

Course Requirements and Registration Priorities Spring 2021

#	Abbr	Title	Cr(US)	Cr(ECTS)	PreRequisite	CoRequisite	AntiRequisite	1st priority registration	2nd priority registration	3rd priority registration	4th priority registration
CPS											
GSP											
1	ZEST 061	Basic Economics and Statistics	0	0							
Mathematics											
2	MATH 500Z	Linear Algebra with Applications	0	0							
NUFYP											
3	FBIO 011	Introduction to Biology	0	0							
4	FBUS 011	Introduction to Business	0	0							
5	FCHM 011	Introduction to Chemistry	0	0							
6	FEAP 020	Foundation English for Academic Purposes 2	0	0							
7	FGEO 011	Introduction to Geography	0	0							
8	FHUM 011	Introduction to Humanities and Social Science	0	0							
9	FMAT 041	Foundation Mathematics 2	0	0							
10	FPHY 011	Introduction to Physics	0	0							
NUZYP											
11	ZCOM 041	Academic Communications for Graduate Studies II	0	0							
12	ZRDG 031	Academic Reading for Graduate Studies II	0	0							
13	ZWRT 021	Academic Writing for Graduate Studies II	0	0							
Sociology and Anthropology											
14	SOC 201Z	Social Science Research Methods	0	0							
GSB											
GSB											
15	BUS 101	Core Course in Business	3	6				3 year UG SEDS, 3 year UG SMG, 3 year UG SSH	2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SSH	SEDS, SMG, SSH, SoM	
16	GSBF 512	Principles of Finance	2.5	5							
17	GSBF 513	Financial Data Analytics II	2.5	5							
18	GSBF 515a	Investments I	2.5	5							

19	GSBF 515b	Investments II	2.5	5	GSBF 515a Investments I (4106) (C- and above)						
20	GSBF 542	Global Finance Experience Residency (II)	3	6							
21	GSBF 550A	Master's Thesis	5	10							
22	MBA 05	Business Communication	2	4							
23	MBA 09	Marketing Management	2	4							
24	MBA 11	Managerial Accounting	2	4							
25	MBA 12	Operations Management	2	4							
26	MBA 13	Macroeconomics	2	4							
27	MBA 15	Corporate Finance	2	4							
28	MBA 16	Entrepreneurship	2	4							
29	MBA 17	Negotiations	2	4							
30	MBA 19	Distinguished Speaker Series	0	1							
31	MSF 01	Financial Modeling	2.5	5							
GSPP											
Master in Public Administration											
32	MPA 608	Strategic Management and Leadership	4	8				1 year GSPP Public Administration			
33	MPA 699	Master's Project with Overseas Component	0	0				1 year GSPP Public Administration			
34	MPE 609	Organizational Behavior in the Public Sector	4	8				Public Administration, Public Policy	GSB, GSE, SEDS, SMG, SSH, SoM		
35	MPE 610	National Identity and Public Policy	4	8				Public Administration, Public Policy	GSB, GSE, SEDS, SMG, SSH, SoM		
36	MPE 611	Benefit Cost Analysis	4	8				Public Administration, Public Policy	GSB, GSE, SEDS, SMG, SSH, SoM		
37	MPE 623	Law and Development	4	8				Public Administration, Public Policy	GSB, GSE, SEDS, SMG, SSH, SoM		
38	MPE 624	Public Management Reforms in Transitional Countries	4	8				Public Administration, Public Policy	GSB, GSE, SEDS, SMG, SSH, SoM		
39	MPE 630	Finance and Economic Development	4	8				Public Administration, Public Policy	GSB, GSE, SEDS, SMG, SSH, SoM		
40	MPE 638	Contemporary Security Challenges in Central Asia and Beyond	4	8				Public Administration, Public Policy	GSB, GSE, SEDS, SMG, SSH, SoM		
41	MPE 644	The Media and Public Policy	4	8				Public Administration, Public Policy	GSB, GSE, SEDS, SMG, SSH, SoM		
42	MPE 647	Macroeconomic Development and Human Capital	4	8				Public Administration, Public Policy	GSB, GSE, SEDS, SMG, SSH, SoM		

43	MPE 648	Environmental Economics and Public Policy	4	8				Public Administration, Public Policy	GSB, GSE, SEDS, SMG, SSH, SoM		
44	MPE 663	Applied Public Economics and Finance	4	8	MPP 601 Microeconomics and Public Policy (1449) (B- and above) OR MPA 603 Economic Applications for Public Managers (2074) (B- and above)			Public Administration, Public Policy	GSB, GSE, SEDS, SMG, SSH, SoM		
45	MPE 682	Sustainable Development and Environmental Governance	4	8				Public Administration, Public Policy	GSB, GSE, SEDS, SMG, SSH, SoM		
46	MPE 688	New Technologies and Public Policy	4	8				Public Administration, Public Policy	GSB, GSE, SEDS, SMG, SSH, SoM		
47	MPE 689	Data Analytics for Public Policy	4	8				Public Administration, Public Policy	GSB, GSE, SEDS, SMG, SSH, SoM		
Master in Public Policy											
48	MPP 602	Macroeconomics and Public Policy	4	8				1 year GSPP Public Policy			
49	MPP 613	Policy Research Design and Methods	4	8				1 year GSPP Public Policy			
50	MPP 641	Public Management and Leadership	4	8				1 year GSPP Public Policy			
51	MPP 699	Policy Analysis Exercise with Overseas Component	8	16	MPP 601 Microeconomics and Public Policy (1449) (C- and above) AND MPP 611 Statistics for Public Policy (1450) (C- and above) AND MPP 613 Policy Research Design and Methods (1301) (C- and above) AND MPP 621 Public Policy and Analysis (1451) (C- and above)			2 year GSPP Public Policy			
52	MPP 699-0	Policy Analysis Exercise with Overseas Component	0	0	MPP 613 Policy Research Design and Methods (1301) (C- and above)			1 year GSPP Public Policy			
PhD in Public Policy											
53	DPP 600	Developing Dissertation Research	0	0				Public Policy			
54	DPP 602	Macroeconomics in Public Sector	4	8				1 year GSPP PhD Public Policy			
55	DPP 613	Research Design (qualitative and quantitative)	4	8				1 year GSPP PhD Public Policy			

56	DPP 615	Law, Governance and Public Policy	4	8				1 year GSPP PhD Public Policy			
57	DPP 631	Politics of Public Policy	4	8				1 year GSPP PhD Public Policy			
58	DPP 689	PhD Qualifying Examinations	0	0				2 year GSPP PhD Public Policy			
59	DPP 690	Thesis Preparation and Writing	60	120	DPP 689 PhD Qualifying Examinations (4830) (P) AND DPP 699 Thesis Design and Written Proposal (4831) (C- and above)						
60	DPP 690-0	Thesis Preparation and Writing	0	0				3 year GSPP PhD Public Policy, 4 year GSPP			
61	DPP 699	Thesis Design and Written Proposal	6	12				2 year GSPP PhD Public Policy			
GSE											
MA in Multilingual Education											
62	EDML 612	Multilingual Society	3	6				1 year GSE MA in Multil.Education			
63	EDML 620	Language and Literacy Development	3	6				2 year GSE MA in Multil.Education			
64	EDML 630	Language Policy and Education Reform Across Contexts	3	6				1 year GSE MA in Multil.Education			
65	EDML 691	Thesis Research II	6	12				2 year GSE MA in Multil.Education			
MSc Educational Leadership HE											
66	EDHE 692	Thesis Seminar III	4.5	9				2 year GSE Educ.Leadership			
67	EDHE 693	Thesis Seminar IV	9	18				2 year GSE Educ.Leadership			
68	EDUC 506	Academic English II	1.5	3				1 year GSE Educ.Leadership			
69	EDUC 508	Academic English IV	1.5	3				2 year GSE Educ.Leadership			
70	EDUC 511	Advanced English for Education Professionals II	3	6				1 year GSE MA in Multil.Education			
71	EDUC 513	English for Thesis Writing II	3	6				2 year GSE MA in Multil.Education			

72	EDUC 572	Kazakh for Professional Purposes	3	6				1 year GSE MA in Multil.Education, 1 year GSE PhD Education, 2 year GSE MA in Multil.Education, 2 year GSE PhD Education, 3 year GSE PhD Education, 4 year GSE PhD Education, Educational Leadership			
73	EDUC 591	Academic English Writing for Doctoral Students II	3	6				2 year GSE PhD Education			
74	EDUC 592	Academic English Writing for Doctoral Students III	3	6				4 year GSE PhD Education			
75	EDUC 600	Research Methods II	3	6				1 year GSE Educ.Leadership, 1 year GSE MA in Multil.Education			
76	EDUC 670	Internship Project	6	12				1 year GSE Educ.Leadership			
77	EDUC 671	Work-based project	6	12				1 year GSE Educ.Leadership			
78	EDUC 675	Learning to Work	4.5	9				2 year GSE Educ.Leadership			
79	EDUC 704	Advanced Methods of Education Research	3	6				1 year GSE PhD Education			
80	EDUC 705	Advanced Methods of Education Research: Qualitative Methods	3	6				1 year GSE PhD Education			
81	EDUC 711	Globalisation and Education	3	6				1 year GSE PhD Education			
82	EDUC 720	Philosophy of Education	3	6				1 year GSE PhD Education			
83	EDUC 728	Exploring the Research Topic 2	0	0				1 year GSE PhD Education			
84	EDUC 730	Preparation for Proposal Defence	0	0				2 year GSE PhD Education			
85	EDUC 740	Doctoral Seminar	3	6				2 year GSE PhD Education			
86	EDUC 750	Dissertation Research	9	18				3 year GSE PhD Education, 4 year GSE PhD Education			
87	EDUC 760	Teaching and Learning in the University Context: Curriculum, Pedagogy and Assessment	3	6				3 year GSE PhD Education			

MSc Educational Leadership IE

88	EDIE 692	Thesis Seminar III	4.5	9				2 year GSE Educ.Leadership			
89	EDIE 693	Thesis Seminar IV	9	18				2 year GSE Educ.Leadership			
MSc Educational Leadership SE											
90	EDSE 692	Thesis Seminar III	4.5	9				2 year GSE Educ.Leadership			
91	EDSE 693	Thesis Seminar IV	9	18				2 year GSE Educ.Leadership			
Other											
Other											
92	T-MOA 106	Developing and Marketing Innovations	3	6							
93	T-OFF 510	Operations and Maintenance Management	1.5	3							
94	T-OFF 540	Condition Monitoring and Management	1.5	3							
95	TEST 001	TEST	3	6							
96	TEST 002	TEST 2	4	8	TEST 001 TEST (5017) (C- and above)			SMG	Computer Science, Electrical and Computer Engineering		
SoM											
MMM											
97	MMMM 506	Biocomputing	1	2				1 year Gr SOM Molecular Medicine			
98	MMMM 507	Critical Analysis of the Contemporary Concepts in Molecular Medicine	3	6				1 year Gr SOM Molecular Medicine			
99	MMMM 508	Molecular Immunology	3	6				1 year Gr SOM Molecular Medicine			
100	MMMM 509	From the Bench to the Bedside: Drug Development and Clinical Trials	3	6				1 year Gr SOM Molecular Medicine			
101	MMMM 510	Natural Medicine	3	6				1 year Gr SOM Molecular Medicine			
102	MMMM 511	Research Methods in Molecular Biomedicine	3	6				1 year Gr SOM Molecular Medicine			
103	MMMM 512	Molecular Basis of Chronic Inflammation	1	2				1 year Gr SOM Molecular Medicine			
104	MMMM 690	Master Research Project	15	30				2 year Gr SOM Molecular Medicine			
MPTOX											

105	MPTX 504	Systemic Pharmacology I	3	6	MPTX 503 Principles of Pharmacology and Toxicology (5843) (C- and above)			1 year Gr SOM Pharmacology and Toxicology			
106	MPTX 507	Applied Toxicology	3	6	MPTX 503 Principles of Pharmacology and Toxicology (5843) (C- and above)			1 year Gr SOM Pharmacology and Toxicology			
107	MPTX 508	Research Methods in Pharmacology	3	6	MPTX 502 Cellular Communications (5842) (C- and above) OR MPTX 503 Principles of Pharmacology and Toxicology (5843) (C- and above)			1 year Gr SOM Pharmacology and Toxicology			
108	MPTX 509	Drug Discovery and Development II	3	6	MPTX 505 Drug Discovery I (5845) (C- and above)			1 year Gr SOM Pharmacology and Toxicology			
109	MPTX 511E	Environmental Toxicology	3	6				1 year Gr SOM Pharmacology and Toxicology			
MSMR											
110	MSMR 502	Nutrition in Sports and Exercise	3	6				1 year Gr SOM Sports Medicine and Rehabilitation			
111	MSMR 506	Seminar in Sports Medicine	3	6				1 year Gr SOM Sports Medicine and Rehabilitation			
112	MSMR 509	Robots for Rehabilitation	3	6				1 year Gr SOM Sports Medicine and Rehabilitation			
113	MSMR 511	Introduction to Research Project	3	6				1 year Gr SOM Sports Medicine and Rehabilitation			
114	MSMR 601	Psychology of Sports and Rehabilitation	3	6				1 year Gr SOM Sports Medicine and Rehabilitation			
Nursing											
115	NUR 101	Human Anatomy and Physiology I and Lab	4	8				1 year UG SOM Nursing			
116	NUR 102L	Human Anatomy and Physiology II with Lab	4	8				1 year UG SOM Nursing			
117	NUR 122	English-Russian-Kazakh Medical Terminology	2	4				2 year UG SOM Nursing			
118	NUR 204	Nutrition Essentials for Nursing Clinical Practice	2	4							
119	NUR 212/L	Foundations of Nursing Practice II	2	4				2 year UG SOM Nursing			

120	NUR 213/C	Medical-Surgical Nursing I: Clinical	7	14				2 year UG SOM Nursing			
121	NUR 221	Nursing Research: Introduction to Critical Appraisal and Evidence-Based Practice	3	6				2 year UG SOM Nursing			
122	NUR 305	Research Methods for Nursing	3	6							
123	NUR 306	Medical-Surgical Nursing: Complex Medical Management for Acute and Chronic Patient	4	8							
124	NUR 307	Health Promotion and Disease Prevention in Culturally Diverse Populations	4	8							
125	NUR 308	Enhanced Communication in Professional Nursing	4	8							
126	NUR 402	Principles of Healthcare Administration	4	8							
127	NUR 405	Issues and Trends in Nursing	4	8							
128	NUR 406.2	Medical-Surgical Nursing: Complex Management	4	8							
129	NUR 407	Capstone: Clinical and EBP Quality Improvement Research	4	8							
PHD											
130	PHDBS 701-0	Thesis Research	0	0				1 year PhD SOM BioMed Sciences, 2 year PhD SOM BioMed Sciences			
131	PHDBS 702	Molecular Basis of Health and Disease	4	8				1 year PhD SOM BioMed Sciences, 1 year PhD SSH Life Sciences, 2 year PhD SOM BioMed Sciences			
132	PHDBS 703	Biomedical Research Analysis and Design of Experimentation	4	8				1 year PhD SOM BioMed Sciences, 1 year PhD SSH Life Sciences, 2 year PhD SOM BioMed Sciences			

133	PHDBS 704-0	NUSOM seminar	0	0				1 year PhD SOM BioMed Sciences, 1 year PhD SSH Life Sciences, 2 year PhD SOM BioMed Sciences	Chemical Engineering, Civil Engineering, Computer Science , Education, Electrical Engineering, Eurasian Studies, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Public Policy, Robotics Engineering, Science, Engineering and Technology		
134	PHDBS 706	Advanced Biomedical Research Analysis and Design of Experimentation	4	8				2 year PhD SOM BioMed Sciences			
135	PHDBS 707	Publication Analysis	4	8				2 year PhD SOM BioMed Sciences			
136	PHDBS 708	Writing for Biomedical Sciences	3	6				2 year PhD SOM BioMed Sciences			
Public Health											
137	PUBH 512	Biostatistical Modeling and Sampling	3	6				1 year Gr SOM Public Health	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
138	PUBH 522	Advanced Analytical Epidemiology	3	6				1 year Gr SOM Public Health	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
139	PUBH 551	Health Services Management, Health Economic and Health Policy	3	6				1 year Gr SOM Public Health	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
140	PUBH 631	Social and Behavioral Sciences in Public Health	3	6				1 year Gr SOM Public Health	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
141	PUBH 641	Problem Investigations in Environmental Health	3	6				1 year Gr SOM Public Health	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
142	PUBH 651	Risk Management in Health Care	3	6				2 year Gr SOM Public Health			
143	PUBH 652	Applied Methods in Health Services Research	3	6				2 year Gr SOM Public Health			
144	PUBH 682	Master's Project Implementation	12	24				2 year Gr SOM Public Health			
SMG											
Economics, School of Mining and Geosciences											

145	SMG 200/ECON 220	Resource Economics	3	6	MATH 161 Calculus I (118) (C- and above) OR MATH 162 Calculus II (170) (C- and above)			SEDS, SMG, SSH, SoM			
Mining Engineering											
146	MINE 201	Mineral Processing	3	6				SMG	SEDS	SSH, SoM	
147	MINE 306	Underground Mining Systems and Design	3	6	MINE 302 Geomechanics (5878) (D and above) AND MINE 405 Mine Ventilation (5879) (D and above)			SMG	SEDS	SSH, SoM	
148	MINE 307	Surface Mining System and Design	3	6	MINE 302 Geomechanics (5878) (D and above)			SMG	SEDS	SSH, SoM	
149	MINE 308	Mine Planning	3	6				SMG	SEDS	SSH, SoM	
150	MINE 309	Sustainability and Mining Environment	3	6	SMG 100 Introduction to Natural Resources Extraction (4773) (D and above)			SMG	SEDS	SSH, SoM	
151	MINE 310	Rock Breakage	3	6	MINE 302 Geomechanics (5878) (D and above)			SMG	SEDS	SSH, SoM	
152	MINE 507	Rock Excavation Methods	3	6				Mining Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Electrical and Electronic Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		

153	MINE 508	Advanced Rock Mechanics	3	6				Mining Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Electrical and Electronic Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
154	MINE 509	Advanced Surface Mine Design	3	6				Mining Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Electrical and Electronic Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		

155	MINE 510	Advanced Underground Mine Design	3	6				Mining Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Electrical and Electronic Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
156	MINE 691	Thesis II	15	30	MINE 690 Thesis I (4531) (P)			Mining Engineering			
157	MINE 702	Current Research Literature	4	8				Mining Engineering			
158	MINE 703	Advanced Mining Systems	4	8				Mining Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		

159	MINE 803	Advanced Geometallurgy	4	8				Mining Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
160	MINE 806	Advanced Numerical Methods	4	8				Mining Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Petroleum Engineering, Robotics Engineering, Science, Engineering and Technology		
161	MINE 890-0	Thesis Research	0	0				Mining Engineering			
Petroleum Engineering											
162	PETE 202	Transport Phenomena	3	6	ENG 200 Engineering Mathematics III (Differential Equations and Linear Algebra) (5009) (C- and above) OR CHEM 101 General Chemistry I (113) (C- and above) OR CHEM 101L General Chemistry I lab (179) (C- and above)			Petroleum Engineering	SEDS		
163	PETE 203	Drilling Engineering with Laboratories	4	8	PETE 201 Fluid Mechanics and Thermodynamics (5120) (C- and above)			Petroleum Engineering	SEDS		
164	PETE 204	Reservoir Rock and Fluid Properties with Lab	4	8	PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above)			Petroleum Engineering	SEDS		

165	PETE 305	Well Test Analysis	3	6	PETE 302 Reservoir Engineering I with Laboratory works (5955) (C- and above)			Petroleum Engineering	SEDS		
166	PETE 306	Reservoir Engineering II	3	6	PETE 204 Reservoir Rock and Fluid Properties with Lab (5487) (C- and above) OR PETE 302 Reservoir Engineering I with Laboratory works (5955) (C- and above)			Petroleum Engineering	SEDS		
167	PETE 307	Production Engineering	3	6	PETE 201 Fluid Mechanics and Thermodynamics (5120) (C- and above) OR PETE 302 Reservoir Engineering I with Laboratory works (5955) (C- and above)			Petroleum Engineering	SEDS		
168	PETE 405	Enhanced Oil Recovery	3	6	PETE 204 Reservoir Rock and Fluid Properties with Lab (5487) (D and above)			Petroleum Engineering	SEDS		
169	PETE 506	Advanced Reservoir Simulation	3	6				1 year Gr SMG Petroleum Engineering			
170	PETE 507	Advanced Reservoir Engineering	3	6				1 year Gr SMG Petroleum Engineering			
171	PETE 508	Advanced Production Engineering	3	6				1 year Gr SMG Petroleum Engineering			
172	PETE 600	Thesis I	6	12				2 year Gr SMG Petroleum Engineering			
173	PETE 606	Advanced Enhanced Oil Recovery	3	6				Petroleum Engineering			
174	PETE 613	Unconventional resources drilling	3	6				Petroleum Engineering			
175	PETE 614	Introduction to Geospatial, Earth Observation and Surveying Technologies for Onshore and Marine Petroleum and Mining Industry	3	6				Petroleum Engineering			
176	PETE 702	Current Research Literature	4	8				Petroleum Engineering			
177	PETE 703	Advanced Reservoir Engineering	4	8				Petroleum Engineering	Mining Engineering, SEDS, SSH		
178	PETE 801	Advanced Reservoir Simulation	4	8				Petroleum Engineering	Mining Engineering, SEDS, SSH		

179	PETE 803	Advanced Enhanced Oil Recovery	4	8				Petroleum Engineering	Mining Engineering, SEDS, SSH		
180	PETE 890	Thesis Research	0	0				Petroleum Engineering			
181	PETE 899	Special topics in Petroleum Engineering: Unconventional Resources Drilling	4	8				Petroleum Engineering	Mining Engineering, SEDS, SSH		
School of Mining and Geosciences											
182	GEOL 101	Fundamentals of Geology	3	6				1 year UG SMG	SMG	SEDS, SSH, SoM	
183	GEOL 204	Sedimentology and stratigraphy	3	6	GEOL 101 Fundamentals of Geology (4774) (D and above) OR GEOL 102 Fundamentals of Geology (4772) (D and above) AND GEOL 202 Geologic Maps and Cross-Sections (5123) (D and above)			SMG			
184	GEOL 205	Paleontology	3	6	GEOL 101 Fundamentals of Geology (4774) (D and above) OR GEOL 102 Fundamentals of Geology (4772) (D and above)			SMG			
185	GEOL 301	Sedimentary petrology	3	6	GEOL 101 Fundamentals of Geology (4774) (D and above) OR GEOL 202 Geologic Maps and Cross-Sections (5123) (D and above)	GEOL 202 Geologic Maps and Cross-Sections (5123) (D and above)		SMG			
186	GEOL 306	Geodynamics	3	6	GEOL 101 Fundamentals of Geology (4774) (D and above) OR GEOL 102 Fundamentals of Geology (4772) (D and above)			SMG			
187	GEOL 307	Geographic Information Systems	3	6				SMG			
188	GEOL 308	Environmental Geochemistry	3	6				SMG			
189	GEOL 309	Hydrogeology	3	6				SMG			
190	SMG 100	Introduction to Natural Resources Extraction	3	6				SMG	SEDS	SSH, SoM	

191	SMG 520	Research Methods	3	6				1 year Gr SMG Mining Engineering, 1 year Gr SMG Petroleum Engineering			
SSH											
Area Studies											
192	EAS 502	Disciplinary Methodology	4	8				SSH	GSB, GSE, GSPP, SEDS, SMG, SoM		
193	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)						
194	EAS 504	Thesis II	12.5	25	EAS 500 Introduction to Eurasia (1632) (C- and above) AND EAS 501 General Methodology (1633) (C- and above) AND EAS 502 Disciplinary Methodology (1379) (C- and above) AND EAS 503 Thesis I (2141) (C- and above)			SSH			
195	EAS 511	Independent Study in Eurasian Studies	4	8							
196	EAS 703	Elective in Eurasian Social Sciences	4	8							
197	EAS 708	Proseminar in Eurasian Humanities	4	8							
198	EAS 709	Proseminar in Eurasian Social Sciences	4	8							
199	EAS 712	Doctoral Seminar in Eurasian Studies II	4	8							
200	EAS 713	Qualifying Examination	0	0							
201	EAS 800-0	Dissertation Research in Eurasian Studies	0	0							
Biological Science											
202	BIOL 101	Biology for non-Science majors	3	6			BIOL 110 Modern Biology I (1070) (C- and above)	5 year UG SEDS, 5 year UG SSH, Anthropology, Economics, History, Political Science and International Relations, Sociology, Undeclared SSH, World Languages, Literatures and Cultures	3 year UG SEDS	4 year UG SEDS	

203	BIOL 110	Modern Biology I	3	6				5 year UG SEDS, 5 year UG SSH, Biological Sciences, Medical Sciences	Chemistry, Computer Science, Mathematics, Robotics and Mechatronics	Anthropology, Economics, History, Political Science and International Relations, Sociology, Undeclared SSH, World Languages, Literatures and Cultures	
204	BIOL 110L	Modern Biology I Laboratory	1	2		BIOL 110 Modern Biology I (1070) (C and above)		5 year UG SEDS, 5 year UG SSH, Biological Sciences, Medical Sciences	Chemistry, Computer Science, Mathematics, Robotics and Mechatronics	Anthropology, Economics, History, Political Science and International Relations, Sociology, Undeclared SSH, World Languages, Literatures and Cultures	
205	BIOL 120	Modern Biology II	3	6	BIOL 110 Modern Biology I (1070) (C and above)			5 year UG SEDS, 5 year UG SSH, Biological Sciences, Medical Sciences	Chemistry, Computer Science, Mathematics, Robotics and Mechatronics	Anthropology, Economics, History, Political Science and International Relations, Sociology, Undeclared SSH, World Languages, Literatures and Cultures	
206	BIOL 231	Human Anatomy and Physiology II	4	8	BIOL 230 Human Anatomy and Physiology I (72) (C and above)			5 year UG SEDS, 5 year UG SSH, Biological Sciences	Chemistry, Computer Science, Mathematics, Physics, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	
207	BIOL 301	Molecular Cell Biology	3	6	BIOL 120 Modern Biology II (1195) (C and above)			5 year UG SEDS, 5 year UG SSH, Biological Sciences	Chemistry, Computer Science, Mathematics, Physics, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	

208	BIOL 301L	Molecular Cell Biology Laboratory	1	2	BIOL 120 Modern Biology II (1195) (C and above) OR BIOL 120L Modern Biology II Laboratory (5443) (C and above)	BIOL 301 Molecular Cell Biology (5809) (C and above)		5 year UG SEDS, 5 year UG SSH, Biological Sciences	Chemistry, Computer Science, Mathematics, Physics, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	
209	BIOL 305	Introduction to Microbiology	3	6	(BIOL 120 Modern Biology II (1195) (C and above) AND BIOL 120L Modern Biology II Laboratory (5443) (C and above)) OR BIOL 120 Modern Biology II (1195) (C and above)			5 year UG SEDS, 5 year UG SSH, Biological Sciences	Chemistry, Computer Science, Mathematics, Physics, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	
210	BIOL 305L	Introduction to Microbiology Laboratory	1	2	BIOL 120 Modern Biology II (1195) (C and above) OR BIOL 120L Modern Biology II Laboratory (5443) (C and above)	BIOL 305 Introduction to Microbiology (5789) (C and above)		5 year UG SEDS, 5 year UG SSH, Biological Sciences	Chemistry, Computer Science, Mathematics, Physics, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	
211	BIOL 310	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)			5 year UG SEDS, 5 year UG SSH, Biological Sciences	Chemistry, Computer Science, Mathematics, Physics, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	
212	BIOL 321	Bioethics	3	6	BIOL 120 Modern Biology II (1195) (C and above)			4 year UG SSH Biological Sciences, 4 year UG SSH Chemistry, 5 year UG SEDS, 5 year UG SSH	3 year UG SSH Biological Sciences, 3 year UG SSH Chemistry	SEDS, SMG, SSH, SoM	
213	BIOL 341	Biochemistry I	3	6	CHEM 211 Organic Chemistry I (154) (C and above)			5 year UG SEDS, 5 year UG SSH, Biological Sciences	Chemistry, Computer Science, Mathematics, Physics, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	
214	BIOL 355	Critical Research Reasoning	3	6	BIOL 120 Modern Biology II (1195) (C and above)			5 year UG SEDS, 5 year UG SSH, Biological Sciences	Chemistry, Computer Science, Mathematics, Physics, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	

215	BIOL 363	Structural Bioinformatics	4	8	BIOL 341 Biochemistry I (2002) (C and above) OR CHEM 341 Biochemistry I (1058) (C and above) OR CSCI 235 Programming Languages (638) (C and above)			5 year UG SEDS, 5 year UG SSH, Biological Sciences	Chemistry, Computer Science, Mathematics, Physics, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	
216	BIOL 370	Genetics	3	6	BIOL 120 Modern Biology II (1195) (C and above)			5 year UG SEDS, 5 year UG SSH, Biological Sciences	Chemistry, Computer Science, Mathematics, Physics, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	
217	BIOL 392	Directed Study in Biology	3	6							
218	BIOL 430	Histology with Laboratory	4	8	BIOL 230 Human Anatomy and Physiology I (72) (C and above) OR BIOL 230 Human Anatomy and Physiology I (6217) (C and above)			5 year UG SEDS, 5 year UG SSH, Biological Sciences	Chemistry, Computer Science, Mathematics, Physics, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	
219	BIOL 440	Neuroscience	3	6	BIOL 230 Human Anatomy and Physiology I (72) (C and above) OR BIOL 230 Human Anatomy and Physiology I (6217) (C and above)			5 year UG SEDS, 5 year UG SSH, Biological Sciences	Chemistry, Computer Science, Mathematics, Physics, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	
220	BIOL 445	Medical Microbiology	3	6	BIOL 305 Introduction to Microbiology (5789) (C and above) OR BIOL 305 Introduction to Microbiology with Lab (1642) (C and above)			5 year UG SEDS, 5 year UG SSH, Biological Sciences	Chemistry, Computer Science, Mathematics, Physics, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	
221	BIOL 450	Food Microbiology	3	6	BIOL 305 Introduction to Microbiology with Lab (1642) (C and above) OR BIOL 305 Introduction to Microbiology (5789) (C and above)			5 year UG SEDS, 5 year UG SSH, Biological Sciences	Chemistry, Computer Science, Mathematics, Physics, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	
222	BIOL 456	Biology Research Design	3	6		BIOL 355 Critical Reasoning (1000) (C and above)		5 year UG SEDS, 5 year UG SSH, Biological Sciences	Chemistry, Computer Science, Mathematics, Physics, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	

223	BIOL 468	Integrated Cell Biology	3	6	(BIOL 110 Modern Biology I (107) (C and above) OR BIOL 110 Modern Biology I (1070) (C and above)) AND BIOL 120 Modern Biology II (1195) (C and above)			5 year UG SEDS, 5 year UG SSH, Biological Sciences	Chemistry, Computer Science, Mathematics, Physics, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	
224	BIOL 471	Light and Electron microscopy concepts and techniques	3	6	BIOL 110 Modern Biology I (1070) (C and above) AND BIOL 120 Modern Biology II (1195) (C and above) AND CHEM 101 General Chemistry I (113) (C and above) AND PHYS 161 Physics I for Scientists and Engineers with Laboratory (116) (C and above)			5 year UG SEDS, 5 year UG SSH, Biological Sciences	Chemistry, Computer Science, Mathematics, Physics, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	
225	BIOL 471L	Light and Electron Microscopy Concepts and Techniques-Lab	1	2		BIOL 471 Light and Electron microscopy concepts and techniques (4686) (C and above)		5 year UG SEDS, 5 year UG SSH, Biological Sciences	Chemistry, Computer Science, Mathematics, Physics, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	
226	BIOL 491	Honors Thesis	9	18	BIOL 490 Honors Thesis Research (1581) (P)						
227	BIOL 502	Research Methods and Bioethics	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
228	BIOL 570	Advanced Biotechnology	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
229	BIOL 580	Applied Bioinformatics	3	6	BIOL 520 Statistical Methods in Life Sciences (1203) (C and above)			Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
230	BIOL 590	Research Design and Project Planning	3	6				1 year Gr SSH Biological Sciences and Technologies			
231	BIOL 591	Cellular Biophysics	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
232	BIOL 599	Master's Thesis Research	0	0				Biological Sciences			
233	BIOL 630	Advanced Neuroscience	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	

234	BIOL 637	Fundamentals of Advanced Microscopy	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
235	BIOL 692	Master's Thesis	15	30	BIOL 691 Master's Thesis Research Proposal (5676) (B- and above)			Biological Sciences			
236	BIOL 800-0	Thesis Research	0	0				Life Sciences			
237	BIOL 830	Advanced Neuroscience	4	8				Biomedical Sciences, Life Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
238	BIOL 837	Advanced Optical and Electron Microscopy	4	8				Biomedical Sciences, Life Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
239	BIOL 870	Advanced Biotechnology	4	8				Biomedical Sciences, Life Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
240	BIOL 880	Applied Bioinformatics	4	8				Biomedical Sciences, Life Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
241	BIOL 891	Cellular Biophysics	4	8				Biomedical Sciences, Life Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
Chemistry											
242	CHEM 092	Survey of Environmental Sciences for Non-Science Majors	3	6				5 year UG SEDS, 5 year UG SSH, Anthropology, Economics, History, Political Science and International Relations, Sociology, Undeclared SSH, World Languages, Literatures and Cultures			
243	CHEM 101	General Chemistry I	3	6				5 year UG SEDS, 5 year UG SSH, Biological Sciences, Chemistry, Medical Sciences	SEDS, SMG, SSH, SoM		
244	CHEM 101L	General Chemistry I lab	1	2		CHEM 101 General Chemistry I (113) (C and above)		5 year UG SEDS, 5 year UG SSH, Biological Sciences, Chemistry, Medical Sciences	SEDS, SMG, SSH, SoM		
245	CHEM 102	General Chemistry II	3	6	CHEM 101 General Chemistry I (113) (C and above)			5 year UG SEDS, 5 year UG SSH, Biological Sciences, Chemistry, Medical Sciences, SMG	SEDS, SSH, SoM		
246	CHEM 189a	Independent Study	1	2							

247	CHEM 211	Organic Chemistry I	3	6	CHEM 102 General Chemistry II (232) (C and above)			5 year UG SEDS, 5 year UG SSH, Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
248	CHEM 212	Organic Chemistry II	3	6	CHEM 211 Organic Chemistry I (154) (C and above) OR CHEM 191 Chemistry I for Engineers (1908) (C and above)			5 year UG SEDS, 5 year UG SSH, Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
249	CHEM 212L	Organic Chemistry II Lab	1	2	CHEM 211L Organic Chemistry I Lab (156) (C and above)	CHEM 212 Organic Chemistry II (443) (C and above) OR CHEM 292 Organic Chemistry for Biologists II (1901) (C and above)		5 year UG SEDS, 5 year UG SSH, Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
250	CHEM 250	Descriptive Inorganic Chemistry	3	6	CHEM 101 General Chemistry I (113) (C and above)			5 year UG SEDS, 5 year UG SSH, Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
251	CHEM 320	Instrumental Analysis	3	6	CHEM 220 Quantitative Chemical Analysis (555) (C and above)			5 year UG SEDS, 5 year UG SSH, Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
252	CHEM 320L	Instrumental Analysis Lab	1	2	(CHEM 220 Quantitative Chemical Analysis (555) (C and above) AND CHEM 220L Quantitative Chemical Analysis Lab (5271) (C and above)) OR CHEM 220 Quantitative Chemical Analysis (555) (C and above)	CHEM 320 Instrumental Analysis (1055) (C and above)		5 year UG SEDS, 5 year UG SSH, Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
253	CHEM 331L	Physical Chemistry Lab	1	2		CHEM 331 Physical Chemistry I (634) (C and above)		5 year UG SEDS, 5 year UG SSH, Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
254	CHEM 332	Physical Chemistry II	3	6	CHEM 331 Physical Chemistry I (634) (C and above)	MATH 274 Introduction to Differential Equations (484) (C and above)		5 year UG SEDS, 5 year UG SSH, Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	

255	CHEM 332L	Physical Chemistry II Lab	1	2		CHEM 332 Physical Chemistry II (1056) (C and above) AND CHEM 331L Physical Chemistry Lab (1060) (C and above)		5 year UG SEDS, 5 year UG SSH, Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
256	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)		5 year UG SEDS, 5 year UG SSH, Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
257	CHEM 380	Research Methods	3	6				5 year UG SEDS, 5 year UG SSH, Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
258	CHEM 411	Advanced Organic Chemistry I	3	6	CHEM 212 Organic Chemistry II (443) (C and above) AND MATH 161 Calculus I (118) (C and above)			5 year UG SEDS, 5 year UG SSH, Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
259	CHEM 433	Surfactants and Colloids	3	6	CHEM 102 General Chemistry II (232) (C and above)			5 year UG SEDS, 5 year UG SSH, Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
260	CHEM 451	Applied Homogenous Catalysis	3	6	CHEM 350 Advanced Inorganic Chemistry (1905) (C and above)			5 year UG SEDS, 5 year UG SSH, Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
261	CHEM 511	Theoretical Chemistry	3	6	CHEM 510 Principles of Physical Chemistry (5266) (C and above)			Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
262	CHEM 515	Applied Colloid and Surfactant Science	3	6				Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
263	CHEM 540	Organic Reactions and Mechanisms	3	6				Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
264	CHEM 550	Selected Topics in Chemistry	3	6				Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
265	CHEM 560	Directed research in chemistry	0	0				Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
266	CHEM 592	Chemistry Seminar	3	6				Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
267	CHEM 692	MSc Thesis in Chemistry	18	36	CHEM 691 Thesis Proposal (5858) (C- and above)			Chemistry			
Communication and Composition											
268	WCS 101	Communication and Society	3	6				1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 1 year UG SSH, 5 year UG SEDS, 5 year UG SSH	SEDS, SMG, SSH, SoM		

269	WCS 150	Rhetoric and Composition	3	6			1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 1 year UG SSH, 5 year UG SEDS, 5 year UG SSH	3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH	SEDS, SMG, SSH, SoM	
270	WCS 200	Introduction to Public Speaking	3	6	WCS 150 Rhetoric and Composition (2183) (C-and above)		3 year UG SSH, 5 year UG SEDS, 5 year UG SSH	3 year UG SEDS, 3 year UG SMG, 3 year UG SOM	SEDS, SMG, SSH, SoM	
271	WCS 205	Intercultural Communication	3	6			5 year UG SEDS, 5 year UG SSH, SEDS, SMG, SSH, SoM			
272	WCS 210	Technical and Professional Writing	3	6	WCS 150 Rhetoric and Composition (2183) (C-and above)		3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 5 year UG SEDS, 5 year UG SSH	2 year UG SEDS, 2 year UG SMG, 2 year UG SOM	2 year UG SSH, 3 year UG SSH	
273	WCS 220	Science Writing	3	6	WCS 150 Rhetoric and Composition (2183) (C-and above)		3 year UG SSH Biological Sciences, 3 year UG SSH Chemistry, 3 year UG SSH Mathematics, 3 year UG SSH Physics, 5 year UG SEDS, 5 year UG SSH	2 year UG SSH Biological Sciences, 2 year UG SSH Chemistry, 2 year UG SSH Mathematics, 2 year UG SSH Physics	SEDS, SMG, SSH, SoM	
274	WCS 230	Say What you Mean: Clarity, Precision, and Style in Academic Writing	3	6	WCS 150 Rhetoric and Composition (2183) (C-and above)		3 year UG SSH, 5 year UG SEDS, 5 year UG SSH	2 year UG SSH	3 year UG SEDS, 3 year UG SMG	
275	WCS 240	Writing for Digital Media	3	6	WCS 150 Rhetoric and Composition (2183) (C-and above)		3 year UG SEDS, 3 year UG SMG, 3 year UG SSH, 5 year UG SEDS, 5 year UG SSH	2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SSH	1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 1 year UG SSH	
276	WCS 250	Advanced Rhetoric and Composition	3	6	WCS 150 Rhetoric and Composition (2183) (C-and above)		3 year UG SEDS, 3 year UG SMG, 3 year UG SSH, 5 year UG SEDS, 5 year UG SSH	2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SSH	1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 1 year UG SSH	
277	WCS 302	Argumentation and Debate	3	6	WCS 200 Introduction to Public Speaking (175) (C- and above)		5 year UG SEDS, 5 year UG SSH, SEDS, SMG, SSH, SoM			

278	WCS 390	Writing Fellows I - Composition and Collaboration in Theory and Practice	3	6	WCS 150 Rhetoric and Composition (2183) (B and above) AND (WCS 210 Technical and Professional Writing (4881) (B+ and above) OR WCS 220 Science Writing (5686) (B+ and above) OR WCS 230 Say What you Mean: Clarity, Precision, and Style in Academic Writing (3026) (B+ and above) OR WCS 240 Writing for Digital Media (4421) (B+ and above) OR WCS 250 Advanced Rhetoric and Composition (3027) (B+ and above))			3 year UG SEDS, 3 year UG SMG, 3 year UG SSH, 5 year UG SEDS, 5 year UG SSH	2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SSH	4 year UG SEDS, 4 year UG SMG, 4 year UG SSH	
279	WCS 391	Writing Fellows II - Practicum in Composition & Collaboration	3	6	WCS 390 Writing Fellows I - Composition and Collaboration in Theory and Practice (1969) (B and above)						
280	WCS 392	Writing Fellows III - Research & Practice in Writing & Peer Mentorship	3	6	WCS 391 Writing Fellows II - Practicum in Composition & Collaboration (3425) (B and above)						
281	WCS 501	Science Communication	3	6				SSH	GSB, GSE, GSPP, SEDS, SMG, SoM		
Communication and Composition, Languages, Literature and Linguistics											
282	WCS 260/WLL 235	Creative Writing: Introduction to Fiction Writing I	3	6	WCS 150 Rhetoric and Composition (2183) (C- and above)			3 year UG SSH, 5 year UG SEDS, 5 year UG SSH	2 year UG SSH	SEDS, SMG, SSH, SoM	
283	WCS 360/WLL 360	Poetry Writing Seminar	3	6							
Economics											
284	ECON 101	Introduction to Microeconomics	3	6				5 year UG SEDS, 5 year UG SSH, Undeclared SSH	1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 1 year UG SSH	SEDS, SMG, SSH, SoM	
285	ECON 102	Introduction to Macroeconomics	3	6				5 year UG SEDS, 5 year UG SSH, Undeclared SSH	1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 1 year UG SSH	SEDS, SMG, SSH, SoM	

286	ECON 120	Managerial Economics	3	6				3 year UG SEDS Chemical and Materials Engineering, 3 year UG SEDS Civil and Environmental Engineering, 3 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	3 year UG SEDS Computer Science, 3 year UG SEDS Electrical and Computer Engineering, 3 year UG SEDS Robotics and Mechatronics	Anthropology, Biological Sciences, Chemistry, History, Mathematics, Physics, Political Science and International Relations, SEDS, SMG, SoM, Sociology, Undeclared SSH, World Languages, Literatures and Cultures	
287	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))			5 year UG SEDS, 5 year UG SSH, Economics	2 year UG SSH Undeclared	SSH	
288	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))			5 year UG SEDS, 5 year UG SSH, Economics	2 year UG SSH Undeclared	SSH	
289	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)			5 year UG SEDS, 5 year UG SSH, Economics	2 year UG SSH Undeclared	SSH	
290	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)						

291	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)))			5 year UG SEDS, 5 year UG SSH, Economics		SSH	
292	ECON 302	Game Theory and Economic Analysis	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above)		PLS 315 Political Game Theory (704) (C- and above)	3 year UG SSH Economics, 5 year UG SEDS, 5 year UG SSH	4 year UG SSH Economics	SSH	
293	ECON 305	Advanced Microeconomics	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above)	ECON 211 Economic Statistics (2280) (D and above)	ECON 398 General Special Topics in Economics (2184) (C- and above)	3 year UG SSH Economics, 5 year UG SEDS, 5 year UG SSH	4 year UG SSH Economics	SSH	
294	ECON 318	Applied Econometrics	3	6	ECON 301 Econometrics I (664) (C- and above)			5 year UG SEDS, 5 year UG SSH, Economics		SSH	
295	ECON 319	Matching Theory and Applications	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above)			3 year UG SSH Economics, 5 year UG SEDS, 5 year UG SSH	4 year UG SSH Economics	SSH	
296	ECON 326	The Economics of Financial Markets	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above)			3 year UG SSH Economics, 5 year UG SEDS, 5 year UG SSH	4 year UG SSH Economics	SSH	
297	ECON 328	Labor Economics	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above)			3 year UG SSH Economics, 5 year UG SEDS, 5 year UG SSH	4 year UG SSH Economics	SSH	
298	ECON 332	Urban Economics	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above)			3 year UG SSH Economics, 5 year UG SEDS, 5 year UG SSH	4 year UG SSH Economics	SSH	
299	ECON 341	Economic Simulation Modeling	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above)			3 year UG SSH Economics, 5 year UG SEDS, 5 year UG SSH	4 year UG SSH Economics	SSH	
300	ECON 399	Independent Study in Economics	3	6							
301	ECON 413	Econometrics II Time Series	3	6	ECON 301 Econometrics I (664) (C- and above)			5 year UG SEDS, 5 year UG SSH, Economics		SSH	

302	ECON 416	Empirical Industrial Organization	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above) AND ECON 301 Econometrics I (664) (C- and above)			5 year UG SEDS, 5 year UG SSH, Economics		SSH	
303	ECON 443	Topics in Macroeconomic Theory	3	6	ECON 202 Intermediate Macroeconomics (207) (C- and above) AND ECON 301 Econometrics I (664) (C- and above)			5 year UG SEDS, 5 year UG SSH, Economics		SSH	
304	ECON 516	Empirical Industrial Organization	4	8	ECON 501 Microeconomics I (2187) (C- and above) AND ECON 531 Econometrics (2505) (C- and above)			Economics	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
305	ECON 521	Microeconomic Theory II	4	8	ECON 501 Microeconomics I (2187) (C- and above) AND ECON 512 Mathematical Economics (2154) (C- and above)			Economics	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
306	ECON 522	Macroeconomics II	4	8	ECON 502 Macroeconomics I (2186) (C- and above) AND ECON 512 Mathematical Economics (2154) (C- and above)			Economics	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
307	ECON 524	Research Methodology	4	8	ECON 501 Microeconomics I (2187) (C- and above) AND ECON 502 Macroeconomics I (2186) (C- and above) AND ECON 511 Statistics (2188) (C- and above)	ECON 531 Econometrics (2505) (D and above)		Economics	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
308	ECON 531	Econometrics	4	8	ECON 511 Statistics (2188) (C- and above) AND ECON 512 Mathematical Economics (2154) (C- and above)			Economics	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
309	ECON 543	Topics in Macroeconomic Theory	4	8	ECON 502 Macroeconomics I (2186) (C- and above)			Economics	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	

310	ECON 590	Thesis II	8	16	ECON 589 Thesis I (3714) (P)						
History, Philosophy and Religious Studies											
311	HST 100	History of Kazakhstan	3	6				4 year UG SEDS, 4 year UG SMG, 4 year UG SSH, 5 year UG SEDS, 5 year UG SSH	1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 1 year UG SSH	SEDS, SMG, SSH, SoM	
312	HST 105	Introduction to World Environmental History	3	6				5 year UG SEDS, 5 year UG SSH, SSH	SEDS, SMG, SoM		
313	HST 123	Introduction to the History of Science and Technology	3	6				5 year UG SEDS, 5 year UG SSH, SSH	SEDS, SMG, SoM		
314	HST 124	Introduction to the History of Medicine	3	6				5 year UG SEDS, 5 year UG SSH, SSH	SEDS, SMG, SoM		
315	HST 241	History of Sexuality	3	6				5 year UG SEDS, 5 year UG SSH, SSH	SEDS, SMG, SoM		
316	HST 433	Empire, Nation and Identity in Nineteenth-Century Eurasia	3	6	HST 100 History of Kazakhstan (172) (C- and above)			5 year UG SEDS, 5 year UG SSH, SSH	SEDS, SMG, SoM		
317	HST 499	History Capstone: Undergraduate Dissertation	4	8	HST 498 Directed Reading (1365) (C- and above)						
318	HST 533	Empire, Nation and Identity in Nineteenth-Century Eurasia	4	8				SSH	GSB, GSE, GSPP, SEDS, SMG, SoM		
319	HST 590	History of Sexuality	4	8				SSH	GSB, GSE, GSPP, SEDS, SMG, SoM		
320	PHIL 101	Introduction to Philosophy	3	6				5 year UG SEDS, 5 year UG SSH, SEDS, SMG, SSH, SoM			
321	PHIL 110	The Good Life in Practice	3	6				5 year UG SEDS, 5 year UG SSH, SEDS, SMG, SSH, SoM			
322	PHIL 124	Knowledge and Reality	3	6				5 year UG SEDS, 5 year UG SSH, SEDS, SMG, SSH, SoM			
323	PHIL 141	Critical Thinking	3	6				5 year UG SEDS, 5 year UG SSH, SEDS, SMG, SSH, SoM			
324	PHIL 210	Ethics	3	6				3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH, 5 year UG SEDS, 5 year UG SSH	2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SSH		
325	PHIL 223	Philosophy of Science	3	6				5 year UG SEDS, 5 year UG SSH, SEDS, SMG, SSH, SoM			

326	PHIL 241	Beyond Common Sense: An Introduction to Paradox	3	6				5 year UG SEDS, 5 year UG SSH, SEDS, SMG, SSH, SoM			
327	PHIL 320	Truth, Knowledge and Belief	3	6				5 year UG SEDS, 5 year UG SSH, SEDS, SMG, SSH, SoM			
328	REL 212	Buddhist Religious Traditions	3	6				5 year UG SEDS, 5 year UG SSH, SSH	SEDS, SMG, SoM		
History, Philosophy and Religious Studies, History, Philosophy and Religious Studies											
329	HST 462/REL 462	History of Islam Under Russian Rule	3	6				5 year UG SEDS, 5 year UG SSH, SSH	SEDS, SMG, SoM		
330	HST 562/REL 562	History of Islam under Russian Rule	4	8				SSH	GSB, GSE, GSPP, SEDS, SMG, SoM		
331	PHIL 265/REL 265	Becoming a Sage: Introduction to Daoism	3	6				5 year UG SEDS, 5 year UG SSH, SEDS, SMG, SSH, SoM			
332	REL 110/HST 110	Introduction to World Religions	3	6				5 year UG SEDS, 5 year UG SSH, SSH	SEDS, SMG, SoM		
333	REL 273/HST 273	History of Sufism in the Middle East and Central Asia	3	6	Subject "HST" BETWEEN 100 and 199			5 year UG SEDS, 5 year UG SSH, SSH	SEDS, SMG, SoM		
334	REL 572/HST 572	History of Sufism in the Middle East and Central Asia	4	8				SSH	GSB, GSE, GSPP, SEDS, SMG, SoM		
History, Philosophy and Religious Studies, Kazakh Language and Turkic Studies											
335	HST 272/TUR 272	Modern Turkey: from the Ottoman Empire to the Turkish Republic	3	6				5 year UG SEDS, 5 year UG SSH, SSH	SEDS, SMG, SoM		
History, Philosophy and Religious Studies, Kazakh Language and Turkic Studies, Sociology and Anthropology											
336	ANT 375/HST 375/TUR 375	Inner Asian Frontiers of China: A Cultural Perspective	3	6				5 year UG SEDS, 5 year UG SSH, SEDS, SMG, SSH, SoM			
History, Philosophy and Religious Studies, Languages, Literature and Linguistics											
337	HST 274/WLL 274	Texts and Contexts	3	6				5 year UG SEDS, 5 year UG SSH, History, World Languages, Literatures and Cultures	2 year UG SSH, 3 year UG SSH	SEDS, SMG, SSH, SoM	
Kazakh Language and Turkic Studies											
338	KAZ 001	Kazakh Language Placement Test	0	0							

339	KAZ 201	Academic Kazakh I	3	6	KAZ 150 Basic Kazakh (1215) (C- and above) OR KLL "[B1.2] Intermediate"			1 year UG SEDS Chemical and Materials Engineering, 1 year UG SEDS Civil and Environmental Engineering, 1 year UG SEDS Electrical and Computer Engineering, 1 year UG SEDS Mechanical and Aerospace Engineering, 1 year UG SOM, 5 year UG SEDS, 5 year UG SSH, Undeclared SEDS	3 year UG SEDS, 3 year UG SMG, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH	1 year UG SEDS, 1 year UG SMG, 1 year UG SSH, 2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SSH
340	KAZ 202	Academic Kazakh II	3	6	KAZ 201 Academic Kazakh I (4561) (C- and above) OR KLL "[B2.2] Upper-Interm."			1 year UG SEDS Chemical and Materials Engineering, 1 year UG SEDS Civil and Environmental Engineering, 1 year UG SEDS Electrical and Computer Engineering, 1 year UG SEDS Mechanical and Aerospace Engineering, 1 year UG SOM, 5 year UG SEDS, 5 year UG SSH, Undeclared SEDS	3 year UG SEDS, 3 year UG SMG, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH	1 year UG SMG, 1 year UG SSH, 2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SSH
341	KAZ 211	Academic Speaking in Kazakh	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"		KAZ 212 Academic Writing in Kazakh (703) (C- and above)	1 year UG SEDS Chemical and Materials Engineering, 1 year UG SEDS Civil and Environmental Engineering, 1 year UG SEDS Electrical and Computer Engineering, 1 year UG SEDS Mechanical and Aerospace Engineering, 1 year UG SOM, 5 year UG SEDS, 5 year UG SSH, Undeclared SEDS	3 year UG SEDS, 3 year UG SMG, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH	1 year UG SMG, 1 year UG SSH, 2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SSH

342	KAZ 212	Academic Writing in Kazakh	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"		KAZ 211 Academic Speaking in Kazakh (702) (C- and above)	1 year UG SEDS Chemical and Materials Engineering, 1 year UG SEDS Civil and Environmental Engineering, 1 year UG SEDS Electrical and Computer Engineering, 1 year UG SEDS Mechanical and Aerospace Engineering, 1 year UG SOM, 5 year UG SEDS, 5 year UG SSH, Undeclared SEDS	3 year UG SEDS, 3 year UG SMG, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH	1 year UG SMG, 1 year UG SSH, 2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SSH
343	KAZ 313	Kazakh for Business	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			1 year UG SEDS Chemical and Materials Engineering, 1 year UG SEDS Civil and Environmental Engineering, 1 year UG SEDS Electrical and Computer Engineering, 1 year UG SEDS Mechanical and Aerospace Engineering, 1 year UG SOM, 5 year UG SEDS, 5 year UG SSH, Undeclared SEDS	3 year UG SEDS, 3 year UG SMG, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH	1 year UG SMG, 1 year UG SSH, 2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SSH
344	KAZ 356	Kazakh Music History	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			1 year UG SEDS Chemical and Materials Engineering, 1 year UG SEDS Civil and Environmental Engineering, 1 year UG SEDS Electrical and Computer Engineering, 1 year UG SEDS Mechanical and Aerospace Engineering, 1 year UG SOM, 5 year UG SEDS, 5 year UG SSH, Undeclared SEDS	3 year UG SEDS, 3 year UG SMG, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH	1 year UG SMG, 1 year UG SSH, 2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SSH

345	KAZ 357	Literature of Alash	3	6	KAZ 202 Academic Kazakh II (4562) (C-and above) OR KLL "[C1.1] Advanced"			1 year UG SEDS Chemical and Materials Engineering, 1 year UG SEDS Civil and Environmental Engineering, 1 year UG SEDS Electrical and Computer Engineering, 1 year UG SEDS Mechanical and Aerospace Engineering, 1 year UG SOM, 5 year UG SEDS, 5 year UG SSH, Undeclared SEDS	3 year UG SEDS, 3 year UG SMG, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH	1 year UG SMG, 1 year UG SSH, 2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SSH
346	KAZ 363	Language and Globalization	3	6	KAZ 202 Academic Kazakh II (4562) (C-and above) OR KLL "[C1.1] Advanced"			1 year UG SEDS Chemical and Materials Engineering, 1 year UG SEDS Civil and Environmental Engineering, 1 year UG SEDS Electrical and Computer Engineering, 1 year UG SEDS Mechanical and Aerospace Engineering, 1 year UG SOM, 5 year UG SEDS, 5 year UG SSH, Undeclared SEDS	3 year UG SEDS, 3 year UG SMG, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH	1 year UG SMG, 1 year UG SSH, 2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SSH
347	KAZ 364	Kazakh for Civil Service	3	6	KAZ 202 Academic Kazakh II (4562) (C-and above) OR KLL "[C1.1] Advanced"			1 year UG SEDS Chemical and Materials Engineering, 1 year UG SEDS Civil and Environmental Engineering, 1 year UG SEDS Electrical and Computer Engineering, 1 year UG SEDS Mechanical and Aerospace Engineering, 1 year UG SOM, 5 year UG SEDS, 5 year UG SSH, Undeclared SEDS	3 year UG SEDS, 3 year UG SMG, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH	1 year UG SMG, 1 year UG SSH, 2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SSH

348	KAZ 365	Abai's World	3	6	KAZ 202 Academic Kazakh II (4562) (C-and above) OR KLL "[C1.1] Advanced"			1 year UG SEDS Chemical and Materials Engineering, 1 year UG SEDS Civil and Environmental Engineering, 1 year UG SEDS Electrical and Computer Engineering, 1 year UG SEDS Mechanical and Aerospace Engineering, 1 year UG SOM, 5 year UG SEDS, 5 year UG SSH, Undeclared SEDS	3 year UG SEDS, 3 year UG SMG, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH	1 year UG SMG, 1 year UG SSH, 2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SSH
349	KAZ 366	Kazakh Language for Engineers	3	6	KAZ 202 Academic Kazakh II (4562) (C-and above) OR KLL "[C1.1] Advanced"			1 year UG SEDS Chemical and Materials Engineering, 1 year UG SEDS Civil and Environmental Engineering, 1 year UG SEDS Electrical and Computer Engineering, 1 year UG SEDS Mechanical and Aerospace Engineering, 1 year UG SOM, 5 year UG SEDS, 5 year UG SSH, Undeclared SEDS	3 year UG SEDS, 3 year UG SMG, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH	1 year UG SMG, 1 year UG SSH, 2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SSH
350	KAZ 368	Onomastics: History and Function of Names	3	6	KAZ 202 Academic Kazakh II (4562) (C-and above) OR KLL "[C1.1] Advanced"			1 year UG SEDS Chemical and Materials Engineering, 1 year UG SEDS Civil and Environmental Engineering, 1 year UG SEDS Electrical and Computer Engineering, 1 year UG SEDS Mechanical and Aerospace Engineering, 1 year UG SOM, 5 year UG SEDS, 5 year UG SSH, Undeclared SEDS	3 year UG SEDS, 3 year UG SMG, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH	1 year UG SMG, 1 year UG SSH, 2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SSH

351	KAZ 371	Contemporary Kazakh Literature	3	6	KAZ 202 Academic Kazakh II (4562) (C-and above) OR KLL "[C1.1] Advanced"			1 year UG SEDS Chemical and Materials Engineering, 1 year UG SEDS Civil and Environmental Engineering, 1 year UG SEDS Electrical and Computer Engineering, 1 year UG SEDS Mechanical and Aerospace Engineering, 1 year UG SOM, 5 year UG SEDS, 5 year UG SSH, Undeclared SEDS	3 year UG SEDS, 3 year UG SMG, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH	1 year UG SMG, 1 year UG SSH, 2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SSH
352	KAZ 372	Language and ethnicity	3	6	KAZ 202 Academic Kazakh II (4562) (C-and above) OR KLL "[C1.1] Advanced"			1 year UG SEDS Chemical and Materials Engineering, 1 year UG SEDS Civil and Environmental Engineering, 1 year UG SEDS Electrical and Computer Engineering, 1 year UG SEDS Mechanical and Aerospace Engineering, 1 year UG SOM, 5 year UG SEDS, 5 year UG SSH, Undeclared SEDS	3 year UG SEDS, 3 year UG SMG, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH	1 year UG SMG, 1 year UG SSH, 2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SSH
353	KAZ 373	Kazakh Terminology	3	6	KAZ 202 Academic Kazakh II (4562) (C-and above) OR KLL "[C1.1] Advanced"			1 year UG SEDS Chemical and Materials Engineering, 1 year UG SEDS Civil and Environmental Engineering, 1 year UG SEDS Electrical and Computer Engineering, 1 year UG SEDS Mechanical and Aerospace Engineering, 1 year UG SOM, 5 year UG SEDS, 5 year UG SSH, Undeclared SEDS	3 year UG SEDS, 3 year UG SMG, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH	1 year UG SMG, 1 year UG SSH, 2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SSH
354	KAZ 374	Kazakh Diplomacy	3	6	KAZ 202 Academic Kazakh II (4562) (C-and above) OR KLL "[C1.1] Advanced"			1 year UG SOM, 5 year UG SEDS, 5 year UG SSH, Political Science and International Relations, Undeclared SEDS	1 year UG SEDS, 3 year UG SEDS, 3 year UG SMG, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH	1 year UG SMG, 1 year UG SSH, 2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SSH

355	KAZ 377	Intercultural Communication through Film	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			1 year UG SEDS Chemical and Materials Engineering, 1 year UG SEDS Civil and Environmental Engineering, 1 year UG SEDS Electrical and Computer Engineering, 1 year UG SEDS Mechanical and Aerospace Engineering, 1 year UG SOM, 5 year UG SEDS, 5 year UG SSH, Undeclared SEDS	3 year UG SEDS, 3 year UG SMG, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH	1 year UG SMG, 1 year UG SSH, 2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SSH
356	KAZ 410	Kazakh literature of the XV-XIX centuries	3	6	Subject "KAZ" BETWEEN 300 and 399 OR Subject "KAZ" BETWEEN 300 and 399			1 year UG SEDS Chemical and Materials Engineering, 1 year UG SEDS Civil and Environmental Engineering, 1 year UG SEDS Electrical and Computer Engineering, 1 year UG SEDS Mechanical and Aerospace Engineering, 1 year UG SOM, 5 year UG SEDS, 5 year UG SSH, Undeclared SEDS	3 year UG SEDS, 3 year UG SMG, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH	1 year UG SMG, 1 year UG SSH, 2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SSH
357	KFL 102	Elementary Kazakh as a Foreign Language II	4	8	KFL 101 Elementary Kazakh as a Foreign Language I (4889) (C- and above)					
358	TUR 100	Languages, Cultures, and Communities of the Turkic World	3	6				1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 1 year UG SSH, 2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SSH, 5 year UG SEDS, 5 year UG SSH	SEDS, SMG, SSH, SoM	
359	TUR 230	Literatures of Central Asia	3	6				5 year UG SEDS, 5 year UG SSH, SEDS, SMG, SSH, SoM		
360	TUR 235	Turkish Poetry in Translation	3	6				5 year UG SEDS, 5 year UG SSH, SEDS, SMG, SSH, SoM		
361	TUR 455	Eurasian Environments	3	6				5 year UG SEDS, 5 year UG SSH, SEDS, SMG, SSH, SoM		
362	TUR 555	Eurasian Environments	4	8				GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		

Languages, Literature and Linguistics

363	CHN 201	Intermediate Mandarin I	4	8	CHN 102 Beginning Mandarin II (1844) (C and above)			5 year UG SEDS, 5 year UG SSH, World Languages, Literatures and Cultures		SEDS, SMG, SSH, SoM	
364	CHN 202	Intermediate Mandarin II	4	8	CHN 201 Intermediate Mandarin I (2181) (C and above)			5 year UG SEDS, 5 year UG SSH, World Languages, Literatures and Cultures		SEDS, SMG, SSH, SoM	
365	FRE 101	Beginning French I	4	8				1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 1 year UG SSH, 2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SSH, 3 year UG SEDS, 3 year UG SMG, 3 year UG SSH			
366	FRE 102	Beginning French II	4	8	FRE 101 Beginning French I (246) (C- and above)			2 year UG SSH World Languages, Literatures and Cultures, 3 year UG SSH World Languages, Literatures and Cultures, 5 year UG SEDS, 5 year UG SSH	Undeclared SSH	SEDS, SMG, SSH, SoM	
367	FRE 201	Intermediate French I	4	8	FRE 102 Beginning French II (454) (C- and above)			5 year UG SEDS, 5 year UG SSH, World Languages, Literatures and Cultures		SEDS, SMG, SSH, SoM	
368	FRE 362	French Linguistics	3	6	FRE 102 Beginning French II (454) (C- and above) AND LING 131 Introduction to Linguistics (1394) (C- and above)			5 year UG SEDS, 5 year UG SSH, World Languages, Literatures and Cultures		SEDS, SMG, SSH, SoM	
369	KOR 101	Beginning Korean I	4	8				1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 1 year UG SSH, 2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SSH, 3 year UG SEDS, 3 year UG SMG, 3 year UG SSH			
370	KOR 102	Beginning Korean II	4	8	KOR 101 Beginning Korean I (4672) (C- and above)			2 year UG SSH World Languages, Literatures and Cultures, 3 year UG SSH World Languages, Literatures and Cultures, 5 year UG SEDS, 5 year UG SSH	Undeclared SSH	SEDS, SMG, SSH, SoM	

371	KOR 201	Intermediate Korean I	4	8	KOR 102 Beginning Korean II (4791) (C- and above)			5 year UG SEDS, 5 year UG SSH, World Languages, Literatures and Cultures		SEDS, SMG, SSH, SoM	
372	KOR 202	Intermediate Korean II	4	8	KOR 201 Intermediate Korean I (5059) (C- and above)			5 year UG SEDS, 5 year UG SSH, World Languages, Literatures and Cultures		SEDS, SMG, SSH, SoM	
373	KOR 301	Advanced Korean I	4	8	KOR 202 Intermediate Korean II (5060) (C- and above)			5 year UG SEDS, 5 year UG SSH, World Languages, Literatures and Cultures		SEDS, SMG, SSH, SoM	
374	LING 130	Introduction to Language and Communication	3	6				1 year UG SSH, 5 year UG SEDS, 5 year UG SSH	2 year UG SSH	SEDS, SMG, SSH, SoM	
375	LING 131	Introduction to Linguistics	3	6				1 year UG SSH, 5 year UG SEDS, 5 year UG SSH	2 year UG SSH	SEDS, SMG, SSH, SoM	
376	LING 140	Language Variation and Change: the Story of English	3	6				1 year UG SSH, 5 year UG SEDS, 5 year UG SSH	2 year UG SSH	SEDS, SMG, SSH, SoM	
377	LING 270	Languages of Eurasia	3	6				5 year UG SEDS, 5 year UG SSH, World Languages, Literatures and Cultures	SSH	SEDS, SMG, SoM	
378	LING 272	Language and the Mind	3	6				5 year UG SEDS, 5 year UG SSH, World Languages, Literatures and Cultures	SSH	SEDS, SMG, SoM	
379	LING 278	Sounds of the World's Languages	3	6				5 year UG SEDS, 5 year UG SSH, World Languages, Literatures and Cultures	SSH	SEDS, SMG, SoM	
380	LING 374	Language Contact in Central Asia	3	6	LING 131 Introduction to Linguistics (1394) (C- and above)			5 year UG SEDS, 5 year UG SSH, World Languages, Literatures and Cultures	SSH	SEDS, SMG, SoM	
381	LING 472	Language Ideologies	3	6	LING 131 Introduction to Linguistics (1394) (C- and above)			5 year UG SEDS, 5 year UG SSH, World Languages, Literatures and Cultures	SSH	SEDS, SMG, SoM	
382	LING 572	Language Ideologies	4	8				SSH	GSB, GSE, GSPP, SEDS, SMG, SoM		
383	LING 772	Language Ideologies	4	8				SSH	GSB, GSE, GSPP, SEDS, SMG, SoM		
384	RFL 404	Advanced and Superior Composition and Conversation Russian II	4	8							

385	SPA 101	Beginning Spanish I	4	8				1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 1 year UG SSH, 2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SSH, 3 year UG SEDS, 3 year UG SMG, 3 year UG SSH			
386	SPA 102	Beginning Spanish II	4	8	SPA 101 Beginning Spanish I (685) (C- and above)			2 year UG SSH World Languages, Literatures and Cultures, 3 year UG SSH World Languages, Literatures and Cultures, 5 year UG SEDS, 5 year UG SSH	Undeclared SSH	SEDS, SMG, SSH, SoM	
387	SPA 202	Intermediate Spanish II	4	8	SPA 201 Intermediate Spanish I (1475) (C- and above)			5 year UG SEDS, 5 year UG SSH, World Languages, Literatures and Cultures		SEDS, SMG, SSH, SoM	
388	SPA 320	The Hispanic Short Story	3	6	Subject "WLL" BETWEEN 100 and 199 AND SPA 202 Intermediate Spanish II (1842) (C- and above)			5 year UG SEDS, 5 year UG SSH, World Languages, Literatures and Cultures		SEDS, SMG, SSH, SoM	
389	WLL 110	Introduction to Literary Studies	3	6				1 year UG SSH, 5 year UG SEDS, 5 year UG SSH	SSH	SEDS, SMG, SoM	
390	WLL 209	Introduction to Translation Studies	3	6				5 year UG SEDS, 5 year UG SSH, World Languages, Literatures and Cultures	SSH	SEDS, SMG, SoM	
391	WLL 211	World Literature II: from the 18th to the 20th century	3	6				5 year UG SEDS, 5 year UG SSH, World Languages, Literatures and Cultures	SSH	SEDS, SMG, SoM	
392	WLL 241	Survey of Folk Tales	3	6				5 year UG SEDS, 5 year UG SSH, World Languages, Literatures and Cultures	SSH	SEDS, SMG, SoM	
393	WLL 314	Petersburg Text in Russian Literature	3	6	Subject "WLL" BETWEEN 100 and 499 OR Subject "HST" BETWEEN 100 and 499			5 year UG SEDS, 5 year UG SSH, World Languages, Literatures and Cultures	SSH	SEDS, SMG, SoM	
394	WLL 440	Oral Epic in Central Asia	3	6	Subject "WLL" BETWEEN 100 and 499			5 year UG SEDS, 5 year UG SSH, World Languages, Literatures and Cultures	SSH	SEDS, SMG, SoM	

395	WLL 499	Languages, Linguistics, and Literatures Capstone II	3	6	WLL 498 Languages, Linguistics, and Literatures Capstone I (3048) (C- and above)			4 year UG SSH World Languages, Literatures and Cultures, 5 year UG SEDS, 5 year UG SSH			
396	WLL 740	Oral Epic in Central Asian	4	8			WLL 440 Oral Epic in Central Asia (4016) (C- and above) OR WLL 540 Oral Epic in Central Asia (4017) (C- and above)				
Languages, Literature and Linguistics, Languages, Literature and Linguistics											
397	WLL 254/SPA 254	Superstition, Magical Realism, and Horror in Hispanic Culture	3	6	Subject "WLL" BETWEEN 100 and 499 OR Subject "HST" BETWEEN 100 and 499			5 year UG SEDS, 5 year UG SSH, World Languages, Literatures and Cultures		SEDS, SMG, SSH, SoM	
398	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)			2 year UG SSH World Languages, Literatures and Cultures, 3 year UG SSH World Languages, Literatures and Cultures, 4 year UG SSH World Languages, Literatures and Cultures, 5 year UG SEDS, 5 year UG SSH	2 year UG SSH, 3 year UG SSH, 4 year UG SSH	SEDS, SMG, SSH, SoM	
Languages, Literature and Linguistics, Sociology and Anthropology											
399	ANT 385/WLL 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)			5 year UG SEDS, 5 year UG SSH, Anthropology, Sociology, World Languages, Literatures and Cultures	SSH	SEDS, SMG, SoM	
Mathematics											

400	MATH 109	Mathematical Discovery	3	6			MATH 161 Calculus I (118) (C- and above)	5 year UG SEDS, 5 year UG SSH, Anthropology, History, Political Science and International Relations, Sociology, Undeclared SSH, World Languages, Literatures and Cultures			
401	MATH 161	Calculus I	4	8				1 year UG SEDS, 1 year UG SMG, 1 year UG SSH Biological Sciences, 1 year UG SSH Chemistry, 1 year UG SSH Mathematics, 1 year UG SSH Physics, 5 year UG SEDS, 5 year UG SSH, Medical Sciences	Biological Sciences, Chemistry, Mathematics, Physics, SEDS, SMG	SSH, SoM	
402	MATH 162	Calculus II	4	8	MATH 161 Calculus I (118) (C and above)			1 year UG SEDS, 1 year UG SMG, 1 year UG SSH Biological Sciences, 1 year UG SSH Chemistry, 1 year UG SSH Mathematics, 1 year UG SSH Physics, 5 year UG SEDS, 5 year UG SSH	Biological Sciences, Chemistry, Mathematics, Physics, SEDS, SMG	SSH, SoM	
403	MATH 251	Discrete Mathematics	3	6	MATH 161 Calculus I (118) (C and above)			5 year UG SEDS, 5 year UG SSH, Computer Science, Mathematics	SEDS, SMG, SSH, SoM		
404	MATH 263	Calculus III	4	8	MATH 162 Calculus II (170) (C and above)			5 year UG SEDS, 5 year UG SSH, Mathematics, Physics	SEDS, SMG, SSH, SoM		
405	MATH 273	Linear Algebra with Applications	4	8	MATH 161 Calculus I (118) (C and above)	MATH 162 Calculus II (170) (C and above)		1 year UG SSH Physics, 2 year UG SSH Undeclared, 5 year UG SEDS, 5 year UG SSH	Chemistry, Computer Science, Mathematics, Physics, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	
406	MATH 274	Introduction to Differential Equations	3	6	MATH 162 Calculus II (170) (C and above)			2 year UG SEDS Robotics and Mechatronics, 2 year UG SSH Mathematics, 2 year UG SSH Undeclared, 5 year UG SEDS, 5 year UG SSH	Chemistry, Mathematics, Physics, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	
407	MATH 302	Abstract Algebra I	3	6	MATH 273 Linear Algebra with Applications (84) (C and above) AND MATH 251 Discrete Mathematics (85) (C and above)			5 year UG SEDS, 5 year UG SSH, Mathematics	SEDS, SMG, SSH, SoM		

408	MATH 310	Applied Statistical Methods	3	6	MATH 161 Calculus I (118) (C and above)		MATH 321 Probability (482) (C and above)	2 year UG SSH Biological Sciences, 2 year UG SSH Undeclared, 5 year UG SEDS, 5 year UG SSH	Biological Sciences	SEDS, SMG, SSH, SoM	
409	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)	2 year UG SEDS Computer Science, 2 year UG SSH Mathematics, 2 year UG SSH Undeclared, 3 year UG SEDS Robotics and Mechatronics, 5 year UG SEDS, 5 year UG SSH	Computer Science, Mathematics, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	
410	MATH 322	Mathematical Statistics	3	6	MATH 321 Probability (482) (C and above) OR ECON 211 Economic Statistics (2280) (C and above)			5 year UG SEDS, 5 year UG SSH, Mathematics	SEDS, SMG, SSH, SoM		
411	MATH 350	Research Methods	3	6	MATH 321 Probability (482) (C and above)			3 year UG SSH Mathematics, 5 year UG SEDS, 5 year UG SSH			
412	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)	5 year UG SEDS, 5 year UG SSH, Mathematics	SEDS, SMG, SSH, SoM		
413	MATH 361	Real Analysis I	3	6	MATH 263 Calculus III (81) (C and above) AND MATH 251 Discrete Mathematics (85) (C and above)			5 year UG SEDS, 5 year UG SSH, Mathematics	SEDS, SMG, SSH, SoM		
414	MATH 407	Graph Theory	3	6	(MATH 301 Introduction to Number Theory (613) (C and above) OR MATH 251 Discrete Mathematics (85) (C and above)) AND MATH 273 Linear Algebra with Applications (84) (C and above)			5 year UG SEDS, 5 year UG SSH, Mathematics	SEDS, SMG, SSH, SoM		
415	MATH 412	Nonlinear Optimization	3	6	MATH 273 Linear Algebra with Applications (84) (C and above) AND MATH 263 Calculus III (81) (C and above)			5 year UG SEDS, 5 year UG SSH, Mathematics	SEDS, SMG, SSH, SoM		

416	MATH 417	Cryptography	3	6	MATH 273 Linear Algebra with Applications (84) (C and above) AND (MATH 251 Discrete Mathematics (85) (C and above) OR MATH 301 Introduction to Number Theory (613) (C and above) OR MATH 355 Introduction to Proofs (86) (C and above))			5 year UG SEDS, 5 year UG SSH, Mathematics	SEDS, SMG, SSH, SoM		
417	MATH 423	Actuarial Mathematics II	3	6	MATH 321 Probability (482) (C and above) OR ECON 211 Economic Statistics (2280) (C and above)			4 year UG SSH Mathematics, 5 year UG SEDS, 5 year UG SSH	3 year UG SSH Mathematics, 4 year UG SSH Economics	SEDS, SMG, SSH, SoM	
418	MATH 424	Mathematical Finance	3	6	MATH 321 Probability (482) (C and above) OR ECON 211 Economic Statistics (2280) (C and above)			4 year UG SSH Mathematics, 5 year UG SEDS, 5 year UG SSH	3 year UG SSH Mathematics, 4 year UG SSH Economics	SEDS, SMG, SSH, SoM	
419	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)	5 year UG SEDS, 5 year UG SSH, Mathematics	SEDS, SMG, SSH, SoM		
420	MATH 460	Topology	3	6	MATH 361 Real Analysis I (483) (C and above)			5 year UG SEDS, 5 year UG SSH, Mathematics	SEDS, SMG, SSH, SoM		
421	MATH 477	Applied Finite Element Methods	3	6	MATH 351 Numerical Methods with Applications (1166) (C and above)			5 year UG SEDS, 5 year UG SSH, Mathematics	SEDS, SMG, SSH, SoM		
422	MATH 490	Special Topics in Mathematics I	3	6				5 year UG SEDS, 5 year UG SSH, Mathematics	SEDS, SMG, SSH, SoM		
423	MATH 491	Special Topics in Mathematics II	3	6							
424	MATH 497	Directed Study in Mathematics I	3	6							
425	MATH 499	Capstone Project	3	6							
426	MATH 512	Optimization Methods and Techniques	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	

427	MATH 541	Data Analysis and Statistical Learning	3	6	MATH 540 Statistical Learning (2340) (B- and above)			Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
428	MATH 582	Mathematical Biology	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
429	MATH 601	Analytic Number Theory	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
430	MATH 691	Thesis Proposal	3	6	MATH 592 Research Seminar (5760) (C- and above)			Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
431	MATH 692	Thesis	15	30	MATH 691 Thesis Proposal (5769) (P)						
432	MATH 700-0	Thesis Research	0	0				Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
433	MATH 702	Functional Analysis with Applications	4	8				Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
434	MATH 722	Advanced Partial Differential Equations	4	8	MATH 701 Real Analysis (5489) (B and above)			Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
435	MATH 751	Probability Theory	4	8				Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
436	MATH 791	Topics in Mathematics	4	8				Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
Physics											
437	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)	5 year UG SEDS, 5 year UG SSH, SEDS, SMG, SSH, SoM			
438	PHYS 162	Physics II for Scientists and Engineers with Laboratory	4	8	PHYS 161 Physics I for Scientists and Engineers with Laboratory (116) (C- and above) OR PHYS 151 Introductory Physics I with Lab (649) (C- and above)		PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above)	5 year UG SEDS, 5 year UG SSH, SEDS, SMG, SSH, SoM			
439	PHYS 202	Introductory Astrophysics	3	6	PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above)			5 year UG SEDS, 5 year UG SSH, SSH	SEDS, SMG, SoM		

440	PHYS 222	Classical Mechanics II	3	6	PHYS 221 Classical Mechanics I (652) (C- and above)	MATH 274 Introduction to Differential Equations (484) (D and above)		5 year UG SEDS, 5 year UG SSH, Physics	SSH	SEDS, SMG, SoM	
441	PHYS 270	Computational Physics with Laboratory	3	6	(CSCI 150 Fundamentals of Programming (1501) (C- and above) OR CSCI 151 Programming for Scientists and Engineers (192) (C- and above)) AND MATH 263 Calculus III (81) (C- and above) AND (PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above) OR PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above))	MATH 273 Linear Algebra with Applications (84) (D and above)		5 year UG SEDS, 5 year UG SSH, Physics	SSH	SEDS, SMG, SoM	
442	PHYS 280	Thermodynamics and Statistical Physics	3	6	MATH 263 Calculus III (81) (C- and above) AND (PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above) OR PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above))			5 year UG SEDS, 5 year UG SSH, Physics	SSH	SEDS, SMG, SoM	
443	PHYS 362	Classical Electrodynamics II	3	6	PHYS 361 Classical Electrodynamics I (651) (C- and above)			5 year UG SEDS, 5 year UG SSH, Physics	SSH	SEDS, SMG, SoM	
444	PHYS 370	Optics with Laboratory	4	8	PHYS 361 Classical Electrodynamics I (651) (C- and above)			5 year UG SEDS, 5 year UG SSH, Physics	SSH	SEDS, SMG, SoM	
445	PHYS 451	Quantum Mechanics I	3	6	PHYS 221 Classical Mechanics I (652) (C- and above) AND PHYS 361 Classical Electrodynamics I (651) (C- and above)			5 year UG SEDS, 5 year UG SSH, Physics	SSH	SEDS, SMG, SoM	

446	PHYS 463	Astrophysics and General Relativity	3	6	MATH 162 Calculus II (170) (C- and above) AND PHYS 221 Classical Mechanics I (652) (C- and above) AND MATH 274 Introduction to Differential Equations (484) (C- and above)			5 year UG SEDS, 5 year UG SSH, Physics	SSH	SEDS, SMG, SoM	
447	PHYS 474	Lasers and Photonics	3	6	PHYS 370 Optics with Laboratory (1405) (C- and above)			5 year UG SEDS, 5 year UG SSH, Physics	SSH	SEDS, SMG, SoM	
448	PHYS 483	Statistical Mechanics	3	6	PHYS 280 Thermodynamics and Statistical Physics (1179) (C- and above)			5 year UG SEDS, 5 year UG SSH, Physics	SSH	SEDS, SMG, SoM	
449	PHYS 499	Honors Thesis	3	6							
450	PHYS 510	Quantum Mechanics	3	6			Physics	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM			
451	PHYS 520	Statistical Physics	3	6			Physics	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM			
452	PHYS 574	Lasers and Photonics	3	6			Physics	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM			
453	PHYS 692	Thesis	21	42							
454	PHYS 700-0	Thesis Research	0	0			Physics				
455	PHYS 701	Current Research Literature	3	6			Physics				
456	PHYS 710	Quantum Mechanics	4	8			Physics	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM			
457	PHYS 720	Statistical Physics	4	8			Physics	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM			
458	PHYS 774	Lasers and Photonics	4	8			Physics	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM			
Political Science and International Relations											
459	PLS 100	Introduction to the Politics of Central Asia	3	6			5 year UG SEDS, 5 year UG SSH, Undeclared SSH	SSH	SEDS, SMG, SoM		
460	PLS 101	Introduction to Political Science	3	6			5 year UG SEDS, 5 year UG SSH, SEDS, SMG, SoM	Biological Sciences, Chemistry, Mathematics, Physics	SSH		

461	PLS 102	The Political Challenges of Technologies and Science: An Introduction	3	6				5 year UG SEDS, 5 year UG SSH, SEDS, SMG, SoM	Biological Sciences, Chemistry, Mathematics, Physics	SSH	
462	PLS 120	Introduction to Political Theory	3	6				5 year UG SEDS, 5 year UG SSH, Undeclared SSH	Political Science and International Relations	SEDS, SMG, SSH, SoM	
463	PLS 140	Introduction to Comparative Politics	3	6				5 year UG SEDS, 5 year UG SSH, Undeclared SSH	Political Science and International Relations	SEDS, SMG, SSH, SoM	
464	PLS 150	Introduction to International Relations	3	6				5 year UG SEDS, 5 year UG SSH, Undeclared SSH	Political Science and International Relations	SEDS, SMG, SSH, SoM	
465	PLS 210	Political Science Research Methods	3	6				5 year UG SEDS, 5 year UG SSH, Political Science and International Relations	SEDS, SMG, SSH, SoM		
466	PLS 211	Quantitative Methods	3	6			ECON 211 Economic Statistics (2280) (C- and above)	5 year UG SEDS, 5 year UG SSH, Political Science and International Relations	SEDS, SMG, SSH, SoM		
467	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)			5 year UG SEDS, 5 year UG SSH, Political Science and International Relations	SEDS, SMG, SSH, SoM		
468	PLS 329	Anarchy	3	6	PLS 120 Introduction to Political Theory (512) (C- and above)			5 year UG SEDS, 5 year UG SSH, Political Science and International Relations	SEDS, SMG, SSH, SoM		
469	PLS 341	Politics of Development	3	6	PLS 210 Political Science Research Methods (129) (C- and above)			5 year UG SEDS, 5 year UG SSH, Political Science and International Relations	SEDS, SMG, SSH, SoM		
470	PLS 342	Political Corruption	3	6	PLS 210 Political Science Research Methods (129) (C- and above)			5 year UG SEDS, 5 year UG SSH, Political Science and International Relations	SEDS, SMG, SSH, SoM		
471	PLS 343	Politics of Sub-Saharan Africa	3	6	PLS 140 Introduction to Comparative Politics (223) (C- and above) AND PLS 210 Political Science Research Methods (129) (C- and above)			5 year UG SEDS, 5 year UG SSH, Political Science and International Relations	SEDS, SMG, SSH, SoM		

472	PLS 352	International Relations Theory	3	6	PLS 150 Introduction to International Relations (511) (C- and above) AND PLS 210 Political Science Research Methods (129) (C- and above)			5 year UG SEDS, 5 year UG SSH, Political Science and International Relations	SEDS, SMG, SSH, SoM		
473	PLS 355	European Union: Institutions and Policies	3	6	PLS 210 Political Science Research Methods (129) (C- and above)			5 year UG SEDS, 5 year UG SSH, Political Science and International Relations	SEDS, SMG, SSH, SoM		
474	PLS 356	International Politics of the Korean Peninsula	3	6	PLS 210 Political Science Research Methods (129) (C- and above) AND PLS 150 Introduction to International Relations (511) (C- and above)			5 year UG SEDS, 5 year UG SSH, Political Science and International Relations	SEDS, SMG, SSH, SoM		
475	PLS 360	Foreign Policy Analysis	3	6	PLS 150 Introduction to International Relations (511) (C- and above) AND PLS 211 Quantitative Methods (221) (C- and above)			5 year UG SEDS, 5 year UG SSH, Political Science and International Relations	SEDS, SMG, SSH, SoM		
476	PLS 374	Public Choice and Public Policy	3	6	PLS 140 Introduction to Comparative Politics (223) (C- and above) AND PLS 211 Quantitative Methods (221) (C- and above)			5 year UG SEDS, 5 year UG SSH, Political Science and International Relations	SEDS, SMG, SSH, SoM		
477	PLS 395	Independent Study	3	6	PLS 210 Political Science Research Methods (129) (C- and above) AND PLS 211 Quantitative Methods (221) (C- and above)						
478	PLS 416	Experimental Political Science	3	6	PLS 210 Political Science Research Methods (129) (C- and above) AND PLS 211 Quantitative Methods (221) (C- and above)			5 year UG SEDS, 5 year UG SSH, Political Science and International Relations	SEDS, SMG, SSH, SoM		
479	PLS 426	Hannah Arendt on Power, Violence, and Revolution	3	6	PLS 120 Introduction to Political Theory (512) (C- and above) AND PLS 210 Political Science Research Methods (129) (C- and above)			5 year UG SEDS, 5 year UG SSH, Political Science and International Relations	SEDS, SMG, SSH, SoM		

480	PLS 431	Politics and Governance of the Russian Federation	3	6	PLS 210 Political Science Research Methods (129) (C- and above)			5 year UG SEDS, 5 year UG SSH, Political Science and International Relations	SEDS, SMG, SSH, SoM		
481	PLS 457	International Security and Conflict	3	6	PLS 150 Introduction to International Relations (511) (C- and above) AND PLS 210 Political Science Research Methods (129) (C- and above) AND PLS 211 Quantitative Methods (221) (C- and above)			5 year UG SEDS, 5 year UG SSH, Political Science and International Relations	SEDS, SMG, SSH, SoM		
482	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)			5 year UG SEDS, 5 year UG SSH, Political Science and International Relations	SEDS, SMG, SSH, SoM		
483	PLS 495	Research Practicum in PSIR	1	2	PLS 210 Political Science Research Methods (129) (C- and above) AND PLS 211 Quantitative Methods (221) (C- and above)						
484	PLS 510	Advanced Research I	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
485	PLS 516	Experimental Political Science	4	8	PLS 511 Advanced Research I (1631) (C- and above)			Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
486	PLS 526	Hannah Arendt on Power, Violence, and Revolution	4	8		PLS 426 Hannah Arendt on Power, Violence, and Revolution (5398) (C- and above)		Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
487	PLS 531	Politics and Governance of the Russian Federation	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
488	PLS 557	International Security and Conflict	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
489	PLS 565	Politics of International Finance	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		

490	PLS 596	Thesis Preparation	2	4	PLS 540 Core Seminar in Comparative Politics (1374) (C+ and above) OR PLS 550 Core Seminar in IR (1372) (C+ and above) AND PLS 511 Advanced Research I (1631) (C+ and above)			Political Science and International Relations		
491	PLS 598	MA Thesis I	6	12						
492	PLS 599	MA Thesis II	10	20						
SSH										
493	SSH 300	School of Sciences and Humanities Internship	3	6						
494	SSH 301	School of Sciences and Humanities Internship: Second Experience	3	6						
495	SSH 398	Independent Study	1	2						
Sociology and Anthropology										
496	ANT 110	Introduction to Sociocultural Anthropology	3	6				5 year UG SEDS, 5 year UG SSH, Anthropology, Sociology, Undeclared SEDS, Undeclared SMG, Undeclared SSH	2 year UG SSH	SEDS, SMG, SSH, SoM
497	ANT 160	Introduction to Biological Anthropology	3	6			ANT 361 Human Evolution: Bones, Stones and Genomes (160) (C- and above)	5 year UG SEDS, 5 year UG SSH, Anthropology, Sociology, Undeclared SEDS, Undeclared SMG, Undeclared SSH	2 year UG SSH	SEDS, SMG, SSH, SoM
498	ANT 286	Nomads: Around the world and through time	3	6				5 year UG SEDS, 5 year UG SSH, Anthropology, Sociology, Undeclared SEDS, Undeclared SMG, Undeclared SSH	2 year UG SSH	SEDS, SMG, SSH, SoM
499	ANT 314	Politics of Identity in Eurasia	3	6	Subject "HST" BETWEEN 100 and 499 OR Subject "SOC" BETWEEN 100 and 499 OR Subject "ANT" BETWEEN 100 and 499 OR Subject "PLS" BETWEEN 100 and 499 OR Subject "SOC" BETWEEN 100 and 499 OR Subject "ANT" BETWEEN 100 and 499			5 year UG SEDS, 5 year UG SSH, Anthropology, Sociology	SSH	SEDS, SMG, SoM

500	ANT 331	Archaeology of Power and Inequality	3	6				5 year UG SEDS, 5 year UG SSH, Anthropology, Sociology	SSH	SEDS, SMG, SoM	
501	ANT 410	Ethnography, Fiction, Memoir	3	6				5 year UG SEDS, 5 year UG SSH, Anthropology, Sociology	SSH	SEDS, SMG, SoM	
502	ANT 421	Sport and Construction of Identity	3	6				5 year UG SEDS, 5 year UG SSH, Anthropology, Sociology	SSH	SEDS, SMG, SoM	
503	ANT 499	Capstone Seminar II	3	6	ANT 498 Capstone Seminar I (2965) (C- and above)						
504	SOC 101	Introduction to Sociology	3	6				5 year UG SEDS, 5 year UG SSH, Anthropology, SoM, Sociology, Undeclared SEDS, Undeclared SMG, Undeclared SSH	1 year UG SSH, 2 year UG SSH, 3 year UG SSH Biological Sciences	SEDS, SMG, SSH	
505	SOC 115	Global Social Problems	3	6				5 year UG SEDS, 5 year UG SSH, Anthropology, Sociology, Undeclared SEDS, Undeclared SMG, Undeclared SSH	1 year UG SSH, 2 year UG SSH, 3 year UG SSH	SEDS, SMG, SSH, SoM	
506	SOC 203	Quantitative Methods in Sociology	3	6				5 year UG SEDS, 5 year UG SSH, Anthropology, Sociology	SSH	SEDS, SMG, SoM	
507	SOC 213	Work and Society	3	6				5 year UG SEDS, 5 year UG SSH, Anthropology, Sociology	SSH	SEDS, SMG, SoM	
508	SOC 215	Sociology of Race and Ethnicity	3	6				5 year UG SEDS, 5 year UG SSH, Anthropology, Sociology	SSH	SEDS, SMG, SoM	
509	SOC 317	Economy and Society	3	6	SOC 101 Introduction to Sociology (508) (C- and above) OR Subject "SOC" BETWEEN 200 and 299 OR Subject "SOC" BETWEEN 200 and 299 OR ECON 102 Introduction to Macroeconomics (503) (C- and above) OR PLS 120 Introduction to Political Theory (512) (C- and above) OR PLS 150 Introduction to International Relations (511) (C- and above)			5 year UG SEDS, 5 year UG SSH, Anthropology, Sociology	SSH	SEDS, SMG, SoM	
510	SOC 320	Organized Crime and Corruption	3	6	SOC 101 Introduction to Sociology (508) (C- and above)			5 year UG SEDS, 5 year UG SSH, Anthropology, Sociology	SSH	SEDS, SMG, SoM	

511	SOC 325	COVID-19: The sociocultural aspects of a pandemic	3	6	SOC 101 Introduction to Sociology (508) (C- and above)			5 year UG SEDS, 5 year UG SSH, Anthropology, Sociology	SSH	SEDS, SMG, SoM	
512	SOC 400	Research Assistance in Sociology	1	2							
513	SOC 401	Research Assistance in Sociology	1	2							
514	SOC 403	Research Assistance in Sociology	2	4							
515	SOC 499	Capstone Seminar II	3	6	SOC 498 Capstone Seminar Part I (3043) (C- and above)						
516	SOC 525	COVID-19: The sociocultural aspects of a pandemic	4	8				SSH	GSB, GSE, GSPP, SEDS, SMG, SoM		
517	SOC 725	COVID-19: The sociocultural aspects of a pandemic	4	8				GSB, GSE, GSPP, SEDS, SMG, SSH, SoM			
Sociology and Anthropology, Sociology and Anthropology											
518	ANT 214/SOC 214	Qualitative Methods	3	6				5 year UG SEDS, 5 year UG SSH, Anthropology, Sociology, Undeclared SEDS, Undeclared SMG, Undeclared SSH	2 year UG SSH	SEDS, SMG, SSH, SoM	
519	ANT 216/SOC 216	Marriage and Kinship	3	6				5 year UG SEDS, 5 year UG SSH, Anthropology, Sociology, Undeclared SEDS, Undeclared SMG, Undeclared SSH	2 year UG SSH	SEDS, SMG, SSH, SoM	
520	SOC 212/ANT 285	Food and Society	3	6				5 year UG SEDS, 5 year UG SSH, Anthropology, Sociology, Undeclared SEDS, Undeclared SMG, Undeclared SSH	2 year UG SSH	SEDS, SMG, SSH, SoM	
SEDS											
Chemical and Materials Engineering											
521	CHME 202	Fluid Mechanics	3	6				2 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	3 year UG SEDS Chemical Engineering, 3 year UG SEDS Chemical and Materials Engineering, 4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering		

522	CHME 203	Organic and Polymer Chemistry	3	6	CHME 222 Inorganic and Analytical Chemistry (5039) (D and above)			2 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	3 year UG SEDS Chemical Engineering, 3 year UG SEDS Chemical and Materials Engineering, 4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering		
523	CHME 303	Separation Processes	3	6	CHME 200 Basic Principles and Calculations in Chemical Engineering (5038) (D and above) AND CHME 201 Chemical Engineering Thermodynamics (5007) (D and above)			3 year UG SEDS Chemical Engineering, 3 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering		
524	CHME 304	Chemical Reaction Engineering	3	6	CHME 200 Basic Principles and Calculations in Chemical Engineering (5038) (D and above)			3 year UG SEDS Chemical Engineering, 3 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering		
525	CHME 305L	Chemical Engineering Laboratory I	3	6	CHME 201 Chemical Engineering Thermodynamics (5007) (D and above) AND CHME 202 Fluid Mechanics (5543) (D and above) AND CHME 300 Heat and Mass Transfer (5952) (D and above)			3 year UG SEDS Chemical Engineering, 3 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering		
526	CHME 352	Research Practice	3	6				3 year UG SEDS Chemical Engineering, 3 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering		
527	CHME 421	Tissue Engineering	3	6				4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH			

528	CHME 454	Transport Phenomena and Operations	3	6				4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	4 year UG SEDS Mechanical Engineering, 4 year UG SEDS Mechanical and Aerospace Engineering		
529	DCHME 700-0	Thesis Research	0	0				Chemical Engineering	Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
530	DCHME 701	Current Research Literature	4	8				Chemical Engineering	Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
531	DCHME 751	Advanced Safety, Reliability and Risk Engineering in Process Industries	4	8				Chemical Engineering	Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
532	DCHME 752	Polymer Melt Fluid Mechanics and Processing	4	8				Chemical Engineering	Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		

533	DCHME 757	Advanced Chemical Engineering Thermodynamics	4	8				Chemical Engineering	Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
534	DCHME 763	Advanced Heat and Mass Transfer	4	8				Chemical Engineering	Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
535	DCHME 766	Advanced Energy Materials and Their Application	4	8				Chemical Engineering	Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
536	ECHE 420	Polymer Processing and Rheology	3	6				4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH			
537	ECHE 479	Capstone Project II	9	18	ECHE 418 Capstone project 1 (1278) (D and above)						
538	ECHE 485	Introduction to Biochemical Engineering	3	6				4 year UG SEDS Chemical Engineering, 4 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH			

539	MBME 600	Research Seminar	3	6				Biomedical Engineering	Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
540	MBME 602	Master Thesis II	12	24	MBME 601 Master Thesis I (5953) (P)			Biomedical Engineering	Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
541	MBME 607	Advanced Tissue Engineering	3	6				Biomedical Engineering	Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		

542	MBME 700	Strategies for Controlled Topical Delivery of Drugs	3	6				Biomedical Engineering	Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
543	MBME 705	Infectious Diseases and Antimicrobial Strategies	3	6				Biomedical Engineering	Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
544	MBME 708	Biomedical Imaging	3	6				Biomedical Engineering	Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		

545	MCHME 600	Research Seminar	3	6				Chemical and Materials Engineering	Biomedical Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
546	MCHME 602	MSc Thesis II	12	24				Chemical and Materials Engineering	Biomedical Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
547	MCHME 606	Advanced Heat and Mass Transfer	3	6				Chemical and Materials Engineering	Biomedical Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		

548	MCHME 701	Advanced Chemical Thermodynamics	3	6				Chemical and Materials Engineering	Biomedical Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
549	MCHME 704	Advanced Safety, Reliability and Risk Engineering in Process Industries	3	6				Chemical and Materials Engineering	Biomedical Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
550	MCHME 707	Polymer Melt Fluid Mechanics and Processing	3	6				Chemical and Materials Engineering	Biomedical Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		

551	MCHME 713	Advanced Energy Materials and their Applications	3	6				Chemical and Materials Engineering	Biomedical Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
Civil Engineering											
552	MSC 600	Research Methods and Ethics	3	6				1 year Gr SEDS Biomedical Engineering, 1 year Gr SEDS Chemical and Materials Engineering, 1 year Gr SEDS Civil and Environmental Engineering, 1 year Gr SEDS Electrical and Computer Engineering, 1 year Gr SEDS Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Mechanical and Aerospace Engineering		
553	MSC 601	Technical Communication	3	6				2 year Gr SEDS Biomedical Engineering, 2 year Gr SEDS Chemical and Materials Engineering, 2 year Gr SEDS Civil and Environmental Engineering, 2 year Gr SEDS Computer Science, 2 year Gr SEDS Electrical and Computer Engineering, 2 year Gr SEDS Mechanical and Aerospace Engineering, 2 year Gr SEDS Robotics and Mechatronics	1 year Gr SEDS Biomedical Engineering, 1 year Gr SEDS Chemical and Materials 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 Mechanical and Aerospace Engineering, 1 year Gr SEDS Robotics and Mechatronics		
Civil and Environmental Engineering											

554	CEE 202	Environmental Engineering	3	6	CEE 201 Environmental Chemistry (4999) (D and above)			2 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	3 year UG SEDS Civil Engineering, 3 year UG SEDS Civil and Environmental Engineering, 4 year UG SEDS Civil Engineering, 4 year UG SEDS Civil and Environmental Engineering		
555	CEE 203	Structural Analysis	3	6	MAE 200 Structural Mechanics I (5010) (D and above) OR CEE 200 Structural Mechanics I (5005) (D and above)			2 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	3 year UG SEDS Civil Engineering, 3 year UG SEDS Civil and Environmental Engineering, 4 year UG SEDS Civil Engineering, 4 year UG SEDS Civil and Environmental Engineering		
556	CEE 301	Structural Design - Steel	3	6	CEE 203 Structural Analysis (5500) (D and above)			3 year UG SEDS Civil Engineering, 3 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	4 year UG SEDS Civil Engineering, 4 year UG SEDS Civil and Environmental Engineering		
557	CEE 303	Geotechnical Design	3	6	CEE 302 Geotechnical Engineering (5896) (D and above)			3 year UG SEDS Civil Engineering, 3 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	4 year UG SEDS Civil Engineering, 4 year UG SEDS Civil and Environmental Engineering		
558	CEE 305	Hydraulics and Hydrology	3	6	MAE 300 Fluid Mechanics I (5926) (D and above) OR EME 275 Fluid Mechanics I (1988) (D and above) OR CEE 304 Fluid Mechanics (6348) (D and above)			3 year UG SEDS Civil Engineering, 3 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	4 year UG SEDS Civil Engineering, 4 year UG SEDS Civil and Environmental Engineering		
559	CEE 350	Water and Wastewater Treatment Processes	3	6	CEE 201 Environmental Chemistry (4999) (D and above) AND CEE 202 Environmental Engineering (5499) (D and above)			3 year UG SEDS Civil Engineering, 3 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	4 year UG SEDS Civil Engineering, 4 year UG SEDS Civil and Environmental Engineering		
560	CEE 352	Engineering geology	3	6				3 year UG SEDS Civil Engineering, 3 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	4 year UG SEDS Civil Engineering, 4 year UG SEDS Civil and Environmental Engineering		

561	CEE 454	Foundation Engineering	3	6	ECE 306 Geotechnical Design (1043) (D and above) OR CEE 303 Geotechnical Design (6158) (D and above)			4 year UG SEDS Civil Engineering, 4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	3 year UG SEDS Civil Engineering, 3 year UG SEDS Civil and Environmental Engineering		
562	CEE 458	Modern Information Technology in Construction	3	6	CEE 204 Civil Engineering CAD and Surveying (5002) (D and above)			3 year UG SEDS Civil Engineering, 3 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	4 year UG SEDS Civil Engineering, 4 year UG SEDS Civil and Environmental Engineering		
563	CEE 464	Individual Research Project in Civil and Environmental Engineering II	3	6	CEE 463 Individual Research Project in Civil & Environmental Engineering 1 (6594) (C and above)			4 year UG SEDS Civil Engineering, 4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	3 year UG SEDS Civil Engineering, 3 year UG SEDS Civil and Environmental Engineering		
564	DCEE 700-0	Thesis Research	0	0				Civil Engineering	Chemical Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
565	DCEE 701	Current Research Literature	4	8				Civil Engineering	Chemical Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		

566	DCEE 755	Contaminated Site Management and Soil Treatment Technologies	4	8				Civil Engineering	Chemical Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
567	DCEE 762	Advanced Project Management	4	8				Civil Engineering	Chemical Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
568	DCEE 765	Concrete Repair and Maintenance	4	8				Civil Engineering	Chemical Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
569	DCEE 770	Green Building - Concept, Design, Construction, and Operation	4	8				Civil Engineering	Chemical Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		

570	DCEE 771	Soil Improvement and Stabilization	4	8				Civil Engineering	Chemical Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
571	ECE 428	Introduction to Finite Element Methods	3	6				4 year UG SEDS Civil Engineering, 4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	3 year UG SEDS Civil Engineering, 3 year UG SEDS Civil and Environmental Engineering		
572	ECE 478	Capstone Project II	9	18	ECE 401 Capstone Project 1 (1270) (D and above)						
573	ECE 481	Individual Research Projects in Civil Engineering	3	6				4 year UG SEDS Civil Engineering, 4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	3 year UG SEDS Civil Engineering, 3 year UG SEDS Civil and Environmental Engineering		
574	EMEM 510	Managerial Accounting	2	4				Engineering Management			
575	EMEM 511	Business Strategy	2	4				Engineering Management			
576	EMEM 513	Entrepreneurship	2	4				Engineering Management			
577	EMEM 514	Finance	2	4				Engineering Management			
578	EMEM 516	Management of Organizations	2	4				Engineering Management			
579	EMEM 517	Marketing	2	4				Engineering Management			
580	EMEM 527	Globalization and Engineering	3	6				Engineering Management			
581	EMEM 529	Capstone Project	8	16				Engineering Management			
582	EMEM 535	Managing Product and Service Development	3	6				Engineering Management			
583	EMEM 545	Business Communication	2	4				Engineering Management			

584	EMEM 548	Understanding and Predicting Consumer Behavior	2	4				Engineering Management		
585	MCEE 600	Research Seminar	3	6				Civil and Environmental Engineering	Biomedical Engineering, Chemical and Materials Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics	
586	MCEE 602	MSc Thesis II	12	24				Civil and Environmental Engineering	Biomedical Engineering, Chemical and Materials Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics	
587	MCEE 606	Advanced Project Management	3	6				Civil and Environmental Engineering	Biomedical Engineering, Chemical and Materials Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics	

588	MCEE 701	Advanced Concrete Technology	3	6				Civil and Environmental Engineering	Biomedical Engineering, Chemical and Materials Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
589	MCEE 704	Contaminated Site Management and Soil Treatment Technologies	3	6				Civil and Environmental Engineering	Biomedical Engineering, Chemical and Materials Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
590	MCEE 706	Concrete Repair and Maintenance	3	6				Civil and Environmental Engineering	Biomedical Engineering, Chemical and Materials Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		

591	MCEE 710	Green Building - Concept, Design, Construction, and Operation	3	6				Civil and Environmental Engineering	Biomedical Engineering, Chemical and Materials Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
592	MCEE 711	Soil Improvement and Stabilization	3	6				Civil and Environmental Engineering	Biomedical Engineering, Chemical and Materials Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
Computer Science											
593	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)	5 year UG SEDS, 5 year UG SSH, SSH		

594	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)	5 year UG SEDS, 5 year UG SSH, Biological Sciences, Chemistry, Mathematics	SSH		
595	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)	5 year UG SEDS, 5 year UG SSH, Computer Science, Robotics and Mechatronics	Physics	SEDS, SMG, SSH, SoM	
596	CSCI 152	Performance and Data Structures	4	8	CSCI 151 Programming for Scientists and Engineers (192) (C- and above) OR ENG 101 Programming for Engineers (4517) (B- and above)			5 year UG SEDS, 5 year UG SSH, Computer Science, Robotics and Mechatronics, Undeclared SEDS	SEDS, SSH	SMG, SoM	
597	CSCI 245	System Analysis and Design	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			5 year UG SEDS, 5 year UG SSH, Computer Science	SEDS	SMG, SSH, SoM	
598	CSCI 270	Algorithms	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)	MATH 251 Discrete Mathematics (85) (D and above)		5 year UG SEDS, 5 year UG SSH, Computer Science	SEDS	SMG, SSH, SoM	

599	CSCI 272	Formal Languages	3	6	CSCI 151 Programming for Scientists and Engineers (192) (C- and above) OR ENG 101 Programming for Engineers (4517) (B- and above)	MATH 251 Discrete Mathematics (85) (D and above)		5 year UG SEDS, 5 year UG SSH, Computer Science	SEDS	SMG, SSH, SoM	
600	CSCI 281	Human-Computer Interaction	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			5 year UG SEDS, 5 year UG SSH, Computer Science	SEDS	SMG, SSH, SoM	
601	CSCI 299	Internship I	3	6							
602	CSCI 307	Research Methods	3	6				3 year UG SEDS Computer Science, 4 year UG SEDS Computer Science, 5 year UG SEDS, 5 year UG SSH			
603	CSCI 325	Introduction to Parallel Systems and Graphics Processing Unit Programming	3	6	CSCI 332 Operating Systems (490) (C- and above)			5 year UG SEDS, 5 year UG SSH, Computer Science	SEDS	SMG, SSH, SoM	
604	CSCI 332	Operating Systems	3	6	CSCI 231 Computer Systems and Organization (194) (C- and above)			5 year UG SEDS, 5 year UG SSH, Computer Science	SEDS	SMG, SSH, SoM	
605	CSCI 333	Computer Networks	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			5 year UG SEDS, 5 year UG SSH, Computer Science	SEDS	SMG, SSH, SoM	
606	CSCI 399	Internship II	3	6							
607	CSCI 409	Senior Project II	3	6	CSCI 408 Senior Project I (1481) (C- and above)			4 year UG SEDS Computer Science, 5 year UG SEDS, 5 year UG SSH			
608	CSCI 447	Machine Learning: Theory and Practice	3	6	MATH 273 Linear Algebra with Applications (84) (C and above) AND MATH 321 Probability (482) (C and above)			5 year UG SEDS, 5 year UG SSH, Computer Science	SEDS	SMG, SSH, SoM	
609	CSCI 462	Open Source Software	3	6	CSCI 361 Software Engineering (640) (C- and above)			5 year UG SEDS, 5 year UG SSH, Computer Science	SEDS	SMG, SSH, SoM	

610	CSCI 502	Hardware Software Co-Design	3	6	CSCI 501 Software Principles and Practice (2408) (C- and above)			Computer Science, Robotics	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering		
611	CSCI 545	Big Data Analytics	3	6				Data Science	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
612	CSCI 547	Algorithmic Trading	3	6				Computer Science, Data Science	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		

613	CSCI 581	Acquisition and Analysis of Biomedical Data	3	6				Computer Science, Data Science	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
614	CSCI 591	Advanced Artificial Intelligence	3	6	CSCI 501 Software Principles and Practice (2408) (C- and above) OR DS 501 Fundamentals of Data Science (5218) (C- and above)			Computer Science	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
615	CSCI 694	Thesis	15	30				Computer Science			
616	CSCI 700-0	Thesis Research	0	0				Computer Science			
617	CSCI 702	Advanced Hardware/Software Co-Design	4	8				Computer Science , Robotics Engineering	Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Science, Engineering and Technology		
618	CSCI 722	Current Research Literature	4	8				Computer Science			

619	CSCI 745	Advanced Big Data Analytics	4	8				Computer Science	Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
620	CSCI 747	Advanced Algorithmic Trading	4	8				Computer Science	Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
621	CSCI 781	Advanced Acquisition and Analysis of Biomedical Data	4	8				Computer Science	Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
622	DS 504	Data Mining and Decision Support	3	6				Data Science	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering, Robotics		

623	DS 694	Thesis	15	30	DS 693 Thesis Proposal (5915) (P)			Data Science		
624	SEDS 502	Teaching Practicum	3	6				Computer Science, Data Science, Robotics		
625	SEDS 592	Research Seminar	3	6				Computer Science, Data Science, Robotics		
Electrical and Computer Engineering										
626	DELCE 700-0	Thesis Research	0	0				Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology	
627	DELCE 701	Current Research Literature	4	8				Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology	
628	DELCE 758	Advanced Industrial and Commercial Energy Systems	4	8				Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology	
629	DELCE 759	Advanced Pattern Recognition and Machine Learning	4	8				Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology	

630	DELCE 762	Fundamentals of Signal Processing	4	8				Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
631	DELCE 763	Advanced Electronic Circuits	4	8				Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
632	EEE 480	Capstone Project II	9	18							
633	EEE 484	Electric Power Generation	3	6				4 year UG SEDS Electrical and Computer Engineering, 4 year UG SEDS Electrical and Electronic Engineering, 5 year UG SEDS, 5 year UG SSH	3 year UG SEDS Electrical and Computer Engineering, 3 year UG SEDS Electrical and Electronic Engineering		
634	EEE 485	Power System Operation and Control	3	6	EEE 379 Power Systems Analysis (1956) (D and above) OR EEE 452 Power Systems Protection (2652) (D and above)			4 year UG SEDS Electrical and Computer Engineering, 4 year UG SEDS Electrical and Electronic Engineering, 5 year UG SEDS, 5 year UG SSH	3 year UG SEDS Electrical and Computer Engineering, 3 year UG SEDS Electrical and Electronic Engineering		
635	EEE 486	Photonics for Engineering	3	6	EEE 342 Electromagnetics (533) (D and above)			4 year UG SEDS Electrical and Computer Engineering, 4 year UG SEDS Electrical and Electronic Engineering, 5 year UG SEDS, 5 year UG SSH	3 year UG SEDS Electrical and Computer Engineering, 3 year UG SEDS Electrical and Electronic Engineering		
636	EEE 488	Numerical Optimization Techniques and Computer Applications	3	6				4 year UG SEDS Electrical and Computer Engineering, 4 year UG SEDS Electrical and Electronic Engineering, 5 year UG SEDS, 5 year UG SSH	3 year UG SEDS Electrical and Computer Engineering, 3 year UG SEDS Electrical and Electronic Engineering		

637	EEE 489	Analog Circuit Design	3	6				4 year UG SEDS Electrical and Computer Engineering, 4 year UG SEDS Electrical and Electronic Engineering		
638	ELCE 201	Circuit Theory	3	6	ELCE 200 Introduction to Electrical Circuits (4991) (C- and above)			2 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	3 year UG SEDS Electrical and Computer Engineering, 3 year UG SEDS Electrical and Electronic Engineering, 4 year UG SEDS Electrical and Computer Engineering, 4 year UG SEDS Electrical and Electronic Engineering	
639	ELCE 201L	Circuit Theory Laboratory	1	2		ELCE 201 Circuit Theory (5507) (D and above)		2 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	3 year UG SEDS Electrical and Computer Engineering, 3 year UG SEDS Electrical and Electronic Engineering, 4 year UG SEDS Electrical and Computer Engineering, 4 year UG SEDS Electrical and Electronic Engineering	
640	ELCE 202L	Digital Logic Design Laboratory	1	2		ELCE 202 Digital Logic Design (4992) (D and above)		2 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	3 year UG SEDS Electrical and Computer Engineering, 3 year UG SEDS Electrical and Electronic Engineering, 4 year UG SEDS Electrical and Computer Engineering, 4 year UG SEDS Electrical and Electronic Engineering	

641	ELCE 203L	Signals and Systems Laboratory	1	2		ELCE 203 Signals and Systems (4993) (D and above)		2 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	3 year UG SEDS Electrical and Computer Engineering, 3 year UG SEDS Electrical and Electronic Engineering, 4 year UG SEDS Electrical and Computer Engineering, 4 year UG SEDS Electrical and Electronic Engineering		
642	ELCE 205	Discrete Mathematics	3	6	MATH 162 Calculus II (170) (C- and above)			2 year UG SEDS Electrical and Computer Engineering, 3 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH			
643	ELCE 300	Microprocessor Systems	3	6	ELCE 202 Digital Logic Design (4992) (C- and above)			3 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	4 year UG SEDS Electrical and Computer Engineering, 4 year UG SEDS Electrical and Electronic Engineering		
644	ELCE 302	Electric Machines	3	6	ELCE 201 Circuit Theory (5507) (C- and above)			3 year UG SEDS Electrical and Computer Engineering, 3 year UG SEDS Electrical and Electronic Engineering, 5 year UG SEDS, 5 year UG SSH	4 year UG SEDS Electrical and Computer Engineering, 4 year UG SEDS Electrical and Electronic Engineering		
645	ELCE 303	Power System Analysis	3	6	ELCE 200 Introduction to Electrical Circuits (4991) (C- and above)			3 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	4 year UG SEDS Electrical and Computer Engineering, 4 year UG SEDS Electrical and Electronic Engineering		
646	ELCE 305	Data Structures and Algorithms	3	6	CSCI 151 Programming for Scientists and Engineers (192) (C- and above) OR ENG 101 Programming for Engineers (4517) (C- and above)			3 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	4 year UG SEDS Electrical and Computer Engineering, 4 year UG SEDS Electrical and Electronic Engineering		

647	ELCE 308	Communication Systems	3	6	ELCE 203 Signals and Systems (4993) (C- and above)			3 year UG SEDS Electrical and Computer Engineering, 3 year UG SEDS Electrical and Electronic Engineering, 5 year UG SEDS, 5 year UG SSH	4 year UG SEDS Electrical and Computer Engineering, 4 year UG SEDS Electrical and Electronic Engineering		
648	ELCE 451	Electric Drives and Motion Control Systems	3	6	ELCE 302 Electric Machines (5919) (C- and above) OR EEE 381 Electrical Machines and Drives (1952) (C- and above) OR ROBT 304 Electromechanical Systems with lab (1171) (C- and above)			4 year UG SEDS Electrical and Computer Engineering, 4 year UG SEDS Electrical and Electronic Engineering, 5 year UG SEDS, 5 year UG SSH	3 year UG SEDS Electrical and Computer Engineering		
649	MECE 602	Master Thesis II	12	24				Electrical and Computer Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
650	MECE 606	Embedded Systems and Applications	3	6				Electrical and Computer Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Engineering Management, Mechanical and Aerospace Engineering, Robotics		

651	MECE 700	Industrial and Commercial Power System	3	6				Electrical and Computer Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
652	MECE 701	Internet of Things	3	6				Electrical and Computer Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Engineering Management, Mechanical and Aerospace Engineering, Robotics		
653	MECE 704	Fundamentals of Signal Processing	3	6				Electrical and Computer Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Engineering Management, Mechanical and Aerospace Engineering, Robotics		

654	MECE 707	Advanced Electronic Circuits	3	6				Electrical and Computer Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Engineering Management, Mechanical and Aerospace Engineering, Robotics			
655	MECE 717	Pattern Recognition and Machine Learning	3	6				Electrical and Computer Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Engineering Management, Mechanical and Aerospace Engineering, Robotics			
Mechanical and Aerospace Engineering												
656	DMAE 700-0	Thesis Research	0	0				Mechanical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Robotics Engineering, Science, Engineering and Technology			
657	DMAE 702	Current Research Literature	4	8				Mechanical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Robotics Engineering, Science, Engineering and Technology			

658	DMAE 703	Numerical Techniques for Engineers	4	8				Mechanical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Robotics Engineering, Science, Engineering and Technology		
659	DMAE 757	Design Optimization	4	8				Mechanical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Robotics Engineering, Science, Engineering and Technology		
660	DMAE 769	Advanced Computational Fluid Dynamics and Heat Transfer in Mechanical Engineering	4	8				Mechanical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Robotics Engineering, Science, Engineering and Technology		
661	DMAE 770	Digital Transformation Concepts	4	8				Mechanical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Robotics Engineering, Science, Engineering and Technology		
662	EME 377	Mechanical Systems Design	3	6	EME 361 Machine Design (1051) (D and above)						

663	EME 414	Fire Engineering	3	6	BENG 226 Engineering Thermodynamics (1553) (D and above)			4 year UG SEDS Mechanical Engineering, 4 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	3 year UG SEDS Mechanical Engineering, 3 year UG SEDS Mechanical and Aerospace Engineering		
664	EME 415	Flight Mechanics	3	6				4 year UG SEDS Mechanical Engineering, 4 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	3 year UG SEDS Mechanical Engineering, 3 year UG SEDS Mechanical and Aerospace Engineering		
665	EME 477	Capstone Project II	9	18							
666	EME 489	Advanced Engineering Mathematics	3	6	BENG 228 Engineering Mathematics III (3154) (D and above)			4 year UG SEDS Mechanical Engineering, 4 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	3 year UG SEDS Mechanical Engineering, 3 year UG SEDS Mechanical and Aerospace Engineering		
667	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)	5 year UG SEDS, 5 year UG SSH, SEDS, SMG			

668	ENG 102	Engineering Materials I	3	6				1 year UG SEDS Civil and Environmental Engineering, 1 year UG SEDS Mechanical and Aerospace Engineering, 1 year UG SEDS Undeclared, 5 year UG SEDS, 5 year UG SSH	Civil and Environmental Engineering, Mechanical and Aerospace Engineering		
669	ENG 103	Engineering Materials II	3	6				1 year UG SEDS Chemical and Materials Engineering, 1 year UG SEDS Electrical and Computer Engineering, 1 year UG SEDS Undeclared, 5 year UG SEDS, 5 year UG SSH	Chemical Engineering, Chemical and Materials Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering		
670	ENG 201	Applied Probability and Statistics	3	6	MATH 162 Calculus II (170) (C- and above)			2 year UG SEDS Chemical and Materials Engineering, 2 year UG SEDS Civil and Environmental Engineering, 2 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH		SEDS	
671	ENG 202	Numerical Methods in Engineering	3	6	ENG 200 Engineering Mathematics III (Differential Equations and Linear Algebra) (5009) (D and above)			2 year UG SEDS Chemical and Materials Engineering, 2 year UG SEDS Civil and Environmental Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH		SEDS	
672	ENG 300	Interdisciplinary Project	3	6				3 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	4 year UG SEDS Mechanical Engineering, 4 year UG SEDS Mechanical and Aerospace Engineering		

673	MAE 205	Material and Manufacturing I	3	6				2 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	3 year UG SEDS Mechanical Engineering, 3 year UG SEDS Mechanical and Aerospace Engineering, 4 year UG SEDS Mechanical Engineering, 4 year UG SEDS Mechanical and Aerospace Engineering		
674	MAE 206	Engineering Dynamics I	3	6				2 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	3 year UG SEDS Mechanical Engineering, 3 year UG SEDS Mechanical and Aerospace Engineering, 4 year UG SEDS Mechanical Engineering, 4 year UG SEDS Mechanical and Aerospace Engineering		
675	MAE 305	Fluid Mechanics II	3	6	MAE 300 Fluid Mechanics I (5926) (D and above) OR EME 275 Fluid Mechanics I (1988) (D and above)			3 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	4 year UG SEDS Mechanical Engineering, 4 year UG SEDS Mechanical and Aerospace Engineering		
676	MAE 306	Computer Aided Engineering	3	6	ENG 202 Numerical Methods in Engineering (5506) (D and above) AND MAE 201 Computer Aided Design (5011) (D and above)			3 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	4 year UG SEDS Mechanical Engineering, 4 year UG SEDS Mechanical and Aerospace Engineering		
677	MAE 307	Engineering Dynamics II	3	6	MAE 206 Engineering Dynamics I (5535) (D and above)			3 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	4 year UG SEDS Mechanical Engineering, 4 year UG SEDS Mechanical and Aerospace Engineering		

678	MAE 350	Structural Mechanics II	3	6	MAE 200 Structural Mechanics I (5010) (D and above) OR CEE 200 Structural Mechanics I (5005) (D and above)			3 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	4 year UG SEDS Mechanical Engineering, 4 year UG SEDS Mechanical and Aerospace Engineering		
679	MAE 351	Vehicle Propulsion Systems	3	6	MAE 301 Engineering Thermodynamics (5927) (D and above) OR BENG 226 Engineering Thermodynamics (1553) (D and above)			3 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	4 year UG SEDS Mechanical Engineering, 4 year UG SEDS Mechanical and Aerospace Engineering		
680	MMAE 600	Research Seminar	3	6				Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Robotics		
681	MMAE 602	Master Thesis II	12	24	MMAE 601 Master Thesis I (5014) (P)			Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Robotics		

682	MMAE 604	Advanced Computational Fluid Dynamics and Heat Transfer in Mechanical Engineering	3	6				Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Robotics		
683	MMAE 700	Advanced Statistics and Probability	3	6				Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Robotics		
684	MMAE 701	Numerical Techniques for Engineers	3	6				Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Robotics		

685	MMAE 704	Design and Manufacturing with Environmental Concern	3	6				Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Robotics		
686	MMAE 705	Design Optimization	3	6				Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Robotics		
687	MMAE 716	Digital Transformation Concepts	3	6				Engineering Management, Mechanical and Aerospace Engineering			
Robotics and Mechatronics											
688	ROBT 202	System Dynamics and Modeling	3	6	MATH 162 Calculus II (170) (C- and above) AND (PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above) OR PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above))			5 year UG SEDS, 5 year UG SSH, Robotics and Mechatronics	SEDS		
689	ROBT 204	Electrical and Electronic Circuits II with Lab	4	8	ROBT 203 Electrical and Electronic Circuits I with Lab (62) (C- and above)			5 year UG SEDS, 5 year UG SSH, Robotics and Mechatronics	SEDS		

690	ROBT 206	Microcontrollers with Lab	4	8	CSCI 150 Fundamentals of Programming (1501) (C and above) OR CSCI 151 Programming for Scientists and Engineers (192) (C and above) OR ENG 101 Programming for Engineers (4517) (C and above)			5 year UG SEDS, 5 year UG SSH, Computer Science, Robotics and Mechatronics	SEDS		
691	ROBT 304	Electromechanical Systems with lab	4	8	ROBT 204 Electrical and Electronic Circuits II with Lab (491) (C- and above)			5 year UG SEDS, 5 year UG SSH, Robotics and Mechatronics	SEDS		
692	ROBT 310	Image Processing	3	6	MATH 162 Calculus II (170) (C- and above) AND MATH 273 Linear Algebra with Applications (84) (C- and above)			5 year UG SEDS, 5 year UG SSH, Robotics and Mechatronics	SEDS		
693	ROBT 312	Robotics I: Kinematics and Dynamics	3	6	ROBT 201 Mechanics: Statics and Dynamics (475) (C and above) AND MATH 273 Linear Algebra with Applications (84) (C and above)			5 year UG SEDS, 5 year UG SSH, Robotics and Mechatronics	SEDS		
694	ROBT 402	Robotic/Mechatronic System Design	3	6	ROBT 204 Electrical and Electronic Circuits II with Lab (491) (C- and above) AND ROBT 206 Microcontrollers with Lab (476) (C- and above)			5 year UG SEDS, 5 year UG SSH, Robotics and Mechatronics	SEDS		
695	ROBT 407	Statistical Methods and Machine Learning	3	6	MATH 273 Linear Algebra with Applications (84) (C and above) AND MATH 321 Probability (482) (C and above) AND CSCI 152 Performance and Data Structures (489) (C and above)			5 year UG SEDS, 5 year UG SSH, Robotics and Mechatronics	SEDS		
696	ROBT 491	Graduation Project	3	6				5 year UG SEDS, 5 year UG SSH, Robotics and Mechatronics	SEDS		

697	ROBT 502	Robot Perception & Vision	3	6	ROBT 501 Robot Manipulation and Mobility (2263) (C- and above)			Robotics	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Mechanical and Aerospace Engineering		
698	ROBT 692	Thesis	15	30	ROBT 691 Thesis Proposal (5930) (P)			Robotics			
699	ROBT 700-0	Thesis Research	0	0				Robotics Engineering			
700	ROBT 702	Advanced Robot Perception and Vision	4	8				Robotics Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Science, Engineering and Technology		
701	ROBT 722	Current Research Literature	4	8				Robotics Engineering			
School of Engineering											
702	DENG 789	Doctoral Seminar I	3	6	DENG 785 PhD Proposal Oral Defence (2604) (P)			Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology			
703	DENG 791	Doctoral Seminar III	3	6	DENG 790 Doctoral Seminar II (4599) (P)			Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology			

704	DENG 792	Doctoral Seminar IV	3	6	DENG 791 Doctoral Seminar III (4600) (P)			Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology			
705	DENG 793	Doctoral Seminar V	3	6	DENG 792 Doctoral Seminar IV (4601) (P)			Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology			
706	DENG 794	Dissertation Research	12	24	DENG 785 PhD Proposal Oral Defence (2604) (P)			Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology			
707	DENG 796	Thesis Completion	0	0				Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology			
708	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)			Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology			
709	DENG 798	Doctoral Seminar VI	3	6	DENG 793 Doctoral Seminar V (4602) (P)			Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology			