Linear Algebra with Applications (84) (C- and above) AND MATH 321 Probability (482) (C- and above) AND CSCI 152 Performance and Data Structures (489) (C- and above)			Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
647	ROBT 414	Human-Robot Interaction	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		

648	ROBT 501	Robot Manipulation and Mobility	3	6				Robotics	SEDS		
649	ROBT 503	Dynamic Systems and Control	3	6				Robotics	SEDS		
650	ROBT 611	Industrial Robotics	3	6	ROBT 501 Advanced Robot Kinematics (2263) (C- and above)			Robotics	SEDS		
651	ROBT 613	Brain-Machine Interfaces	3	6				Robotics	SEDS		
652	ROBT 615	Optimal Control and Planning	3	6	ROBT 503 System Dynamics and Control (2264) (C- and above)			Robotics	SEDS		
653	ROBT 700-0	Thesis Research	0	0							
654	ROBT 701	Advanced Robot Manipulation and Mobility	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS		
655	ROBT 703	Advanced Optimal Control and Planning	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS		
656	ROBT 709	Advanced Robot Dynamics and Control	4	8				1 year PhD SEDS Science, Engineering and Technology	SEDS		