Course Requirements and Registration Priorities
Spring 2024

#	Abbr	Title	Cr(US)	Cr(ECTS)	PreRequisite	CoRequisite	AntiRequisite	1st priority registration	2nd priority registration	3rd priority registration	4th priority registration
CPS											
GSPP											
1	ZEST 061	Basic Economics and Statistics	0	0							
NUFYP											
2	FEAP 020	Foundation English for Academic Purposes 2	0	0							
3	FLDP 095	Leadership 2	0	0							
4	FMAT 041	Foundation Mathematics 2	0	0							
NUZYP											
5	ZCOM 041	Academic Communications for Graduate Studies II	0	0							
6	ZLIN 062	Linear Algebra for Graduate Studies	0	0							
7	ZRDG 031	Academic Reading for Graduate Studies II	0	0							
8	ZWRT 021	Academic Writing for Graduate Studies II	0	0							
GSB											
Economics											
9	ECON 101	Introduction to Microeconomics	3	6				1 year UG SSH Undeclared, 2 year UG SSH Undeclared, 5 year UG SSH	SSH	SEDS, SMG, SoM	
10	ECON 102	Introduction to Macroeconomics	3	6				1 year UG SSH Undeclared, 2 year UG SSH Undeclared, 5 year UG SSH	SSH	SEDS, SMG, SoM	
11	ECON 120	Managerial Economics	3	6				SEDS	SMG, SSH, SoM		
12	ECON 201	Intermediate Microeconomics	3	6	ECON 101 Introduction to Microeconomics (379) (B- and above) AND (MATH 161 Calculus I (118) (B- and above) OR MATH 162 Calculus II (170) (B- and above))			Economics	2 year UG SSH Undeclared	SSH	

13	ECON 202	Intermediate Macroeconomics	3	6	ECON 102 Introduction to Macroeconomics (503) (B- and above) AND (MATH 161 Calculus I (118) (B- and above) OR MATH 162 Calculus II (170) (B- and above))			Economics	2 year UG SSH Undeclared	SSH	
14	ECON 211	Economic Statistics	3	6	ECON 101 Introduction to Microeconomics (379) (C and above) OR ECON 102 Introduction to Macroeconomics (503) (C and above)			Economics	2 year UG SSH Undeclared	SSH	
15	ECON 300	Research Assistance in Economics	1	2	ECON 101 Introduction to Microeconomics (379) (C- and above) AND ECON 102 Introduction to Macroeconomics (503) (C- and above) OR CSCI 151 Programming for Scientists and Engineers (192) (C- and above) OR CSCI 235 Programming Languages (638) (C- and above) OR CSCI 390 Artificial Intelligence (643) (C- and above) OR MATH 321 Probability (482) (C- and above) OR MATH 322 Mathematical Statistics (1165) (C- and above)			Instructor's Permission Required. Registration through Add Course form only!			
16	ECON 301	Econometrics I	3	6	ECON 211 Economic Statistics (2280) (C- and above) OR (MATH 321 Probability (482) (C- and above) AND (MATH 322 Mathematical Statistics (1165) (C- and above) OR MATH 310 Applied Statistical Methods (82) (C- and above)))			Economics	2 year UG SSH Undeclared	SSH	

17	ECON 302	Game Theory and Economic Analysis	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above) OR ECON 101 Introduction to Microeconomics (379) (C- and above) AND MATH 251 Discrete Mathematics (85) (C- and above)		PLS 315 Political Game Theory (704) (C- and above)	3 year UG SSH Economics, 5 year UG SSH, 6 year UG SSH	4 year UG SSH Economics	SSH	
18	ECON 305	Advanced Microeconomics	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above)	ECON 211 Economic Statistics (2280) (D and above)	ECON 398 General Special Topics in Economics (2184) (C- and above)	3 year UG SSH Economics, 5 year UG SSH, 6 year UG SSH	4 year UG SSH Economics	SSH	
19	ECON 318	Applied Econometrics	3	6	ECON 301 Econometrics I (664) (C- and above)		ECON 336 Programming for Economists (7979) (C- and above)	3 year UG SSH Economics, 5 year UG SSH, 6 year UG SSH	4 year UG SSH Economics	SSH	
20	ECON 319	Matching Theory and Applications	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above)			3 year UG SSH Economics, 5 year UG SSH, 6 year UG SSH	4 year UG SSH Economics	SSH	
21	ECON 341	Economic Simulation Modeling	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above)			3 year UG SSH Economics, 5 year UG SSH, 6 year UG SSH	4 year UG SSH Economics	SSH	
22	ECON 400	Research Assistance in Economics 2	1	2	ECON 300 Research Assistance in Economics (3080) (P)			Instructor's Permission Required. Registration through Add Course form only!			
23	ECON 415	Industrial Organization	3	6	ECON 301 Econometrics I (664) (C- and above)			Economics		SSH	
24	ECON 428	Wages and the Labor Market	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above) AND ECON 301 Econometrics I (664) (C- and above)			Economics		SSH	
25	ECON 443	Topics in Macroeconomic Theory	3	6	ECON 202 Intermediate Macroeconomics (207) (C- and above) AND ECON 301 Econometrics I (664) (C- and above)			Economics		SSH	

26	ECON 446	Empirical Finance	3	6	ECON 211 Economic Statistics (2280) (C- and above) OR MATH 322 Mathematical Statistics (1165) (C- and above)			Economics		SSH	
27	ECON 498	Advanced Special Topics in Economics	3	6	ECON 201 Intermediate Microeconomics (133) (C- and above) OR ECON 202 Intermediate Macroeconomics (207) (C- and above) OR MATH 322 Mathematical Statistics (1165) (C- and above) OR MATH 321 Probability (482) (C- and above)			Economics	SEDS, SMG, SSH		
28	ECON 515	Industrial Organization	4	8	ECON 531 Econometrics (2505) (C- and above)			Economics			
29	ECON 521	Microeconomic Theory II	4	8	ECON 501 Microeconomics (2187) (C- and above) AND ECON 512 Mathematical Economics (2154) (C- and above)			Economics			
30	ECON 522	Macroeconomics II	4	8	() (and above)			Economics			
31	ECON 524	Research Methodology	4	8	ECON 501 Microeconomics (2187) (C- and above) AND ECON 502 Macroeconomics (2186) (C- and above) AND ECON 511 Mathematics and Statistics (2188) (C- and above)	ECON 531 Econometrics (2505) (D and above)		Economics			
32	ECON 531	Econometrics	4	8	ECON 511 Mathematics and Statistics (2188) (C- and above) AND ECON 512 Mathematical Economics (2154) (C- and above)			Economics			
33	ECON 590	Thesis II	8	16	ECON 589 Thesis I (3714) (P)			Economics			

GSB											
34	ACCT 201	Introduction to Accounting	3	6				4 year UG SEDS, 4 year UG SEDS (pending graduation), 4 year UG SMG, 4 year UG SOM, 4 year UG SSH, 4 year UG SSH (pending graduation)	3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH	2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SSH	
35	BUS 101	Core Course in Business	3	6				2 year UG SOM Medical Sciences, 2 year UG SOM Nursing, 3 year UG SOM, 4 year UG SEDS, 4 year UG SEDS (pending graduation), 4 year UG SMG, 4 year UG SOM, 4 year UG SSH, 4 year UG SSH (pending graduation)	3 year UG SEDS, 3 year UG SMG, 3 year UG SSH	2 year UG SEDS, 2 year UG SMG, 2 year UG SSH	
36	BUS 420	Business Law	3	6	BUS 101 Core Course in Business (5889) (C- and above)			4 year UG SEDS, 4 year UG SEDS (pending graduation), 4 year UG SMG, 4 year UG SOM, 4 year UG SSH, 4 year UG SSH (pending graduation)	3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH	2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SSH	
37	FIN 201	Principles of Finance	3	6	BUS 101 Core Course in Business (5889) (B- and above)			4 year UG SEDS, 4 year UG SEDS (pending graduation), 4 year UG SMG, 4 year UG SOM, 4 year UG SSH, 4 year UG SSH (pending graduation)	3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH	2 year UG SEDS, 2 year UG SMG, 2 year UG SOM, 2 year UG SSH	
38	GSBF 514	Corporate Finance	2.5	5				For GSB programs only! Registration by School admin.			
39	GSBF 515b	Investments II	2.5	5	GSBF 515a Investments I (4106) (C- and above)			For GSB programs only! Registration by School admin.			
40	GSBF 517	Macroeconomics for Finance	2.5	5				For GSB programs only! Registration by School admin.			
41	GSBPHD 02	Qualitative Research Methods	4	8				1 year GSB Business Administration (PhD)			
42	GSBPHD 03	Quantitative Research Methods	4	8				1 year GSB Business Administration (PhD)			
43	GSBPHD 04	Core Research Skills I	4	8				1 year GSB Business Administration (PhD)			
44	GSBPHD 14	Thesis Research Progress	0	0							

45	MBA 03	Financial Accounting	2	4							
46	MBA 09	Marketing Management	2	4				For GSB programs only! Registration by School admin.			
47	MBA 11	Managerial Accounting	2	4				For GSB programs only! Registration by School admin.			
48	MBA 12	Operations Management	2	4				For GSB programs only! Registration by School admin.			
49	MBA 13	Macroeconomics	2	4				For GSB programs only! Registration by School admin.			
50	MBA 15	Corporate Finance	2	4				For GSB programs only! Registration by School admin.			
51	MBA 16	Entrepreneurship	2	4				For GSB programs only! Registration by School admin.			
52	MBAE 18	Consumer Behavior	2	4							
53	MBAE 2	Emerging Markets Strategy	2	4							
54	MBAE 9	Marketing Strategy	2	4							
55	MSF 01	Financial Modeling	2.5	5				For GSB programs only! Registration by School admin.			
56	MSF 06	Credit Modeling	2.5	5				For GSB programs only! Registration by School admin.			
57	MSF 11	FinTech	2.5	5				For GSB programs only! Registration by School admin.			
GSPP											
Master in Public Administration											
58	MPA 608	Strategic Management and Leadership	4	8				1 year GSPP Public Administration			
59	MPA 610	Program Evaluation	4	8	MPA 602 Public Administration in Theory and Practice (2077) (C- and above) AND MPA 603 Economic Applications for Public Managers (2074) (C- and above) AND MPA 605 Research Methods for Public Managers (2108) (C- and above)			1 year GSPP Public Administration			

60	MPA 699	Master’s Project with Overseas Component	0	0				1 year GSPP Public Administration			
61	MPE 600	Internship in Public Policy	4	8	(MPP 601 Microeconomics and Public Policy (1449) (C- and above) AND MPP 602 Macroeconomics and Public Policy (1023) (C- and above) AND MPP 611 Statistics for Public Policy (1450) (C- and above) AND MPP 621 Public Policy and Analysis (1451) (C- and above) AND MPP 641 Public Management and Leadership (1907) (C- and above) AND MPP 603 Data Analytics in Public Policy (6618) (C- and above)) OR (MPA 602 Public Administration in Theory and Practice (2077) (C- and above) AND MPA 603 Economic Applications for Public Managers (2074) (C- and above) AND MPA 605 Research Methods for Public Managers (2108) (C- and above) AND MPE 608 Strategic Management and Leadership (2491) (C- and above) AND MPA 610 Program Evaluation (6617) (C- and above))			2 year GSPP Public Policy			
62	MPE 610	National Identity and Public Policy	4	8				Public Administration, Public Policy	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
63	MPE 611	Benefit Cost Analysis	4	8				Public Administration, Public Policy	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
64	MPE 616	Collaborative Governance	4	8				Public Administration	Public Policy	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM	

65	MPE 634	Foreign Policy Analysis	4	8				Public Administration	Public Policy	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM	
66	MPE 638	Contemporary Security Challenges in Central Asia and Beyond	4	8				Public Administration, Public Policy	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
67	MPE 639	International Financial Policy	4	8				Public Administration	Public Policy	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM	
68	MPE 649	Public Sector Innovation	4	8				Public Administration	Public Policy	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM	
69	MPE 670	Behavioural Insights and Public Policy	4	8				Public Administration, Public Policy	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
70	MPE 672	The Third Sector: civil society, nonprofit organizations, and voluntary action	4	8				Public Administration, Public Policy	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
71	MPE 673	Development Assistance and Governance	4	8				Public Administration	Public Policy	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM	
72	MPE 681	Natural Resource Management and Policy	4	8				Public Administration	Public Policy	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM	
73	MPE 683	Energy Systems and Climate Policy	4	8				Public Administration, Public Policy	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
Master in Public Policy											
74	MPP 602	Macroeconomics and Public Policy	4	8				1 year GSPP Public Policy			
75	MPP 603	Data Analytics in Public Policy	4	8	MPP 611 Statistics for Public Policy (1450) (C- and above) AND MPP 601 Microeconomics and Public Policy (1449) (C- and above) AND MPP 621 Public Policy and Analysis (1451) (C- and above) AND MPP 613 Policy Research Design and Methods (1301) (C- and above)			1 year GSPP Public Policy			

76	MPP 641	Public Management and Leadership	4	8				1 year GSPP Public Policy			
77	MPP 699	Policy Analysis Exercise with Overseas Component	8	16	MPP 601 Microeconomics and Public Policy (1449) (C- and above) AND MPP 611 Statistics for Public Policy (1450) (C- and above) AND MPP 613 Policy Research Design and Methods (1301) (C- and above) AND MPP 621 Public Policy and Analysis (1451) (C- and above)			2 year GSPP Public Policy			
78	MPP 699-0	Policy Analysis Exercise with Overseas Component	0	0	MPP 613 Policy Research Design and Methods (1301) (C- and above)			1 year GSPP Public Policy			
PhD in Public Policy											
79	DPP 600	Developing Dissertation Research	0	0				Public Policy			
80	DPP 602	Macroeconomics in Public Sector	4	8				1 year GSPP PhD Public Policy			
81	DPP 613	Research Design (qualitative and quantitative)	4	8				1 year GSPP PhD Public Policy			
82	DPP 615	Law, Governance and Public Policy	4	8				1 year GSPP PhD Public Policy			
83	DPP 631	Politics of Public Policy	4	8				1 year GSPP PhD Public Policy			
84	DPP 689	PhD Qualifying Examinations	0	0				2 year GSPP PhD Public Policy			
85	DPP 690	Thesis Preparation and Writing	66	132	DPP 689 PhD Qualifying Examinations (4830) (P) AND DPP 699 Thesis Design and Written Proposal (4831) (B- and above)			4 year GSPP PhD Public Policy			
86	DPP 690-0	Thesis Preparation and Writing	0	0				3 year GSPP PhD Public Policy			
87	DPP 699	Thesis Design and Written Proposal	6	12				2 year GSPP PhD Public Policy			
GSE											
MA in Multilingual Education											
88	EDML 622	First and Second Language Acquisition	3	6				2 year GSE MA in Multil.Education			

89	EDML 630	Language Policy and Education Reform Across Contexts	3	6				1 year GSE MA in Multil.Education			
90	EDML 691	Thesis Research II	6	12				2 year GSE MA in Multil.Education			
MSc Educational Leadership HE											
91	EDHE 604	Thesis Seminar 4	0	0				2 year GSE Educ.Leadership			
92	EDHE 605	Thesis Submission and Defense	10.5	21				2 year GSE Educ.Leadership			
93	EDHE 626	Organization and Governance in Higher Education	3	6				1 year GSE Educ.Leadership			
94	EDHE 628	Higher Education Policy Analysis and Development	3	6				1 year GSE Educ.Leadership			
95	EDHE 629	Globalization and International Higher Education	3	6				1 year GSE Educ.Leadership			
96	EDUC 511	Advanced English for Education Professionals II	3	6				1 year GSE MA in Multil.Education			
97	EDUC 513	English for Thesis Writing II	3	6				2 year GSE MA in Multil.Education			
98	EDUC 531	Academic English 2	2	4				1 year GSE Educ.Leadership			
99	EDUC 573	Academic Writing in Kazakh	3	6				1 year GSE MA in Multil.Education, 1 year GSE PhD Education, 2 year GSE MA in Multil.Education, 2 year GSE PhD Education, 3 year GSE PhD Education, 4 year GSE PhD Education			
100	EDUC 583	Academic Writing in Kazakh (MSc)	2	4				1 year GSE Educ.Leadership, 2 year GSE Educ.Leadership			
101	EDUC 585	Education in Kazakhstan for International Students	3	6				1 year GSE Educ.Leadership, 1 year GSE MA in Multil.Education, 1 year GSE PhD Education, 2 year GSE Educ.Leadership, 2 year GSE MA in Multil.Education, 2 year GSE PhD Education, 3 year GSE PhD Education, 4 year GSE PhD Education			

102	EDUC 591	Academic English Writing for Doctoral Students II	3	6				2 year GSE PhD Education			
103	EDUC 592	Academic English Writing for Doctoral Students III	3	6				4 year GSE PhD Education			
104	EDUC 608	Research Methods 2	3	6				1 year GSE Educ.Leadership, 1 year GSE MA in Multil.Education			
105	EDUC 618	Educational Leadership	3	6				1 year GSE Educ.Leadership			
106	EDUC 700	Developing PhD Student Strategies for Progressing the Thesis	9	18				4 year GSE (pending graduation), 5 year GSE (pending graduation)			
107	EDUC 704	Advanced Methods of Education Research	3	6				1 year GSE PhD Education			
108	EDUC 705	Advanced Methods of Education Research: Qualitative Methods	3	6				1 year GSE PhD Education			
109	EDUC 711	Globalisation and Education	3	6				1 year GSE PhD Education			
110	EDUC 720	Philosophy of Education	3	6				1 year GSE PhD Education			
111	EDUC 728	Exploring the Research Topic 2	0	0				1 year GSE PhD Education			
112	EDUC 730	Preparation for Proposal Defence	0	0				2 year GSE PhD Education			
113	EDUC 733	Thesis Proposal Defense	12.5	25				3 year GSE PhD Education, 4 year GSE PhD Education			
114	EDUC 740	Doctoral Seminar	3	6				2 year GSE PhD Education, 3 year GSE PhD Education			
115	EDUC 751	Dissertation Research	0	0				3 year GSE PhD Education, 4 year GSE PhD Education			
MSc Educational Leadership IE											
116	EDIE 604	Thesis Seminar 4	0	0				2 year GSE Educ.Leadership			
117	EDIE 605	Thesis Submission and Defense	10.5	21				2 year GSE Educ.Leadership			
118	EDIE 626	Global Perspectives on Inclusive Education	3	6				1 year GSE Educ.Leadership			
119	EDIE 628	Inclusive Curriculum and Assessment	3	6				1 year GSE Educ.Leadership			
120	EDIE 631	Developing Inclusive Schools for an Inclusive Society	3	6				1 year GSE Educ.Leadership			
MSc Educational Leadership SE											

121	EDSE 604	Thesis Seminar 4	0	0				2 year GSE Educ.Leadership			
122	EDSE 605	Thesis Submission and Defense	10.5	21				2 year GSE Educ.Leadership			
123	EDSE 626	Curriculum Development and Implementation	3	6				1 year GSE Educ.Leadership			
124	EDSE 629	Teacher Development and Identity	3	6				1 year GSE Educ.Leadership			
125	EDSE 632	School Improvement and Effectiveness	3	6				1 year GSE Educ.Leadership			
Other											
Other											
126	STUMOB 001	Student Mobility Course	0	0							
127	T - 30510763	Intermediate Macroeconomics	3	6							
128	T - 30510973	Econometrics I	3	6							
129	T - 40510943	Theory of Industrial Organization	3	6							
130	T - 40511103	Game Theory	3	6							
131	T - 94061	International Communication and Change Management	2	4							
132	T - 94071	Digital Transformation	2	4							
133	T - CCFER 300	Contemporary Chinese Foreign Economic Relations	3	6							
134	T - CCP 300	Contemporary Chinese Politics	3	6							
135	T - CF 300	Corporate Finance	3	6							
136	T - COMM 1200	Public Speaking & Persuasion	3	6							
137	T - CSCI 2407	Theory of Computation	3	6							
138	T - CSCI 3510	Principles of Operating Systems	3	6							
139	T - ECON 2402	Intermediate Macroeconomics	3	6							
140	T - ECON 3501	Econometrics I	3	6							
141	T - ECON 3601	Public Finance	3	6							

142	T - ENCE 2301	Digital Logic Design	3	6							
143	T - IC 300	Intermediate Chinese	4	8							
144	T - INTA 3601	International development	3	6							
145	T - IR 300	Intensive Reading	4	8							
146	T - IRT 300	International Relations Theory and Asia-Pacific Regional Cooperation	3	6							
147	T - MATH 2406	Probability & Statistics	3	6							
148	T - ME 300	Macroeconomics	1.5	3							
149	T - OCIM 300	Overseas Chinese and International Migration	3	6							
150	T - PHIL 1202	Perspectives on ethics & values	3	6							
151	T - POLS 1200	State & Politics	3	6							
152	T - POLS 2400	Theories of International Relations	3	6							
SoM											
Biological Science											
153	BIOL 101	Biology for non-Science majors	3	6			BIOL 110 Modern Biology I (1070) (C- and above)	Anthropology, Economics, History, Nursing, Political Science and International Relations, Sociology, Undeclared SSH, World Languages, Literature and Culture			
154	BIOL 105	General Biology	3	6				SEDS, SMG, SoM	Anthropology, Chemistry, Economics, History, Mathematics, Physics, Political Science and International Relations, Sociology, Undeclared SSH, World Languages, Literature and Culture		

155	BIOL 110	Modern Biology I	3	6				1 year UG SSH Biological Sciences, 2 year UG SSH Biological Sciences, 5 year UG SSH	Chemistry, Medical Sciences	SEDS, SMG, SSH, SoM	
156	BIOL 110L	Modern Biology I Laboratory	1	2		BIOL 110 Modern Biology I (1070) (C and above)		1 year UG SSH Biological Sciences, 2 year UG SSH Biological Sciences, 5 year UG SSH	Chemistry, Medical Sciences	SEDS, SMG, SSH, SoM	
157	BIOL 120	Modern Biology II	3	6	BIOL 110 Modern Biology I (1070) (C and above)			1 year UG SSH Biological Sciences, 2 year UG SSH Biological Sciences, Chemistry	Medical Sciences	SEDS, SMG, SSH, SoM	
158	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)		1 year UG SSH Biological Sciences, 2 year UG SSH Biological Sciences, Chemistry	Medical Sciences	SEDS, SMG, SSH, SoM	
159	BIOL 230	Human Anatomy and Physiology I	4	8	BIOL 110 Modern Biology I (107) (C and above) OR BIOL 110 Modern Biology I (1070) (C and above)			2 year UG SSH Biological Sciences, 3 year UG SSH Biological Sciences	Biological Sciences, Medical Sciences		
160	BIOL 301	Molecular Cell Biology	3	6	BIOL 120 Modern Biology II (1195) (C and above)			2 year UG SSH Biological Sciences, 3 year UG SSH Biological Sciences, 4 year UG SSH Biological Sciences	Biological Sciences, Medical Sciences		
161	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 SSH Biological Sciences, 3 year UG SSH Biological Sciences, 4 year UG SSH Biological Sciences	Biological Sciences, Medical Sciences		
162	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	Chemistry, Mathematics, Physics	Biological Sciences	
163	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	Chemistry, Mathematics, Physics	Biological Sciences	

164	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)			2 year UG SOM Medical Sciences, 3 year UG SSH Biological Sciences, 4 year UG SSH Biological Sciences	3 year UG SOM Medical Sciences, Biological Sciences		
165	BIOL 321	Bioethics	3	6	BIOL 120 Modern Biology II (1195) (C and above)			2 year UG SOM Medical Sciences, 2 year UG SSH Biological Sciences, 3 year UG SSH Biological Sciences, 4 year UG SSH Biological Sciences	Chemistry, Mathematics, Physics		
166	BIOL 331	Human Anatomy and Physiology II	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)			3 year UG SSH Biological Sciences, 4 year UG SSH Biological Sciences	3 year UG SOM Medical Sciences, Biological Sciences		
167	BIOL 333	Environmental Biology	3	6	BIOL 120 Modern Biology II (1195) (C and above)			3 year UG SSH Biological Sciences, 4 year UG SSH Biological Sciences	Biological Sciences, Medical Sciences		
168	BIOL 341	Biochemistry I	3	6	CHEM 211 Organic Chemistry I (154) (C and above)			3 year UG SSH Biological Sciences, 4 year UG SSH Biological Sciences	Biological Sciences, Medical Sciences		
169	BIOL 355	Critical Research Reasoning	3	6	BIOL 120 Modern Biology II (1195) (C and above)			3 year UG SSH Biological Sciences, 4 year UG SSH Biological Sciences	3 year UG SOM Medical Sciences, Biological Sciences		
170	BIOL 363	Structural Bioinformatics	4	8	BIOL 341 Biochemistry I (2002) (C and above) OR CHEM 341 Biochemistry I (1058) (C and above) OR CSCI 235 Programming Languages (638) (C and above)			3 year UG SSH Biological Sciences, 4 year UG SSH Biological Sciences	3 year UG SOM Medical Sciences, Biological Sciences		

171	BIOL 370	Genetics	3	6	BIOL 120 Modern Biology II (1195) (C and above)			3 year UG SSH Biological Sciences, 4 year UG SSH Biological Sciences	3 year UG SOM Medical Sciences, Biological Sciences		
172	BIOL 370L	Genetics Laboratory	1	2		BIOL 370 Genetics (1174) (C and above)		3 year UG SSH Biological Sciences, 4 year UG SSH Biological Sciences	3 year UG SOM Medical Sciences, Biological Sciences		
173	BIOL 425	Biomedical Research Methods	3	6	BIOL 110 Modern Biology I Lab (1444) (C and above) OR BIOL 110 Modern Biology I (1070) (C and above) AND BIOL 341 Biochemistry I (2002) (C and above) OR CHEM 341 Biochemistry I (1058) (C and above)			4 year UG SSH Biological Sciences	Biological Sciences, Chemistry, Mathematics, Physics	SEDS	
174	BIOL 440	Neuroscience	3	6	BIOL 230 Human Anatomy and Physiology I (72) (C and above) OR BIOL 230 Human Anatomy and Physiology I (6217) (C and above)			4 year UG SSH Biological Sciences	Biological Sciences, Chemistry, Mathematics, Physics	SEDS	
175	BIOL 445	Medical Microbiology	3	6	BIOL 305 Introduction to Microbiology (5789) (C and above) OR BIOL 305 Introduction to Microbiology with Lab (1642) (C and above)			4 year UG SSH Biological Sciences	Biological Sciences, Chemistry, Mathematics, Physics	SEDS	
176	BIOL 450	Food Microbiology	3	6	BIOL 305 Introduction to Microbiology with Lab (1642) (C and above) OR BIOL 305 Introduction to Microbiology (5789) (C and above)			4 year UG SSH Biological Sciences	Biological Sciences, Chemistry, Mathematics, Physics	SEDS	
177	BIOL 450L	Food Microbiology Lab	1	2	BIOL 305 Introduction to Microbiology with Lab (1642) (C and above) OR BIOL 305 Introduction to Microbiology (5789) (C and above)	BIOL 450 Food Microbiology (4609) (C and above)		4 year UG SSH Biological Sciences	Biological Sciences, Chemistry, Mathematics, Physics	SEDS	

178	BIOL 468	Integrated Cell Biology	3	6	(BIOL 110 Modern Biology I (107) (C and above) OR BIOL 110 Modern Biology I (1070) (C and above)) AND BIOL 120 Modern Biology II (1195) (C and above)			4 year UG SSH Biological Sciences	Biological Sciences, Chemistry, Mathematics, Physics	SEDS	
179	BIOL 471	Light and Electron microscopy concepts and techniques	3	6	BIOL 110 Modern Biology I (1070) (C and above) AND BIOL 120 Modern Biology II (1195) (C and above) AND CHEM 101 General Chemistry I (113) (C and above) AND PHYS 161 Physics I for Scientists and Engineers with Laboratory (116) (C and above)			4 year UG SSH Biological Sciences	Biological Sciences, Chemistry, Mathematics, Physics	SEDS	
180	BIOL 471L	Light and Electron Microscopy Concepts and Techniques-Lab	1	2		BIOL 471 Light and Electron microscopy concepts and techniques (4686) (C and above)		4 year UG SSH Biological Sciences	Biological Sciences, Chemistry, Mathematics, Physics	SEDS	
181	BIOL 481	Neuroimmunology	3	6	BIOL 310 Immunology (628) (C and above)			4 year UG SSH Biological Sciences	Biological Sciences, Chemistry, Mathematics, Physics	SEDS	
182	BIOL 491	Honors Thesis	9	18	BIOL 490 Honors Thesis Research (1581) (C and above)			4 year UG SSH Biological Sciences	Biological Sciences, Chemistry, Mathematics, Physics	SEDS	
183	BIOL 492	Research Experience in Biology	3	6	BIOL 456 Biology Research Design (1217) (C- and above)			4 year UG SSH Biological Sciences	Biological Sciences, Chemistry, Mathematics, Physics	SEDS	
184	BIOL 502	Research Methods and Bioethics	3	6				Biological Sciences	SEDS, SSH, SoM		
185	BIOL 580	Applied Bioinformatics	3	6	BIOL 520 Statistical Methods in Life Sciences (1203) (C and above)			Biological Sciences	SEDS, SSH, SoM		
186	BIOL 590	Research Design and Project Planning	3	6				Biological Sciences	SEDS, SSH, SoM		

187	BIOL 591	Cellular Biophysics	3	6				Biological Sciences	SEDS, SSH, SoM		
188	BIOL 599	Master's Thesis Research	0	0				Biological Sciences	SEDS, SSH, SoM		
189	BIOL 630	Advanced Neuroscience	3	6				Biological Sciences	SEDS, SSH, SoM		
190	BIOL 637	Fundamentals of Advanced Microscopy	3	6				Biological Sciences	SEDS, SSH, SoM		
191	BIOL 637L	Fundamentals of advanced microscopy	1	2				Biological Sciences	SEDS, SSH, SoM		
192	BIOL 692	Master's Thesis	15	30	BIOL 691 Master's Thesis Research Proposal (5676) (B- and above)			Biological Sciences	SEDS, SSH, SoM		
193	BIOL 800-0	Thesis Research	0	0				Biomedical Sciences, Life Sciences	SEDS, SSH, SoM		
194	BIOL 830	Advanced Neuroscience	4	8				Biomedical Sciences, Life Sciences	SEDS, SSH, SoM		
195	BIOL 837	Advanced Optical and Electron Microscopy	4	8				Biomedical Sciences, Life Sciences	SEDS, SSH, SoM		
196	BIOL 880	Applied Bioinformatics	4	8				Biomedical Sciences, Life Sciences	SEDS, SSH, SoM		
197	BIOL 891	Cellular Biophysics	4	8				Biomedical Sciences, Life Sciences	SEDS, SSH, SoM		
MMM											
198	MMMM 508	Molecular Immunology	3	6				1 year Gr SOM Molecular Medicine, 2 year Gr SOM Molecular Medicine			
199	MMMM 509	From the Bench to the Bedside: Drug Development and Clinical Trials	3	6				1 year Gr SOM Molecular Medicine	2 year Gr SOM Molecular Medicine		
200	MMMM 511	Research Methods in Molecular Biomedicine	3	6				1 year Gr SOM Molecular Medicine, 2 year Gr SOM Molecular Medicine			
201	MMMM 513	Molecular Basis of Neurological Disorders	3	6				1 year Gr SOM Molecular Medicine, 2 year Gr SOM Molecular Medicine			
202	MMMM 690	Master Research Project	15	30				2 year Gr SOM Molecular Medicine			
MPTOX											
203	MPTX 508	Research Methods in Pharmacology	3	6	MPTX 502 Cellular Communications (5842) (C- and above) OR MPTX 503 Principles of Pharmacology and Toxicology (5843) (C- and above)			1 year Gr SOM Molecular Medicine, 1 year Gr SOM Pharmacology and Toxicology			

204	MPTX 509	Drug Discovery and Development II	3	6	MPTX 505 Drug Discovery I (5845) (C- and above)			1 year Gr SOM Molecular Medicine, 1 year Gr SOM Pharmacology and Toxicology			
205	MPTX 511E	Environmental Toxicology	3	6				1 year Gr SOM Pharmacology and Toxicology			
206	MPTX 701	Research Project and Thesis	15	30	MPTX 601 Biostatistics and Critical Appraisal (6342) (C and above) AND MSBM 601 Introduction to Research Project (6344) (P)			2 year Gr SOM Pharmacology and Toxicology			
MSMR											
207	MSMR 502	Nutrition in Sports and Exercise	3	6				1 year Gr SOM Sports Medicine and Rehabilitation			
208	MSMR 506	Seminar in Sports Medicine	3	6				1 year Gr SOM Sports Medicine and Rehabilitation			
209	MSMR 511	Introduction to Research Project	3	6				1 year Gr SOM Sports Medicine and Rehabilitation			
210	MSMR 515	Nutrition for Life	3	6				1 year Gr SOM Sports Medicine and Rehabilitation			
211	MSMR 601	Psychology of Sports and Rehabilitation	3	6				1 year Gr SOM Sports Medicine and Rehabilitation			
212	MSMR 602	Advances in Sports and Rehabilitation	4	8				2 year Gr SOM Sports Medicine and Rehabilitation			
213	MSMR 702	Master Research Project Thesis	12	24				2 year Gr SOM Sports Medicine and Rehabilitation			
Master of Sciences in Biomedicine											
214	MMMM 507	Critical Analysis of the Contemporary Concepts in Molecular Medicine	3	6				1 year Gr SOM Molecular Medicine			
215	MPTX 504	Systemic Pharmacology I	3	6	MSBM 512 Principles of Pharmacology and Toxicology (8727) (C- and above)			1 year Gr SOM Pharmacology and Toxicology			
216	MPTX 507	Applied Toxicology	3	6	MSBM 512 Principles of Pharmacology and Toxicology (8727) (C- and above)			1 year Gr SOM Pharmacology and Toxicology			

217	MSMR 509	Robots for Rehabilitation	3	6				1 year Gr SOM Sports Medicine and Rehabilitation			
218	MSMR 514	Adaptive Physical Activity	3	6				1 year Gr SOM Sports Medicine and Rehabilitation			
Medical Sciences											
219	NUSM 310	Capstone Project	15	30	NUSM 301 Introduction to Immunology, Microbiology and Genetics (6958) (C- and above) OR NUSM 302 Introduction to Statistics for Evidence-Based Practice (6959) (C- and above) OR NUSM 303 Introduction to Anatomy and Histology (6957) (C- and above)			3 year UG SOM Medical Sciences			
220	NUSM 404	Cellular and Pathological Basis of Disease	4	8	NUSM 310 Capstone Project (7138) (C- and above)			4 year UG SOM Medical Sciences			
221	NUSM 406	Immunology in Health and Disease	4.5	9	NUSM 310 Capstone Project (7138) (C- and above)			4 year UG SOM Medical Sciences			
222	NUSM 407	Medical Microbiology	4.5	9	NUSM 310 Capstone Project (7138) (C- and above)			4 year UG SOM Medical Sciences			
Nursing											
223	NUR 101	Human Anatomy and Physiology I and Lab	4	8				1 year UG SOM Nursing			
224	NUR 102L	Human Anatomy and Physiology II with Lab	4	8				1 year UG SOM Nursing			
225	NUR 121	Introduction to Basic Statistics for Evidence-Based Practice	3	6				3 year UG SOM Nursing			
226	NUR 122	English-Russian-Kazakh Medical Terminology	2	4				2 year UG SOM Nursing			
227	NUR 202	Introduction to Genetics & Molecular Therapeutics	3	6				2 year UG SOM Nursing			
228	NUR 212/L	Foundations of Nursing Practice II	2	4				2 year UG SOM Nursing			
229	NUR 213/C	Medical-Surgical Nursing I: Clinical	7	14				2 year UG SOM Nursing			
230	NUR 305	Research Methods for Nursing	3	6				1 year UG SOM Nursing			

231	NUR 306	Medical-Surgical Nursing: Complex Medical Management for Acute and Chronic Patient	4	8				1 year UG SOM Nursing			
232	NUR 307	Health Promotion and Disease Prevention in Culturally Diverse Populations	4	8				1 year UG SOM Nursing			
233	NUR 308	Enhanced Communication in Professional Nursing	4	8				1 year UG SOM Nursing			
234	NUR 313C	Medical-Surgical Nursing II: Complex Surgical Management and Clinical	7	14				3 year UG SOM Nursing			
235	NUR 314C	Psychiatric Nursing and Clinical	4	8				3 year UG SOM Nursing			
236	NUR 321	Ethics in Healthcare	2	4				3 year UG SOM Nursing			
237	NUR 322	Nursing Clinical Informatics	2	4				2 year UG SOM Nursing			
238	NUR 402	Principles of Healthcare Administration	4	8				2 year UG SOM Nursing			
239	NUR 405	Issues and Trends in Nursing	4	8				2 year UG SOM Nursing			
240	NUR 406.2	Medical-Surgical Nursing: Complex Management	4	8				2 year UG SOM Nursing			
241	NUR 407	Capstone: Clinical and EBP Quality Improvement Research	4	8				2 year UG SOM Nursing			
242	NUR 415C	Clinical Transitions	9	18				4 year UG SOM Nursing			
243	NUR 422	Capstone II: Evidence-Based Quality Improvement/Research Project Completion	3	6				4 year UG SOM Nursing			
PHD											
244	PHDBS 701	Thesis Research	90	180				4 year PhD SOM BioMed Sciences, 4 year PhD SOM Global Health, Global Health			
245	PHDBS 701-0	Thesis Research	0	0				SoM			
246	PHDBS 702	Molecular Basis of Health and Disease	4	8				SoM			
247	PHDBS 703	Biomedical Research Analysis and Design of Experimentation	4	8				SoM			

248	PHDBS 704	NUSOM seminar (final semester)	4	8				4 year PhD SOM BioMed Sciences, 4 year PhD SOM Global Health, Global Health			
249	PHDBS 704-0	NUSOM seminar	0	0				SoM	Life Sciences		
250	PHDBS 706	Advanced Biomedical Research Analysis and Design of Experimentation	4	8				SoM			
251	PHDBS 707	Publication Analysis	4	8				SoM			
252	PHDBS 708	Writing for Biomedical Sciences	3	6				SoM	Life Sciences		
253	PHDGH 701-0	Thesis Research	0	0				1 year PhD SOM Global Health, 2 year PhD SOM Global Health, 3 year PhD SOM Global Health, 4 year PhD SOM Global Health, Global Health			
254	PHDGH 704-0	NUSOM Seminar in Global Health	0	0				1 year PhD SOM Global Health, 2 year PhD SOM Global Health, 3 year PhD SOM Global Health, 4 year PhD SOM Global Health, Global Health			
255	PHDGH 705	Global Health into Action	3	6				Global Health			
256	PHDGH 706	Methods in Global Health Research	3	6				1 year PhD SOM Global Health, 2 year PhD SOM Global Health, 3 year PhD SOM Global Health, 4 year PhD SOM Global Health, Global Health			
257	PHDGH 707	Implementation Science in Global Health	3	6				1 year PhD SOM Global Health, 2 year PhD SOM Global Health, 3 year PhD SOM Global Health, 4 year PhD SOM Global Health, Global Health			
258	PHDGH 709	Critical Appraisal in Global Health	3	6				1 year PhD SOM Global Health, 2 year PhD SOM Global Health, 3 year PhD SOM Global Health, 4 year PhD SOM Global Health, Global Health			
Public Health											

259	PUBH 512	Biostatistical Modeling and Sampling	3	6				1 year Gr SOM Public Health			
260	PUBH 522	Advanced Analytical Epidemiology	3	6				1 year Gr SOM Public Health			
261	PUBH 551	Health Services Management, Health Economic and Health Policy	3	6				1 year Gr SOM Public Health			
262	PUBH 631	Social and Behavioral Sciences in Public Health	3	6				1 year Gr SOM Public Health			
263	PUBH 641	Problem Investigations in Environmental Health	3	6				1 year Gr SOM Public Health			
264	PUBH 651	Risk Management in Health Care	3	6				2 year Gr SOM Public Health			
265	PUBH 652	Applied Methods in Health Services Research	3	6				2 year Gr SOM Public Health			
266	PUBH 682	Master's Project Implementation	12	24				2 year Gr SOM Public Health			
SSH											
Academic Success Centre, Communication and Composition											
267	WCS 150	Rhetoric and Composition	3	6				1 year UG SEDS, 1 year UG SMG, 1 year UG SSH, 4 year UG SSH, SoM		SEDS, SMG, SSH	

268	WCS 210	Technical and Professional Writing	3	6	ASC 100 Advanced English for Academic Purposes (9234) (C- and above) OR Test "IELTS" BETWEEN 6.5 and 9 OR WCS 150/ASC 100 Advanced English for Academic Purposes (2183) (C- and above)		WCS 200 Introduction to Public Speaking (175) (D and above) OR WCS 220 Science Writing (5686) (D and above) OR WCS 230 Say What you Mean: Clarity, Precision, and Style in Academic Writing (3026) (D and above) OR WCS 240 Writing for Digital Media (4421) (D and above) OR WCS 250 Advanced Rhetoric and Composition (3027) (D and above) OR WCS 260/WLL 235 Creative Writing: Introduction to Fiction Writing I (4000) (D and above) OR WCS 270 Academic and Professional Presentations (8409) (D and above)	Chemistry, SEDS, SMG		SSH, SoM	
Area Studies											
269	EAS 502	Disciplinary Methodology	4	8				Eurasian Studies	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
270	EAS 504	Thesis II	12.5	25	EAS 500 Introduction to Eurasia (1632) (C- and above) AND EAS 501 General Methodology (1633) (C- and above) AND EAS 502 Disciplinary Methodology (1379) (C- and above) AND EAS 503 Thesis I (2141) (C- and above)			Eurasian Studies	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		

271	EAS 511	Independent Study in Eurasian Studies	4	8				Eurasian Studies			
272	EAS 512	Topics in Eurasian Studies	4	8				Eurasian Studies			
273	EAS 513	Critical Issues in Eurasian Studies	4	8				Eurasian Studies			
274	EAS 702	Elective in Eurasian Humanities	4	8				Eurasian Studies			
275	EAS 703	Elective in Eurasian Social Sciences	4	8				Eurasian Studies			
276	EAS 704	Elective 2 in Eurasian Humanities	4	8				Eurasian Studies			
277	EAS 705	Elective 2 in Social Sciences	4	8				Eurasian Studies			
278	EAS 708	Proseminar in Eurasian Humanities	4	8				Eurasian Studies			
279	EAS 709	Proseminar in Eurasian Social Sciences	4	8				Eurasian Studies			
280	EAS 710	Independent Study in Eurasian Studies	4	8				Eurasian Studies			
281	EAS 712	Doctoral Seminar in Eurasian Studies II	4	8				Eurasian Studies	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
282	EAS 713	Qualifying Examination	0	0				Eurasian Studies	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
283	EAS 800	Doctoral Thesis in Eurasian Studies	70	140							
284	EAS 800-0	Dissertation Research in Eurasian Studies	0	0				Eurasian Studies	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
Chemistry											
285	CHEM 092	Survey of Environmental Sciences for Non-Science Majors	3	6				Anthropology, Economics, History, Nursing, Political Science and International Relations, Sociology, World Languages, Literature and Culture			
286	CHEM 101	General Chemistry I	3	6				1 year UG SMG, Biological Sciences, Chemistry, SoM	Undeclared SSH	SEDS, SMG, SSH	
287	CHEM 101L	General Chemistry I lab	1	2		CHEM 101 General Chemistry I (113) (C and above)		1 year UG SMG, Biological Sciences, Chemistry, SoM	Undeclared SSH	SSH	

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

297	CHEM 332L	Physical Chemistry II Lab	1	2		CHEM 332 Physical Chemistry II (1056) (C and above) AND CHEM 331L Physical Chemistry Lab (1060) (C and above)		Chemistry	SSH		
298	CHEM 380	Research Methods	3	6				Chemistry	SSH		
299	CHEM 411	Advanced Organic Chemistry I	3	6	CHEM 212 Organic Chemistry II (443) (C and above) AND MATH 161 Calculus I (118) (C and above)			Chemistry	SSH		
300	CHEM 431	Computational Chemistry	3	6	CHEM 332 Physical Chemistry II (1056) (C and above) AND (CSCI 111 Web Programming and Problem Solving (110) (C- and above) OR CSCI 150 Fundamentals of Programming (1501) (C- and above) OR CSCI 151 Programming for Scientists and Engineers (192) (C- and above))			Chemistry	SSH		
301	CHEM 433	Surfactants and Colloids	3	6	CHEM 102 General Chemistry II (232) (C and above)			Chemistry	SSH		
302	CHEM 442	Biochemistry II with Lab-Metabolic Biochemistry	3	6	CHEM 341 Biochemistry I (1058) (C and above) AND CHEM 212 Organic Chemistry II (443) (C and above)			Chemistry	SSH		
303	CHEM 451	Applied Homogenous Catalysis	3	6	CHEM 350 Advanced Inorganic Chemistry (1905) (C and above)			Chemistry	SSH		
304	CHEM 489	Directed Research II	3	6	CHEM 488 Directed Research I (7174) (C and above)			Chemistry	SSH		

305	CHEM 490	Nanochemistry	3	6	CHEM 331 Physical Chemistry I (634) (C and above) AND CHEM 250 Descriptive Inorganic Chemistry (445) (C and above)			Chemistry	SSH		
306	CHEM 511	Theoretical Chemistry	3	6	CHEM 510 Principles of Physical Chemistry (5266) (C and above)			Chemistry	SSH	SoM	
307	CHEM 515	Applied Colloid and Surfactant Science	3	6				Chemistry	SSH	SoM	
308	CHEM 532	Organometallic Chemistry	4	8	CHEM 530 Inorganic Structures and Reaction Mechanisms (5265) (C and above)			Chemistry	SSH	SoM	
309	CHEM 540	Organic Reactions and Mechanisms	3	6				Chemistry	SSH	SoM	
310	CHEM 550	Selected Topics in Chemistry	3	6				Chemistry	SSH	SoM	
311	CHEM 560	Directed research in chemistry	0	0				Chemistry	SSH	SoM	
312	CHEM 592	Chemistry Seminar	3	6				Chemistry	SSH	SoM	
313	CHEM 692	MSc Thesis in Chemistry	18	36	CHEM 691 Thesis Proposal (5858) (C- and above)			Chemistry	SSH	SoM	
314	CHEM 710	Mechanistic Principles of Organic Reactions	4	8				Chemistry	SSH	SoM	
315	CHEM 731	Design of Functional Materials	4	8				Chemistry	SSH	SoM	
316	CHEM 733	Colloid and Surfactant Science	4	8				Chemistry	SSH	SoM	
317	CHEM 752	Materials Chemistry	4	8				Chemistry	SSH	SoM	
318	CHEM 780	Research Methods and Ethics	3	6				Chemistry	SSH	SoM	
319	CHEM 798-0	Thesis Research	0	0				Chemistry	SSH	SoM	
Communication and Composition											
320	WCS 200	Introduction to Public Speaking	3	6	WCS 150/ASC 100 Advanced English for Academic Purposes (2183) (C- and above)			2 year UG SEDS, 2 year UG SSH, SoM		SEDS, SMG, SSH	
321	WCS 205	Intercultural Communication	3	6				2 year UG SEDS, 2 year UG SSH, SoM		SEDS, SMG, SSH	

322	WCS 220	Science Writing	3	6	WCS 150/ASC 100 Advanced English for Academic Purposes (2183) (C- and above)		WCS 210/ASC 200 Academic Writing, Science Communication, and Media Literacy (4881) (C- and above)	2 year UG SEDS, 2 year UG SSH, SoM		SEDS, SMG, SSH	
323	WCS 230	Say What you Mean: Clarity, Precision, and Style in Academic Writing	3	6	WCS 150/ASC 100 Advanced English for Academic Purposes (2183) (C- and above)			2 year UG SEDS, 2 year UG SSH, SoM		SEDS, SMG, SSH	
324	WCS 240	Writing for Digital Media	3	6	WCS 150/ASC 100 Advanced English for Academic Purposes (2183) (C- and above)			2 year UG SEDS, 2 year UG SSH, SoM		SEDS, SMG, SSH	
325	WCS 250	Advanced Rhetoric and Composition	3	6	WCS 150/ASC 100 Advanced English for Academic Purposes (2183) (C- and above)			2 year UG SEDS, 2 year UG SSH, SoM		SEDS, SMG, SSH	
326	WCS 390	Writing Fellows I – Composition and Collaboration in Theory and Practice	3	6	WCS 150/ASC 100 Advanced English for Academic Purposes (2183) (B and above) AND (WCS 220 Science Writing (5686) (B+ and above) OR WCS 230 Say What you Mean: Clarity, Precision, and Style in Academic Writing (3026) (B+ and above) OR WCS 250 Advanced Rhetoric and Composition (3027) (B+ and above))			2 year UG SEDS, 2 year UG SSH	3 year UG SEDS, 3 year UG SSH	SEDS, SMG, SSH, SoM	
327	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)			SEDS, SMG, SSH, SoM			
328	WCS 392	Writing Fellows III - Research & Practice in Writing & Peer Mentorship	3	6	WCS 391 Writing Fellows II – Practicum in Composition & Collaboration (3425) (B and above)			SEDS, SMG, SSH, SoM			
329	WCS 393	Internship: Undergraduate Writing Tutor I	3	6	WCS 392 Writing Fellows III - Research & Practice in Writing & Peer Mentorship (4472) (B and above)			Instructor's Permission Required. Registration through Add Course form only!			

330	WCS 394	Internship: Undergraduate Writing Tutor II	3	6	WCS 393 Internship: Undergraduate Writing Tutor I (7346) (P)			Instructor's Permission Required. Registration through Add Course form only!			
331	WCS 501	Science Communication	3	6				SEDS, SMG, SSH, SoM			
Communication and Composition, Languages, Literature and Linguistics											
332	WLL 235/WCS 260	Creative Writing: Introduction to Fiction Writing I	3	6	WCS 150/ASC 100 Advanced English for Academic Purposes (2183) (C- and above)			2 year UG SSH World Languages, Literatures and Cultures, 3 year UG SSH World Languages, Literatures and Cultures	SSH	SEDS, SoM	
333	WLL 363/WCS 363	Writing Speculative Fiction	3	6	WCS 260/WLL 235 Creative Writing: Introduction to Fiction Writing I (4000) (C and above)			World Languages, Literature and Culture	SSH		
334	WLL 462/WCS 462	Creative Nonfiction	3	6	WCS 260/WLL 235 Creative Writing: Introduction to Fiction Writing I (4000) (C and above)			World Languages, Literature and Culture			
335	WLL 562/WCS 562	Creative Nonfiction	4	8				SSH	GSB, GSE, GSPP		
History, Philosophy and Religious Studies											
336	HST 100	History of Kazakhstan	3	6				2 year UG SOM, 3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH	1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 1 year UG SSH	SEDS, SMG, SSH, SoM	
337	HST 104	Central Asian History II (1700 - 1991)	3	6				1 year UG SSH Undeclared, History	1 year UG SSH, 2 year UG SSH	SEDS, SMG, SSH, SoM	
338	HST 123	Introduction to the History of Science and Technology	3	6				1 year UG SSH Undeclared, History	1 year UG SSH, 2 year UG SSH	SEDS, SMG, SSH, SoM	
339	HST 124	Introduction to the History of Medicine	3	6				1 year UG SSH Undeclared, History	1 year UG SSH, 2 year UG SSH	SEDS, SMG, SSH, SoM	
340	HST 206	The Age of the Dragon Throne: Chinese Civilizations from the Mongols through the Qing	3	6				1 year UG SSH Undeclared, History	1 year UG SSH, 2 year UG SSH	SEDS, SMG, SSH, SoM	
341	HST 236	Eurasian revolutions, 1905-1949	3	6				1 year UG SSH Undeclared, History	1 year UG SSH, 2 year UG SSH	SEDS, SMG, SSH, SoM	

342	HST 433	Empire, Nation and Identity in Nineteenth-Century Eurasia	3	6	HST 100 History of Kazakhstan (172) (C- and above)			4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH, 5 year UG SEDS, 5 year UG SMG, 5 year UG SOM (pending graduation), 6 year UG SEDS, 6 year UG SMG (pending graduation), 6 year UG SOM (pending graduation), History	SSH	SEDS, SMG, SoM	
343	HST 499	History Capstone: Undergraduate Dissertation	4	8	HST 498 Directed Reading (1365) (C- and above)			Instructor's Permission Required. Registration through Add Course form only!			
344	HST 533	Empire, Nation and Identity in Nineteenth-Century Eurasia	4	8				Eurasian Studies	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
345	HST 733	Empire, Nation and Identity in Nineteenth-Century Eurasia	4	8				Eurasian Studies	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
346	PHIL 112	Classical Chinese and Indian Ethic	3	6				1 year UG SSH Undeclared	1 year UG SSH, 2 year UG SSH	SEDS, SMG, SSH, SoM	
347	PHIL 141	Critical Thinking	3	6				1 year UG SSH Undeclared	1 year UG SSH, 2 year UG SSH	SEDS, SMG, SSH, SoM	
348	PHIL 210	Ethics	3	6				3 year UG SOM Medical Sciences, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH	2 year UG SEDS, 2 year UG SMG, 2 year UG SSH, 3 year UG SEDS, 3 year UG SMG, 3 year UG SSH, Biological Sciences	SEDS, SMG, SSH, SoM	
349	PHIL 240	Formal Logic	3	6				4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH, 5 year UG SEDS, 5 year UG SMG, 5 year UG SOM (pending graduation), 6 year UG SEDS, 6 year UG SMG (pending graduation), 6 year UG SOM (pending graduation)	SSH	SEDS, SMG, SoM	

350	PHIL 314	Free Will and Moral Responsibility	3	6				4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH, 5 year UG SEDS, 5 year UG SMG, 5 year UG SOM (pending graduation), 6 year UG SEDS, 6 year UG SMG (pending graduation), 6 year UG SOM (pending graduation)	SSH	SEDS, SMG, SoM	
351	PHIL 323	Does Equality Matter?	3	6				4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH, 5 year UG SEDS, 5 year UG SMG, 5 year UG SOM (pending graduation), 6 year UG SEDS, 6 year UG SMG (pending graduation), 6 year UG SOM (pending graduation)	SSH	SEDS, SMG, SoM	
352	PHIL 362	Philosophy of Mind	3	6				4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH, 5 year UG SEDS, 5 year UG SMG, 5 year UG SOM (pending graduation), 6 year UG SEDS, 6 year UG SMG (pending graduation), 6 year UG SOM (pending graduation)	SSH	SEDS, SMG, SoM	
History, Philosophy and Religious Studies, History, Philosophy and Religious Studies											
353	HST 110/REL 110	Introduction to World Religions	3	6				1 year UG SSH Undeclared, History	1 year UG SSH, 2 year UG SSH	SEDS, SMG, SSH, SoM	
354	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			1 year UG SSH Undeclared, History	1 year UG SSH, 2 year UG SSH	SEDS, SMG, SSH, SoM	
355	HST 440/REL 440	Religions in the Soviet and Post-Soviet Eras	3	6	Subject "REL" BETWEEN 100 and 200 OR Subject "REL" BETWEEN 100 and 200 OR Subject "HST" BETWEEN 100 and 200			4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH, 5 year UG SEDS, 5 year UG SMG, 5 year UG SOM (pending graduation), 6 year UG SEDS, 6 year UG SMG (pending graduation), 6 year UG SOM (pending graduation), History	SSH	SEDS, SMG, SoM	

356	HST 540/REL 540	Religions in the Soviet and Post-Soviet Eras	4	8				Eurasian Studies	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM		
History, Philosophy and Religious Studies, Kazakh Language and Turkic Studies											
357	HST 272/TUR 272	Modern Turkey: from the Ottoman Empire to the Turkish Republic	3	6				1 year UG SSH Undeclared, History	1 year UG SSH, 2 year UG SSH	SEDS, SMG, SSH, SoM	
History, Philosophy and Religious Studies, Kazakh Language and Turkic Studies, Sociology and Anthropology											
358	HST 380/TUR 380/ANT 380	Linguistic and Cultural Diversity in Contemporary China: From Beijing to Xinjiang	3	6				Anthropology	3 year UG SSH, 4 year UG SSH	SEDS, SMG, SSH, SoM	
History, Philosophy and Religious Studies, Languages, Literature and Linguistics											
359	HST 245/WLL 245	Global History of Travel and Travel Literature	3	6				1 year UG SSH Undeclared, History	1 year UG SSH, 2 year UG SSH	SEDS, SMG, SSH, SoM	
360	HST 274/WLL 274	Texts and Contexts	3	6				History, World Languages, Literature and Culture		SSH	
History, Philosophy and Religious Studies, Sociology and Anthropology											
361	REL 435/ANT 435	The Archaeology of Ritual	3	6	ANT 140 World Prehistory (227) (C- and above) OR ANT 231 Frauds and Fallacies in Archaeology (1129) (C- and above) OR ANT 232 Life, Death and Economy: Archaeology of Central Asia (1461) (C- and above) OR ANT 240 Laboratory Methods in Archaeology (5669) (C- and above)			Anthropology	4 year UG SSH History, 4 year UG SSH Sociology	SEDS, SMG, SSH, SoM	
362	REL 535/ANT 535	The Archaeology of Ritual	4	8				Eurasian Studies	SSH		
Kazakh Language and Turkic Studies											
363	KAZ 001	Kazakh Language Placement Test	0	0				SEDS, SMG, SSH, SoM			
364	KAZ 201	Academic Kazakh I	3	6	KAZ 150 Basic Kazakh (1215) (C- and above) OR KLL "[B1.2] Intermediate"			1 year UG SEDS, 1 year UG SMG, 1 year UG SOM	3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH	SEDS, SMG, SSH, SoM	

365	KAZ 202	Academic Kazakh II	3	6	KAZ 201 Academic Kazakh I (4561) (C- and above) OR KLL "[B2.2] Upper-Interm."			1 year UG SEDS, 1 year UG SMG, 1 year UG SOM	3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH	SEDS, SMG, SSH, SoM	
366	KAZ 313	Kazakh for Business	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 5 year UG SEDS, 5 year UG SMG, 5 year UG SSH	3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH	SEDS, SMG, SSH, SoM	
367	KAZ 349	Kazakh Mythology	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 5 year UG SEDS, 5 year UG SMG, 5 year UG SSH	3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH	SEDS, SMG, SSH, SoM	
368	KAZ 351	Kazakh Short Stories	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 5 year UG SEDS, 5 year UG SMG, 5 year UG SSH	3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH	SEDS, SMG, SSH, SoM	
369	KAZ 353	Kazakh Poetry	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 5 year UG SEDS, 5 year UG SMG, 5 year UG SSH	3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH	SEDS, SMG, SSH, SoM	
370	KAZ 356	Kazakh Music History	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 5 year UG SEDS, 5 year UG SMG, 5 year UG SSH	3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH	SEDS, SMG, SSH, SoM	

371	KAZ 357	Literature of Alash	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 5 year UG SEDS, 5 year UG SMG, 5 year UG SSH	3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH	SEDS, SMG, SSH, SoM	
372	KAZ 359	Professional Kazakh for Medicine	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 5 year UG SEDS, 5 year UG SMG, 5 year UG SSH	3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH	SEDS, SMG, SSH, SoM	
373	KAZ 362	Creative Writing in Kazakh Language	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 5 year UG SEDS, 5 year UG SMG, 5 year UG SSH	3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH	SEDS, SMG, SSH, SoM	
374	KAZ 363	Language and Globalization	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 5 year UG SEDS, 5 year UG SMG, 5 year UG SSH	3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH	SEDS, SMG, SSH, SoM	
375	KAZ 364	Kazakh for Civil Service	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 5 year UG SEDS, 5 year UG SMG, 5 year UG SSH	3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH	SEDS, SMG, SSH, SoM	
376	KAZ 371	Contemporary Kazakh Literature	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 5 year UG SEDS, 5 year UG SMG, 5 year UG SSH	3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH	SEDS, SMG, SSH, SoM	

377	KAZ 372	Language and ethnicity	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 5 year UG SEDS, 5 year UG SMG, 5 year UG SSH	3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH	SEDS, SMG, SSH, SoM	
378	KAZ 373	Kazakh Terminology	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 5 year UG SEDS, 5 year UG SMG, 5 year UG SSH	3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH	SEDS, SMG, SSH, SoM	
379	KAZ 374	Kazakh Diplomacy	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			Political Science and International Relations	3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH	SEDS, SMG, SSH, SoM	
380	KAZ 376	Language and Culture	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 5 year UG SEDS, 5 year UG SMG, 5 year UG SSH	3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH	SEDS, SMG, SSH, SoM	
381	KAZ 377	Intercultural Communication through Film	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 5 year UG SEDS, 5 year UG SMG, 5 year UG SSH	3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH	SEDS, SMG, SSH, SoM	
382	KAZ 378	Kazakh for Social Science	3	6	KAZ 202 Academic Kazakh II (4562) (C- and above) OR KLL "[C1.1] Advanced"			1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 5 year UG SEDS, 5 year UG SMG, 5 year UG SSH	3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH	SEDS, SMG, SSH, SoM	

383	KAZ 410	Kazakh literature of the XV-XIX centuries	3	6	Subject "KAZ" BETWEEN 300 and 399 OR Subject "KAZ" BETWEEN 300 and 399			1 year UG SEDS, 1 year UG SMG, 1 year UG SOM, 5 year UG SEDS, 5 year UG SMG, 5 year UG SSH	3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH	SEDS, SMG, SSH, SoM	
384	KFL 102	Elementary Kazakh as a Foreign Language II	4	8	KFL 101 Elementary Kazakh as a Foreign Language I (4889) (C- and above)			Instructor's Permission Required. Registration through Add Course form only!			
385	TUR 230	Literatures of Central Asia	3	6				3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH		SEDS, SMG, SSH, SoM	
386	TUR 231	Istanbul in Literature and Culture	3	6				3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH		SEDS, SMG, SSH, SoM	
387	TUR 235	Turkish Poetry in Translation	3	6				3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH		SEDS, SMG, SSH, SoM	
388	TUR 412	Advanced Turkish in Media and Politics	3	6				3 year UG SEDS, 3 year UG SMG, 3 year UG SOM, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SOM, 4 year UG SSH		SEDS, SMG, SSH, SoM	
389	TUR 775	Doctoral Topic in Turkic Studies	4	8							
Languages, Literature and Linguistics											
390	CHN 101	Beginning Mandarin I	4	8				1 year UG SSH Undeclared, 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	
391	CHN 201	Intermediate Mandarin I	4	8	CHN 102 Beginning Mandarin II (1844) (C and above)			SSH	SEDS, SMG, SoM		

392	DUT 101	Beginning Dutch I	4	8				1 year UG SSH Undeclared, 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	
393	FRE 101	Beginning French I	4	8				SSH	SEDS, SMG, SoM		
394	FRE 201	Intermediate French I	4	8	FRE 102 Beginning French II (454) (C- and above)			1 year UG SSH Undeclared, 2 year UG SSH World Languages, Literatures and Cultures	3 year UG SSH World Languages, Literatures and Cultures, SSH	2 year UG SSH, 3 year UG SSH, SEDS, SMG, SoM	
395	FRE 312	Advanced Expression	3	6	FRE 201 Intermediate French I (667) (C- and above)			SSH	SEDS, SMG, SoM		
396	GER 101	Beginning German	4	8				1 year UG SSH Undeclared, 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	
397	GER 201	Intermediate German I	4	8	GER 102 Beginning German II (3335) (C- and above)				SSH	SEDS, SMG, SoM	
398	GER 202	Intermediate German II	4	8	GER 201 Intermediate German I (3722) (C- and above)			SSH	SEDS, SMG, SoM		
399	KOR 102	Beginning Korean II	4	8	KOR 101 Beginning Korean I (4672) (C- and above)			SSH	SEDS, SMG, SoM		
400	KOR 202	Intermediate Korean II	4	8	KOR 201 Intermediate Korean I (5059) (C- and above)			SSH	SEDS, SMG, SoM		
401	LING 130	Introduction to Language and Communication	3	6				2 year UG SSH World Languages, Literatures and Cultures, Undeclared SEDS, Undeclared SSH	World Languages, Literature and Culture	SEDS, SMG, SSH, SoM	
402	LING 131	Introduction to Linguistics	3	6				1 year UG SSH Undeclared, 2 year UG SSH World Languages, Literatures and Cultures	World Languages, Literature and Culture	SEDS, SMG, SSH, SoM	
403	LING 140	Language Variation and Change: the Story of English	3	6				1 year UG SSH Undeclared, 2 year UG SSH World Languages, Literatures and Cultures	World Languages, Literature and Culture	SEDS, SMG, SSH, SoM	
404	LING 270	Languages of Eurasia	3	6				2 year UG SSH World Languages, Literatures and Cultures	World Languages, Literature and Culture	SEDS, SMG, SSH, SoM	

405	LING 271	Introduction to Cognitive Linguistics	3	6	LING 131 Introduction to Linguistics (1394) (C and above)			2 year UG SSH World Languages, Literatures and Cultures	World Languages, Literature and Culture	SEDS, SMG, SSH, SoM	
406	LING 273	Survey of Research Methods in Linguistics	3	6	LING 131 Introduction to Linguistics (1394) (C- and above)			World Languages, Literature and Culture	SSH	SEDS, SMG, SoM	
407	LING 278	Sounds of the World’s Languages	3	6				World Languages, Literature and Culture	SSH	SEDS, SMG, SoM	
408	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)			World Languages, Literature and Culture	SSH	SEDS, SMG, SoM	
409	LING 389	Discourse and Grammar	3	6	LING 131 Introduction to Linguistics (1394) (C and above)			World Languages, Literature and Culture	SSH	SEDS, SMG, SoM	
410	LING 461	Experimental semantics	3	6	LING 130 Introduction to Language and Communication (4014) (C- and above) OR LING 131 Introduction to Linguistics (1394) (C- and above)			World Languages, Literature and Culture	SSH	SEDS, SMG, SoM	
411	LING 491	Advanced Independent Study	3	6							
412	PER 102	Beginning Persian II	4	8	PER 101 Beginning Persian I (4474) (C- and above)			SSH	SEDS, SMG, SoM		
413	RFL 103	Intensive Beginning Russian	4	8				Instructor's Permission Required. Registration through Add Course form only!			
414	RFL 156	Kazakhstan - history, culture, traditions, society, modernity	6	3				Instructor's Permission Required. Registration through Add Course form only!			
415	RFL 203	Intensive Intermediate Russian	4	8				Instructor's Permission Required. Registration through Add Course form only!			
416	RFL 211	East in Soviet Russian-language culture: origin and fate	3	6				Instructor's Permission Required. Registration through Add Course form only!			
417	RFL 415	Social Problems and Issues of Eurasia	6	3				Instructor's Permission Required. Registration through Add Course form only!			
418	RFL 469	International relations of Eurasia	3	6				Instructor's Permission Required. Registration through Add Course form only!			

419	SPA 102	Beginning Spanish II	4	8	SPA 101 Beginning Spanish I (685) (C- and above)			SSH	SEDS, SMG, SoM		
420	SPA 202	Intermediate Spanish II	4	8	SPA 201 Intermediate Spanish I (1475) (C- and above)			SSH	SEDS, SMG, SoM		
421	WLL 110	Introduction to Literary Studies	3	6				1 year UG SSH Undeclared, 2 year UG SSH World Languages, Literatures and Cultures, Undeclared SEDS	World Languages, Literature and Culture	SEDS, SMG, SSH, SoM	
422	WLL 211	World Literature II: from the 18th to the 20th century	3	6				2 year UG SSH World Languages, Literatures and Cultures	World Languages, Literature and Culture	SEDS, SMG, SSH, SoM	
423	WLL 218	Renaissance in Italy and Beyond	3	6				2 year UG SSH World Languages, Literatures and Cultures	World Languages, Literature and Culture	SEDS, SMG, SSH, SoM	
424	WLL 248	Survey of Soviet Literature and Culture	3	6				2 year UG SSH World Languages, Literatures and Cultures	World Languages, Literature and Culture	SEDS, SMG, SSH, SoM	
425	WLL 340	The image of the East in Russophone literature and culture: genesis and meaning	3	6				World Languages, Literature and Culture	SSH	SEDS, SMG, SoM	
426	WLL 400	Research Assistance in Linguistics and Literature	1	2				Instructor's Permission Required. Registration through Add Course form only!			
427	WLL 440	Oral Epic in Central Asia	3	6	Subject "WLL" BETWEEN 100 and 499			World Languages, Literature and Culture	SSH	SEDS, SMG, SoM	
428	WLL 499	Languages, Linguistics, and Literatures Capstone II	3	6	WLL 498 Languages, Linguistics, and Literatures Capstone I (3048) (C- and above)			SSH	GSB, GSE, GSPP		
429	WLL 540	Oral Epic in Central Asia	4	8				SSH	GSB, GSE, GSPP		
430	WLL 740	Oral Epic in Central Asian	4	8			WLL 440 Oral Epic in Central Asia (4016) (C- and above) OR WLL 540 Oral Epic in Central Asia (4017) (C- and above)	Eurasian Studies	SSH	SEDS, SMG, SoM	
Languages, Literature and Linguistics, Languages, Literature and Linguistics											
431	SPA 351/WLL 351	Literature and Film of the Postcolonial World	3	6	Subject "WLL" BETWEEN 200 and 299			World Languages, Literature and Culture	SSH	SEDS, SMG, SoM	
Languages, Literature and Linguistics, Sociology and Anthropology											

432	WLL 271/ANT 275	Language and Society	3	6				Anthropology, Sociology	SEDS, SMG, SSH, SoM		
Physics											
433	PHYS 161	Physics I for Scientists and Engineers with Laboratory	4	8		MATH 161 Calculus I (118) (C and above)	PHYS 171 Physics I for Physics Majors with Laboratory (1401) (C- and above)	1 year UG SEDS, 1 year UG SMG, 1 year UG SSH Biological Sciences, 1 year UG SSH Chemistry, 1 year UG SSH Mathematics, 1 year UG SSH Physics	SEDS, SMG, SSH, SoM		
434	PHYS 162	Physics II for Scientists and Engineers with Laboratory	4	8	PHYS 161 Physics I for Scientists and Engineers with Laboratory (116) (C- and above) OR PHYS 151 Introductory Physics I with Lab (649) (C- and above)		PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above)	1 year UG SEDS, 1 year UG SMG, 1 year UG SSH Mathematics, 1 year UG SSH Physics	SEDS, SMG, SSH, SoM		
435	PHYS 202	Introductory Astrophysics	3	6	PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above)			Physics		SEDS, SMG, SSH, SoM	
436	PHYS 222	Classical Mechanics II	3	6	PHYS 221 Classical Mechanics I (652) (C- and above)	MATH 274 Introduction to Differential Equations (484) (D and above)		Physics		SEDS, SMG, SSH, SoM	
437	PHYS 270	Computational Physics with Laboratory	3	6	(CSCI 150 Fundamentals of Programming (1501) (C- and above) OR CSCI 151 Programming for Scientists and Engineers (192) (C- and above) OR CSCI 115 Programming Fundamentals (5257) (C- and above)) AND MATH 162 Calculus II (170) (C- and above)	MATH 273 Linear Algebra with Applications (84) (D and above)		Physics		SEDS, SMG, SSH, SoM	

438	PHYS 280	Thermodynamics and Statistical Physics	3	6	MATH 263 Calculus III (81) (C- and above) AND (PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above) OR PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above))			Physics		SEDS, SMG, SSH, SoM	
439	PHYS 362	Classical Electrodynamics II	3	6	PHYS 361 Classical Electrodynamics I (651) (C- and above)			Physics			
440	PHYS 370	Optics with Laboratory	4	8	PHYS 361 Classical Electrodynamics I (651) (C- and above)			Physics			
441	PHYS 451	Quantum Mechanics I	3	6	PHYS 221 Classical Mechanics I (652) (C- and above) AND PHYS 361 Classical Electrodynamics I (651) (C- and above)			Physics			
442	PHYS 462	Field Theories in Physics	3	6	MATH 162 Calculus II (170) (C- and above) AND PHYS 221 Classical Mechanics I (652) (C- and above)	PHYS 451 Quantum Mechanics I (1415) (C- and above)		Physics			
443	PHYS 470	Introduction to Optoelectronics	4	8	PHYS 261 Modern Physics with laboratory (125) (C- and above) OR PHYS 473 Introduction to Solid State Physics (1423) (C- and above) OR CHEM 331 Physical Chemistry I (634) (C- and above) OR MAE 301 Engineering Thermodynamics (5927) (C- and above) OR CHME 201 Chemical Engineering Thermodynamics (5007) (C- and above) OR ELCE 204 Solid State Devices (5508) (C- and above)			Physics			

444	PHYS 483	Statistical Mechanics	3	6	PHYS 280 Thermodynamics and Statistical Physics (1179) (C- and above)			Physics			
445	PHYS 491	Directed Study of Advanced Physics Topics	3	6				Instructor's Permission Required. Registration through Add Course form only!			
446	PHYS 499	Honors Thesis	3	6				Instructor's Permission Required. Registration through Add Course form only!			
447	PHYS 510	Quantum Mechanics	3	6				Physics			
448	PHYS 511	Computational Modeling and Simulation	3	6				Physics			
449	PHYS 520	Statistical Physics	3	6				Physics			
450	PHYS 570	Introduction to Optoelectronics	4	8				Physics			
451	PHYS 700-0	Thesis Research	0	0				Physics			
452	PHYS 701	Current Research Literature	3	6				Physics			
453	PHYS 710	Quantum Mechanics	4	8				Physics			
454	PHYS 711	Computational Modeling and Simulation	4	8				Physics			
455	PHYS 720	Statistical Physics	4	8				Physics			
Political Science and International Relations											
456	PLS 101	Introduction to Political Science	3	6				5 year UG SEDS, 5 year UG SSH	Undeclared SEDS, Undeclared SSH	SEDS, SMG, SSH, SoM	
457	PLS 120	Introduction to Political Theory	3	6				5 year UG SEDS, 5 year UG SSH, Political Science and International Relations	Undeclared SEDS, Undeclared SSH	SEDS, SMG, SSH, SoM	
458	PLS 140	Introduction to Comparative Politics	3	6				5 year UG SEDS, 5 year UG SSH, Political Science and International Relations	Undeclared SEDS, Undeclared SSH	SEDS, SMG, SSH, SoM	
459	PLS 150	Introduction to International Relations	3	6				5 year UG SEDS, 5 year UG SSH, Political Science and International Relations	Undeclared SEDS, Undeclared SSH	SEDS, SMG, SSH, SoM	

460	PLS 210	Political Science Research Methods	3	6				5 year UG SSH, Political Science and International Relations	SSH		
461	PLS 211	Quantitative Methods	3	6			ECON 211 Economic Statistics (2280) (C- and above)	5 year UG SSH, Political Science and International Relations	SSH		
462	PLS 312	Public Opinion and Elections	3	6	PLS 211 Quantitative Methods (221) (C- and above) OR ECON 211 Economic Statistics (2280) (C- and above)			5 year UG SSH, Political Science and International Relations	SSH		
463	PLS 341	Politics of Development	3	6	PLS 210 Political Science Research Methods (129) (C- and above)			5 year UG SSH, Political Science and International Relations	SSH		
464	PLS 345	Revolutions, Social Movements, and Contentious Politics	3	6	PLS 210 Political Science Research Methods (129) (C- and above)			5 year UG SSH, Political Science and International Relations	SSH		
465	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 SSH, Political Science and International Relations	SSH		
466	PLS 355	European Union: Institutions and Policies	3	6	PLS 210 Political Science Research Methods (129) (C- and above)			5 year UG SSH, Political Science and International Relations	SSH		
467	PLS 356	International Politics of the Korean Peninsula	3	6	PLS 210 Political Science Research Methods (129) (C- and above) AND PLS 150 Introduction to International Relations (511) (C- and above)			5 year UG SSH, Political Science and International Relations	SSH		
468	PLS 361	Memory Politics in East Asia	3	6				5 year UG SSH, Political Science and International Relations	SSH		
469	PLS 362	Science, Technology and International Affairs	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 SSH, Political Science and International Relations	SSH		

470	PLS 363	Visual Politics	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 SSH, Political Science and International Relations	SSH		
471	PLS 392	Politics of China	3	6	PLS 210 Political Science Research Methods (129) (C- and above)			5 year UG SSH, Political Science and International Relations	SSH		
472	PLS 395	Independent Study	3	6	PLS 210 Political Science Research Methods (129) (C- and above) AND PLS 211 Quantitative Methods (221) (C- and above)			Instructor's Permission Required. Registration through Add Course form only!			
473	PLS 412	Scientific Research in International Relations	3	6	PLS 150 Introduction to International Relations (511) (C- and above) AND PLS 210 Political Science Research Methods (129) (C- and above) AND PLS 211 Quantitative Methods (221) (C- and above)			5 year UG SSH, Political Science and International Relations	SSH		
474	PLS 424	Issues in the Philosophy of Social Science	3	6	PLS 120 Introduction to Political Theory (512) (C- and above) AND PLS 210 Political Science Research Methods (129) (C- and above)			5 year UG SSH, Political Science and International Relations	SSH		
475	PLS 435	Political Polarization in Democracies	3	6	PLS 140 Introduction to Comparative Politics (223) (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 SSH, Political Science and International Relations	SSH		
476	PLS 436	State capacity and state-building	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 SSH, Political Science and International Relations	SSH		

477	PLS 441	Advanced Topics in Comparative Politics	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 SSH, Political Science and International Relations	SSH		
478	PLS 457	International Security and Conflict	3	6	PLS 150 Introduction to International Relations (511) (C- and above) AND PLS 210 Political Science Research Methods (129) (C- and above) AND PLS 211 Quantitative Methods (221) (C- and above)			5 year UG SSH, Political Science and International Relations	SSH		
479	PLS 460	Environmental Politics	3	6				5 year UG SSH, Political Science and International Relations	SSH		
480	PLS 468	International Relations of Asia	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 SSH, Political Science and International Relations	SSH		
481	PLS 469	International Relations of Eurasia	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 SSH, Political Science and International Relations	SSH		
482	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!			
483	PLS 511	Advanced Research I	4	8				Political Science and International Relations	GSB, GSE, GSPP, SSH		
484	PLS 512	Scientific Research in International Relations	4	8				Political Science and International Relations	GSB, GSE, GSPP, SSH		
485	PLS 524	Issues in the Philosophy of Social Science	4	8				Instructor's Permission Required. Registration through Add Course form only!			

486	PLS 535	Political Polarization in Democracies	4	8	PLS 510 Quantitative Research Methods (1946) (C and above) AND PLS 540 Core Seminar in Comparative Politics (1374) (C and above)			Political Science and International Relations	GSB, GSE, GSPP, SSH		
487	PLS 536	State capacity and state-building	4	8				Political Science and International Relations	GSB, GSE, GSPP, SSH		
488	PLS 557	International Security and Conflict	4	8				Political Science and International Relations	GSB, GSE, GSPP, SSH		
489	PLS 560	Environmental Politics	4	8				Political Science and International Relations	GSB, GSE, GSPP, SSH		
490	PLS 568	International Relations of Asia	4	8				Political Science and International Relations	GSB, GSE, GSPP, SSH		
491	PLS 596	Thesis Preparation	2	4	Subject "PLS" BETWEEN 500 and 599			Political Science and International Relations			
492	PLS 599	MA Thesis II	10	20				Political Science and International Relations			
SSH											
493	SSH 300	School of Sciences and Humanities Internship	3	6				Instructor's Permission Required. Registration through Add Course form only!			
494	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											
495	ANT 110	Introduction to Sociocultural Anthropology	3	6				Anthropology, Undeclared SEDS, Undeclared SSH	SEDS, SMG, SSH, SoM		
496	ANT 160	Introduction to Biological Anthropology	3	6			ANT 361 Human Evolution: Bones, Stones and Genomes (160) (C- and above)	Anthropology, Undeclared SEDS, Undeclared SSH	Biological Sciences, Medical Sciences	SEDS, SMG, SSH, SoM	
497	ANT 232	Life, Death and Economy: Archaeology of Central Asia	3	6				Anthropology	2 year UG SSH Undeclared, 3 year UG SSH Undeclared	SEDS, SMG, SSH, SoM	
498	ANT 270	Anthropology of Warfare	3	6				Anthropology	2 year UG SSH Undeclared, 3 year UG SSH Undeclared	SEDS, SMG, SSH, SoM	

499	ANT 340	Method and Theory in Archaeology	3	6	(Subject "ANT" BETWEEN 100 and 199 AND Subject "ANT" BETWEEN 200 and 299) OR (Subject "ANT" BETWEEN 100 and 199 AND Subject "ANT" BETWEEN 200 and 299)			Anthropology	3 year UG SSH, 4 year UG SSH	SEDS, SMG, SSH, SoM	
500	ANT 361	Human Evolution: Bones, Stones and Genomes	3	6				Anthropology	Biological Sciences, Sociology	SEDS, SMG, SSH, SoM	
501	ANT 400	Research Assistance in Anthropology	1	2				Instructor's Permission Required. Registration through Add Course form only!			
502	ANT 401	Research Assistance in Anthropology	1	2				Instructor's Permission Required. Registration through Add Course form only!			
503	ANT 475	Digital Ethnographies	3	6	ANT 110 Introduction to Sociocultural Anthropology (501) (C- and above) OR PLS 210 Political Science Research Methods (129) (C- and above) OR SOC 201 Social Science Research Methods (1341) (C- and above) OR ANT 214/SOC 214 Qualitative Methods (1033) (C- and above)			Anthropology	4 year UG SSH Sociology	SEDS, SMG, SSH, SoM	
504	ANT 499	Capstone Seminar II	3	6	ANT 498 Capstone Seminar I (2965) (C- and above)			Instructor's Permission Required. Registration through Add Course form only!			
505	SOC 101	Introduction to Sociology	3	6				Nursing, Sociology, Undeclared SSH	SSH	SEDS, SMG, SoM	
506	SOC 201	Social Science Research Methods	3	6				3 year UG SSH Anthropology, 3 year UG SSH Sociology, 4 year UG SSH Anthropology, 4 year UG SSH Sociology, 5 year UG SSH Sociology	Anthropology, Sociology	SEDS, SMG, SSH, SoM	

507	SOC 203	Quantitative Methods in Sociology	3	6				3 year UG SSH Anthropology, 3 year UG SSH Sociology, 4 year UG SSH Anthropology, 4 year UG SSH Sociology, 5 year UG SSH Sociology	Anthropology, Sociology	SEDS, SMG, SSH, SoM	
508	SOC 210	Gender and Society	3	6				Sociology	Anthropology	SEDS, SMG, SSH, SoM	
509	SOC 220	Science, Technology, and Society	3	6				Sociology	Anthropology	SEDS, SMG, SSH, SoM	
510	SOC 221	International Migration	3	6				Sociology	Anthropology	SEDS, SMG, SSH, SoM	
511	SOC 223	Social Movements: How People Make Change	3	6				3 year UG SSH Anthropology, 3 year UG SSH Sociology, 4 year UG SSH Anthropology, 4 year UG SSH Sociology, 5 year UG SSH Sociology	Anthropology, Sociology	SEDS, SMG, SSH, SoM	
512	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)			4 year UG SSH Sociology, 5 year UG SSH Sociology	3 year UG SSH Sociology	Anthropology, Sociology	
513	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)			3 year UG SSH Anthropology, 3 year UG SSH Sociology, 4 year UG SSH Anthropology, 4 year UG SSH Sociology, 5 year UG SSH Sociology	Anthropology, Sociology	SEDS, SMG, SSH, SoM	

514	SOC 317	Economy and Society	3	6	SOC 101 Introduction to Sociology (508) (C- and above) OR Subject "SOC" BETWEEN 200 and 299 OR Subject "SOC" BETWEEN 200 and 299 OR ECON 102 Introduction to Macroeconomics (503) (C- and above) OR PLS 120 Introduction to Political Theory (512) (C- and above) OR PLS 150 Introduction to International Relations (511) (C- and above)			Sociology	Anthropology	SEDS, SMG, SSH, SoM	
515	SOC 399	Special Topics in Sociology	3	6				4 year UG SSH Sociology, 5 year UG SSH Sociology	Anthropology, Sociology	SEDS, SMG, SSH, SoM	
516	SOC 400	Research Assistance in Sociology	1	2				Instructor's Permission Required. Registration through Add Course form only!			
517	SOC 402	Research Assistance in Sociology	1	2				Instructor's Permission Required. Registration through Add Course form only!			
518	SOC 415	Social Problems and Issues in Eurasia	3	6				4 year UG SSH Sociology, 5 year UG SSH Sociology	3 year UG SSH Sociology	Anthropology, Sociology	
519	SOC 416	Sociology of Punishment	3	6	SOC 301 Classical Sociological Theory (683) (C- and above)			3 year UG SSH Anthropology, 3 year UG SSH Sociology, 4 year UG SSH Anthropology, 4 year UG SSH Sociology, 5 year UG SSH Sociology	Anthropology, Sociology	SEDS, SMG, SSH, SoM	
520	SOC 420	Applied Policy Analysis: Tools and Perspectives	3	6	SOC 101 Introduction to Sociology (508) (C and above)			Anthropology, Sociology			
521	SOC 499	Capstone Seminar II	3	6	SOC 498 Capstone Seminar Part I (3043) (C- and above)			Instructor's Permission Required. Registration through Add Course form only!			
522	SOC 510	Social Inequality	4	8				Eurasian Studies			
523	SOC 515	Social Problems and Issues in Eurasia	4	8				Eurasian Studies			
524	SOC 710	Social Inequality	4	8				Eurasian Studies			
Sociology and Anthropology, Sociology and Anthropology											

525	ANT 214/SOC 214	Qualitative Methods	3	6				3 year UG SSH Anthropology, 3 year UG SSH Sociology, 4 year UG SSH Anthropology, 4 year UG SSH Sociology, 5 year UG SSH Sociology	Anthropology, Sociology	SEDS, SMG, SSH, SoM	
526	ANT 222/SOC 222	Approaches to Global Development	3	6				Anthropology, Sociology	SEDS, SMG, SSH, SoM		
527	ANT 285/SOC 212	Food and Society	3	6				Anthropology, Sociology	SEDS, SMG, SSH, SoM		
SEDS											
Civil and Environmental Engineering											
528	DCEE 700	Thesis Research	89	178							
Computer Science											
529	SEDS 502	Teaching Practicum	3	6				Computer Science, Data Science, Robotics			
Electrical and Computer Engineering											
530	DELCE 700	Thesis Research	89	178							
SoE											
Chemical and Materials Engineering											
531	CHME 202	Fluid Mechanics	3	6				2 year UG SEDS Chemical and Materials Engineering	3 year UG SEDS Chemical and Materials Engineering, 4 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS Chemical Engineering, 5 year UG SEDS Chemical and Materials Engineering		

532	CHME 203	Organic and Polymer Chemistry	3	6	CHME 222 Inorganic and Analytical Chemistry (5039) (D and above)			2 year UG SEDS Chemical and Materials Engineering	3 year UG SEDS Chemical and Materials Engineering, 4 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS Chemical Engineering, 5 year UG SEDS Chemical and Materials Engineering		
533	CHME 303	Separation Processes	3	6	CHME 200 Basic Principles and Calculations in Chemical Engineering (5038) (D and above) AND CHME 201 Chemical Engineering Thermodynamics (5007) (D and above)			3 year UG SEDS Chemical and Materials Engineering	4 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS Chemical Engineering, 5 year UG SEDS Chemical and Materials Engineering		
534	CHME 304	Chemical Reaction Engineering	3	6	CHME 200 Basic Principles and Calculations in Chemical Engineering (5038) (D and above)			3 year UG SEDS Chemical and Materials Engineering	4 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS Chemical Engineering, 5 year UG SEDS Chemical and Materials Engineering		
535	CHME 305L	Chemical Engineering Laboratory I	3	6	CHME 201 Chemical Engineering Thermodynamics (5007) (D and above) AND CHME 202 Fluid Mechanics (5543) (D and above) AND CHME 300 Heat and Mass Transfer (5952) (D and above)			3 year UG SEDS Chemical and Materials Engineering	4 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS Chemical Engineering, 5 year UG SEDS Chemical and Materials Engineering		

536	CHME 352	Research Practice	3	6				3 year UG SEDS Chemical and Materials Engineering	4 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS Chemical Engineering, 5 year UG SEDS Chemical and Materials Engineering		
537	CHME 402	Materials Chemistry	3	6				4 year UG SEDS Chemical and Materials Engineering	5 year UG SEDS Chemical and Materials Engineering		
538	CHME 403	Chemical Process Control and Safety	3	6				4 year UG SEDS Chemical and Materials Engineering	5 year UG SEDS Chemical and Materials Engineering		
539	CHME 421	Tissue Engineering	3	6				4 year UG SEDS Chemical and Materials Engineering	5 year UG SEDS Chemical and Materials Engineering	3 year UG SEDS Chemical and Materials Engineering	
540	CHME 454	Transport Phenomena and Operations	3	6				4 year UG SEDS Chemical and Materials Engineering	5 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS Mechanical and Aerospace Engineering		
541	CHME 461	Powder technology	3	6				4 year UG SEDS Chemical and Materials Engineering	5 year UG SEDS Chemical and Materials Engineering	3 year UG SEDS Chemical and Materials Engineering	
542	DCHME 700-0	Thesis Research	0	0				Chemical Engineering			
543	DCHME 701	Current Research Literature	4	8				Chemical Engineering			
544	DCHME 752	Polymer Melt Fluid Mechanics and Processing	4	8				Chemical Engineering			
545	DCHME 757	Advanced Chemical Engineering Thermodynamics	4	8				Chemical Engineering			
546	DCHME 763	Advanced Heat and Mass Transfer	4	8				Chemical Engineering			
547	MBME 600	Research Seminar	3	6				Biomedical Engineering	SEDS		
548	MBME 602	Master Thesis II	12	24	MBME 601 Master Thesis I (5953) (P)			Biomedical Engineering	SEDS		

549	MBME 607	Advanced Tissue Engineering	3	6				Biomedical Engineering	SEDS		
550	MBME 700	Strategies for Controlled Topical Delivery of Drugs	3	6				Biomedical Engineering	SEDS		
551	MBME 708	Biomedical Imaging	3	6				Biomedical Engineering	SEDS		
552	MCHME 600	Research Seminar	3	6				Chemical and Materials Engineering	SEDS		
553	MCHME 602	MSc Thesis II	12	24				Chemical and Materials Engineering	SEDS		
554	MCHME 606	Advanced Heat and Mass Transfer	3	6				Chemical and Materials Engineering	SEDS		
555	MCHME 701	Advanced Chemical Thermodynamics	3	6				Chemical and Materials Engineering	SEDS		
556	MCHME 707	Polymer Melt Fluid Mechanics and Processing	3	6				Chemical and Materials Engineering	SEDS		
557	MCHME 713	Advanced Energy Materials and their Applications	3	6				Chemical and Materials Engineering	SEDS		
Civil Engineering											
558	MSC 600	Research Methods and Ethics	3	6				1 year Gr SEDS Biomedical Engineering, 1 year Gr SEDS Chemical and Materials Engineering, 1 year Gr SEDS Civil and Environmental Engineering, 1 year Gr SEDS Electrical and Computer Engineering, 1 year Gr SEDS Mechanical and Aerospace Engineering	2 year Gr SEDS Biomedical Engineering, 2 year Gr SEDS Chemical and Materials Engineering, 2 year Gr SEDS Civil and Environmental Engineering, 2 year Gr SEDS Electrical and Computer Engineering, 2 year Gr SEDS Mechanical and Aerospace Engineering	SEDS, SMG	
Civil Engineering, Communication and Composition											
559	MSC 601	Technical Communication	3	6				SEDS, SMG			
Civil and Environmental Engineering											
560	CEE 202	Environmental Engineering	3	6	CEE 201 Environmental Chemistry (4999) (D and above)			2 year UG SEDS Civil and Environmental Engineering	3 year UG SEDS Civil and Environmental Engineering	4 year UG SEDS Civil and Environmental Engineering	

561	CEE 203	Structural Analysis	3	6	MAE 200 Structural Mechanics I (5010) (D and above) OR CEE 200 Structural Mechanics I (5005) (D and above)			2 year UG SEDS Civil and Environmental Engineering	3 year UG SEDS Civil and Environmental Engineering	4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS Civil and Environmental Engineering	
562	CEE 301	Structural Design – Steel	3	6	CEE 203 Structural Analysis (5500) (D and above)			3 year UG SEDS Civil and Environmental Engineering	4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS Civil and Environmental Engineering		
563	CEE 303	Geotechnical Design	3	6	CEE 302 Geotechnical Engineering (5896) (D and above)			3 year UG SEDS Civil and Environmental Engineering	4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS Civil and Environmental Engineering		
564	CEE 305	Hydraulics and Hydrology	3	6	MAE 300 Fluid Mechanics I (5926) (D and above) OR EME 275 Fluid Mechanics I (1988) (D and above) OR CEE 304 Fluid Mechanics (6348) (D and above)			3 year UG SEDS Civil and Environmental Engineering	4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS Civil and Environmental Engineering		
565	CEE 400	Transportation Engineering	3	6	CEE 204 Civil Engineering CAD and Surveying (5002) (D and above)			4 year UG SEDS Civil and Environmental Engineering	5 year UG SEDS Civil and Environmental Engineering		
566	CEE 454	Foundation Engineering	3	6	ECE 306 Geotechnical Design (1043) (D and above) OR CEE 303 Geotechnical Design (6158) (D and above)			4 year UG SEDS Civil and Environmental Engineering	5 year UG SEDS Civil and Environmental Engineering		
567	CEE 455	Solid and Hazardous Waste Management	3	6	CEE 202 Environmental Engineering (5499) (D and above)			3 year UG SEDS Civil and Environmental Engineering	4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS Civil and Environmental Engineering		

568	CEE 457	Air Quality Management	3	6				4 year UG SEDS Civil and Environmental Engineering	5 year UG SEDS Civil and Environmental Engineering		
569	CEE 458	Modern Information Technology in Construction	3	6	CEE 204 Civil Engineering CAD and Surveying (5002) (D and above)			3 year UG SEDS Civil and Environmental Engineering	4 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS Civil and Environmental Engineering		
570	CEE 463	Individual Research Project in Civil & Environmental Engineering 1	3	6				4 year UG SEDS Civil and Environmental Engineering			
571	CEE 466	Introduction to Finite Element Methods	3	6	CEE 200 Structural Mechanics I (5005) (D and above)			4 year UG SEDS Civil and Environmental Engineering	5 year UG SEDS Civil and Environmental Engineering		
572	CEE 468	Structural Design – Concrete II	3	6	CEE 300 Structural Design – Concrete (5895) (C- and above)			4 year UG SEDS Civil and Environmental Engineering	5 year UG SEDS Civil and Environmental Engineering		
573	DCEE 700-0	Thesis Research	0	0				Civil Engineering			
574	DCEE 701	Current Research Literature	4	8				2 year PhD SEDS Civil Engineering	Civil Engineering		
575	DCEE 755	Contaminated Site Management and Soil Treatment Technologies	4	8				1 year PhD SEDS Civil Engineering	2 year PhD SEDS Civil Engineering		
576	DCEE 759	Geotechnical Earthquake Engineering	4	8							
577	DCEE 766	Advanced Pavement Design, Analysis, and Rehabilitation	4	8							
578	DCEE 774	Computational Modeling and Instrumentation in Geotechnical Engineering	4	8				1 year PhD SEDS Civil Engineering	2 year PhD SEDS Civil Engineering		
579	EMEM 509	Systems Engineering	3	6				Engineering Management			
580	EMEM 510	Managerial Accounting	2	4				Engineering Management			
581	EMEM 511	Business Strategy	2	4				Engineering Management			
582	EMEM 513	Entrepreneurship	2	4				Engineering Management			
583	EMEM 514	Finance	2	4				Engineering Management			

584	EMEM 516	Management of Organizations	2	4				Engineering Management			
585	EMEM 517	Marketing	2	4				Engineering Management			
586	EMEM 542	Production and Service Operations Management	3	6				Engineering Management			
587	EMEM 545	Business Communication	2	4				Engineering Management			
588	EMEM 548	Understanding and Predicting Consumer Behavior	2	4				Engineering Management			
589	EMEM 550	Capstone Project II	5	10				Engineering Management			
590	EMEM 551	Digital Transformation and Disruption	3	6				2 year Gr SEDS Engineering Management	1 year Gr SEDS Engineering Management		
591	MCEE 600	Research Seminar	3	6				1 year Gr SEDS Civil and Environmental Engineering	2 year Gr SEDS Civil and Environmental Engineering		
592	MCEE 602	MSc Thesis II	12	24				2 year Gr SEDS Civil and Environmental Engineering			
593	MCEE 606	Advanced Project Management	3	6				1 year Gr SEDS Civil and Environmental Engineering			
594	MCEE 704	Contaminated Site Management and Soil Treatment Technologies	3	6				1 year Gr SEDS Civil and Environmental Engineering	2 year Gr SEDS Civil and Environmental Engineering		
595	MCEE 707	Geotechnical Earthquake Engineering	3	6							
596	MCEE 712	Advanced Pavement Design, Analysis, and Rehabilitation	3	6				1 year Gr SEDS Civil and Environmental Engineering	2 year Gr SEDS Civil and Environmental Engineering		
597	MCEE 717	Computational Modeling and Instrumentation in Geotechnical Engineering	3	6							
Electrical and Computer Engineering											

598	DELCE 700-0	Thesis Research	0	0				Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
599	DELCE 701	Current Research Literature	4	8				Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
600	DELCE 759	Advanced Pattern Recognition and Machine Learning	4	8				Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
601	DELCE 762	Fundamentals of Signal Processing	4	8				Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		

602	DELCE 763	Advanced Electronic Circuits	4	8				Electrical Engineering	Chemical Engineering, Civil Engineering, Computer Science , Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
603	ELCE 201	Circuits Theory II	3	6	ELCE 200 Introduction to Electrical Circuits (4991) (C- and above)			2 year UG SEDS Electrical and Computer Engineering	3 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	
604	ELCE 201L	Circuit Theory Laboratory	1	2		ELCE 201 Circuit Theory (5507) (D and above)		2 year UG SEDS Electrical and Computer Engineering	3 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	
605	ELCE 202	Digital Logic Design	3	6	MATH 162 Calculus II (170) (C- and above) AND PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above) AND ENG 101 Programming for Engineers (4517) (C- and above)			2 year UG SEDS Electrical and Computer Engineering	3 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	
606	ELCE 202L	Digital Logic Design Laboratory	1	2		ELCE 202 Digital Logic Design (4992) (D and above)		2 year UG SEDS Electrical and Computer Engineering	3 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	
607	ELCE 204L	Solid State Devices Laboratory	1	2	ENG 103 Engineering Materials II (4818) (C- and above)	ELCE 204 Solid State Devices (5508) (D and above)		2 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	3 year UG SEDS Electrical and Computer Engineering	
608	ELCE 300	Microprocessor Systems	3	6	ELCE 202 Digital Logic Design (4992) (C- and above)			3 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	1 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS Electrical and Computer Engineering, Electrical and Computer Engineering	

609	ELCE 300L	Microprocessor Systems Laboratory	1	2		ELCE 300 Microprocessor Systems (6183) (C- and above)		3 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	1 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS Electrical and Computer Engineering, Electrical and Computer Engineering	
610	ELCE 302	Electric Machines	3	6	ELCE 201 Circuit Theory (5507) (C- and above)			3 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	1 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS Electrical and Computer Engineering, Electrical and Computer Engineering	
611	ELCE 303	Power System Analysis	3	6	ELCE 200 Introduction to Electrical Circuits (4991) (C- and above)			3 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	1 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS Electrical and Computer Engineering, Electrical and Computer Engineering	
612	ELCE 303L	Power System Analysis Laboratory	1	2	ELCE 200 Introduction to Electrical Circuits (4991) (C- and above)	ELCE 303 Power System Analysis (6180) (D and above)		4 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS Electrical and Computer Engineering	3 year UG SEDS Electrical and Computer Engineering	SEDS	

613	ELCE 305	Data Structures and Algorithms	3	6	CSCI 151 Programming for Scientists and Engineers (192) (C- and above) OR ENG 101 Programming for Engineers (4517) (C- and above)			3 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	1 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS Electrical and Computer Engineering, Electrical and Computer Engineering	
614	ELCE 306L	Linear Control Theory Lab	1	2	ELCE 203L Signals and Systems Laboratory (6182) (C- and above)	ELCE 306 Linear Control Theory (5949) (D and above)		Instructor's Permission Required. Registration through Add Course form only!			
615	ELCE 307L	Digital Signal Processing Laboratory	1	2	ELCE 203 Signals and Systems (4993) (C- and above) AND ELCE 203L Signals and Systems Laboratory (6182) (C- and above)	ELCE 307 Digital Signal Processing (5921) (D and above)		Instructor's Permission Required. Registration through Add Course form only!			
616	ELCE 308	Communication Systems	3	6	ELCE 203 Signals and Systems (4993) (C- and above)			3 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	1 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS Electrical and Computer Engineering, Electrical and Computer Engineering	
617	ELCE 308L	Communication Systems Laboratory	1	2	ELCE 203 Signals and Systems (4993) (C- and above)	ELCE 308 Communication Systems (5922) (D and above)		4 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS Electrical and Computer Engineering	3 year UG SEDS Electrical and Computer Engineering	SEDS	
618	ELCE 311	Interdisciplinary Design Project	3	6			ENG 400 Capstone Project (6385) (C- and above)	3 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	Electrical and Computer Engineering	

619	ELCE 350	Electromagnetics I	3	6	PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above) AND ENG 200 Engineering Mathematics III (Differential Equations and Linear Algebra) (5009) (C- and above) AND ELCE 200 Introduction to Electrical Circuits (4991) (C- and above)			3 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	1 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS Electrical and Computer Engineering, Electrical and Computer Engineering	
620	ELCE 399	Internship	3	6				Instructor's Permission Required. Registration through Add Course form only!			
621	ELCE 403	Introduction to Adaptive Signal Processing	3	6	ELCE 307 Digital Signal Processing (5921) (C- and above)			5 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	Electrical and Computer Engineering	
622	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)			SMG	4 year UG SEDS Electrical and Computer Engineering	Electrical and Computer Engineering	
623	ELCE 458	Numerical Optimization Techniques and Computer Applications	3	6	ENG 200 Engineering Mathematics III (Differential Equations and Linear Algebra) (5009) (C- and above)			5 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	Electrical and Computer Engineering	
624	ELCE 459	Design of Application Specific Electronic Circuits	3	6	ELCE 301 Electronic Circuits (5918) (C- and above)			5 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	Electrical and Computer Engineering	
625	ELCE 461	Industrial Automation	3	6	ELCE 202 Digital Logic Design (4992) (C- and above)			SMG	4 year UG SEDS Electrical and Computer Engineering	Electrical and Computer Engineering	
626	ELCE 468	Robots For Rehabilitation	3	6				5 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	Electrical and Computer Engineering	

627	ELCE 469	Microfluidics Fundamentals and Applications	3	6	PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above) AND MATH 162 Calculus II (170) (C- and above)			5 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	Electrical and Computer Engineering	
628	ELCE 470	Optical Communications	3	6	ELCE 203 Signals and Systems (4993) (C- and above)			5 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	Electrical and Computer Engineering	
629	ELCE 486	Photonics for Engineering	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)			5 year UG SEDS Electrical and Computer Engineering	4 year UG SEDS Electrical and Computer Engineering	Electrical and Computer Engineering	
630	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)	SMG	4 year UG SEDS Electrical and Computer Engineering	Chemical and Materials Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Mechanical and Aerospace Engineering	
631	MECE 600	Research Seminar	3	6				1 year Gr SEDS Electrical and Computer Engineering	2 year Gr SEDS Electrical and Computer Engineering	SEDS	
632	MECE 602	Master Thesis II	12	24				1 year Gr SEDS Electrical and Computer Engineering	2 year Gr SEDS Electrical and Computer Engineering	SEDS	
633	MECE 608	Energy Systems Operations and Planning	3	6				2 year Gr SEDS Electrical and Computer Engineering	1 year Gr SEDS Electrical and Computer Engineering	Electrical and Computer Engineering	

634	MECE 704	Fundamentals of Signal Processing	3	6				2 year Gr SEDS Electrical and Computer Engineering	1 year Gr SEDS Electrical and Computer Engineering	Electrical and Computer Engineering	
635	MECE 707	Advanced Electronic Circuits	3	6				2 year Gr SEDS Electrical and Computer Engineering	1 year Gr SEDS Electrical and Computer Engineering	Electrical and Computer Engineering	
636	MECE 717	Pattern Recognition and Machine Learning	3	6				2 year Gr SEDS Electrical and Computer Engineering	1 year Gr SEDS Electrical and Computer Engineering	Electrical and Computer Engineering	
637	MECE 729	Convex Optimization	3	6				2 year Gr SEDS Electrical and Computer Engineering	1 year Gr SEDS Electrical and Computer Engineering	Electrical and Computer Engineering	
638	MECE 730	Microfluidic Devices	3	6				2 year Gr SEDS Electrical and Computer Engineering	1 year Gr SEDS Electrical and Computer Engineering	Electrical and Computer Engineering	
639	MECE 732	Optical Communications	3	6				2 year Gr SEDS Electrical and Computer Engineering	1 year Gr SEDS Electrical and Computer Engineering		
Geosciences											
640	GEOL 101	Fundamentals of Geology	3	6				1 year UG SMG, 3 year UG SEDS, 3 year UG SMG, 3 year UG SSH, 4 year UG SEDS, 4 year UG SMG, 4 year UG SSH, 5 year UG SEDS, 5 year UG SSH			
641	GEOL 204	Sedimentology and strartigraphy	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)			2 year UG SMG Geology	2 year UG SMG Mining Engineering, 3 year UG SMG Mining Engineering		
642	GEOL 205	Paleontology	3	6	GEOL 101 Fundamentals of Geology (4774) (D and above) OR GEOL 102 Fundamentals of Geology (4772) (D and above)			2 year UG SMG Geology			

643	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)			2 year UG SMG Geology	2 year UG SMG Mining Engineering, 3 year UG SMG Mining Engineering, 4 year UG SMG Mining Engineering		
644	GEOL 304	Geophysics	3	6	GEOL 204 Sedimentology and strartigraphy (5475) (D and above)			3 year UG SMG Geology	3 year UG SMG Mining Engineering, 3 year UG SMG Petroleum Engineering, 4 year UG SMG Mining Engineering, 4 year UG SMG Petroleum Engineering		
645	GEOL 306	Geodynamics	3	6	GEOL 101 Fundamentals of Geology (4774) (D and above) OR GEOL 102 Fundamentals of Geology (4772) (D and above)			3 year UG SMG Geology			
646	GEOL 307	Geographic Information Systems	3	6				3 year UG SMG Geology			
647	GEOL 402	Water Resource Management	3	6				4 year UG SMG	4 year UG SEDS, 4 year UG SSH		
648	GEOL 403	Geostatistics	3	6	MATH 161 Calculus I (118) (C- and above)			4 year UG SMG Geology	4 year UG SMG Petroleum Engineering		
649	GEOL 405	Research Project II	3	6	GEOL 404 Research Project I (6423) (C- and above)			4 year UG SMG Geology			
650	GEOL 407	Exploration Geology & Geophysics	3	6	GEOL 101 Fundamentals of Geology (4774) (C- and above)			3 year UG SMG Geology, 4 year UG SMG Geology	4 year UG SMG Mining Engineering		
651	GEOL 411	Photography for Geosciences	3	6	GEOL 101 Fundamentals of Geology (4774) (D and above)			4 year UG SMG Geology			
Mechanical and Aerospace Engineering											
652	DMAE 700	Thesis Research	89	178							
653	DMAE 700-0	Thesis Research	0	0				Mechanical Engineering			

654	DMAE 702	Current Research Literature	4	8				Mechanical Engineering			
655	DMAE 703	Numerical Techniques for Engineers	4	8				Mechanical Engineering	Science, Engineering and Technology	SEDS	
656	DMAE 750	Advanced Statistics and Probability	4	8			MSC 615 Advanced Statistics and Probability (2394) (B- and above)	Mechanical Engineering	Science, Engineering and Technology	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Robotics Engineering	
657	DMAE 769	Advanced Computational Fluid Dynamics and Heat Transfer in Mechanical Engineering	4	8				Mechanical Engineering	Science, Engineering and Technology	Chemical Engineering, Civil Engineering, Computer Science , Electrical Engineering, Robotics Engineering	
658	DMAE 771	Space Flight Dynamics	4	8							
659	ENG 102	Engineering Materials I	3	6				1 year UG SEDS Civil and Environmental Engineering, 1 year UG SEDS Mechanical and Aerospace Engineering, Undeclared SEDS	Civil Engineering		

660	ENG 103	Engineering Materials II	3	6				1 year UG SEDS Chemical Engineering, 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 Undeclared	2 year UG SEDS Chemical and Materials Engineering, 2 year UG SEDS Electrical and Computer Engineering, 3 year UG SEDS Chemical and Materials Engineering, 3 year UG SEDS Electrical and Computer Engineering, 4 year UG SEDS Chemical and Materials Engineering, 4 year UG SEDS Electrical and Computer Engineering, Civil and Environmental Engineering	SEDS	

661	ENG 201	Applied Probability and Statistics	3	6	MATH 162 Calculus II (170) (C- and above)			2 year UG SEDS Chemical and Materials Engineering, 2 year UG SEDS Civil and Environmental Engineering, 2 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering	3 year UG SEDS Chemical and Materials Engineering, 3 year UG SEDS Civil and Environmental Engineering, 3 year UG SEDS Electrical and Computer Engineering, 3 year UG SEDS Mechanical and Aerospace Engineering, 4 year UG SEDS Chemical and Materials Engineering, 4 year UG SEDS Civil and Environmental Engineering, 4 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS Electrical and Computer Engineering	SEDS	

662	ENG 202	Numerical Methods in Engineering	3	6	ENG 200 Engineering Mathematics III (Differential Equations and Linear Algebra) (5009) (D and above)			2 year UG SEDS Chemical and Materials Engineering, 2 year UG SEDS Civil and Environmental Engineering, 2 year UG SEDS Electrical and Computer Engineering, 2 year UG SEDS Mechanical and Aerospace Engineering	3 year UG SEDS Chemical and Materials Engineering, 3 year UG SEDS Civil and Environmental Engineering, 3 year UG SEDS Electrical and Computer Engineering, 3 year UG SEDS Mechanical and Aerospace Engineering, 4 year UG SEDS Chemical and Materials Engineering, 4 year UG SEDS Civil and Environmental Engineering, 4 year UG SEDS Electrical and Computer Engineering, 5 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS Electrical and Computer Engineering	SEDS	

663	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 Mechanical Engineering, 5 year UG SEDS Mechanical and Aerospace Engineering	5 year UG SEDS Chemical and Materials Engineering, 5 year UG SEDS Civil and Environmental Engineering, 5 year UG SEDS Electrical and Computer Engineering		
664	MAE 205	Material and Manufacturing I	3	6				2 year UG SEDS Mechanical and Aerospace Engineering	3 year UG SEDS Mechanical and Aerospace Engineering	Mechanical and Aerospace Engineering	
665	MAE 206	Engineering Dynamics I	3	6				2 year UG SEDS Mechanical and Aerospace Engineering	3 year UG SEDS Mechanical and Aerospace Engineering	Mechanical and Aerospace Engineering	
666	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	4 year UG SEDS Mechanical and Aerospace Engineering	Mechanical and Aerospace Engineering	
667	MAE 305	Fluid Mechanics II	3	6	MAE 300 Fluid Mechanics I (5926) (D and above) OR EME 275 Fluid Mechanics I (1988) (D and above)			3 year UG SEDS Mechanical and Aerospace Engineering	4 year UG SEDS Mechanical and Aerospace Engineering	Mechanical and Aerospace Engineering	
668	MAE 306	Computer Aided Engineering	3	6	ENG 202 Numerical Methods in Engineering (5506) (D and above) AND MAE 201 Computer Aided Design (5011) (D and above)			3 year UG SEDS Mechanical and Aerospace Engineering	4 year UG SEDS Mechanical and Aerospace Engineering	Mechanical and Aerospace Engineering	
669	MAE 350	Structural Mechanics II	3	6	MAE 200 Structural Mechanics I (5010) (D and above) OR CEE 200 Structural Mechanics I (5005) (D and above)			3 year UG SEDS Mechanical and Aerospace Engineering	4 year UG SEDS Mechanical and Aerospace Engineering	Mechanical and Aerospace Engineering	

670	MAE 351	Vehicle Propulsion Systems	3	6	MAE 301 Engineering Thermodynamics (5927) (D and above) OR BENG 226 Engineering Thermodynamics (1553) (D and above)			3 year UG SEDS Mechanical and Aerospace Engineering	4 year UG SEDS Mechanical and Aerospace Engineering	Mechanical and Aerospace Engineering	
671	MAE 451	Unmanned Aerial Vehicle Design	3	6	(MAE 303 Control Systems (5929) (D and above) AND MAE 340 Aerodynamics (6576) (D and above)) OR MMAE 603 Modern Control Engineering (4500) (C- and above)			4 year UG SEDS Mechanical and Aerospace Engineering	5 year UG SEDS Mechanical and Aerospace Engineering		
672	MAE 454	Aerodynamics	3	6	MAE 300 Fluid Mechanics I (5926) (D and above)			3 year UG SEDS Mechanical and Aerospace Engineering	4 year UG SEDS Mechanical and Aerospace Engineering	Mechanical and Aerospace Engineering	
673	MAE 456	Materials and Manufacturing II	3	6				4 year UG SEDS Mechanical and Aerospace Engineering	5 year UG SEDS Mechanical and Aerospace Engineering	SEDS	
674	MAE 457	Feasibility Analysis of Clean Energy Technologies	3	6				4 year UG SEDS Mechanical and Aerospace Engineering	5 year UG SEDS Mechanical and Aerospace Engineering		
675	MAE 460	Advanced Topics in Computational Fluid Dynamics	3	6	MAE 300 Fluid Mechanics I (5926) (D and above) AND ENG 202 Numerical Methods in Engineering (5506) (D and above)			4 year UG SEDS Mechanical and Aerospace Engineering	5 year UG SEDS Mechanical and Aerospace Engineering	SEDS	
676	MAE 463	Micro-Electro-Mechanical Systems and Microsystems technology	3	6				4 year UG SEDS Mechanical and Aerospace Engineering	5 year UG SEDS Mechanical and Aerospace Engineering	SEDS	
677	MAE 464	Mechanics of Soft Materials	3	6	ENG 102 Engineering Materials I (4708) (D and above)			4 year UG SEDS Mechanical and Aerospace Engineering	5 year UG SEDS Mechanical and Aerospace Engineering	SEDS	
678	MAE 465	Introduction to Maintenance Engineering	3	6	ENG 201 Applied Probability and Statistics (5505) (D and above)			4 year UG SEDS Mechanical and Aerospace Engineering	5 year UG SEDS Mechanical and Aerospace Engineering		
679	MAE 500	Unmanned Aerial Vehicle Design	3	6	MMAE 603 Modern Control Engineering (4500) (C- and above)			1 year Gr SEDS Mechanical and Aerospace Engineering	2 year Gr SEDS Mechanical and Aerospace Engineering		

680	MMAE 602	Master Thesis II	12	24	MMAE 601 Master Thesis I (5014) (P)			2 year Gr SEDS Mechanical and Aerospace Engineering			
681	MMAE 604	Advanced Computational Fluid Dynamics and Heat Transfer in Mechanical Engineering	3	6				1 year Gr SEDS Mechanical and Aerospace Engineering	2 year Gr SEDS Mechanical and Aerospace Engineering		
682	MMAE 700	Advanced Statistics and Probability	3	6				1 year Gr SEDS Mechanical and Aerospace Engineering	2 year Gr SEDS Mechanical and Aerospace Engineering		
683	MMAE 701	Numerical Techniques for Engineers	3	6				1 year Gr SEDS Mechanical and Aerospace Engineering	2 year Gr SEDS Mechanical and Aerospace Engineering		
684	MMAE 714	Space Flight Dynamics	3	6				1 year Gr SEDS Mechanical and Aerospace Engineering	2 year Gr SEDS Mechanical and Aerospace Engineering		
Mining Engineering											
685	MINE 201	Mineral Processing	3	6	SMG 100 Introduction to Natural Resources Extraction (4773) (and above) AND MATH 162 Calculus II (170) (and above) AND CHEM 101 General Chemistry I (113) (C- and above) AND PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above)			2 year UG SMG Mining Engineering	4 year UG SMG Geology		
686	MINE 303	Mine Services and Materials Handling	3	6	SMG 100 Introduction to Natural Resources Extraction (4773) (C- and above) AND PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above) AND ROBT 201 Mechanics: Statics and Dynamics (475) (C- and above)			3 year UG SMG Mining Engineering			
687	MINE 304	Resource Estimation	3	6				3 year UG SMG Mining Engineering			

688	MINE 306	Underground Mining Systems and Design	3	6	MINE 302 Geomechanics (5878) (D and above)			3 year UG SMG Mining Engineering			
689	MINE 307	Surface Mining System and Design	3	6	MINE 302 Geomechanics (5878) (D and above)			3 year UG SMG Mining Engineering			
690	MINE 310	Rock Breakage	3	6	MINE 302 Geomechanics (5878) (D and above)			3 year UG SMG Mining Engineering			
691	MINE 403	Mine Risk Management	3	6				4 year UG SMG Mining Engineering			
692	MINE 480	Mine Design Project	3	6	MINE 307 Surface Mining System and Design (6150) (C- and above) OR MINE 306 Underground Mining Systems and Design (6151) (C- and above)			4 year UG SMG Mining Engineering			
693	MINE 490	Research project II	3	6	MINE 489 Mine Design Project I (6419) (P)			4 year UG SMG Mining Engineering			
694	MINE 507	Rock Excavation Methods	3	6				1 year Gr SMG Mining Engineering			
695	MINE 508	Advanced Rock Mechanics	3	6				1 year Gr SMG Mining Engineering			
696	MINE 509	Advanced Surface Mine Design	3	6				1 year Gr SMG Mining Engineering			
697	MINE 510	Advanced Underground Mine Design	3	6				1 year Gr SMG Mining Engineering			
698	MINE 601	Mine Management and Sustainability	3	6				2 year Gr SMG Mining Engineering			
699	MINE 691	Thesis II	15	30	MINE 690 Thesis I (4531) (P)			2 year Gr SMG Mining Engineering			
700	MINE 702	Current Research Literature	4	8				1 year PhD SMG Mining Engineering			
701	MINE 703	Advanced Mining Systems	4	8				1 year PhD SMG Mining Engineering	1 year PhD SEDS Chemical Engineering, 1 year PhD SEDS Civil Engineering, 1 year PhD SEDS Mechanical Engineering, 1 year PhD SEDS Robotics Engineering		

702	MINE 890-0	Thesis Research	0	0				1 year PhD SMG Mining Engineering, 1 year PhD SMG Petroleum Engineering, 2 year PhD SMG Mining Engineering, 2 year PhD SMG Petroleum Engineering, 3 year PhD SMG Mining Engineering, 3 year PhD SMG Petroleum Engineering, 4 year PhD SMG Mining Engineering, 4 year PhD SMG Petroleum Engineering			
Petroleum Engineering											
703	PETE 202	Transport Phenomena	3	6	ENG 200 Engineering Mathematics III (Differential Equations and Linear Algebra) (5009) (C- and above)			2 year UG SMG Petroleum Engineering	3 year UG SMG Petroleum Engineering		
704	PETE 203	Drilling Engineering with Laboratories	4	8	PETE 201 Fluid Mechanics and Thermodynamics (5120) (C- and above)			2 year UG SMG Petroleum Engineering	3 year UG SMG Petroleum Engineering		
705	PETE 204	Reservoir Rock and Fluid Properties with Lab	4	8				2 year UG SMG Petroleum Engineering	3 year UG SMG Petroleum Engineering		
706	PETE 305	Well Test Analysis	3	6	PETE 302 Reservoir Engineering I with Laboratory works (5955) (C- and above)			3 year UG SMG Petroleum Engineering	4 year UG SMG Petroleum Engineering		
707	PETE 306	Reservoir Engineering II	3	6	PETE 302 Reservoir Engineering I with Laboratory works (5955) (C- and above)			3 year UG SMG Petroleum Engineering	4 year UG SMG Petroleum Engineering		
708	PETE 307	Production Engineering	3	6	PETE 201 Fluid Mechanics and Thermodynamics (5120) (C- and above) OR PETE 302 Reservoir Engineering I with Laboratory works (5955) (C- and above)			3 year UG SMG Petroleum Engineering	4 year UG SMG Petroleum Engineering		

709	PETE 311	Reservoir Simulation	3	6	PETE 301 Numerical Methods for Petroleum Engineers (5881) (C- and above) AND PETE 302 Reservoir Engineering I with Laboratory works (5955) (C- and above)			3 year UG SMG Petroleum Engineering	4 year UG SMG Petroleum Engineering		
710	PETE 404	Petroleum Geomechanics	3	6	GEOL 101 Fundamentals of Geology (4774) (C- and above) OR GEOL 102 Fundamentals of Geology (4772) (C- and above)			4 year UG SMG Petroleum Engineering			
711	PETE 407	Capstone Design Project II	3	6	PETE 400 Capstone Design Project I (6424) (P)			4 year UG SMG Petroleum Engineering			
712	PETE 409	Surface Facilities	3	6	PETE 307 Production Engineering (6146) (C- and above) AND PETE 203 Drilling Engineering with Laboratories (5486) (C- and above)			4 year UG SMG Petroleum Engineering			
713	PETE 506	Advanced Reservoir Simulation	3	6				1 year Gr SMG Petroleum Engineering			
714	PETE 507	Advanced Reservoir Engineering	3	6				1 year Gr SMG Petroleum Engineering			
715	PETE 508	Advanced Production Engineering	3	6				1 year Gr SMG Petroleum Engineering			
716	PETE 606	Advanced Enhanced Oil Recovery	3	6				1 year Gr SMG Petroleum Engineering			
717	PETE 613	Unconventional resources drilling	3	6				2 year Gr SMG Petroleum Engineering			
718	PETE 620	Thesis II	12	24				2 year Gr SMG Petroleum Engineering			
719	PETE 701	Advanced Well Engineering	4	8				1 year PhD SMG Petroleum Engineering	1 year PhD SEDS Chemical Engineering, 1 year PhD SEDS Civil Engineering, 1 year PhD SEDS Mechanical Engineering, 1 year PhD SEDS Robotics Engineering		
720	PETE 702	Current Research Literature	4	8				1 year PhD SMG Petroleum Engineering			

721	PETE 703	Advanced Reservoir Engineering	4	8				1 year PhD SMG Petroleum Engineering	1 year PhD SEDS Chemical Engineering, 1 year PhD SEDS Civil Engineering, 1 year PhD SEDS Mechanical Engineering, 1 year PhD SEDS Robotics Engineering		
722	PETE 801	Advanced Reservoir Simulation	4	8				1 year PhD SMG Petroleum Engineering	1 year PhD SEDS Chemical Engineering, 1 year PhD SEDS Civil Engineering, 1 year PhD SEDS Mechanical Engineering, 1 year PhD SEDS Robotics Engineering		
723	PETE 803	Advanced Enhanced Oil Recovery	4	8				1 year PhD SMG Petroleum Engineering	1 year PhD SEDS Chemical Engineering, 1 year PhD SEDS Civil Engineering, 1 year PhD SEDS Mechanical Engineering, 1 year PhD SEDS Robotics Engineering		
724	PETE 890-0	Thesis Research	0	0				1 year PhD SMG Petroleum Engineering, 2 year PhD SMG Petroleum Engineering, 3 year PhD SMG Petroleum Engineering, 4 year PhD SMG Petroleum Engineering			
SMG											
725	SMG 400	Engineering Economics	3	6	SMG 200/ECON 220 Resource Economics (6197) (C- and above) OR ECON 120 Managerial Economics (1852) (C- and above) OR MATH 161 Calculus I (118) (C- and above) OR MATH 162 Calculus II (170) (C- and above)			4 year UG SMG Petroleum Engineering, Geology, Mining Engineering	4 year UG SEDS, 4 year UG SSH		

School of Engineering											
726	DENG 700	Thesis Research	89	178							
727	DENG 700-0	Thesis Research	0	0				Science, Engineering and Technology			
728	DENG 793	Doctoral Seminar V	3	6	DENG 792 Doctoral Seminar IV (4601) (P)			Science, Engineering and Technology			
729	DENG 794	Dissertation Research	12	24	DENG 785 PhD Proposal Oral Defence (2604) (P)			Science, Engineering and Technology			
730	DENG 795	Research at Host University	6	12	DENG 785 PhD Proposal Oral Defence (2604) (P)			Science, Engineering and Technology			
731	DENG 796	Thesis Completion	0	0				Science, Engineering and Technology			
732	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			
733	DENG 799	Doctoral Seminar VII	3	6	DENG 798 Doctoral Seminar VI (4607) (P)			Instructor's Permission Required. Registration through Add Course form only!			
SCAI											
Computer Science											
734	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)	SSH, SoM			

735	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)	1 year UG SOM, 2 year UG SOM, 3 year UG SOM, 4 year UG SOM, Biological Sciences, Chemistry, Mathematics	SSH		
736	CSCI 151	Programming for Scientists and Engineers	4	8			CSCI 111 Web Programming and Problem Solving (110) (D and above) OR CSCI 115 Programming Fundamentals (5257) (D and above) OR ENG 101 Programming for Engineers (4517) (B- and above)	Computer Science, Robotics Engineering, Robotics and Mechatronics	Physics, Undeclared SEDS	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM	
737	CSCI 152	Performance and Data Structures	4	8	CSCI 151 Programming for Scientists and Engineers (192) (C- and above)			Computer Science, Robotics Engineering, Robotics and Mechatronics	Undeclared SEDS, Undeclared SSH	GSB, GSE, GSPP, SEDS, SMG, SSH, SoM	
738	CSCI 245	System Analysis and Design	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science			
739	CSCI 262	Software Project Management	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science			
740	CSCI 270	Algorithms	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)	MATH 251 Discrete Mathematics (85) (D and above)		Computer Science			

741	CSCI 272	Formal Languages	3	6	CSCI 151 Programming for Scientists and Engineers (192) (C- and above)	MATH 251 Discrete Mathematics (85) (D and above)		Computer Science			
742	CSCI 281	Human-Computer Interaction	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science			
743	CSCI 307	Research Methods	3	6				3 year UG SEDS Computer Science, 4 year UG SEDS Computer Science, 5 year UG SEDS Computer Science			
744	CSCI 325	Introduction to Parallel Systems and Graphics Processing Unit Programming	3	6	CSCI 332 Operating Systems (490) (C- and above)		PHYS 421 Parallel Computing (8532) (D and above)	3 year UG SEDS Computer Science, 4 year UG SEDS Computer Science, 5 year UG SEDS Computer Science			
745	CSCI 332	Operating Systems	3	6	CSCI 231 Computer Systems and Organization (194) (D and above)			3 year UG SEDS Computer Science, 4 year UG SEDS Computer Science, 5 year UG SEDS Computer Science			
746	CSCI 333	Computer Networks	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 Computer Science			
747	CSCI 363	Software Testing and Quality Assurance	3	6	CSCI 235 Programming Languages (638) (C- and above)			Computer Science			
748	CSCI 371	Algorithmic Problem Solving	3	6	CSCI 270 Algorithms (648) (B and above)			Instructor's Permission Required. Registration through Add Course form only!			
749	CSCI 393	Introduction to Natural Language Processing	3	6	CSCI 390 Artificial Intelligence (643) (C- and above)			Computer Science			
750	CSCI 399	Internship II	3	6				Instructor's Permission Required. Registration through Add Course form only!			
751	CSCI 409	Senior Project II	3	6	CSCI 408 Senior Project I (1481) (C- and above)			4 year UG SEDS Computer Science, 5 year UG SEDS Computer Science			

752	CSCI 447	Machine Learning: Theory and Practice	3	6	MATH 273 Linear Algebra with Applications (84) (C and above) AND MATH 321 Probability (482) (C and above)			3 year UG SEDS Computer Science, 4 year UG SEDS Computer Science, 5 year UG SEDS Computer Science			
753	CSCI 462	Open Source Software	3	6	CSCI 361 Software Engineering (640) (C- and above)			3 year UG SEDS Computer Science, 4 year UG SEDS Computer Science, 5 year UG SEDS Computer Science			
754	CSCI 490	Brain Computer Interface	3	6	MATH 273 Linear Algebra with Applications (84) (C and above) AND MATH 321 Probability (482) (C and above)			3 year UG SEDS Computer Science, 4 year UG SEDS Computer Science, 5 year UG SEDS Computer Science			
755	CSCI 496	Generative Artificial Intelligence	3	6	CSCI 390 Artificial Intelligence (643) (C- and above) AND MATH 273 Linear Algebra with Applications (84) (C- and above)			Computer Science			
756	CSCI 502	Hardware Software Co-Design	3	6	CSCI 501 Software Principles and Practice (2408) (C- and above)			Computer Science, Robotics			
757	CSCI 545	Big Data Analytics	3	6				Data Science	Computer Science	Robotics	
758	CSCI 563	Software Testing and Quality Assurance	3	6				Computer Science, Data Science	Robotics		
759	CSCI 585	Computer Vision	3	6				Computer Science, Data Science	Robotics		
760	CSCI 595	Generative Artificial Intelligence	3	6				Computer Science, Data Science	Robotics		
761	CSCI 694	Thesis	15	30				2 year Gr SEDS Computer Science			
762	CSCI 700-0	Thesis Research	0	0				Computer Science			
763	CSCI 702	Advanced Hardware/Software Co-Design	4	8				Computer Science , Robotics Engineering			
764	CSCI 722	Current Research Literature	4	8				Computer Science			

765	CSCI 745	Advanced Big Data Analytics	4	8				Computer Science	Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Robotics Engineering, Science, Engineering and Technology		
766	CSCI 785	Advanced Computer Vision	4	8				Computer Science	Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Science, Engineering and Technology		
767	CSCI 795	Advanced Generative Artificial Intelligence	4	8				Computer Science	Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Science, Engineering and Technology		
768	DS 504	Data Mining and Decision Support	3	6				Data Science	Computer Science		
769	DS 694	Thesis	15	30	DS 693 Thesis Proposal (5915) (P)			2 year Gr SEDS Data Science			
770	DS 704	Advanced Data Mining and Decision Support	4	8				Computer Science			
771	SEDS 592	Research Seminar	3	6				Computer Science, Data Science, Robotics			
Mathematics											
772	MATH 109	Mathematical Discovery	3	6			MATH 161 Calculus I (118) (C- and above)	Anthropology, History, Political Science and International Relations, Sociology, Undeclared SSH, World Languages, Literature and Culture			

773	MATH 161	Calculus I	4	8				1 year UG SEDS, 1 year UG SMG, 1 year UG SOM Medical Sciences, Biological Sciences, Chemistry, Mathematics, Physics	Undeclared SSH	SEDS, SMG, SSH, SoM	
774	MATH 162	Calculus II	4	8	MATH 161 Calculus I (118) (C and above)			1 year UG SEDS, 1 year UG SMG, Chemistry, Mathematics, Physics	Biological Sciences, Undeclared SSH	SEDS, SMG, SSH, SoM	
775	MATH 251	Discrete Mathematics	3	6	MATH 161 Calculus I (118) (C and above)			Computer Science, Mathematics	SEDS, SMG, SSH, SoM		
776	MATH 263	Calculus III	4	8	MATH 162 Calculus II (170) (C and above)			Mathematics, Physics	SEDS, SMG, SSH, SoM		
777	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 Engineering, 2 year UG SEDS Robotics and Mechatronics, Mathematics, Physics	Computer Science, Robotics Engineering, Robotics and Mechatronics	SEDS, SMG, SSH, SoM	
778	MATH 274	Introduction to Differential Equations	3	6	MATH 162 Calculus II (170) (C and above)			Chemistry, Mathematics, Physics, Robotics Engineering, Robotics and Mechatronics	SEDS, SMG, SSH, SoM		
779	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)			Mathematics	SEDS, SMG, SSH, SoM		
780	MATH 310	Applied Statistical Methods	3	6	MATH 161 Calculus I (118) (C and above)		MATH 321 Probability (482) (C and above)	2 year UG SMG Mining Engineering, 2 year UG SSH Biological Sciences	Biological Sciences, Mining Engineering, Petroleum Engineering	SEDS, SMG, SSH, SoM	
781	MATH 321	Probability	3	6	MATH 162 Calculus II (170) (C and above)		ECON 211 Economic Statistics (2280) (C- and above) OR PLS 211 Quantitative Methods (221) (C- and above)	Computer Science, Mathematics, Robotics Engineering, Robotics and Mechatronics	SEDS, SMG, SSH, SoM		
782	MATH 322	Mathematical Statistics	3	6	MATH 321 Probability (482) (C and above) OR ECON 211 Economic Statistics (2280) (C and above)			Mathematics	SEDS, SMG, SSH, SoM		

783	MATH 350	Research Methods	3	6	MATH 321 Probability (482) (C and above)			Mathematics			
784	MATH 351	Numerical Methods with Applications	3	6	MATH 274 Introduction to Differential Equations (484) (C and above) AND MATH 263 Calculus III (81) (C and above)		ENG 202 Numerical Methods in Engineering (5506) (C and above)	Mathematics	SEDS, SMG, SSH, SoM		
785	MATH 361	Real Analysis I	3	6	MATH 263 Calculus III (81) (C and above) AND MATH 251 Discrete Mathematics (85) (C and above)			Mathematics	SEDS, SMG, SSH, SoM		
786	MATH 407	Graph Theory	3	6	(MATH 301 Introduction to Number Theory (613) (C and above) OR MATH 251 Discrete Mathematics (85) (C and above)) AND MATH 273 Linear Algebra with Applications (84) (C and above)			Mathematics	SEDS, SMG, SSH, SoM		
787	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)			Mathematics	SEDS, SMG, SSH, SoM		
788	MATH 412	Nonlinear Optimization	3	6	MATH 273 Linear Algebra with Applications (84) (C and above) AND MATH 263 Calculus III (81) (C and above)			Mathematics	SEDS, SMG, SSH, SoM		
789	MATH 423	Actuarial Mathematics II	3	6	MATH 321 Probability (482) (C and above) OR ECON 211 Economic Statistics (2280) (C and above)			Mathematics	SEDS, SMG, SSH, SoM		
790	MATH 449	Statistical Programming	3	6	MATH 322 Mathematical Statistics (1165) (C and above)			Mathematics	SEDS, SMG, SSH, SoM		
791	MATH 455	Stochastic Calculus	3	6	MATH 321 Probability (482) (C and above) OR ECON 211 Economic Statistics (2280) (C and above)			Mathematics	SEDS, SMG, SSH, SoM		

792	MATH 456	Introduction to Lie Groups and Representations	3	6	MATH 361 Real Analysis I (483) (C and above) AND MATH 273 Linear Algebra with Applications (84) (C and above) AND MATH 274 Introduction to Differential Equations (484) (C and above)			Mathematics	SEDS, SMG, SSH, SoM		
793	MATH 462	Advanced Linear Algebra	3	6	MATH 251 Discrete Mathematics (85) (C and above) AND MATH 273 Linear Algebra with Applications (84) (C and above)			Mathematics	SEDS, SMG, SSH, SoM		
794	MATH 476	Numerical Methods for Partial Differential Equations	3	6	MATH 351 Numerical Methods with Applications (1166) (C and above) AND MATH 481 Partial Differential Equations (1168) (C and above)			Mathematics	SEDS, SMG, SSH, SoM		
795	MATH 480	Complex Analysis	3	6	MATH 263 Calculus III (81) (C and above)			Instructor's Permission Required. Registration through Add Course form only!			
796	MATH 482	Fourier Analysis	3	6	MATH 263 Calculus III (81) (C and above) AND MATH 274 Introduction to Differential Equations (484) (C and above)			Mathematics	SEDS, SMG, SSH, SoM		
797	MATH 490	Special Topics in Mathematics I	3	6				Instructor's Permission Required. Registration through Add Course form only!			
798	MATH 498	Directed Study in Mathematics II	3	6				Instructor's Permission Required. Registration through Add Course form only!			
799	MATH 499	Capstone Project	3	6				Instructor's Permission Required. Registration through Add Course form only!			
800	MATH 514	Operations Research	3	6				Applied Mathematics	SEDS, SMG, SSH, SoM		
801	MATH 576	Numerical Methods for Partial Differential Equations	3	6				Applied Mathematics	SEDS, SMG, SSH, SoM		

802	MATH 601	Analytic Number Theory	3	6				Applied Mathematics	SEDS, SMG, SSH, SoM		
803	MATH 691	Thesis Proposal	3	6	MATH 592 Research Seminar (5760) (C- and above)			Applied Mathematics			
804	MATH 692	Thesis	15	30	MATH 691 Thesis Proposal (5769) (P)			Applied Mathematics			
805	MATH 700	Doctoral Thesis	90	180							
806	MATH 700-0	Thesis Research	0	0				Mathematics			
807	MATH 711	Abstract Algebra	4	8				Mathematics			
808	MATH 771	Operations Research	4	8				Mathematics			
809	MATH 776	Advanced numerical methods for partial differential equations	4	8				Mathematics			
810	MATH 791	Topics in Mathematics	4	8				Mathematics			
Robotics and Mechatronics											
811	ROBT 202	System Dynamics and Modeling	3	6	MATH 162 Calculus II (170) (C- and above) AND (PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above) OR PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above))			Robotics Engineering, Robotics and Mechatronics			
812	ROBT 204	Electrical and Electronic Circuits II with Lab	4	8	ROBT 203 Electrical and Electronic Circuits I with Lab (62) (C- and above)			Robotics Engineering, Robotics and Mechatronics			
813	ROBT 206	Microcontrollers with Lab	4	8	CSCI 150 Fundamentals of Programming (1501) (C- and above) OR CSCI 151 Programming for Scientists and Engineers (192) (C- and above) OR ENG 101 Programming for Engineers (4517) (C- and above)			Computer Science, Robotics Engineering, Robotics and Mechatronics			

814	ROBT 304	Electromechanical Systems with lab	4	8	ROBT 203 Electrical and Electronic Circuits I with Lab (62) (C- and above)			Robotics Engineering, Robotics and Mechatronics	SEDS		
815	ROBT 307	Power Electronics	3	6	ROBT 204 Electrical and Electronic Circuits II with Lab (491) (C- and above)			Robotics Engineering, Robotics and Mechatronics		SEDS	
816	ROBT 312	Robotics I: Kinematics and Dynamics	3	6	ROBT 201 Mechanics: Statics and Dynamics (475) (C- and above) AND MATH 273 Linear Algebra with Applications (84) (C- and above)			Robotics Engineering, Robotics and Mechatronics	SEDS		
817	ROBT 391	Research methods	3	6				3 year UG SEDS Robotics Engineering, 3 year UG SEDS Robotics and Mechatronics	Robotics Engineering, Robotics and Mechatronics	SEDS	
818	ROBT 402	Robotic/Mechatronic System Design	3	6	ROBT 204 Electrical and Electronic Circuits II with Lab (491) (C- and above) AND ROBT 206 Microcontrollers with Lab (476) (C- and above)			5 year UG SEDS (pending graduation), Robotics Engineering, Robotics and Mechatronics	SEDS		
819	ROBT 491	Graduation Project	3	6	ROBT 391 Research methods (7418) (C- and above)			5 year UG SEDS (pending graduation), Robotics Engineering, Robotics and Mechatronics	SEDS		
820	ROBT 502	Robot Perception & Vision	3	6	ROBT 501 Advanced Robot Kinematics (2263) (C- and above)			Robotics	SEDS		
821	ROBT 692	Thesis	15	30	ROBT 691 Thesis Proposal (5930) (P)			Biomedical Engineering, Chemical Engineering, Chemical and Materials Engineering, Civil Engineering, Civil and Environmental Engineering, Computer Science, Data Science, Electrical and Computer Engineering, Electrical and Electronic Engineering, Engineering Management, Industrial and Systems Engineering, Robotics			

822	ROBT 700	Thesis Research	89	178								
823	ROBT 700-0	Thesis Research	0	0				Robotics Engineering				
824	ROBT 702	Advanced Robot Perception and Vision	4	8				Robotics Engineering				
825	ROBT 722	Current Research Literature	4	8				Robotics Engineering				