

**Course Requirements and Registration Priorities  
School of Science and Technology, Fall 2018**

#	Abbr	Title	Cr(US)	Cr(ECTS)	PreRequisite	CoRequisite	AntiRequisite	1st priority registration	2nd priority registration	3rd priority registration	4th priority registration
<b>SST</b>											
<b>Computer Science</b>											
1	CSCI 512	Information Theory	3	6							
<b>Mathematics</b>											
2	MATH 441	Design of Experiments	3	6	MATH 273 Linear Algebra with Applications (84) (C and above) AND (MATH 310 Applied Statistical Methods (82) (C and above) OR MATH 322 Mathematical Statistics (1165) (C and above))			Mathematics	SHSS, SST		
<b>SSH</b>											
<b>Biological Science</b>											
3	BIOL 101	Biology for non-Science majors	3	6			BIOL 110 Modern Biology I (1070) (C- and above)	SEng, SHSS, SMG			
4	BIOL 110	Modern Biology I	3	6				Biological Sciences, Chemistry	SST	SHSS	
5	BIOL 230	Human Anatomy and Physiology I	4	8	BIOL 110 Modern Biology I (107) (C and above) OR BIOL 110 Modern Biology I (1070) (C and above)			Biological Sciences	SST	SEng, SHSS, SMG	
6	BIOL 305	Introduction to Microbiology with Lab	4	8	BIOL 110 Modern Biology I (1070) (C and above) AND BIOL 120 Modern Biology II (1195) (C and above)			Biological Sciences	SST	SEng, SHSS, SMG	
7	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)			Biological Sciences	SST	SEng, SHSS, SMG	
8	BIOL 320	Developmental Biology	3	6	BIOL 230 Human Anatomy and Physiology I (72) (C and above) OR BIOL 230 Human Anatomy and Physiology I (6217) (C and above)			Biological Sciences	SST	SEng, SHSS, SMG	

9	BIOL 340	Introduction to Applied Bioinformatics	4	8	(BIOL 120 Modern Biology II (1195) (C and above) OR (BIOL 120 Modern Biology II (1195) (C and above) AND BIOL 120L Modern Biology II Laboratory (5443) (C and above))) AND MATH 310 Applied Statistical Methods (82) (C and above)		Biological Sciences	SST	SEng, SHSS, SMG	
10	BIOL 355	Critical Research Reasoning	3	6	BIOL 120 Modern Biology II (1195) (C and above)		Biological Sciences	SST	SEng, SHSS, SMG	
11	BIOL 385	Cell signaling: principles and mechanisms	3	6	BIOL 120 Modern Biology II (1195) (C and above)		Biological Sciences	SST	SEng, SHSS, SMG	
12	BIOL 392	Directed Study in Biology	3	6			Through Add form only			
13	BIOL 452	Biology of Cancer	3	6	BIOL 231 Human Anatomy and Physiology II (479) (C and above) OR BIOL 301 Molecular Biology of Cell with Lab (1197) (C and above) OR BIOL 331 Human Anatomy and Physiology II (6218) (C and above) OR BIOL 301 Molecular Cell Biology (5809) (C and above)		Biological Sciences	SST	SEng, SHSS, SMG	
14	BIOL 455	Biotechnology	3	6	BIOL 301 Molecular Biology of Cell with Lab (1197) (C- and above) OR (BIOL 301 Molecular Cell Biology (5809) (C- and above) AND BIOL 301L Molecular Cell Biology Laboratory (5678) (C- and above))		Biological Sciences	SST	SEng, SHSS, SMG	
15	BIOL 470	Advanced Cell Biology	3	6	BIOL 120 Modern Biology II (1195) (C and above) AND BIOL 110L Modern Biology I Laboratory (5448) (C and above) AND (BIOL 341 Biochemistry I (2002) (C and above) OR CHEM 341 Biochemistry I (1058) (C and above))		Biological Sciences	SST	SEng, SHSS, SMG	
16	BIOL 490	Honors Thesis Research	0	0	BIOL 355 Critical Research Reasoning (1000) (B and above)		Through Add form only			
17	BIOL 520	Statistical Methods in Life Sciences	3	6						
18	BIOL 550	Structural and Molecular Biology in Health and Disease	3	6						
19	BIOL 560	Molecular Biology of Prokaryotic Cells	3	6						
20	BIOL 600	Graduate Seminar Series	3	6						
21	BIOL 623	Advanced Immunology	3	6			Biological Sciences	SST, Science, Engineering and Technology	SEng, SHSS	

22	BIOL 635	Hot Topics in Life Sciences	3	6							
23	BIOL 670	Gene Therapy	3	6				Biological Sciences	SST, Science, Engineering and Technology	SEng, SHSS	
24	BIOL 690	Research Thesis I	6	12							
<b>Chemistry</b>											
25	CHEM 090	Chemistry for Non-Science majors	3	6				SHSS			
26	CHEM 091	Survey of Physical Science	3	6				SHSS			
27	CHEM 101	General Chemistry I	3	6				Biological Sciences, Chemistry, SMG	SST	SEng, SHSS	
28	CHEM 101L	General Chemistry I lab	1	2		CHEM 101 General Chemistry I (113) (C and above)		Biological Sciences, Chemistry, SMG	SST	SEng, SHSS	
29	CHEM 211	Organic Chemistry I	3	6	CHEM 102 General Chemistry II (232) (C and above)			Chemistry	Biological Sciences	SST	
30	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)		Chemistry	Biological Sciences	SST	
31	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)			Chemistry	Biological Sciences	SST	
32	CHEM 220	Quantitative Chemical Analysis	3	6	CHEM 102 General Chemistry II (232) (C and above)			Chemistry	Biological Sciences	SST	
33	CHEM 250	Descriptive Inorganic Chemistry	3	6	CHEM 101 General Chemistry I (113) (C and above)			Chemistry	Biological Sciences	SST	
34	CHEM 331	Physical Chemistry I	3	6	CHEM 220 Quantitative Chemical Analysis (555) (C and above) AND PHYS 161 Physics I for Scientists and Engineers with Laboratory (116) (C and above)			Chemistry	Biological Sciences	SST	
35	CHEM 331L	Physical Chemistry Lab	1	2		CHEM 331 Physical Chemistry I (634) (C and above)		Chemistry	Biological Sciences	SST	
36	CHEM 341	Biochemistry I	3	6	CHEM 211 Organic Chemistry I (154) (C and above)			Chemistry	Biological Sciences	SST	

37	CHEM 341L	Biochemistry I Lab	1	2	CHEM 212L Organic Chemistry II Lab (444) (C and above)	CHEM 341 Biochemistry I (1058) (C and above)		Chemistry	Biological Sciences	SST	
38	CHEM 350	Advanced Inorganic Chemistry	3	6	CHEM 212 Organic Chemistry II (443) (C and above) AND CHEM 212L Organic Chemistry II Lab (444) (C and above) AND CHEM 250 Descriptive Inorganic Chemistry (445) (C and above)			Chemistry	Biological Sciences	SST	
39	CHEM 400	Chemistry Seminar	3	6	CHEM 380 Research Methods (636) (C and above)			Chemistry	Biological Sciences	SST	
40	CHEM 410	Structural Spectroscopy	4	8	CHEM 212 Organic Chemistry II (443) (C and above)			Chemistry	Biological Sciences	SST	
41	CHEM 471	Environmental Chemistry	3	6	CHEM 102 General Chemistry II (232) (C and above)			Chemistry	Biological Sciences	SST	
<b>Mathematics</b>											
42	MATH 109	Mathematical Discovery	3	6		MATH 161 Calculus I (118) (C- and above)		SHSS	SST		
43	MATH 161	Calculus I	4	8				1 year UG SENG, 1 year UG SMG, 1 year UG SST	SST	SEng, SHSS	
44	MATH 162	Calculus II	4	8	MATH 161 Calculus I (118) (C and above)			3 year UG SHSS, 4 year UG SHSS, SST	SHSS		
45	MATH 251	Discrete Mathematics	3	6	MATH 161 Calculus I (118) (C and above)			Computer Science, Mathematics	Physics, Robotics and Mechatronics, SHSS		
46	MATH 263	Calculus III	4	8	MATH 162 Calculus II (170) (C and above)			4 year UG SHSS, SST	SHSS		
47	MATH 273	Linear Algebra with Applications	4	8	MATH 161 Calculus I (118) (C and above)	MATH 162 Calculus II (170) (C and above)		4 year UG SHSS, SST	SHSS		
48	MATH 274	Introduction to Differential Equations	3	6	MATH 162 Calculus II (170) (C and above)			4 year UG SHSS, SST	SHSS		

49	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 SST Biological Sciences, 2 year UG SST Computer Science, 3 year UG SST Biological Sciences, 3 year UG SST Computer Science, 4 year UG SST Biological Sciences, 4 year UG SST Computer Science	Mathematics, SHSS		
50	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)	4 year UG SHSS, Computer Science, Mathematics	SHSS, SST		
51	MATH 323	Actuarial Mathematics I	3	6	MATH 321 Probability (482) (C and above) OR ECON 211 Economic Statistics (2280) (C and above) OR (MATH 162 Calculus II (170) (C and above) AND MATH 310 Applied Statistical Methods (82) (C and above))			Mathematics	SHSS		
52	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	SHSS, SST		
53	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	SHSS, SST		
54	MATH 425	Stochastic Processes	3	6	MATH 321 Probability (482) (C and above) OR ECON 211 Economic Statistics (2280) (C and above)			Mathematics	SHSS, SST		
55	MATH 471	Nonlinear Differential Equations	3	6	MATH 273 Linear Algebra with Applications (84) (C and above) AND MATH 274 Introduction to Differential Equations (484) (C and above)			Mathematics	SHSS, SST		
56	MATH 480	Complex Analysis	3	6	MATH 263 Calculus III (81) (C and above)			Mathematics	SHSS, SST		
57	MATH 481	Partial Differential Equations	3	6	MATH 274 Introduction to Differential Equations (484) (C and above)	MATH 480 Complex Analysis (618) (C and above)		Mathematics	SHSS, SST		

58	MATH 517	Scientific Modeling and Simulation with Mathematics	3	6							
59	MATH 518	Applied Finite Element Analysis	3	6							
60	MATH 540	Statistical Learning	3	6							
61	MATH 576	Numerical Methods for Partial Differential Equations	3	6							
62	MATH 676	Advanced Partial Differential Equations with Applications	3	6							
<b>Physics</b>											
63	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 SENG, 1 year UG SMG, 1 year UG SST	SST	SEng, SHSS, SMG	
64	PHYS 201	Introductory Astronomy I	3	6				Physics	SEng, SHSS, SMG, SST		
65	PHYS 221	Classical Mechanics I	3	6	(PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above) OR PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above)) AND MATH 273 Linear Algebra with Applications (84) (C- and above)			Physics	SST	SEng, SHSS, SMG	
66	PHYS 261	Modern Physics with laboratory	4	8	MATH 162 Calculus II (170) (C- and above) AND (PHYS 152 Introductory Physics II with Lab (1176) (C- and above) OR PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above) OR PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above))			Physics	SST	SEng, SHSS, SMG	
67	PHYS 315	Mathematical Methods of Physics	3	6	(PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above) OR PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above)) AND MATH 274 Introduction to Differential Equations (484) (C- and above)			Physics	SST	SEng, SHSS, SMG	

68	PHYS 361	Classical Electrodynamics I	3	6		PHYS 315 Mathematical Methods of Physics (653) (D and above) OR PHYS 411 Advanced Mathematical Physics (3142) (D and above)	Physics	SST	SEng, SHSS, SMG	
69	PHYS 452	Quantum Mechanics II	3	6	PHYS 451 Quantum Mechanics I (1415) (C- and above)		Physics	SST	SEng, SHSS, SMG	
70	PHYS 465	Advanced Experimental Physics	3	6	PHYS 370 Optics with Laboratory (1405) (C- and above)		Physics	SST	SEng, SHSS, SMG	
71	PHYS 474	Lasers and Photonics	3	6	PHYS 370 Optics with Laboratory (1405) (C- and above)		Physics	SST	SEng, SHSS, SMG	
72	PHYS 505	Classical Mechanics	3	6						
73	PHYS 511	Computational Modeling and Simulation	3	6			Physics	SST, Science, Engineering and Technology	SEng, SHSS	
74	PHYS 515	Classical Electrodynamics	3	6						
75	PHYS 550	Advanced Mathematical Physics	3	6			Physics	SST, Science, Engineering and Technology	SEng, SHSS	
76	PHYS 574	Lasers and Photonics	3	6			Physics	SST, Science, Engineering and Technology	SEng, SHSS	
77	SST 501	Teaching and Learning	3	6						
<b>SEDS</b>										
<b>Computer Science</b>										
78	CSCI 151	Programming for Scientists and Engineers	4	8		CSCI 111 Web Programming and Problem Solving (110) (D and above) OR CSCI 115 Programming Fundamentals (5257) (D and above) OR ENG 101 Programming for Engineers (4517) (B- and above)	1 year UG SST	SMG, SST	SHSS	

79	CSCI 231	Computer Systems and Organization	3	6	CSCI 151 Programming for Scientists and Engineers (192) (C- and above) OR ENG 100 Introduction to Engineering (4518) (B- and above)			Computer Science			
80	CSCI 235	Programming Languages	4	8	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science			
81	CSCI 262	Software Project Management	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science	SST	SHSS	
82	CSCI 281	Human-Computer Interaction	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science	SST	SHSS	
83	CSCI 299	Internship I	3	6				Through Add form only			
84	CSCI 344	Data Mining and Decision Support	3	6	CSCI 341 Database Systems (195) (C- and above) AND MATH 273 Linear Algebra with Applications (84) (C- and above)			Computer Science			
85	CSCI 361	Software Engineering	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science			
86	CSCI 390	Artificial Intelligence	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science			
87	CSCI 398	Directed Study	3	6				Through Add form only			
88	CSCI 408	Senior Project I	3	6				Computer Science			
89	CSCI 434	Information Security	3	6		CSCI 333 Computer Networks (1145) (D and above)		Computer Science			
90	CSCI 471	Complexity and Computability	3	6	MATH 251 Discrete Mathematics (85) (C- and above)			Computer Science			
91	CSCI 494	Deep Learning	3	6	CSCI 390 Artificial Intelligence (643) (C and above) AND MATH 273 Linear Algebra with Applications (84) (C and above)			Computer Science			
92	CSCI 501	Software Principles and Practice	3	6							
93	CSCI 511	Theory of Computation	3	6							
94	CSCI 525	Quantum Computing	3	6				Computer Science, Physics	SST, Science, Engineering and Technology	SEng, SHSS	
95	CSCI 545	Big Data Analytics	3	6							
96	CSCI 575	Formal Methods and Applications	3	6							



97	CSCI 693	Thesis Proposal	3	6	SEDS 591 Research Methods (3184) (C- and above)						
98	SEDS 503	Laboratory Practicum	3	6	SEDS 502 Teaching Practicum (2824) (P)						
99	SEDS 591	Research Methods	3	6							
<b>Robotics and Mechatronics</b>											
100	ROBT 201	Mechanics: Statics and Dynamics	3	6	MATH 162 Calculus II (170) (C- and above) AND (PHYS 161 Physics I for Scientists and Engineers with Laboratory (116) (C- and above) OR PHYS 171 Physics I for Physics Majors with Laboratory (1401) (C- and above))			Robotics and Mechatronics	SST		
101	ROBT 203	Electrical and Electronic Circuits I with Lab	4	8	MATH 162 Calculus II (170) (C- and above) AND (PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above) OR PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above) OR (PHYS 141 Physics I for non-majors with Lab (1437) (C- and above) AND PHYS 142 Physics II for non-majors with Lab (1438) (C- and above)))			Robotics and Mechatronics	SST		
102	ROBT 205	Signals and Sensing with Lab	4	8	MATH 162 Calculus II (170) (C- and above) AND (PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above) OR PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above))			Robotics and Mechatronics	SST		
103	ROBT 301	Mechanical Design I with CAD Laboratory	4	8	ROBT 201 Mechanics: Statics and Dynamics (475) (C- and above)			Robotics and Mechatronics	SST		
104	ROBT 303	Linear Control Theory with Lab	4	8	ROBT 202 System Dynamics and Modeling (68) (C- and above) AND MATH 274 Introduction to Differential Equations (484) (C- and above)			Robotics and Mechatronics	SST		
105	ROBT 305	Embedded Systems	3	6	ROBT 206 Microcontrollers with Lab (476) (C- and above)			Robotics and Mechatronics	SST		
106	ROBT 307	Power Electronics	3	6	ROBT 204 Electrical and Electronic Circuits II with Lab (491) (C- and above)			Robotics and Mechatronics	SST		
107	ROBT 308	Industrial Automation	3	6				Robotics and Mechatronics	SST		
108	ROBT 401	Robot Dynamics and Control	3	6	ROBT 303 Linear Control Theory with Lab (623) (C- and above)			Robotics and Mechatronics	SST		

109	ROBT 407	Statistical Methods and Machine Learning	3	6	MATH 273 Linear Algebra with Applications (84) (C and above) AND MATH 321 Probability (482) (C and above) AND CSCI 152 Performance and Data Structures (489) (C and above)		Robotics and Mechatronics	SST		
110	ROBT 414	Human-Robot Interaction	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)		Robotics and Mechatronics	SST		
111	ROBT 501	Robot Manipulation and Mobility	3	6						
112	ROBT 503	Dynamic Systems and Control	3	6						
113	ROBT 611	Industrial Robotics	3	6	ROBT 501 Robot Manipulation and Mobility (2263) (C- and above) AND CSCI 501 Software Principles and Practice (2408) (C- and above)		Robotics	SST, Science, Engineering and Technology	SEng, SHSS	
114	ROBT 613	Brain-Machine Interfaces	3	6			Robotics	SST, Science, Engineering and Technology	SEng, SHSS	
115	ROBT 615	Optimal Control and Planning	3	6	ROBT 501 Robot Manipulation and Mobility (2263) (C- and above) AND ROBT 503 Dynamic Systems and Control (2264) (C- and above)		Robotics	SST, Science, Engineering and Technology	SEng, SHSS	