

Course Requirements and Registration Priorities Fall 2021

#	Abbr	Title	Cr(US)	Cr(ECTS)	PreRequisite	CoRequisite	AntiRequisite	1st priority registration	2nd priority registration	3rd priority registration	4th priority registration
CPS											
NUFYP											
1	FEAP 010	Foundation English for Academic Purposes 1	0	0							
2	FLDP 090	Leadership 1	0	0							
3	FMAT 010	Foundation Mathematics 1	0	0							
NUZYP											
4	ZCOM 040	Academic Communications for Graduate Studies I	0	0							
5	ZRDG 030	Academic Reading for Graduate Studies I	0	0							
6	ZSTA 060	Foundational Statistics	0	0							
7	ZWRT 020	Academic Writing for Graduate Studies I	0	0							
GSB											
GSB											
8	BUS 101	Core Course in Business	3	6				4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH	3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH	SEDS, SMG, SSH, SoM	
9	GSBF 501	Team Building and Business Communications	1	2				For GSB programs only! Registration by School admin.			
10	GSBF 511	Applied Data Analytics I	2.5	5				For GSB programs only! Registration by School admin.			
11	GSBF 512	Principles of Finance	2.5	5				For GSB programs only! Registration by School admin.			
12	GSBF 513	Financial Data Analytics II	2.5	5				For GSB programs only! Registration by School admin.			
13	GSBF 516	Financial Markets and Institutions	2	4							
14	GSBF 517	Macroeconomics for Finance	2.5	5				For GSB programs only! Registration by School admin.			
15	GSBF 523	Special Topics in Corporate Finance	2	4							

16	GSBF 533	Islamic Banking and Finance	2	4				For GSB programs only! Registration by School admin.			
17	GSBF 535	Insurance and Actuarial Science	2	4				For GSB programs only! Registration by School admin.			
18	GSBF 542	Global Finance Experience Residency (II)	3	6				For GSB programs only! Registration by School admin.			
19	GSBF 550A	Master's Thesis	5	10				For GSB programs only! Registration by School admin.			
20	GSBF 661	Corporate Finance	2.5	5				For GSB programs only! Registration by School admin.			
21	MBA 01	Consequential Leadership	1	2				For GSB programs only! Registration by School admin.			
22	MBA 02	Business Mathematics and Business Computer Application	1	2				For GSB programs only! Registration by School admin.			
23	MBA 03	Financial Accounting	2	4				For GSB programs only! Registration by School admin.			
24	MBA 04	Probability and Statistics	2	4				For GSB programs only! Registration by School admin.			
25	MBA 05	Business Communication	2	4				For GSB programs only! Registration by School admin.			
26	MBA 07	Managerial Effectiveness	2	4				For GSB programs only! Registration by School admin.			
27	MBA 08	Managerial Economics	2	4				For GSB programs only! Registration by School admin.			
28	MBA 11	Managerial Accounting	2	4				For GSB programs only! Registration by School admin.			
29	MBA 13	Macroeconomics	2	4							
30	MBA 16	Entrepreneurship	2	4				1 year Gr SOM Molecular Medicine			
31	MBA 17	Negotiations	2	4				For GSB programs only! Registration by School admin.			
32	MBA 19	Distinguished Speaker Series	0	1				For GSB programs only! Registration by School admin.			

33	MBA 20	Practicum Project	2.5	5				For GSB programs only! Registration by School admin.			
34	MBAE 1	Investments	2	4				For GSB programs only! Registration by School admin.			
35	MBAE 13	Raising Capital	2	4				For GSB programs only! Registration by School admin.			
36	MBAE 14	Innovation Process	2	4							
37	MBAE 16	Project Management	2	4				For GSB programs only! Registration by School admin.			
38	MBAE 17	China Business Environment	2	4				For GSB programs only! Registration by School admin.			
39	MBAE 18	Consumer Behavior	2	4				For GSB programs only! Registration by School admin.			
40	MBAE 19	Global Economics for Managers	2	4	MBA 08 Managerial Economics (1722) (C and above)			For GSB programs only! Registration by School admin.			
41	MBAE 20	Marketing Research	2	4				For GSB programs only! Registration by School admin.			
42	MBAE 21	Project Finance	2	4							
43	MBAE 8	Leadership	2	4				For GSB programs only! Registration by School admin.			
44	MBAE 9	Marketing Strategy	2	4							
45	MHRM 09	Talent Management	2	4				For GSB programs only! Registration by School admin.			
46	MSF 02	Thesis Preparation Seminar	2	4				For GSB programs only! Registration by School admin.			
47	MSF 03	Advanced Econometrics	2	4				For GSB programs only! Registration by School admin.			
48	MSF 04	Private Equity	2	4				For GSB programs only! Registration by School admin.			
49	MSF 06	Credit Modeling	2.5	5				For GSB programs only! Registration by School admin.			
50	MSF 07	Economic Policy in Global Markets	2	4				For GSB programs only! Registration by School admin.			

51	MSF 08	Microeconomics for Finance	2.5	5				For GSB programs only! Registration by School admin.			
52	MSF 09	Corporate Governance	2	4				For GSB programs only! Registration by School admin.			
53	MSF 10	Independent Research	2	4							
GSPP											
Master in Public Administration											
54	MPA 602	Public Administration in Theory and Practice	4	8				1 year GSPP Public Administration			
55	MPA 603	Economic Applications for Public Managers	4	8				1 year GSPP Public Administration			
56	MPA 605	Research Methods for Public Managers	4	8				1 year GSPP Public Administration			
57	MPA 699	Master's Project with Overseas Component	0	0				2 year GSPP Public Administration			
58	MPE 617	Institutions and development policies	4	8				2 year GSPP Public Administration	2 year GSPP Public Policy	Public Administration, Public Policy	
59	MPE 625	Ethical Challenges in Governance	4	8				2 year GSPP Public Administration	2 year GSPP Public Policy	Public Administration, Public Policy	
60	MPE 626	Open Governance	4	8				2 year GSPP Public Administration, 2 year GSPP Public Policy	Public Administration, Public Policy		
61	MPE 627	Public Policy and Health Issues	4	8				2 year GSPP Public Administration	2 year GSPP Public Policy	Public Administration, Public Policy	
62	MPE 628	Good Governance and Corruption	4	8				2 year GSPP Public Administration	2 year GSPP Public Policy	Public Administration, Public Policy	
63	MPE 629	Political Economy of State-Building	4	8				2 year GSPP Public Administration	2 year GSPP Public Policy	Public Administration, Public Policy	
64	MPE 639	International Financial Policy	4	8				2 year GSPP Public Administration	2 year GSPP Public Policy	Public Administration, Public Policy	
65	MPE 640	International Political Economy	4	8				2 year GSPP Public Administration, 2 year GSPP Public Policy	Public Administration, Public Policy		
66	MPE 643	Marketing Public Policy	4	8				2 year GSPP Public Administration	2 year GSPP Public Policy	Public Administration, Public Policy	
67	MPE 650	Science and Technology Policy	4	8				2 year GSPP Public Administration, 2 year GSPP Public Policy	Public Administration, Public Policy		

68	MPE 671	Game Theory and Public Policy	4	8				2 year GSPP Public Administration, 2 year GSPP Public Policy	Public Administration, Public Policy		
69	MPE 685	Water Resources Policy and Management	4	8				2 year GSPP Public Administration	2 year GSPP Public Policy	Public Administration, Public Policy	
Master in Public Policy											
70	MPP 601	Microeconomics and Public Policy	4	8				1 year GSPP Public Policy			
71	MPP 611	Statistics for Public Policy	4	8				1 year GSPP Public Policy			
72	MPP 613	Policy Research Design and Methods	4	8				1 year GSPP Public Policy			
73	MPP 621	Public Policy and Analysis	4	8				1 year GSPP Public Policy			
74	MPP 631	Politics and Public Policy	4	8				2 year GSPP Public Policy			
75	MPP 699-0	Policy Analysis Exercise with Overseas Component	0	0	MPP 613 Policy Research Design and Methods (1301) (C- and above)			2 year GSPP Public Policy			
PhD in Public Policy											
76	DPE 617	Institutions and Development Policies	4	8				2 year GSPP PhD Public Policy			
77	DPE 623	International Political Economy	4	8				2 year GSPP PhD Public Policy			
78	DPE 625	Ethical Challenges in Governance	4	8				2 year GSPP PhD Public Policy			
79	DPE 626	Open Governance	4	8				2 year GSPP PhD Public Policy			
80	DPE 627	Public Policy and Health Issues	4	8				2 year GSPP PhD Public Policy			
81	DPE 628	Good Governance and Corruption	4	8				2 year GSPP PhD Public Policy			
82	DPE 629	Political Economy of State-Building	4	8				2 year GSPP PhD Public Policy			
83	DPE 639	International Financial Policy	4	8				2 year GSPP PhD Public Policy			
84	DPE 643	Marketing Public Policy	4	8				2 year GSPP PhD Public Policy			
85	DPE 650	Science and Technology Policy	4	8				2 year GSPP PhD Public Policy			
86	DPE 671	Game Theory and Public Policy	4	8				2 year GSPP PhD Public Policy			
87	DPP 600	Developing Dissertation Research	0	0				Public Policy			

88	DPP 601	Microeconomics in the Public Sector	4	8				1 year GSPP PhD Public Policy			
89	DPP 603	Public Administration and Management	4	8				1 year GSPP PhD Public Policy			
90	DPP 611	Statistics in Public Policy	4	8				1 year GSPP PhD Public Policy			
91	DPP 614	Advanced Quantitative Methods	4	8				2 year GSPP PhD Public Policy			
92	DPP 616	Advanced Qualitative Methods	4	8				2 year GSPP PhD Public Policy			
93	DPP 621	Public Policy and Analysis	4	8				1 year GSPP PhD Public Policy			
94	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)			Special permission required			
95	DPP 690-0	Thesis Preparation and Writing	0	0				3 year GSPP PhD Public Policy, 4 year GSPP PhD Public Policy			
GSE											
MA in Multilingual Education											
96	EDML 601	Introduction to Linguistics	3	6				1 year GSE MA in Multil.Education			
97	EDML 610	Foundations of Multilingual Education	3	6				1 year GSE MA in Multil.Education			
98	EDML 613	The Multilingual School	3	6				2 year GSE MA in Multil.Education			
99	EDML 614	Multilingual curriculum development and assessment	3	6				2 year GSE MA in Multil.Education			
100	EDML 627	Application of CLIL in Teaching	3	6				2 year GSE MA in Multil.Education			
101	EDML 629	Multiliteracies: Teaching Language and Literacy for a Multilingual Context	3	6				2 year GSE MA in Multil.Education			
102	EDML 690	Thesis Research I	3	6				2 year GSE MA in Multil.Education			
MSc Educational Leadership HE											
103	EDHE 625	Fundamentals of Higher Education	3	6				1 year GSE Educ.Leadership			
104	EDHE 691	Thesis Seminar II	3	6				2 year GSE Educ.Leadership			

105	EDUC 507	Academic English III	1.5	3				2 year GSE Educ.Leadership			
106	EDUC 510	Advanced English for Education Professionals I	3	6				1 year GSE MA in Multil.Education			
107	EDUC 512	English for Thesis Writing I	3	6				2 year GSE MA in Multil.Education			
108	EDUC 535	Academic English I	2	4				1 year GSE Educ.Leadership			
109	EDUC 590	Academic English Writing for Doctoral Students I	3	6				1 year GSE PhD Education			
110	EDUC 602	Educational Context and Reform in Kazakhstan	3	6				1 year GSE MA in Multil.Education			
111	EDUC 606	Introduction to Education Research	2	4				1 year GSE Educ.Leadership			
112	EDUC 607	Research Methods 1	3	6							
113	EDUC 617	Contextualizing Education Reform in Kazakhstan and Beyond	3	6				1 year GSE Educ.Leadership			
114	EDUC 701	Education Research Methods	3	6				1 year GSE PhD Education			
115	EDUC 709	Introduction to Scholarship in Education	3	6				1 year GSE PhD Education			
116	EDUC 712	Educational Policy and Reform	3	6				1 year GSE PhD Education			
117	EDUC 727	Exploring the Research Topic 1	0	0				1 year GSE PhD Education			
118	EDUC 730	Preparation for Proposal Defence	0	0				2 year GSE PhD Education			
119	EDUC 740	Doctoral Seminar	3	6				3 year GSE PhD Education			
120	EDUC 750	Dissertation Research	9	18				3 year GSE PhD Education, 4 year GSE PhD Education			
121	EDUC 800	International Study	12	24				2 year GSE PhD Education			
MSc Educational Leadership IE											
122	EDIE 625	Fundamentals of Inclusive Education	3	6				1 year GSE Educ.Leadership			
123	EDIE 691	Thesis Seminar II	3	6				2 year GSE Educ.Leadership			
MSc Educational Leadership SE											
124	EDSE 625	Fundamentals of School Education	3	6				1 year GSE Educ.Leadership			
125	EDSE 691	Thesis Seminar II	3	6				2 year GSE Educ.Leadership			
126	EDSE 692	Thesis Seminar III	4.5	9				2 year GSE Educ.Leadership			

127	EDSE 693	Thesis Seminar IV	9	18				2 year GSE Educ. Leadership			
Other											
Other											
128	STUMOB 001	Student Mobility Course	0	0							
129	T-MSE 076	Topics in Political Economy and Development	4	8							
130	T-MSE 082	Democracy, Political Mobilization and Economic Development: Korea's Experience	4	8							
131	T-MSN 011	Dispute Resolution and Negotiation	4	8							
132	T-MSN 039	Industrial Policy and International Trade Regulation	4	8							
SoM											
MMM											
133	MMMM 501	Molecular Basis of Infection	3	6				1 year Gr SOM Molecular Medicine			
134	MMMM 502	Molecular Basis of Cancer	3	6				1 year Gr SOM Molecular Medicine			
135	MMMM 503	Bioethics in Research: Principles and Practice	3	6				2 year Gr SOM Molecular Medicine			
136	MMMM 504	Molecular Basis of Genetic Disease	3	6				1 year Gr SOM Molecular Medicine			
137	MMMM 506	Biocomputing	1	2				1 year Gr SOM Molecular Medicine			
138	MMMM 513	Molecular Basis of Neurological Disorders	3	6				2 year Gr SOM Molecular Medicine			
139	MMMM 603	Recombinant Drugs	3	6				2 year Gr SOM Molecular Medicine			
140	MMMM 605	Developmental Biology	3	6				2 year Gr SOM Molecular Medicine			
MPTOX											
141	MPTX 501	Organ system and common diseases	3	6				1 year Gr SOM Pharmacology and Toxicology			
142	MPTX 502	Cellular Communications	3	6				1 year Gr SOM Pharmacology and Toxicology			

143	MPTX 503	Principles of Pharmacology and Toxicology	3	6		MPTX 501 Organ system and common diseases (5841) (C and above)		1 year Gr SOM Pharmacology and Toxicology			
144	MPTX 505	Drug Discovery I	3	6		MPTX 503 Principles of Pharmacology and Toxicology (5843) (C and above)		1 year Gr SOM Pharmacology and Toxicology			
145	MPTX 506	Systemic Pharmacology II	3	6	MPTX 503 Principles of Pharmacology and Toxicology (5843) (C- and above) AND MPTX 504 Systemic Pharmacology I (5844) (C- and above)			2 year Gr SOM Pharmacology and Toxicology			
146	MPTX 601	Biostatistics and Critical Appraisal	3	6	MPTX 503 Principles of Pharmacology and Toxicology (5843) (C- and above) AND MPTX 505 Drug Discovery I (5845) (C- and above)			2 year Gr SOM Pharmacology and Toxicology			
147	MPTX 602	Current Topics in Pharmacology and Toxicology	3	6	MPTX 503 Principles of Pharmacology and Toxicology (5843) (C- and above) AND MPTX 505 Drug Discovery I (5845) (C- and above)	MPTX 601 Biostatistics and Critical Appraisal (6342) (C- and above)		2 year Gr SOM Pharmacology and Toxicology			
148	MPTX 603	Introduction to Research Project	6	12	MPTX 503 Principles of Pharmacology and Toxicology (5843) (C- and above) AND MPTX 505 Drug Discovery I (5845) (C- and above)	MPTX 601 Biostatistics and Critical Appraisal (6342) (C- and above)		2 year Gr SOM Pharmacology and Toxicology			
149	MPTX 604E	Scientific Writing	3	6				1 year Gr SOM Pharmacology and Toxicology, 2 year Gr SOM Molecular Medicine			
MSMR											
150	MSMR 501	Musculoskeletal System	3	6				1 year Gr SOM Sports Medicine and Rehabilitation			

151	MSMR 503	Exercise Genetics, Physiology and Endocrinology	3	6				1 year Gr SOM Sports Medicine and Rehabilitation			
152	MSMR 504	Pharmacology in Sports and Rehabilitation	3	6				1 year Gr SOM Sports Medicine and Rehabilitation			
153	MSMR 505	Exercise and Biomechanics	3	6				1 year Gr SOM Sports Medicine and Rehabilitation			
154	MSMR 507	Management and Rehabilitation of Injury	4	8				2 year Gr SOM Sports Medicine and Rehabilitation			
155	MSMR 510	Biostatistics and Epidemiology	3	6				1 year Gr SOM Sports Medicine and Rehabilitation			
156	MSMR 603	Master Research Project	8	16				2 year Gr SOM Sports Medicine and Rehabilitation			
157	MSMR 701	Ethics and Professionalism	3	6				2 year Gr SOM Sports Medicine and Rehabilitation			
Medical Sciences											
158	NUSM 101	Introduction to Medicine	2	4				Medical Sciences	SSH	SEDS, SMG, SoM	
Nursing											
159	NUR 103L	Microbiology for Nurses with Lab	4	8				1 year UG SOM Nursing			
160	NUR 112	Introduction to Professional Nursing	2	4				1 year UG SOM Nursing			
161	NUR 121	Introduction to Basic Statistics for Evidence-Based Practice	3	6				2 year UG SOM Nursing			
162	NUR 201	Pathophysiologic Foundations of Nursing Care	3	6				2 year UG SOM Nursing			
163	NUR 203	Pharmacology and Therapeutics	3	6				2 year UG SOM Nursing			
164	NUR 205	Psychology for the Health Practitioner	3	6				3 year UG SOM Nursing			
165	NUR 211	Foundations of Nursing Practice I	3	6				2 year UG SOM Nursing			
166	NUR 301	Nutrition for Clinical Practice	3	6				For Bachelor of Nursing (2-year program) only! Registration by School admin.			

167	NUR 302	Physical Assessment Across the Lifespan	4	8				For Bachelor of Nursing (2-year program) only! Registration by School admin.			
168	NUR 303	Nursing Care of Older Adults	4	8				For Bachelor of Nursing (2-year program) only! Registration by School admin.			
169	NUR 304	Introduction to Basic Statistics for Evidence Based Practice	3	6				For Bachelor of Nursing (2-year program) only! Registration by School admin.			
170	NUR 313C	Medical-Surgical Nursing II: Complex Surgical Management and Clinical	7	14				3 year UG SOM Nursing			
171	NUR 314C	Psychiatric Nursing and Clinical	4	8				3 year UG SOM Nursing			
172	NUR 322	Nursing Clinical Informatics	2	4				3 year UG SOM Nursing			
173	NUR 401	Education: Principles and Practice for Teaching in Nursing	4	8				For Bachelor of Nursing (2-year program) only! Registration by School admin.			
174	NUR 403	Data Analytics for Quality Improvement in Healthcare	3	6				For Bachelor of Nursing (2-year program) only! Registration by School admin.			
175	NUR 404	Community and Home Health Nursing	4	8				For Bachelor of Nursing (2-year program) only! Registration by School admin.			
176	NUR 406.1	Medical-Surgical Nursing: Complex Surgical Management	4	8				For Bachelor of Nursing (2-year program) only! Registration by School admin.			
PHD											
177	PHDBS 701-0	Thesis Research	0	0				Biomedical Sciences			
178	PHDBS 702	Molecular Basis of Health and Disease	4	8				Biomedical Sciences	Life Sciences		
179	PHDBS 703	Biomedical Research Analysis and Design of Experimentation	4	8				Biomedical Sciences	Life Sciences		
180	PHDBS 704-0	NUSOM seminar	0	0				Biomedical Sciences			
181	PHDBS 705	Biosafety, Animal Welfare and Ethics	4	8				Biomedical Sciences	Life Sciences		

182	PHDBS 706	Advanced Biomedical Research Analysis and Design of Experimentation	4	8				Biomedical Sciences			
183	PHDBS 707	Publication Analysis	4	8				Biomedical Sciences			
184	PHDBS 708	Writing for Biomedical Sciences	3	6				Biomedical Sciences	Life Sciences		
185	PHDBS 709	Molecular Basis of Infection	3	6				Biomedical Sciences	Life Sciences		
186	PHDBS 710	Molecular Pathology of Cancer	3	6				Biomedical Sciences	Life Sciences		
187	PHDBS 711	Molecular Basis of Genetic Disease	3	6				Biomedical Sciences	Life Sciences		
188	PHDBS 715	Molecular Basis of Neurological Disorders	3	6				Biomedical Sciences	Life Sciences		
189	PHDBS 716	Recombinant Drugs	3	6				Biomedical Sciences	Life Sciences		
190	PHDBS 717	Organ System and Common Diseases	3	6				Biomedical Sciences			
191	PHDBS 718	Principles of Pharmacology and Toxicology	3	6				Biomedical Sciences			
192	PHDBS 721	Drug Discovery I	3	6				Biomedical Sciences			
Public Health											
193	PUBH 501	Principles of Public Health Problem Solving	3	6				1 year Gr SOM Public Health			
194	PUBH 511	Inferential Biostatistics	3	6				1 year Gr SOM Molecular Medicine, 1 year Gr SOM Public Health			
195	PUBH 521	Principles of Analytical Epidemiology	3	6				1 year Gr SOM Public Health, 2 year Gr SOM Molecular Medicine			
196	PUBH 528	Qualitative Research Methods	3	6				1 year Gr SOM Public Health			
197	PUBH 552	Principles of Health Economics and Policy	3	6	PUBH 551 Health Services Management, Health Economic and Health Policy (3696) (C and above)			2 year Gr SOM Public Health			
198	PUBH 561	Graduate Research Seminar I	3	6				2 year Gr SOM Public Health			
199	PUBH 599	Global Nutrition and Sustainability	3	6				1 year Gr SOM Public Health			

200	PUBH 601	Health Education and Promotion	3	6				2 year Gr SOM Public Health		
201	PUBH 633	Methods in Public Health	3	6				2 year Gr SOM Public Health		
202	PUBH 681	Master's Project Planning	3	6				2 year Gr SOM Public Health		
SMG										
Economics, School of Mining and Geosciences										
203	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)			5 year UG SEDS, 5 year UG SSH, Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG	Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Electrical and Computer Engineering, Mechanical and Aerospace Engineering, Robotics and Mechatronics, Undeclared SEDS	SSH
Mining Engineering										
204	MINE 301	Mine Surveying and Geographic Information Systems	3	6				5 year UG SEDS, 5 year UG SSH, Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG		
205	MINE 302	Geomechanics	3	6				5 year UG SEDS, 5 year UG SSH, Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG		
206	MINE 304	Resource Estimation	3	6				5 year UG SEDS, 5 year UG SSH, Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG		
207	MINE 401	Mining Geotechnical Engineering	3	6	MINE 302 Geomechanics (5878) (C- and above)			5 year UG SEDS, 5 year UG SSH, Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG		
208	MINE 402	Coal Mining	3	6				5 year UG SEDS, 5 year UG SSH, Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG		

209	MINE 405	Mine Ventilation	3	6				5 year UG SEDS, 5 year UG SSH, Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG			
210	MINE 406	Mine Robotics and Automation	3	6	SMG 100 Introduction to Natural Resources Extraction (4773) (C- and above)			5 year UG SEDS, 5 year UG SSH, Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG			
211	MINE 489	Research Project I	3	6				5 year UG SEDS, 5 year UG SSH, Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG			
212	MINE 501	Foundations of Mining	3	6				Mining Engineering			
213	MINE 502	Geology for Mining Engineers	3	6				Mining Engineering			
214	MINE 503	Applied Geostatistics	3	6				Mining Engineering			
215	MINE 504	Mine Geomechanics	3	6				Mining Engineering			
216	MINE 505	Advanced Mine Ventilation	3	6				Mining Engineering			
217	MINE 601	Mine Management and Sustainability	3	6				Mining Engineering			
218	MINE 602	Mine Maintenance and Services	3	6	MINE 502 Geology for Mining Engineers (3691) (C- and above)			Mining Engineering			
219	MINE 605	Mechanized Excavation and Tunnelling	3	6				Mining Engineering	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		

220	MINE 606	Underground Hard Rock Geotechnical Engineering	3	6				Mining Engineering	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		
221	MINE 690	Thesis I	6	12				Mining Engineering			
222	MINE 701	Advanced Mine Geomechanics	4	8				Mining Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
223	MINE 801	Advanced Mechanized Excavation and Tunneling	4	8				Mining Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
224	MINE 805	Mine Robotics and Automation	4	8				Mining Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		

225	MINE 890-0	Thesis Research	0	0				Mining Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
Petroleum Engineering											
226	PETE 201	Fluid Mechanics and Thermodynamics	3	6	MATH 161 Calculus I (118) (D and above) OR CHEM 101 General Chemistry I (113) (D and above)			5 year UG SEDS, 5 year UG SSH, Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG	Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Electrical and Computer Engineering, Mechanical and Aerospace Engineering, Robotics and Mechatronics, Undeclared SEDS		
227	PETE 301	Numerical Methods for Petroleum Engineers	3	6	ENG 200 Engineering Mathematics III (Differential Equations and Linear Algebra) (5009) (C- and above) OR ENG 101 Programming for Engineers (4517) (C- and above)			5 year UG SEDS, 5 year UG SSH, Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG			
228	PETE 302	Reservoir Engineering I with Laboratory works	4	8	PETE 204 Reservoir Rock and Fluid Properties with Lab (5487) (C- and above)			5 year UG SEDS, 5 year UG SSH, Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG			
229	PETE 303	Well Logging and Formation Evaluation	3	6	GEOL 101 Fundamentals of Geology (4774) (C- and above)			5 year UG SEDS, 5 year UG SSH, Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG			
230	PETE 304	Well Completion and Stimulation	3	6	PETE 203 Drilling Engineering with Laboratories (5486) (C- and above)			5 year UG SEDS, 5 year UG SSH, Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG			

231	PETE 400	Capstone Design Project I	3	6	PETE 302 Reservoir Engineering I with Laboratory works (5955) (C- and above) AND PETE 203 Drilling Engineering with Laboratories (5486) (C- and above)			5 year UG SEDS, 5 year UG SSH, Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG			
232	PETE 401	Production Enhancement	3	6	PETE 307 Production Engineering (6146) (C- and above)			5 year UG SEDS, 5 year UG SSH, Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG			
233	PETE 501	Foundations of Petroleum Engineering	3	6				Petroleum Engineering			
234	PETE 502	Petroleum Geology	3	6				Petroleum Engineering			
235	PETE 503	Fluid Flow Through Porous Media	3	6				Petroleum Engineering			
236	PETE 504	Advanced Formation Evaluation	3	6				Petroleum Engineering			
237	PETE 505	Advanced Drilling Engineering	3	6				Petroleum Engineering			
238	PETE 509	Advanced Well Testing and Evaluation	3	6				Petroleum Engineering			
239	PETE 600	Thesis I	6	12				Petroleum Engineering			
240	PETE 601	Petroleum Data Analytics	3	6				Petroleum Engineering			
241	PETE 602	Research Seminar	3	6				Petroleum Engineering			
242	PETE 802	Fluid Flow Through Porous Media	4	8				Petroleum Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
243	PETE 805	Special Topics in Petroleum Engineering: Data Analytics	4	8				Petroleum Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
244	PETE 890	Thesis Research	0	0				Petroleum Engineering			

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245	GEOL 201	Mineralogy	3	6	GEOL 101 Fundamentals of Geology (4774) (C- and above)			5 year UG SEDS, 5 year UG SSH, Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG			
246	GEOL 202	Geologic Maps and Cross-Sections	3	6	GEOL 101 Fundamentals of Geology (4774) (D and above) OR GEOL 102 Fundamentals of Geology (4772) (D and above)			5 year UG SEDS, 5 year UG SSH, Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG	Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Electrical and Computer Engineering, Mechanical and Aerospace Engineering, Robotics and Mechatronics, Undeclared SEDS		
247	GEOL 301	Igneous and metamorphic petrology	3	6	GEOL 101 Fundamentals of Geology (4774) (D and above) OR GEOL 102 Fundamentals of Geology (4772) (D and above)			5 year UG SEDS, 5 year UG SSH, Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG			
248	GEOL 302	Thermodynamics and Geochemistry	3	6	GEOL 101 Fundamentals of Geology (4774) (D and above) OR GEOL 102 Fundamentals of Geology (4772) (D and above)			5 year UG SEDS, 5 year UG SSH, Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG			
249	GEOL 303	Structural Geology and Tectonics	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)			5 year UG SEDS, 5 year UG SSH, Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG			

250	GEOL 305	Geology of ore deposits	3	6	GEOL 101 Fundamentals of Geology (4774) (D and above) OR GEOL 102 Fundamentals of Geology (4772) (D and above) OR GEOL 201 Mineralogy (5122) (D and above)			5 year UG SEDS, 5 year UG SSH, Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG			
251	GEOL 310	Field Geology 2	3	6	GEOL 303 Structural Geology and Tectonics (5874) (D and above) OR GEOL 301 Igneous and metamorphic petrology (5886) (D and above)			5 year UG SEDS, 5 year UG SSH, Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG			
252	GEOL 401	Petroleum Geology and Geochemistry	3	6				5 year UG SEDS, 5 year UG SSH, Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG			
253	GEOL 402	Water Resource Management	3	6				5 year UG SEDS, 5 year UG SSH, Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG			
254	GEOL 404	Research Project I	3	6				5 year UG SEDS, 5 year UG SSH, Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG			
255	SMG 100	Introduction to Natural Resources Extraction	3	6				5 year UG SEDS, 5 year UG SSH, Geology, Mining Engineering, Petroleum Engineering, Undeclared SMG			
256	SMG 710	Research Methods and Statistics	3	6				Mining Engineering, Petroleum Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
SSH											
Area Studies											
257	EAS 500	Introduction to Eurasia	4	8				Eurasian Studies	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		

258	EAS 501	General Methodology	4	8				Eurasian Studies	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
259	EAS 502	Disciplinary Methodology	4	8				Instructor's Permission Required. Registration through Add Course form only!			
260	EAS 503	Thesis I	7.5	15	EAS 500 Introduction to Eurasia (1632) (C- and above) AND EAS 501 General Methodology (1633) (C- and above) AND EAS 502 Disciplinary Methodology (1379) (C- and above)			2 year Gr SSH Eurasian Studies			
261	EAS 512	Topics in Eurasian Studies	4	8							
262	EAS 513	Critical Issues in Eurasian Studies	4	8							
263	EAS 514	Topics in Eurasian Social Sciences	4	8							
264	EAS 700	Introduction to Eurasia	4	8				Eurasian Studies	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
265	EAS 701	Critical Issues in Eurasian Studies	2	4				Eurasian Studies	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
266	EAS 702	Elective in Eurasian Humanities	4	8				Instructor's Permission Required. Registration through Add Course form only!			
267	EAS 703	Elective in Eurasian Social Sciences	4	8				Instructor's Permission Required. Registration through Add Course form only!			
268	EAS 704	Elective 2 in Eurasian Humanities	4	8				Instructor's Permission Required. Registration through Add Course form only!			
269	EAS 705	Elective 2 in Social Sciences	4	8				Instructor's Permission Required. Registration through Add Course form only!			
270	EAS 710	Independent Study in Eurasian Studies	4	8							
271	EAS 711	Doctoral Seminar in Eurasian Studies I	4	8				Eurasian Studies			

272	EAS 800-0	Dissertation Research in Eurasian Studies	0	0				Eurasian Studies			
Area Studies, Political Science and International Relations, Sociology and Anthropology											
273	SOC 514/PLS 514/EAS 506	Qualitative Research Methods	4	8				Eurasian Studies	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
Biological Science											
274	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, Nursing, Political Science and International Relations, Sociology, Undeclared SSH, World Languages, Literatures and Cultures			
275	BIOL 105	General Biology	3	6				5 year UG SEDS, 5 year UG SSH, Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM	
276	BIOL 110	Modern Biology I	3	6				1 year UG SOM Medical Sciences, 2 year UG SSH Biological Sciences, 5 year UG SEDS, 5 year UG SSH	Chemistry, Computer Science, Electrical and Computer Engineering, Mathematics, Physics, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	
277	BIOL 110L	Modern Biology I Laboratory	1	2		BIOL 110 Modern Biology I (1070) (C and above)		1 year UG SOM Medical Sciences, 2 year UG SSH Biological Sciences, 5 year UG SEDS, 5 year UG SSH	Chemistry, Computer Science, Electrical and Computer Engineering, Mathematics, Physics, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	
278	BIOL 120	Modern Biology II	3	6	BIOL 110 Modern Biology I (1070) (C and above)			2 year UG SOM Medical Sciences, 5 year UG SEDS, 5 year UG SSH, Biological Sciences, Undeclared SSH	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM	
279	BIOL 120L	Modern Biology II Laboratory	1	2	BIOL 110 Modern Biology I (1070) (C and above) OR BIOL 110L Modern Biology I Laboratory (5448) (C and above)	BIOL 120 Modern Biology II (1195) (C and above)		2 year UG SOM Medical Sciences, 5 year UG SEDS, 5 year UG SSH, Biological Sciences, Undeclared SSH	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM	
280	BIOL 230	Human Anatomy and Physiology I	3	6	BIOL 110 Modern Biology I (107) (C and above) OR BIOL 110 Modern Biology I (1070) (C and above)						

281	BIOL 301	Molecular Cell Biology	3	6	BIOL 120 Modern Biology II (1195) (C and above)			2 year UG SOM Medical Sciences, 3 year UG SSH Biological Sciences, 4 year UG SSH Biological Sciences, 5 year UG SEDS, 5 year UG SSH	Biological Sciences	SEDS, SMG, SSH, SoM	
282	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)		2 year UG SOM Medical Sciences, 3 year UG SSH Biological Sciences, 4 year UG SSH Biological Sciences, 5 year UG SEDS, 5 year UG SSH	Biological Sciences	SEDS, SMG, SSH, SoM	
283	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)			2 year UG SOM Medical Sciences, 3 year UG SSH Biological Sciences, 4 year UG SSH Biological Sciences, 5 year UG SEDS, 5 year UG SSH	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM	
284	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)		2 year UG SOM Medical Sciences, 3 year UG SSH Biological Sciences, 4 year UG SSH Biological Sciences, 5 year UG SEDS, 5 year UG SSH	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM	
285	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)			3 year UG SSH Biological Sciences, 4 year UG SSH Biological Sciences, 5 year UG SEDS, 5 year UG SSH	Biological Sciences	SEDS, SMG, SSH, SoM	
286	BIOL 320	Developmental Biology	3	6	BIOL 230 Human Anatomy and Physiology I (72) (C and above) OR BIOL 230 Human Anatomy and Physiology I (6217) (C and above)			2 year UG SOM Medical Sciences, 5 year UG SEDS, 5 year UG SSH, Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM	
287	BIOL 321	Bioethics	3	6	BIOL 120 Modern Biology II (1195) (C and above)			3 year UG SSH Biological Sciences, 4 year UG SSH Biological Sciences, 5 year UG SEDS, 5 year UG SSH	Biological Sciences, Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM	

288	BIOL 340	Introduction to Applied Bioinformatics	4	8	(BIOL 120 Modern Biology II (1195) (C and above) OR (BIOL 120 Modern Biology II (1195) (C and above) AND BIOL 120L Modern Biology II Laboratory (5443) (C and above))) AND MATH 310 Applied Statistical Methods (82) (C and above)			2 year UG SOM Medical Sciences, 5 year UG SEDS, 5 year UG SSH, Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM	
289	BIOL 341	Biochemistry I	3	6	CHEM 211 Organic Chemistry I (154) (C and above)			2 year UG SOM Medical Sciences, 5 year UG SEDS, 5 year UG SSH, Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM	
290	BIOL 355	Critical Research Reasoning	3	6	BIOL 120 Modern Biology II (1195) (C and above)			2 year UG SOM Medical Sciences, 3 year UG SSH Biological Sciences, 4 year UG SSH Biological Sciences, 5 year UG SEDS, 5 year UG SSH	Biological Sciences	SEDS, SMG, SSH, SoM	
291	BIOL 370	Genetics	3	6	BIOL 120 Modern Biology II (1195) (C and above)			2 year UG SOM Medical Sciences, 3 year UG SSH Biological Sciences, 4 year UG SSH Biological Sciences, 5 year UG SEDS, 5 year UG SSH	Biological Sciences	SEDS, SMG, SSH, SoM	
292	BIOL 380	Biology of Behavior	3	6	BIOL 120 Modern Biology II (1195) (C and above)			2 year UG SOM Medical Sciences, 5 year UG SEDS, 5 year UG SSH, Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM	
293	BIOL 385	Cell signaling: principles and mechanisms	3	6	BIOL 120 Modern Biology II (1195) (C and above)			2 year UG SOM Medical Sciences, 5 year UG SEDS, 5 year UG SSH, Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM	
294	BIOL 456	Biology Research Design	3	6		BIOL 355 Critical Research Reasoning (1000) (C and above)		4 year UG SSH Biological Sciences, 5 year UG SEDS, 5 year UG SSH	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	
295	BIOL 460	Human Parasitology	3	6	BIOL 305 Introduction to Microbiology with Lab (1642) (C and above) OR BIOL 305 Introduction to Microbiology (5789) (C and above)			2 year UG SOM Medical Sciences, 5 year UG SEDS, 5 year UG SSH, Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM	

296	BIOL 470	Advanced Cell Biology	3	6	BIOL 120 Modern Biology II (1195) (C and above) AND BIOL 110L Modern Biology I Laboratory (5448) (C and above) AND (BIOL 341 Biochemistry I (2002) (C and above) OR CHEM 341 Biochemistry I (1058) (C and above))			5 year UG SEDS, 5 year UG SSH, Biological Sciences	Chemistry, Mathematics, Physics	SEDS, SMG, SSH, SoM	
297	BIOL 490	Honors Thesis Research	0	0	BIOL 355 Critical Research Reasoning (1000) (B and above)			Instructor's Permission Required. Registration through Add Course form only!			
298	BIOL 520	Statistical Methods in Life Sciences	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
299	BIOL 550	Structural and Molecular Biology in Health and Disease	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
300	BIOL 560	Molecular Biology of Prokaryotic Cells	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
301	BIOL 592	Graduate Research Seminar	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
302	BIOL 599	Master's Thesis Research	0	0				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
303	BIOL 631	Synthetic Biology	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
304	BIOL 632	Drug Discovery and Design	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
305	BIOL 634	Advanced Cancer Biology	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
306	BIOL 670	Gene Therapy	3	6				Biological Sciences	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
307	BIOL 691	Master's Thesis Research Proposal	3	6				2 year Gr SSH Biological Sciences and Technologies			
308	BIOL 800-0	Thesis Research	0	0				Life Sciences			
309	BIOL 820	Statistical Methods in Life Sciences	3	6				Biomedical Sciences, Life Sciences	GSB, GSE, GSPP, SEDS, SMG, SoM		

310	BIOL 831	Synthetic Biology	4	8				Biomedical Sciences, Life Sciences	GSB, GSE, GSPP, SEDS, SMG, SoM		
311	BIOL 832	Drug Discovery and Design	4	8				Biomedical Sciences, Life Sciences	GSB, GSE, GSPP, SEDS, SMG, SoM		
312	BIOL 834	Advanced Cancer Biology	4	8				Biomedical Sciences, Life Sciences	GSB, GSE, GSPP, SEDS, SMG, SoM		
313	BIOL 850	Structural and Molecular Biology in Health and Disease	4	8				Biomedical Sciences, Life Sciences	GSB, GSE, GSPP, SEDS, SMG, SoM		
314	BIOL 860	Molecular Biology of Prokaryotic Cells	4	8				Biomedical Sciences, Life Sciences	GSB, GSE, GSPP, SEDS, SMG, SoM		
315	BIOL 875	Gene Therapy	4	8				Biomedical Sciences, Life Sciences	GSB, GSE, GSPP, SEDS, SMG, SoM		
Chemistry											
316	CHEM 090	Chemistry for Non-Science majors	3	6				5 year UG SEDS, 5 year UG SSH, Anthropology, Economics, History, Nursing, Political Science and International Relations, Sociology, Undeclared SEDS, Undeclared SMG, Undeclared SSH, World Languages, Literatures and Cultures			
317	CHEM 091	Survey of Physical Science	3	6				5 year UG SEDS, 5 year UG SSH, Anthropology, Economics, History, Nursing, Political Science and International Relations, Sociology, Undeclared SEDS, Undeclared SMG, Undeclared SSH, World Languages, Literatures and Cultures			
318	CHEM 101	General Chemistry I	3	6				1 year UG SMG, 5 year UG SEDS, 5 year UG SSH, Biological Sciences, Chemistry, SoM	Computer Science, Electrical and Computer Engineering, Mathematics, Physics, Robotics and Mechatronics, SMG	SEDS, SSH	
319	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, Undeclared SSH	Computer Science, Electrical and Computer Engineering, Mathematics, Physics, Robotics and Mechatronics, SMG	SEDS, SSH, SoM	

320	CHEM 211	Organic Chemistry I	3	6	CHEM 102 General Chemistry II (232) (C and above)			5 year UG SEDS, 5 year UG SSH, Biological Sciences, Chemistry, Undeclared SSH	SEDS, SMG, SSH, SoM		
321	CHEM 211L	Organic Chemistry I Lab	1	2	CHEM 101L General Chemistry I lab (179) (C and above)	CHEM 211 Organic Chemistry I (154) (C and above)		2 year UG SSH, 3 year UG SSH, 4 year UG SSH			
322	CHEM 220	Quantitative Chemical Analysis	3	6	CHEM 102 General Chemistry II (232) (C and above)			5 year UG SEDS, 5 year UG SSH, Chemistry, Undeclared SSH	Biological Sciences	SEDS, SMG, SSH, SoM	
323	CHEM 220L	Quantitative Chemical Analysis Lab	1	2	CHEM 101L General Chemistry I lab (179) (C and above)	CHEM 220 Quantitative Chemical Analysis (555) (C and above)		5 year UG SEDS, 5 year UG SSH, Chemistry, Undeclared SSH	Biological Sciences	SEDS, SMG, SSH, SoM	
324	CHEM 331	Physical Chemistry I	3	6	CHEM 220 Quantitative Chemical Analysis (555) (C and above) AND PHYS 161 Physics I for Scientists and Engineers with Laboratory (116) (C and above)			5 year UG SEDS, 5 year UG SSH, Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
325	CHEM 341	Biochemistry I	3	6	CHEM 211 Organic Chemistry I (154) (C and above)			5 year UG SEDS, 5 year UG SSH, Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
326	CHEM 350	Advanced Inorganic Chemistry	3	6	CHEM 212 Organic Chemistry II (443) (C and above) AND CHEM 212L Organic Chemistry II Lab (444) (C and above) AND CHEM 250 Descriptive Inorganic Chemistry (445) (C and above)			5 year UG SEDS, 5 year UG SSH, Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
327	CHEM 350L	Advanced Inorganic Chemistry Laboratory	1	2	CHEM 212 Organic Chemistry II (443) (C and above) AND CHEM 212L Organic Chemistry II Lab (444) (C and above) AND CHEM 250 Descriptive Inorganic Chemistry (445) (C and above)	CHEM 350 Advanced Inorganic Chemistry (1905) (C and above)		4 year UG SSH			
328	CHEM 400	Chemistry Seminar	3	6	CHEM 380 Research Methods (636) (C and above)			5 year UG SEDS, 5 year UG SSH, Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	

329	CHEM 410	Structural Spectroscopy	4	8	CHEM 212 Organic Chemistry II (443) (C and above)			5 year UG SEDS, 5 year UG SSH, Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
330	CHEM 471	Environmental Chemistry	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	
331	CHEM 490	Nanochemistry	3	6	CHEM 331 Physical Chemistry I (634) (C and above) AND CHEM 250 Descriptive Inorganic Chemistry (445) (C and above)			5 year UG SEDS, 5 year UG SSH, Chemistry	Biological Sciences	SEDS, SMG, SSH, SoM	
332	CHEM 510	Principles of Physical Chemistry	3	6				Chemistry	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
333	CHEM 518	Applied Polymer Science	4	8				Chemistry	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
334	CHEM 520	Applied Analytical Chemistry	3	6				Chemistry	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
335	CHEM 522	Analytical Environmental Chemistry	3	6	CHEM 520 Applied Analytical Chemistry (5267) (C and above)			Chemistry	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
336	CHEM 530	Inorganic Structures and Reaction Mechanisms	3	6				Chemistry	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
337	CHEM 531	Nanochemistry and Functional Nanomaterials	3	6				Chemistry	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
338	CHEM 541	Medicinal Chemistry and Drug Design	3	6	CHEM 540 Organic Reactions and Mechanisms (5460) (C and above)			Chemistry	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
339	CHEM 543	Structural Identification of Organic Compounds	3	6				Chemistry	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
340	CHEM 591	Scientific Methods in Chemistry	3	6				Chemistry	SSH	GSB, GSE, GSPP, SEDS, SMG, SoM	
341	CHEM 691	Thesis Proposal	3	6				Chemistry			
Communication and Composition											
342	WCS 101	Communication and Society	3	6				SEDS, SMG, SSH, SoM			
343	WCS 150	Rhetoric and Composition	3	6				SEDS, SMG, SSH, SoM			

344	WCS 200	Introduction to Public Speaking	3	6	WCS 150 Rhetoric and Composition (2183) (C- and above)			2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SOM Medical Sciences, 2 year UG SSH, 3 year UG SOM Nursing, 5 year UG SEDS, 5 year UG SSH	3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH, 4 year UG SEDS	SEDS, SMG, SSH, SoM	
345	WCS 203	Interpersonal Communication	3	6	WCS 101 Communication and Society (199) (C- and above) OR WCS 200 Introduction to Public Speaking (175) (C- and above)			SEDS, SMG, SSH, SoM			
346	WCS 204	Gender and Communication	3	6	WCS 150 Rhetoric and Composition (2183) (C- and above) AND WCS 101 Communication and Society (199) (C- and above)			SEDS, SMG, SSH, SoM			
347	WCS 206	Health Communication	3	6	WCS 101 Communication and Society (199) (C- and above)			SEDS, SMG, SSH, SoM			
348	WCS 210	Technical and Professional Writing	3	6	WCS 150 Rhetoric and Composition (2183) (C- and above)			5 year UG SEDS, 5 year UG SSH, SEDS, SMG		SSH, SoM	
349	WCS 220	Science Writing	3	6	WCS 150 Rhetoric and Composition (2183) (C- and above)			SEDS, SMG, SSH, SoM			
350	WCS 230	Say What you Mean: Clarity, Precision, and Style in Academic Writing	3	6	WCS 150 Rhetoric and Composition (2183) (C- and above)			2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 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, 4 year UG SEDS	SEDS, SMG, SSH, SoM	
351	WCS 240	Writing for Digital Media	3	6	WCS 150 Rhetoric and Composition (2183) (C- and above)			2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 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, 4 year UG SEDS	SEDS, SMG, SSH, SoM	
352	WCS 250	Advanced Rhetoric and Composition	3	6	WCS 150 Rhetoric and Composition (2183) (C- and above)			2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 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, 4 year UG SEDS	SEDS, SMG, SSH, SoM	
353	WCS 361	Advanced Fiction Writing	3	6	WCS 260/WLL 235 Creative Writing: Introduction to Fiction Writing I (4000) (C- and above)			SSH		SEDS, SMG, SoM	

354	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 SOM, 3 year UG SSH, 5 year UG SEDS, 5 year UG SSH	4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH		
355	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)			Instructor's Permission Required. Registration through Add Course form only!			
356	WCS 501	Science Communication	3	6				SMG, SSH, SoM			
357	WCS 730	From Genre to Style and Back: Writing for PhD Students	4	8				Instructor's Permission Required. Registration through Add Course form only!			
Communication and Composition, Languages, Literature and Linguistics											
358	WCS 260/WLL 235	Creative Writing: Introduction to Fiction Writing I	3	6	WCS 150 Rhetoric and Composition (2183) (C- and above)			2 year UG SSH		SEDS, SMG, SSH, SoM	
Economics											
359	ECON 101	Introduction to Microeconomics	3	6				5 year UG SEDS, 5 year UG SSH, Undeclared SSH	1 year UG SSH Mathematics, 2 year UG SSH Mathematics	2 year UG SSH, Medical Sciences, SEDS	
360	ECON 102	Introduction to Macroeconomics	3	6				5 year UG SEDS, 5 year UG SSH, Undeclared SSH	1 year UG SSH Mathematics, 2 year UG SSH Mathematics	2 year UG SSH, Medical Sciences, SEDS	

361	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, 4 year UG SEDS Electrical and Computer Engineering	Anthropology, Biological Sciences, Chemistry, History, Mathematics, Physics, Political Science and International Relations, SEDS, SMG, SoM, Sociology, Undeclared SSH, World Languages, Literatures and Cultures	
362	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, Mathematics	SEDS, SMG, SSH, SoM	
363	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	SEDS, SMG, SSH, SoM	
364	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)			Instructor's Permission Required. Registration through Add Course form only!			

365	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		SEDS, SMG, SSH, SoM	
366	ECON 325	International Trade	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above)			3 year UG SSH Economics, 5 year UG SEDS, 5 year UG SSH	Economics	SEDS, SMG, SSH, SoM	
367	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	Economics	SEDS, SMG, SSH, SoM	
368	ECON 333	Political Economy	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above)			3 year UG SSH Economics, 5 year UG SEDS, 5 year UG SSH	Economics	SEDS, SMG, SSH, SoM	
369	ECON 345	The Economics of Family	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above)			3 year UG SSH Economics, 5 year UG SEDS, 5 year UG SSH	Economics	SEDS, SMG, SSH, SoM	
370	ECON 403	Introduction to Contract Theory and Auctions	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above) AND ECON 301 Econometrics I (664) (C- and above)			5 year UG SEDS, 5 year UG SSH, Economics		SEDS, SMG, SSH, SoM	
371	ECON 405	Behavioral and Experimental Economics	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above) AND ECON 301 Econometrics I (664) (C- and above)			5 year UG SEDS, 5 year UG SSH, Economics		SEDS, SMG, SSH, SoM	
372	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		SEDS, SMG, SSH, SoM	
373	ECON 415	Industrial Organization	3	6	ECON 301 Econometrics I (664) (C- and above)			5 year UG SEDS, 5 year UG SSH, Economics		SEDS, SMG, SSH, SoM	
374	ECON 501	Microeconomics I	4	8				Economics	SEDS, SMG, SSH, SoM		

375	ECON 502	Macroeconomics I	4	8				Economics	SEDS, SMG, SSH, SoM		
376	ECON 503	Introduction to Contract Theory and Auctions	4	8				Economics	SEDS, SMG, SSH, SoM		
377	ECON 511	Statistics	4	8				Economics	SEDS, SMG, SSH, SoM		
378	ECON 512	Mathematical Economics	4	8				Economics	SEDS, SMG, SSH, SoM		
379	ECON 515	Industrial Organization	4	8	ECON 531 Econometrics (2505) (C- and above)			Economics	SEDS, SMG, SSH, SoM		
380	ECON 532	Applied Econometrics	4	8				Economics	SEDS, SMG, SSH, SoM		
381	ECON 589	Thesis I	4	8				2 year Gr SSH Economics			
History, Philosophy and Religious Studies											
382	HST 100	History of Kazakhstan	3	6				4 year UG SEDS, 4 year UG SEDS (pending graduation), 4 year UG SMG, 4 year UG SSH, 4 year UG SSH (pending graduation), 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	
383	HST 124	Introduction to the History of Medicine	3	6				5 year UG SEDS, 5 year UG SSH, History, Undeclared SEDS, Undeclared SMG, Undeclared SSH	SEDS, SMG, SSH, SoM		
384	HST 125	History of Magic	3	6				5 year UG SEDS, 5 year UG SSH, History, Undeclared SEDS, Undeclared SMG, Undeclared SSH	SEDS, SMG, SSH, SoM		
385	HST 132	European History II (from 1700)	3	6				5 year UG SEDS, 5 year UG SSH, History, Undeclared SEDS, Undeclared SMG, Undeclared SSH	SEDS, SMG, SSH, SoM		
386	HST 232	Russian History from Riurik to Catherine the Great	3	6				5 year UG SEDS, 5 year UG SSH, History, Undeclared SEDS, Undeclared SMG, Undeclared SSH	SEDS, SMG, SSH, SoM		
387	HST 242	History of the Soviet Union: Politics, Society, Culture	3	6				5 year UG SEDS, 5 year UG SSH, History, Undeclared SEDS, Undeclared SMG, Undeclared SSH	SEDS, SMG, SSH, SoM		

388	HST 331	The Eurasian Enlightenment	3	6	HST 100 History of Kazakhstan (172) (B and above) OR Subject "HST" BETWEEN 100 and 199			5 year UG SEDS, 5 year UG SSH, History, Undeclared SEDS, Undeclared SMG, Undeclared SSH	SEDS, SMG, SSH, SoM		
389	HST 399	Independent Study	3	6				Instructor's Permission Required. Registration through Add Course form only!			
390	HST 498	Directed Reading	3	6				5 year UG SSH, History			
391	PHIL 101	Introduction to Philosophy	3	6				5 year UG SEDS, 5 year UG SSH, SEDS, SMG, SSH, SoM			
392	PHIL 124	Knowledge and Reality	3	6				5 year UG SEDS, 5 year UG SSH, SEDS, SMG, SSH, SoM			
393	PHIL 141	Critical Thinking	3	6				5 year UG SEDS, 5 year UG SSH, SEDS, SMG, SSH, SoM			
394	PHIL 210	Ethics	3	6				5 year UG SEDS, 5 year UG SSH, Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Mechanical and Aerospace Engineering, SMG	SEDS, SSH, SoM		
395	PHIL 361	Philosophy of Language	3	6				SEDS, SMG, SSH, SoM			
History, Philosophy and Religious Studies, History, Philosophy and Religious Studies											
396	HST 261/REL 261	History of Islam (570s to 1258)	3	6	Subject "HST" BETWEEN 100 and 199 OR Subject "REL" BETWEEN 100 and 199			5 year UG SEDS, 5 year UG SSH, History, Undeclared SEDS, Undeclared SMG, Undeclared SSH	SEDS, SMG, SSH, SoM		
397	HST 329/REL 329	Women in Islamic History	3	6				5 year UG SEDS, 5 year UG SSH, History, Undeclared SEDS, Undeclared SMG, Undeclared SSH, World Languages, Literatures and Cultures	SEDS, SMG, SSH, SoM		

398	REL 110/HST 110	Introduction to World Religions	3	6				5 year UG SEDS, 5 year UG SSH, History, Undeclared SEDS, Undeclared SMG, Undeclared SSH	SEDS, SMG, SSH, SoM		
History, Philosophy and Religious Studies, Kazakh Language and Turkic Studies											
399	HST 271/TUR 271	History of the Ottoman Empire	3	6	HST 100 History of Kazakhstan (172) (C- and above)			5 year UG SEDS, 5 year UG SSH, History, Undeclared SEDS, Undeclared SMG, Undeclared SSH	SEDS, SMG, SSH, SoM		
History, Philosophy and Religious Studies, Languages, Literature and Linguistics											
400	HST 274/WLL 274	Texts and Contexts	3	6				5 year UG SEDS, 5 year UG SSH, History, Undeclared SEDS, Undeclared SMG, Undeclared SSH, World Languages, Literatures and Cultures	SEDS, SMG, SSH, SoM		
History, Philosophy and Religious Studies, Political Science and International Relations											
401	HST 213/PLS 241	Public Health, Society, and the State	3	6				5 year UG SEDS, 5 year UG SSH, History, Political Science and International Relations, Undeclared SEDS, Undeclared SMG, Undeclared SSH	SEDS, SMG, SSH, SoM		
History, Philosophy and Religious Studies, Sociology and Anthropology											
402	ANT 313/REL 332	Islam and Politics in Eurasia	3	6				5 year UG SEDS, 5 year UG SSH, SEDS, SMG, SSH, SoM			
Kazakh Language and Turkic Studies											
403	KAZ 001	Kazakh Language Placement Test	0	0							
404	KAZ 201	Academic Kazakh I	3	6	KAZ 150 Basic Kazakh (1215) (C- and above) OR KLL "[B1.2] Intermediate"			1 year UG SMG, 1 year UG SOM, 2 year UG SEDS Undeclared, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH, 5 year UG SEDS, 5 year UG SSH	SEDS, SMG, SSH, SoM		
405	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 SMG, 1 year UG SOM, 2 year UG SEDS Undeclared, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH, 5 year UG SEDS, 5 year UG SSH	SEDS, SMG, SSH, SoM		

406	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 SMG, 1 year UG SOM, 2 year UG SEDS Undeclared, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH, 5 year UG SEDS, 5 year UG SSH	SEDS, SMG, SSH, SoM		
407	KAZ 313	Kazakh for Business	3	6	KAZ 202 Academic Kazakh II (4562) (C-and above) OR KLL "[C1.1] Advanced"			1 year UG SMG, 1 year UG SOM, 2 year UG SEDS Undeclared, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH, 5 year UG SEDS, 5 year UG SSH	SEDS, SMG, SSH, SoM		
408	KAZ 349	Kazakh Mythology	3	6	KAZ 202 Academic Kazakh II (4562) (C-and above) OR KLL "[C1.1] Advanced"			1 year UG SMG, 1 year UG SOM, 2 year UG SEDS Undeclared, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH, 5 year UG SEDS, 5 year UG SSH	SEDS, SMG, SSH, SoM		
409	KAZ 356	Kazakh Music History	3	6	KAZ 202 Academic Kazakh II (4562) (C-and above) OR KLL "[C1.1] Advanced"			1 year UG SMG, 1 year UG SOM, 2 year UG SEDS Undeclared, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH, 5 year UG SEDS, 5 year UG SSH	SEDS, SMG, SSH, SoM		
410	KAZ 357	Literature of Alash	3	6	KAZ 202 Academic Kazakh II (4562) (C-and above) OR KLL "[C1.1] Advanced"			1 year UG SMG, 1 year UG SOM, 2 year UG SEDS Undeclared, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH, 5 year UG SEDS, 5 year UG SSH	SEDS, SMG, SSH, SoM		
411	KAZ 363	Language and Globalization	3	6	KAZ 202 Academic Kazakh II (4562) (C-and above) OR KLL "[C1.1] Advanced"			1 year UG SMG, 1 year UG SOM, 2 year UG SEDS Undeclared, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH, 5 year UG SEDS, 5 year UG SSH	SEDS, SMG, SSH, SoM		
412	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 SMG, 1 year UG SOM, 2 year UG SEDS Undeclared, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH, 5 year UG SEDS, 5 year UG SSH	SEDS, SMG, SSH, SoM		
413	KAZ 365	Abai's World	3	6	KAZ 202 Academic Kazakh II (4562) (C-and above) OR KLL "[C1.1] Advanced"			1 year UG SMG, 1 year UG SOM, 2 year UG SEDS Undeclared, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH, 5 year UG SEDS, 5 year UG SSH	SEDS, SMG, SSH, SoM		

414	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 SMG, 1 year UG SOM, 2 year UG SEDS Undeclared, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH, 5 year UG SEDS, 5 year UG SSH	SEDS, SMG, SSH, SoM		
415	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 SMG, 1 year UG SOM, 2 year UG SEDS Undeclared, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH, 5 year UG SEDS, 5 year UG SSH	SEDS, SMG, SSH, SoM		
416	KAZ 371	Contemporary Kazakh Literature	3	6	KAZ 202 Academic Kazakh II (4562) (C-and above) OR KLL "[C1.1] Advanced"			1 year UG SMG, 1 year UG SOM, 2 year UG SEDS Undeclared, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH, 5 year UG SEDS, 5 year UG SSH	SEDS, SMG, SSH, SoM		
417	KAZ 373	Kazakh Terminology	3	6	KAZ 202 Academic Kazakh II (4562) (C-and above) OR KLL "[C1.1] Advanced"			1 year UG SMG, 1 year UG SOM, 2 year UG SEDS Undeclared, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH, 5 year UG SEDS, 5 year UG SSH	SEDS, SMG, SSH, SoM		
418	KAZ 374	Kazakh Diplomacy	3	6	KAZ 202 Academic Kazakh II (4562) (C-and above) OR KLL "[C1.1] Advanced"			1 year UG SMG, 1 year UG SOM, 2 year UG SEDS Undeclared, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH, 5 year UG SEDS, 5 year UG SSH	SEDS, SMG, SSH, SoM		
419	KFL 201	Intermediate Kazakh as a Foreign Language I	4	8				1 year UG SMG, 1 year UG SOM, 4 year UG SEDS, 4 year UG SSH, 5 year UG SEDS, 5 year UG SSH	SEDS, SMG, SSH, SoM		
420	TUR 100	Languages, Cultures, and Communities of the Turkic World	3	6				5 year UG SEDS, 5 year UG SSH, SEDS, SMG, SSH, SoM			
421	TUR 231	Istanbul in Literature and Culture	3	6				5 year UG SEDS, 5 year UG SSH, SEDS, SMG, SSH, SoM			
422	TUR 235	Turkish Poetry in Translation	3	6				5 year UG SEDS, 5 year UG SSH, SEDS, SMG, SSH, SoM			
Languages, Literature and Linguistics											
423	CHN 101	Beginning Mandarin I	4	8				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	1 year UG SEDS Undeclared, Undeclared SMG, Undeclared SSH	SEDS, SMG, SSH, SoM	

424	CHN 202	Intermediate Mandarin II	4	8	CHN 201 Intermediate Mandarin I (2181) (C and above)			World Languages, Literatures and Cultures	SSH	SEDS, SMG, SoM	
425	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 SOM, 3 year UG SSH			
426	FRE 102	Beginning French II	4	8	FRE 101 Beginning French I (246) (C- and above)			World Languages, Literatures and Cultures	SSH	SEDS, SMG, SoM	
427	FRE 201	Intermediate French I	4	8	FRE 102 Beginning French II (454) (C- and above)			World Languages, Literatures and Cultures	SSH	SEDS, SMG, SoM	
428	GER 101	Beginning German	4	8				2 year UG SSH World Languages, Literatures and Cultures, 3 year UG SSH World Languages, Literatures and Cultures	2 year UG SSH, 3 year UG SSH, Undeclared SSH	SEDS, SMG, SSH, SoM	
429	KOR 101	Beginning Korean I	4	8				2 year UG SSH World Languages, Literatures and Cultures, 3 year UG SSH World Languages, Literatures and Cultures	2 year UG SSH, 3 year UG SSH, Undeclared SSH	SEDS, SMG, SSH, SoM	
430	KOR 201	Intermediate Korean I	4	8	KOR 102 Beginning Korean II (4791) (C- and above)			World Languages, Literatures and Cultures	SSH	SEDS, SMG, SoM	
431	LING 131	Introduction to Linguistics	3	6				5 year UG SEDS, 5 year UG SSH, Undeclared SSH, World Languages, Literatures and Cultures	2 year UG SSH, 3 year UG SSH	SEDS, SMG, SSH, SoM	
432	LING 277	Language Diversity and Language Universals	3	6	LING 131 Introduction to Linguistics (1394) (C and above)			5 year UG SEDS, 5 year UG SSH, World Languages, Literatures and Cultures	2 year UG SSH, 3 year UG SSH	SEDS, SMG, SSH, SoM	
433	LING 278	Sounds of the World's Languages	3	6				5 year UG SEDS, 5 year UG SSH, World Languages, Literatures and Cultures	2 year UG SSH, 3 year UG SSH	SEDS, SMG, SSH, SoM	

434	LING 372	Discourse Analysis	3	6	Subject "LLL" BETWEEN 100 and 199 OR Subject "WLL" BETWEEN 100 and 199 OR WLL 171/ANT 175 Introduction to Linguistic Anthropology (4417) (C- and above) OR Subject "LING" BETWEEN 100 and 199 OR Subject "LING" BETWEEN 100 and 199			5 year UG SEDS, 5 year UG SSH, World Languages, Literatures and Cultures	2 year UG SSH, 3 year UG SSH	SEDS, SMG, SSH, SoM	
435	LING 375	The Art and Science of Analyzing Languages: Morphosyntax of the World's Languages	3	6	LING 131 Introduction to Linguistics (1394) (C- and above)			5 year UG SEDS, 5 year UG SSH, World Languages, Literatures and Cultures	2 year UG SSH, 3 year UG SSH	SEDS, SMG, SSH, SoM	
436	LING 473	Advanced Empirical Methods in Linguistics	3	6	LING 131 Introduction to Linguistics (1394) (C and above)			5 year UG SEDS, 5 year UG SSH, World Languages, Literatures and Cultures	2 year UG SSH, 3 year UG SSH	SEDS, SMG, SSH, SoM	
437	SPA 101	Beginning Spanish I	4	8				2 year UG SSH World Languages, Literatures and Cultures, 3 year UG SSH World Languages, Literatures and Cultures	2 year UG SSH, 3 year UG SSH, Undeclared SSH	SEDS, SMG, SSH, SoM	
438	SPA 201	Intermediate Spanish I	4	8	SPA 102 Beginning Spanish II (1128) (C- and above)			World Languages, Literatures and Cultures	SSH	SEDS, SMG, SoM	
439	SPA 314	Advanced Spanish Grammar and Composition	3	6	SPA 202 Intermediate Spanish II (1842) (C- and above)			World Languages, Literatures and Cultures	SSH	SEDS, SMG, SoM	
440	WLL 110	Introduction to Literary Studies	3	6				5 year UG SEDS, 5 year UG SSH, World Languages, Literatures and Cultures	Undeclared SSH	SEDS, SMG, SSH, SoM	
441	WLL 121	Introduction to Cultural Studies	3	6				5 year UG SEDS, 5 year UG SSH, World Languages, Literatures and Cultures	Undeclared SSH	SEDS, SMG, SSH, SoM	
442	WLL 201	World Literature I	3	6				World Languages, Literatures and Cultures	2 year UG SSH, 3 year UG SSH	SEDS, SMG, SSH, SoM	
443	WLL 244	Survey of Nineteenth-Century Russian Literature	3	6				World Languages, Literatures and Cultures	2 year UG SSH, 3 year UG SSH	SEDS, SMG, SSH, SoM	
444	WLL 248	Survey of Soviet Literature and Culture	3	6				World Languages, Literatures and Cultures	2 year UG SSH, 3 year UG SSH	SEDS, SMG, SSH, SoM	

445	WLL 314	Petersburg Text in Russian Literature	3	6	Subject "WLL" BETWEEN 100 and 499 OR Subject "HST" BETWEEN 100 and 499			World Languages, Literatures and Cultures	2 year UG SSH, 3 year UG SSH	SEDS, SMG, SSH, SoM	
446	WLL 333	Literary Modernism: Tradition and Innovation	3	6	Subject "WLL" BETWEEN 200 and 299			World Languages, Literatures and Cultures	2 year UG SSH, 3 year UG SSH	SEDS, SMG, SSH, SoM	
447	WLL 498	Languages, Linguistics, and Literatures Capstone I	3	6				4 year UG SSH World Languages, Literatures and Cultures			
Languages, Literature and Linguistics, Languages, Literature and Linguistics											
448	SPA 351/WLL 351	Literature and Film of the Postcolonial World	3	6	Subject "WLL" BETWEEN 200 and 299			World Languages, Literatures and Cultures	SSH	SEDS, SMG, SoM	
Languages, Literature and Linguistics, Sociology and Anthropology											
449	WLL 171/ANT 175	Introduction to Linguistic Anthropology	3	6			ANT 277/WLL 271 Language and Society (1027) (C- and above)	5 year UG SEDS, 5 year UG SSH, World Languages, Literatures and Cultures	Undeclared SSH	SEDS, SMG, SSH, SoM	
Mathematics											
450	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	Biological Sciences, Chemistry, Mathematics, Physics, SEDS, SMG	SSH, SoM	
451	MATH 162	Calculus II	4	8	MATH 161 Calculus I (118) (C and above)			2 year UG SEDS Undeclared, 5 year UG SEDS, 5 year UG SSH, Undeclared SSH	2 year UG SSH Biological Sciences, Chemistry, Mathematics, Physics, SEDS, SMG	SSH, SoM	
452	MATH 251	Discrete Mathematics	3	6	MATH 161 Calculus I (118) (C and above)			2 year UG SEDS Computer Science, 2 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH, Undeclared SSH	Computer Science, Mathematics	SEDS, SMG, SSH, SoM	
453	MATH 263	Calculus III	4	8	MATH 162 Calculus II (170) (C and above)			2 year UG SSH Mathematics, 2 year UG SSH Physics, 5 year UG SEDS, 5 year UG SSH, Undeclared SSH	Mathematics, Physics	SEDS, SMG, SSH, SoM	

454	MATH 273	Linear Algebra with Applications	4	8	MATH 161 Calculus I (118) (C and above)	MATH 162 Calculus II (170) (C and above)		2 year UG SEDS Computer Science, 2 year UG SEDS Robotics and Mechatronics, 2 year UG SSH Mathematics, 2 year UG SSH Physics, 3 year UG SSH Chemistry, 5 year UG SEDS, 5 year UG SSH, Undeclared SSH	Chemistry, Computer Science, Mathematics, Physics, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	
455	MATH 274	Introduction to Differential Equations	3	6	MATH 162 Calculus II (170) (C and above)			3 year UG SSH Chemistry, 5 year UG SEDS, 5 year UG SSH, Physics, Undeclared SSH	Chemistry, Mathematics, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	
456	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		
457	MATH 310	Applied Statistical Methods	3	6	MATH 161 Calculus I (118) (C and above)		MATH 321 Probability (482) (C and above)	5 year UG SEDS, 5 year UG SSH, Biological Sciences, Mining Engineering	SEDS, SMG, SSH, SoM		
458	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)	5 year UG SEDS, 5 year UG SSH, Mathematics	Computer Science, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	
459	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		
460	MATH 323	Actuarial Mathematics I	3	6	MATH 321 Probability (482) (C and above) OR ECON 211 Economic Statistics (2280) (C and above) OR (MATH 162 Calculus II (170) (C and above) AND MATH 310 Applied Statistical Methods (82) (C and above))			5 year UG SEDS, 5 year UG SSH, Mathematics	SEDS, SMG, SSH, SoM		

461	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		
462	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		
463	MATH 371	Introduction to Mathematical Biology	3	6	MATH 273 Linear Algebra with Applications (84) (C and above) AND MATH 274 Introduction to Differential Equations (484) (C and above)			5 year UG SEDS, 5 year UG SSH, Mathematics	SEDS, SMG, SSH, SoM		
464	MATH 399	Internship	3	6				Instructor's Permission Required. Registration through Add Course form only!			
465	MATH 411	Linear Programming	3	6	MATH 273 Linear Algebra with Applications (84) (C and above) AND MATH 263 Calculus III (81) (C and above)			5 year UG SEDS, 5 year UG SSH, Mathematics	SEDS, SMG, SSH, SoM		
466	MATH 425	Stochastic Processes	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		
467	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		
468	MATH 455	Stochastic Calculus	3	6	MATH 321 Probability (482) (C and above)			5 year UG SEDS, 5 year UG SSH, Mathematics	SEDS, SMG, SSH, SoM		

469	MATH 471	Nonlinear Differential Equations	3	6	MATH 273 Linear Algebra with Applications (84) (C and above) AND MATH 274 Introduction to Differential Equations (484) (C and above)			5 year UG SEDS, 5 year UG SSH, Mathematics	SEDS, SMG, SSH, SoM		
470	MATH 480	Complex Analysis	3	6	MATH 263 Calculus III (81) (C and above)			5 year UG SEDS, 5 year UG SSH, Mathematics	SEDS, SMG, SSH, SoM		
471	MATH 490	Special Topics in Mathematics I	3	6				Instructor's Permission Required. Registration through Add Course form only!			
472	MATH 491	Special Topics in Mathematics II	3	6				Instructor's Permission Required. Registration through Add Course form only!			
473	MATH 498	Directed Study in Mathematics II	3	6				Instructor's Permission Required. Registration through Add Course form only!			
474	MATH 510	Measure Theory and Applications	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
475	MATH 517	Scientific Modeling and Simulation with Mathematics	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
476	MATH 519	Scientific Computing	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
477	MATH 540	Statistical Learning	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
478	MATH 551	Advanced Numerical Methods	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
479	MATH 571	Advanced Nonlinear Differential Equations	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
480	MATH 592	Research Seminar	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
481	MATH 680	Potential Theory and Polynomial Approximation	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
482	MATH 682	Applied Functional Analysis	3	6				Applied Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	

483	MATH 700-0	Thesis Research	0	0				Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
484	MATH 701	Real Analysis	4	8				Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
485	MATH 721	Nonlinear Differential Equations with Applications	4	8				Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
486	MATH 751	Probability Theory	4	8				Mathematics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
Physics											
487	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			
488	PHYS 201	Introductory Astronomy I	3	6				5 year UG SEDS, 5 year UG SSH, SEDS, SMG, SSH, SoM			
489	PHYS 221	Classical Mechanics I	3	6	(PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above) OR PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above)) AND MATH 273 Linear Algebra with Applications (84) (C- and above)			5 year UG SEDS, 5 year UG SSH, Physics, Undeclared SSH	SEDS, SMG, SSH, SoM		
490	PHYS 261	Modern Physics with laboratory	4	8	MATH 162 Calculus II (170) (C- and above) AND (PHYS 152 Introductory Physics II with Lab (1176) (C- and above) OR PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above) OR PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above))			5 year UG SEDS, 5 year UG SSH, Physics, Undeclared SSH	SEDS, SMG, SSH, SoM		

491	PHYS 291	Introduction to Quantum Technologies	3	6				5 year UG SEDS, 5 year UG SSH, Physics	SEDS, SMG, SSH, SoM		
492	PHYS 315	Mathematical Methods of Physics	3	6	(PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above) OR PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above)) AND MATH 274 Introduction to Differential Equations (484) (C- and above)			5 year UG SEDS, 5 year UG SSH, Physics	SEDS, SMG, SSH, SoM		
493	PHYS 361	Classical Electrodynamics I	3	6		PHYS 315 Mathematical Methods of Physics (653) (D and above) OR PHYS 411 Advanced Mathematical Physics (3142) (D and above)		5 year UG SEDS, 5 year UG SSH, Physics	SEDS, SMG, SSH, SoM		
494	PHYS 395	Research Methods	3	6				5 year UG SEDS, 5 year UG SSH, Physics	SEDS, SMG, SSH, SoM		
495	PHYS 452	Quantum Mechanics II	3	6	PHYS 451 Quantum Mechanics I (1415) (C- and above)			5 year UG SEDS, 5 year UG SSH, Physics	SEDS, SMG, SSH, SoM		
496	PHYS 473	Introduction to Solid State Physics	4	8	PHYS 261 Modern Physics with laboratory (125) (C- and above) OR CHEM 331 Physical Chemistry I (634) (C- and above) OR MAE 301 Engineering Thermodynamics (5927) (C- and above) OR CHME 201 Chemical Engineering Thermodynamics (5007) (C- and above) OR ELCE 204 Solid State Devices (5508) (C- and above)			5 year UG SEDS, 5 year UG SSH, Physics	SEDS, SMG, SSH, SoM		
497	PHYS 491	Directed Study of Advanced Physics Topics	3	6				Instructor's Permission Required. Registration through Add Course form only!			

498	PHYS 498	Honors Thesis Research	0	0				4 year UG SSH Physics, 5 year UG SSH			
499	PHYS 505	Classical Mechanics	3	6				Physics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
500	PHYS 511	Computational Modeling and Simulation	3	6				Physics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
501	PHYS 515	Classical Electrodynamics	3	6				Physics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
502	PHYS 530	Solid State Physics	4	8				Physics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
503	PHYS 550	Advanced Mathematical Physics	3	6				Physics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
504	PHYS 591	Research Methods	3	6				Physics	SEDS, SSH	GSB, GSE, GSPP, SMG, SoM	
505	PHYS 600	Thesis Research	0	0				Physics			
506	PHYS 700-0	Thesis Research	0	0				Physics			
507	PHYS 705	Classical Mechanics	4	8				SEDS, SSH			
508	PHYS 711	Computational Modeling and Simulation	4	8				SEDS, SSH			
509	PHYS 730	Solid State Physics	4	8				SEDS, SSH			
510	PHYS 750	Advanced Mathematical Physics	4	8				SEDS, SSH			
Political Science and International Relations											
511	PLS 100	Introduction to the Politics of Central Asia	3	6				5 year UG SEDS, 5 year UG SSH, SSH	SEDS, SMG, SoM		
512	PLS 101	Introduction to Political Science	3	6				5 year UG SEDS, 5 year UG SSH, SEDS, SMG	Biological Sciences, Chemistry, Mathematics, Physics	SSH	
513	PLS 120	Introduction to Political Theory	3	6				5 year UG SEDS, 5 year UG SSH, Political Science and International Relations	Undeclared SEDS, Undeclared SMG, Undeclared SSH	SEDS, SMG, SSH, SoM	
514	PLS 140	Introduction to Comparative Politics	3	6				5 year UG SEDS, 5 year UG SSH, Political Science and International Relations	Undeclared SEDS, Undeclared SMG, Undeclared SSH	SEDS, SMG, SSH, SoM	
515	PLS 150	Introduction to International Relations	3	6				5 year UG SEDS, 5 year UG SSH, Political Science and International Relations	Undeclared SEDS, Undeclared SMG, Undeclared SSH	SEDS, SMG, SSH, SoM	

516	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		
517	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		
518	PLS 327	Contemporary Political Theory	3	6	PLS 120 Introduction to Political Theory (512) (C- and above)		PHIL 131 Introduction to Contemporary Political Philosophy (4032) (C- and above)	5 year UG SEDS, 5 year UG SSH, Political Science and International Relations	SEDS, SMG, SSH, SoM		
519	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		
520	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		
521	PLS 351	International Political Economy	3	6	PLS 150 Introduction to International Relations (511) (C- and above) AND PLS 210 Political Science Research Methods (129) (C- and above) AND PLS 211 Quantitative Methods (221) (C- and above)			5 year UG SEDS, 5 year UG SSH, Political Science and International Relations	SEDS, SMG, SSH, SoM		
522	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		
523	PLS 433	Homeland Security	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		
524	PLS 448	Comparative Electoral System	3	6	PLS 140 Introduction to Comparative Politics (223) (C- and above)			5 year UG SEDS, 5 year UG SSH, Political Science and International Relations	SEDS, SMG, SSH, SoM		

525	PLS 449	Politics and Governance of the Gulf	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		
526	PLS 458	International Organization	3	6	PLS 150 Introduction to International Relations (511) (C- and above) AND PLS 210 Political Science Research Methods (129) (C- and above)			5 year UG SEDS, 5 year UG SSH, Political Science and International Relations	SEDS, SMG, SSH, SoM		
527	PLS 459	International Conflict Processes	3	6	PLS 150 Introduction to International Relations (511) (C- and above) AND PLS 210 Political Science Research Methods (129) (C- and above) OR 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		
528	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)			Instructor's Permission Required. Registration through Add Course form only!			
529	PLS 511	Advanced Research I	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
530	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		
531	PLS 533	Homeland Security	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
532	PLS 540	Core Seminar in Comparative Politics	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
533	PLS 548	Comparative Electoral System	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
534	PLS 549	Politics and Governance of the Gulf	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		

535	PLS 550	Core Seminar in IR	4	8				Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
536	PLS 558	International Organization	4	8	PLS 550 Core Seminar in IR (1372) (C- and above)			Political Science and International Relations	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
537	PLS 559	International Conflict Processes	4	8	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	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
538	PLS 598	MA Thesis I	6	12				Instructor's Permission Required. Registration through Add Course form only!			
SSH											
539	SSH 300	School of Sciences and Humanities Internship	3	6				Instructor's Permission Required. Registration through Add Course form only!			
540	SSH 301	School of Sciences and Humanities Internship: Second Experience	3	6				Instructor's Permission Required. Registration through Add Course form only!			
Sociology and Anthropology											
541	ANT 140	World Prehistory	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	
542	ANT 231	Frauds and Fallacies in Archaeology	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	
543	ANT 233	Cavemen, Mammoths, and Sabertooths: Stone Age Archaeology in Eurasia	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	
544	ANT 306	Anthropology of Performance	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	

545	ANT 333	Anthropology of Space	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	
546	ANT 421	Sport and Construction of Identity	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	
547	ANT 498	Capstone Seminar I	3	6				Instructor's Permission Required. Registration through Add Course form only!			
548	ANT 506	Anthropology of Performance	4	8			ANT 306 Anthropology of Performance (1459) (D and above)	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM			
549	ANT 521	Sport and Construction of Identity	4	8				GSB, GSE, GSPP, SEDS, SMG, SSH, SoM			
550	SOC 101	Introduction to Sociology	3	6				5 year UG SEDS, 5 year UG SSH, Anthropology, SoM, Sociology, Undeclared SEDS, Undeclared SMG, Undeclared SSH	2 year UG SSH, 3 year UG SSH Biological Sciences	SEDS, SMG, SSH	
551	SOC 201	Social Science Research Methods	3	6				5 year UG SEDS, 5 year UG SSH, Anthropology, Sociology	2 year UG SSH, Undeclared SEDS, Undeclared SMG, Undeclared SSH	SEDS, SMG, SSH, SoM	
552	SOC 213	Work and Society	3	6				5 year UG SEDS, 5 year UG SSH, Anthropology, Sociology	SSH	SEDS, SMG, SoM	
553	SOC 301	Classical Sociological Theory	3	6			SOC 101 Introduction to Sociology (508) (C- and above) OR SOC 115 Global Social Problems (1032) (C- and above) OR ANT 110 Introduction to Sociocultural Anthropology (501) (C- and above)	5 year UG SEDS, 5 year UG SSH, Anthropology, Sociology	SSH	SEDS, SMG, SoM	
554	SOC 310	Social Inequality	3	6			SOC 101 Introduction to Sociology (508) (C- and above) OR SOC 115 Global Social Problems (1032) (C- and above)	5 year UG SEDS, 5 year UG SSH, Anthropology, Sociology	SSH	SEDS, SMG, SoM	

555	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	
556	SOC 400	Research Assistance in Sociology	1	2				Instructor's Permission Required. Registration through Add Course form only!			
557	SOC 402	Research Assistance in Sociology	1	2				Instructor's Permission Required. Registration through Add Course form only!			
558	SOC 498	Capstone Seminar Part I	3	6				Instructor's Permission Required. Registration through Add Course form only!			
Sociology and Anthropology, Sociology and Anthropology											
559	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	
SEDS											
Chemical and Materials Engineering											
560	CHME 200	Basic Principles and Calculations in Chemical Engineering	3	6				2 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical and Materials Engineering		
561	CHME 201	Chemical Engineering Thermodynamics	3	6				2 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical and Materials Engineering		
562	CHME 222	Inorganic and Analytical Chemistry	3	6				2 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical and Materials Engineering		
563	CHME 300	Heat and Mass Transfer	3	6				3 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical and Materials Engineering		
564	CHME 301	Applied Mathematics for Process Design	3	6				3 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical and Materials Engineering		
565	CHME 302	Instrumental Methods of Analysis for Engineers	3	6				3 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical and Materials Engineering		

566	CHME 351	Environment and Development	3	6				3 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical and Materials Engineering		
567	CHME 353	Electrochemical Engineering	3	6				3 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical and Materials Engineering		
568	CHME 400	Process Design and Simulation	3	6	CHME 300 Heat and Mass Transfer (5952) (D and above) AND CHME 304 Chemical Reaction Engineering (6168) (D and above)			4 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical and Materials Engineering		
569	CHME 401	Chemical Engineering Lab II	3	6				4 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical and Materials Engineering		
570	CHME 450	Atmospheric Chemistry and Physics	3	6				4 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical and Materials Engineering		
571	CHME 453	Multiphase Systems	3	6	CHME 202 Fluid Mechanics (5543) (D and above)			4 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS, 5 year UG SSH	Chemical and Materials Engineering		
572	DCHME 700-0	Thesis Research	0	0				1 year PhD SEDS Chemical Engineering	Chemical Engineering, Science, Engineering and Technology		
573	DCHME 755	Integrated Computational Materials Engineering	4	8				1 year PhD SEDS Chemical Engineering	Science, Engineering and Technology		
574	DCHME 761	Advanced Chemical Reaction Engineering	4	8				1 year PhD SEDS Chemical Engineering	Science, Engineering and Technology		
575	DCHME 762	Advanced Materials Processing	4	8				1 year PhD SEDS Chemical Engineering	Science, Engineering and Technology		
576	DCHME 765	Biofilms Science and Engineering	4	8				1 year PhD SEDS Chemical Engineering	Science, Engineering and Technology		
577	MBME 601	Master Thesis I	12	24				2 year Gr SEDS Biomedical Engineering			

578	MBME 603	Biomaterials Science & Engineering	3	6				1 year Gr SEDS Biomedical Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		
579	MBME 604	Biosensors	3	6				1 year Gr SEDS Biomedical Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		

580	MBME 610	Anatomy and Physiology for Biomedical Engineers	3	6				1 year Gr SEDS Biomedical Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		
581	MBME 703	Medical Device Technology	3	6				2 year Gr SEDS Biomedical Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		

582	MBME 709	Mechanics of Living Tissue	3	6				2 year Gr SEDS Biomedical Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		
583	MCHME 601	Master Thesis I	12	24				2 year Gr SEDS Chemical and Materials Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		

584	MCHME 603	Advanced Materials Processing	3	6				1 year Gr SEDS Chemical and Materials Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		
585	MCHME 604	Advanced Materials Characterization Methods	3	6				1 year Gr SEDS Chemical and Materials Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		

586	MCHME 605	Advanced Chemical Reaction Engineering	3	6				1 year Gr SEDS Chemical and Materials Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		
587	MCHME 702	Biofilms Science and Engineering	3	6				2 year Gr SEDS Chemical and Materials Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		

588	MCHME 714	Computational Materials Engineering	3	6				2 year Gr SEDS Chemical and Materials Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		
Civil Engineering											
589	MSC 600	Research Methods and Ethics	3	6				1 year Gr SEDS Engineering Management	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
590	MSC 601	Technical Communication	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 Computer Science, 1 year Gr SEDS Mechanical and Aerospace Engineering, 1 year Gr SEDS Robotics and Mechatronics	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Mechanical and Aerospace Engineering, Robotics	Electrical and Computer Engineering	

591	MSC 602	Advanced Applied Mathematics	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		
592	MSC 615	Advanced Statistics and Probability	3	6				1 year Gr SEDS Engineering Management	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
Civil and Environmental Engineering											
593	CEE 200	Structural Mechanics I	3	6				2 year UG SEDS Civil and Environmental Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH, SMG	Civil and Environmental Engineering, Mechanical and Aerospace Engineering		
594	CEE 201	Environmental Chemistry	3	6				2 year UG SEDS Civil and Environmental Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	Civil and Environmental Engineering, Mechanical and Aerospace Engineering		
595	CEE 204	Civil Engineering CAD and Surveying	3	6				2 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	Civil and Environmental Engineering		

596	CEE 300	Structural Design - Concrete	3	6	CEE 203 Structural Analysis (5500) (D and above)			3 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	Civil and Environmental Engineering		
597	CEE 302	Geotechnical Engineering	3	6				3 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	Civil and Environmental Engineering		
598	CEE 304	Fluid Mechanics	3	6				3 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	Civil and Environmental Engineering		
599	CEE 306	Civil Engineering Materials	3	6	ENG 102 Engineering Materials I (4708) (D and above)			3 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	Civil and Environmental Engineering		
600	CEE 401	Construction Technology and Management	3	6	CEE 306 Civil Engineering Materials (5897) (D and above)			4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	Civil and Environmental Engineering		
601	CEE 450	Behavior and Design of Structural System	3	6	CEE 300 Structural Design - Concrete (5895) (D and above) AND CEE 301 Structural Design - Steel (6157) (D and above)			4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	Civil and Environmental Engineering		
602	CEE 455	Solid and Hazardous Waste Management	3	6	CEE 202 Environmental Engineering (5499) (D and above)			4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	Civil and Environmental Engineering		
603	CEE 460	Water Supply and Distribution Management	3	6	CEE 305 Hydraulics and Hydrology (6177) (D and above)			4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	Civil and Environmental Engineering		
604	CEE 462	Pavement Design and Performance	3	6	CEE 306 Civil Engineering Materials (5897) (D and above) AND CEE 303 Geotechnical Design (6158) (D and above)			4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	Civil and Environmental Engineering		
605	CEE 465	Structure and Properties of Concrete Materials	3	6	CEE 306 Civil Engineering Materials (5897) (D and above)			4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS, 5 year UG SSH	Civil and Environmental Engineering		
606	DCEE 700-0	Thesis Research	0	0				1 year PhD SEDS Civil Engineering	Civil Engineering, Science, Engineering and Technology		

607	DCEE 750	Finite Element Methods	4	8				Civil Engineering	Biomedical Sciences, Chemical Engineering, Computer Science , Education, Electrical Engineering, Eurasian Studies, Life Sciences, Mathematics, Mechanical Engineering, Mining Engineering, Petroleum Engineering, Physics, Public Policy, Robotics Engineering, Science, Engineering and Technology		
608	DCEE 757	Advanced Environmental Chemistry	4	8				1 year PhD SEDS Civil Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
609	DCEE 760	Advanced Foundation Engineering	4	8				1 year PhD SEDS Civil Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
610	DCEE 761	Advanced Soil Mechanics	4	8				1 year PhD SEDS Civil Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		

611	DCEE 772	Engineering Management and Engineering Economy	4	8				1 year PhD SEDS Civil Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
612	EMEM 507	Project Management	3	6				1 year Gr SEDS Engineering Management	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
613	EMEM 509	Systems Engineering	3	6				2 year Gr SEDS Engineering Management, 2 year Gr SEDS Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		

614	EMEM 523	Supply Chain Management	3	6				2 year Gr SEDS Engineering Management	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
615	EMEM 533	Engineering Management and Engineering Economy	3	6				1 year Gr SEDS Engineering Management	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
616	EMEM 537	Engineering Decision Tools	3	6				2 year Gr SEDS Engineering Management	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		

617	EMEM 538	Knowledge and Innovation Management	3	6				1 year Gr SEDS Engineering Management	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
618	EMEM 539	Big Data and Information Management	3	6				2 year Gr SEDS Engineering Management	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		
619	EMEM 542	Production and Service Operations Management	3	6				2 year Gr SEDS Engineering Management	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics		

620	MCEE 601	Master Thesis I	12	24	MCEE 600 Research Seminar (4692) (P)			2 year Gr SEDS Civil and Environmental Engineering		
621	MCEE 603	Finite Element Methods	3	6				1 year Gr SEDS Civil and Environmental Engineering, 1 year Gr SEDS Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics	
622	MCEE 604	Advanced Soil Mechanics	3	6				1 year Gr SEDS Civil and Environmental Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics	

623	MCEE 605	Advanced Environmental Chemistry	3	6				1 year Gr SEDS Civil and Environmental Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		
624	MCEE 708	Advanced Foundation Engineering	3	6				2 year Gr SEDS Civil and Environmental Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		

Computer Science

625	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	Chemical and Materials Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Mechanical and Aerospace Engineering, Robotics and Mechatronics, SMG, SoM, Undeclared SEDS		
626	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	Undeclared SEDS, Undeclared SMG, Undeclared SSH	SSH	

627	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)	1 year UG SEDS Computer Science, 1 year UG SEDS Robotics and Mechatronics, 1 year UG SEDS Undeclared, 1 year UG SSH Physics, 5 year UG SEDS, 5 year UG SSH	Computer Science, Mathematics, Physics, Robotics and Mechatronics, Undeclared SEDS, Undeclared SMG, Undeclared SSH	SSH	
628	CSCI 231	Computer Systems and Organization	3	6	CSCI 151 Programming for Scientists and Engineers (192) (C- and above) OR ENG 100 Introduction to Engineering (4518) (B- and above)			5 year UG SEDS, 5 year UG SSH, Computer Science			
629	CSCI 235	Programming Languages	4	8	CSCI 152 Performance and Data Structures (489) (C- and above)			5 year UG SEDS, 5 year UG SSH, Computer Science			
630	CSCI 262	Software Project Management	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	
631	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, SEDS	SMG, SSH, SoM		
632	CSCI 299	Internship I	3	6				Instructor's Permission Required. Registration through Add Course form only!			
633	CSCI 341	Database Systems	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			3 year UG SEDS Computer Science, 4 year UG SEDS Computer Science, 5 year UG SEDS, 5 year UG SSH			
634	CSCI 344	Data Mining and Decision Support	3	6	CSCI 341 Database Systems (195) (C- and above) AND MATH 273 Linear Algebra with Applications (84) (C- and above)			5 year UG SEDS, 5 year UG SSH, SEDS	SMG, SSH, SoM		

635	CSCI 361	Software Engineering	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			3 year UG SEDS Computer Science, 4 year UG SEDS Computer Science, 5 year UG SEDS, 5 year UG SSH			
636	CSCI 371	Algorithmic Problem Solving	3	6	CSCI 270 Algorithms (648) (B and above)			5 year UG SEDS, 5 year UG SSH, Computer Science			
637	CSCI 390	Artificial Intelligence	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			3 year UG SEDS Computer Science, 4 year UG SEDS Computer Science, 5 year UG SEDS, 5 year UG SSH			
638	CSCI 399	Internship II	3	6				Instructor's Permission Required. Registration through Add Course form only!			
639	CSCI 399F	Internship II - F	6	12				Instructor's Permission Required. Registration through Add Course form only!			
640	CSCI 408	Senior Project I	3	6				4 year UG SEDS Computer Science, 5 year UG SEDS, 5 year UG SSH			
641	CSCI 434	Information Security	3	6		CSCI 333 Computer Networks (1145) (D and above)		5 year UG SEDS, 5 year UG SSH, Computer Science	SEDS	SMG, SSH, SoM	
642	CSCI 494	Deep Learning	3	6	CSCI 390 Artificial Intelligence (643) (C and above) AND MATH 273 Linear Algebra with Applications (84) (C and above)			5 year UG SEDS, 5 year UG SSH, Computer Science	SEDS	SMG, SSH, SoM	
643	CSCI 501	Software Principles and Practice	3	6				Computer Science, Robotics	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering	SSH	

644	CSCI 511	Theory of Computation	3	6				Computer Science, Robotics	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering	SSH	
645	CSCI 515	Modeling and Simulation for Computer Science	3	6				Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Robotics	Applied Mathematics, Biological Sciences, Chemistry, Economics, Eurasian Studies, Physics, Political Science and International Relations	SSH	
646	CSCI 585	Computer Vision	3	6				Computer Science, Data Science, Robotics	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, SEDS	SSH	

647	CSCI 594	Deep Learning	3	6				Computer Science, Data Science, Robotics	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, SEDS	SSH	
648	CSCI 693	Thesis Proposal	3	6	SEDS 591 Research Methods (3184) (C- and above)			2 year Gr SEDS Computer Science			
649	CSCI 700-0	Thesis Research	0	0				1 year PhD SEDS Computer Science	Computer Science , Science, Engineering and Technology		
650	CSCI 701	Advanced Software Principles and Practice	4	8				Computer Science , Robotics Engineering	Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Science, Engineering and Technology	SSH	
651	CSCI 711	Advanced Theory of Computation	4	8				Computer Science , Robotics Engineering	Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Science, Engineering and Technology	SSH	
652	CSCI 785	Advanced Computer Vision	4	8				Computer Science , Robotics Engineering	Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Science, Engineering and Technology	SSH	

653	CSCI 794	Advanced Deep Learning	4	8				Computer Science , Robotics Engineering	Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Science, Engineering and Technology	SSH	
654	DS 501	Fundamentals of Data Science	3	6				Data Science			
655	DS 502	Probability and Statistics for Data Science	3	6				Data Science	Computer Science	SEDS, SSH	
656	DS 507	Database Management Systems	3	6				Data Science	Computer Science	SEDS, SSH	
657	DS 551	Process and Project Management	3	6				Data Science	Computer Science	SEDS, SSH	
658	DS 552	Data-Driven Innovation	3	6				Data Science	Computer Science	SEDS, SSH	
659	DS 693	Thesis Proposal	3	6	SEDS 591 Research Methods (3184) (C- and above)			2 year Gr SEDS Data Science			
660	SEDS 503	Laboratory Practicum	3	6	SEDS 502 Teaching Practicum (2824) (P)			2 year Gr SEDS Computer Science, 2 year Gr SEDS Data Science, 2 year Gr SEDS Robotics and Mechatronics			
661	SEDS 504	Innovation and Entrepreneurship	3	6							
662	SEDS 591	Research Methods	3	6				1 year Gr SEDS Computer Science, 1 year Gr SEDS Data Science, 1 year Gr SEDS Robotics and Mechatronics	Computer Science, Data Science, Robotics		
Electrical and Computer Engineering											
663	DELCE 700-0	Thesis Research	0	0				1 year PhD SEDS Electrical Engineering	Electrical Engineering, Science, Engineering and Technology		
664	DELCE 753	Stochastic Processes	4	8				1 year PhD SEDS Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		

665	DELCE 760	Advanced System Modelling and Control	4	8				1 year PhD SEDS Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
666	DELCE 761	Advanced Data Structures and Algorithms	4	8				1 year PhD SEDS Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
667	EEE 437	Capstone Project 1	3	6				Instructor's Permission Required. Registration through Add Course form only!			
668	ELCE 200	Introduction to Electrical Circuits	3	6	MATH 162 Calculus II (170) (C- and above) AND PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above)			2 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		
669	ELCE 203	Signals and Systems	3	6	MATH 162 Calculus II (170) (C- and above) AND PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above)			2 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		
670	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	Electrical and Computer Engineering		
671	ELCE 204	Solid State Devices	3	6	ENG 103 Engineering Materials II (4818) (C- and above)	ELCE 204L Solid State Devices Laboratory (7769) (D and above)		3 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		

672	ELCE 205	Discrete Mathematics	3	6	MATH 162 Calculus II (170) (C- and above)			2 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		
673	ELCE 301	Electronic Circuits	3	6	ELCE 201 Circuit Theory (5507) (C- and above)			3 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		
674	ELCE 301L	Electronic Circuits Laboratory	1	2	ELCE 201L Circuit Theory Laboratory (6179) (C- and above)	ELCE 301 Electronic Circuits (5918) (C- and above)		3 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		
675	ELCE 304	Computer Networks	3	6	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	Electrical and Computer Engineering		
676	ELCE 304L	Computer Networks Laboratory	1	2		ELCE 304 Computer Networks (5920) (D and above)		3 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		
677	ELCE 306	Linear Control Theory	3	6	ELCE 203 Signals and Systems (4993) (C- and above)			3 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		
678	ELCE 307	Digital Signal Processing	3	6	ELCE 203 Signals and Systems (4993) (C- and above)			3 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		
679	ELCE 450	Modern Characterizations for Semiconductor Industry	3	6		ELCE 204 Solid State Devices (5508) (C- and above)		4 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		
680	ELCE 453	High Voltage, AC/DC, FACTS Devices	3	6	ELCE 201 Circuit Theory (5507) (C- and above)			4 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		
681	ELCE 454	Power Transmission and Distribution Systems	3	6	ELCE 201 Circuit Theory (5507) (C- and above)			4 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		
682	ELCE 455	Machine Learning with Python	3	6	ENG 101 Programming for Engineers (4517) (C- and above) OR CSCI 151 Programming for Scientists and Engineers (192) (C- and above)			4 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS, 5 year UG SSH	Electrical and Computer Engineering		

683	ELCE 456	Internet of Things	3	6	ELCE 304 Computer Networks (5920) (C-and above) OR CSCI 333 Computer Networks (1145) (C-and above)			4 year UG SEDS Electrical and Computer Engineering			
684	ELCE 457	Introduction to Computer Vision	3	6	ENG 101 Programming for Engineers (4517) (C-and above) AND ENG 200 Engineering Mathematics III (Differential Equations and Linear Algebra) (5009) (C-and above)			4 year UG SEDS Electrical and Computer Engineering			
685	MECE 600	Research Seminar	3	6				2 year Gr SEDS Electrical and Computer Engineering			
686	MECE 601	Master Thesis I	12	24				2 year Gr SEDS Electrical and Computer Engineering			
687	MECE 603	Advanced Data Structures and Algorithms	3	6				1 year Gr SEDS Electrical and Computer Engineering	Applied Mathematics, Biological Sciences, Biomedical Engineering, Chemical and Materials Engineering, Chemistry, Civil and Environmental Engineering, Computer Science, Data Science, Economics, Electrical and Computer Engineering, Engineering Management, Eurasian Studies, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Physics, Political Science and International Relations, Robotics		

688	MECE 605	Statistics and Probability for Electrical and Computer Engineers	3	6				1 year Gr SEDS Electrical and Computer Engineering	Applied Mathematics, Biological Sciences, Biomedical Engineering, Chemical and Materials Engineering, Chemistry, Civil and Environmental Engineering, Computer Science, Data Science, Economics, Electrical and Computer Engineering, Engineering Management, Eurasian Studies, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Physics, Political Science and International Relations, Robotics		
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689	MECE 606	Embedded Systems and Applications	3	6				1 year Gr SEDS Electrical and Computer Engineering	Applied Mathematics, Biological Sciences, Biomedical Engineering, Chemical and Materials Engineering, Chemistry, Civil and Environmental Engineering, Computer Science, Data Science, Economics, Electrical and Computer Engineering, Engineering Management, Eurasian Studies, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Physics, Political Science and International Relations, Robotics	
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690	MECE 724	System Modelling and Control	3	6				1 year Gr SEDS Electrical and Computer Engineering	Applied Mathematics, Biological Sciences, Biomedical Engineering, Chemical and Materials Engineering, Chemistry, Civil and Environmental Engineering, Computer Science, Data Science, Economics, Electrical and Computer Engineering, Engineering Management, Eurasian Studies, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Physics, Political Science and International Relations, Robotics		
Mechanical and Aerospace Engineering											
691	DMAE 700-0	Thesis Research	0	0				1 year PhD SEDS Mechanical Engineering	Mechanical Engineering, Science, Engineering and Technology		
692	DMAE 701	Advanced Applied Mathematics	4	8				1 year PhD SEDS Mechanical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
693	DMAE 750	Advanced Statistics and Probability	4	8			MSC 615 Advanced Statistics and Probability (2394) (B- and above)	1 year PhD SEDS Mechanical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		

694	DMAE 751	Modern Control Engineering	4	8				1 year PhD SEDS Mechanical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
695	DMAE 765	Advanced Manufacturing Processes and Strategies	4	8				1 year PhD SEDS Mechanical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
696	EME 451	Capstone Project 1	3	6				Instructor's Permission Required. Registration through Add Course form only!			
697	ENG 100	Introduction to Engineering	3	6				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 SEDS Undeclared, 1 year UG SMG, 5 year UG SEDS, 5 year UG SSH	Chemical and Materials Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Mechanical and Aerospace Engineering, SMG		

698	ENG 101	Programming for Engineers	3	6			CSCI 151 Programming for Scientists and Engineers (192) (F) OR CSCI 111 Web Programming and Problem Solving (110) (F) OR CSCI 115 Programming Fundamentals (5257) (F) OR CSCI 152 Performance and Data Structures (489) (F) OR CSCI 408 Senior Project I (1481) (F) OR CSCI 409 Senior Project II (1483) (F)	1 year UG SEDS Chemical 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 SEDS Undeclared, 5 year UG SEDS, 5 year UG SSH	Chemical and Materials Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Mechanical and Aerospace Engineering	SMG	
699	ENG 200	Engineering Mathematics III (Differential Equations and Linear Algebra)	3	6	MATH 162 Calculus II (170) (C and above)			2 year UG SEDS Chemical 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	Chemical and Materials Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Mechanical and Aerospace Engineering, SMG		
700	ENG 400	Capstone Project	3	6				4 year UG SEDS Chemical and Materials Engineering, 4 year UG SEDS Civil and Environmental Engineering, 4 year UG SEDS Electrical and Computer Engineering, 4 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH			
701	MAE 201	Computer Aided Design	3	6				2 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	Mechanical and Aerospace Engineering		

702	MAE 300	Fluid Mechanics I	3	6	PHYS 161 Physics I for Scientists and Engineers with Laboratory (116) (D and above)			3 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	Mechanical and Aerospace Engineering		
703	MAE 301	Engineering Thermodynamics	3	6				3 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	Mechanical and Aerospace Engineering		
704	MAE 302	Machine Elements Design	3	6	MAE 205 Material and Manufacturing I (5534) (D and above)			3 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	Mechanical and Aerospace Engineering		
705	MAE 303	Control Systems	3	6				3 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	Mechanical and Aerospace Engineering		
706	MAE 400	Heat Transfer	3	6	MAE 300 Fluid Mechanics I (5926) (D and above) AND MAE 301 Engineering Thermodynamics (5927) (D and above)			4 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	Mechanical and Aerospace Engineering		
707	MAE 401	Mechanical Systems Design	3	6	MAE 302 Machine Elements Design (5928) (D and above)			4 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	Mechanical and Aerospace Engineering		
708	MAE 452	Computer Aided Geometric Design	3	6	MAE 201 Computer Aided Design (5011) (D and above)			4 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	Mechanical and Aerospace Engineering		
709	MAE 453	Fire Engineering	3	6	MAE 305 Fluid Mechanics II (6173) (D and above) AND MAE 301 Engineering Thermodynamics (5927) (D and above)			4 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	Mechanical and Aerospace Engineering		
710	MAE 462	Multiphase Systems	3	6	MAE 300 Fluid Mechanics I (5926) (D and above) AND MAE 305 Fluid Mechanics II (6173) (D and above)			4 year UG SEDS Mechanical and Aerospace Engineering, 5 year UG SEDS, 5 year UG SSH	Mechanical and Aerospace Engineering		

711	MMAE 601	Master Thesis I	12	24	MMAE 600 Research Seminar (4703) (P)			2 year Gr SEDS Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		
712	MMAE 603	Modern Control Engineering	3	6				1 year Gr SEDS Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		

713	MMAE 605	Advanced Manufacturing Processes and Strategies	3	6				1 year Gr SEDS Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		
714	MMAE 702	Sustainable Vehicle Transportation Systems	3	6				2 year Gr SEDS Mechanical and Aerospace Engineering	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering, Mining Engineering, Petroleum Engineering, Robotics		

Robotics and Mechatronics

715	ROBT 201	Mechanics: Statics and Dynamics	3	6	MATH 162 Calculus II (170) (C- and above) AND (PHYS 161 Physics I for Scientists and Engineers with Laboratory (116) (C- and above) OR PHYS 171 Physics I for Physics Majors with Laboratory (1401) (C- and above))			5 year UG SEDS, 5 year UG SSH, Robotics and Mechatronics, SMG	Biological Sciences, Chemical Engineering, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
716	ROBT 203	Electrical and Electronic Circuits I with Lab	4	8	MATH 162 Calculus II (170) (C- and above) AND (PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above) OR PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above) OR (PHYS 141 Physics I for non-majors with Lab (1437) (C- and above) AND PHYS 142 Physics II for non-majors with Lab (1438) (C- and above)))			5 year UG SEDS, 5 year UG SSH, Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
717	ROBT 205	Signals and Sensing with Lab	4	8	MATH 162 Calculus II (170) (C- and above) AND (PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above) OR PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above))			5 year UG SEDS, 5 year UG SSH, Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
718	ROBT 301	Mechanical Design I with CAD Laboratory	4	8	ROBT 201 Mechanics: Statics and Dynamics (475) (C- and above)			5 year UG SEDS, 5 year UG SSH, Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		

719	ROBT 303	Linear Control Theory with Lab	4	8	ROBT 202 System Dynamics and Modeling (68) (C- and above) AND MATH 274 Introduction to Differential Equations (484) (C- and above)			5 year UG SEDS, 5 year UG SSH, Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
720	ROBT 307	Power Electronics	3	6	ROBT 204 Electrical and Electronic Circuits II with Lab (491) (C- and above)			5 year UG SEDS, 5 year UG SSH, Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Electrical and Computer Engineering, Mathematics, Physics		
721	ROBT 308	Industrial Automation	3	6				5 year UG SEDS, 5 year UG SSH, Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Electrical and Computer Engineering, Mathematics, Physics		
722	ROBT 403	Robotics II: Control, Modeling and Learning with Laboratory	4	8	ROBT 303 Linear Control Theory with Lab (623) (C and above) AND ROBT 312 Robotics I: Kinematics and Dynamics (5263) (C and above)			5 year UG SEDS, 5 year UG SSH, Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Mathematics, Physics, Undeclared SEDS, Undeclared SSH		
723	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	Biological Sciences, Chemistry, Computer Science, Electrical and Computer Engineering, Mathematics, Physics		
724	ROBT 414	Human-Robot Interaction	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			5 year UG SEDS, 5 year UG SSH, Robotics and Mechatronics	Biological Sciences, Chemistry, Computer Science, Electrical and Computer Engineering, Mathematics, Physics		

725	ROBT 501	Robot Manipulation and Mobility	3	6				Robotics	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering		
726	ROBT 503	Dynamic Systems and Control	3	6				Robotics	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering		
727	ROBT 613	Brain-Machine Interfaces	3	6				Robotics	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering		

728	ROBT 615	Optimal Control and Planning	3	6	ROBT 501 Robot Manipulation and Mobility (2263) (C- and above) AND ROBT 503 Dynamic Systems and Control (2264) (C- and above)			Robotics	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering		
729	ROBT 691	Thesis Proposal	6	12				Robotics	Biomedical Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Engineering Management, Industrial and Systems Engineering, Mechanical and Aerospace Engineering		
730	ROBT 700-0	Thesis Research	0	0				1 year PhD SEDS Robotics Engineering	Robotics Engineering, Science, Engineering and Technology		
731	ROBT 701	Advanced Robot Manipulation and Mobility	4	8				1 year PhD SEDS Robotics Engineering	Science, Engineering and Technology		
732	ROBT 703	Advanced Optimal Control and Planning	4	8				1 year PhD SEDS Robotics Engineering	Science, Engineering and Technology		
733	ROBT 709	Advanced Robot Dynamics and Control	4	8				1 year PhD SEDS Robotics Engineering	Science, Engineering and Technology		
School of Engineering											
734	DENG 700-0	Thesis Research	0	0				Science, Engineering and Technology			

735	DENG 782	Research Methods and Ethics	3	6				1 year PhD SEDS Chemical Engineering, 1 year PhD SEDS Civil Engineering, 1 year PhD SEDS Computer Science, 1 year PhD SEDS Electrical Engineering, 1 year PhD SEDS Mechanical Engineering, 1 year PhD SEDS Robotics Engineering, 1 year PhD SEDS Science, Engineering and Technology, 1 year PhD SSH Eurasian Studies, 1 year PhD SSH Life Sciences, 1 year PhD SSH Mathematics, 1 year PhD SSH Physics	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology	1 year PhD SMG Mining Engineering, 1 year PhD SMG Petroleum Engineering, 2 year PhD SSH Physics	
736	DENG 790	Doctoral Seminar II	3	6	DENG 789 Doctoral Seminar I (4598) (P)			Science, Engineering and Technology			
737	DENG 792	Doctoral Seminar IV	3	6	DENG 791 Doctoral Seminar III (4600) (P)			Science, Engineering and Technology			
738	DENG 793	Doctoral Seminar V	3	6	DENG 792 Doctoral Seminar IV (4601) (P)			Science, Engineering and Technology			
739	DENG 794	Dissertation Research	12	24	DENG 785 PhD Proposal Oral Defence (2604) (P)			Science, Engineering and Technology			
740	DENG 796	Thesis Completion	0	0				Science, Engineering and Technology			
741	DENG 797	Oral Defence of PhD Dissertation	0	0	DENG 785 PhD Proposal Oral Defence (2604) (P) AND DENG 789 Doctoral Seminar I (4598) (P) AND DENG 790 Doctoral Seminar II (4599) (P)			Science, Engineering and Technology			
742	DENG 798	Doctoral Seminar VI	3	6	DENG 793 Doctoral Seminar V (4602) (P)			Science, Engineering and Technology			
743	DENG 799	Doctoral Seminar VII	3	6	DENG 798 Doctoral Seminar VI (4607) (P)			Science, Engineering and Technology			