

**Course Requirements and Registration Priorities
School of Science and Technology, Spring 2017**

#	Abbr	Title	Cr(US)	Cr(ECTS)	PreRequisite	CoRequisite	AntiRequisite	1st priority registration	2nd priority registration	3rd priority registration	4th priority registration
SST											
Mathematics											
1	MATH 417	Cryptography	3	6	MATH 273 Linear Algebra with Applications (84) (C and above) AND (MATH 251 Discrete Mathematics (85) (C and above) OR MATH 301 Introduction to Number Theory (613) (C and above) OR MATH 355 Introduction to Proofs (86) (C and above))			Mathematics	SST	SHSS	
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	SST	SHSS	
3	MATH 444	Nonparametric Methods	3	6	MATH 322 Mathematical Statistics (1165) (C and above)			Mathematics	SST	SHSS	
4	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	SST	SHSS	
SSH											
Biological Science											
5	BIOL 101	Biology for non-Science majors	3	6			BIOL 110 Modern Biology I (1070) (C- and above)	SHSS			
6	BIOL 110	Modern Biology I	3	6				Biological Sciences, Chemistry	SST	SHSS	
7	BIOL 120	Modern Biology II	3	6	BIOL 110 Modern Biology I (1070) (C and above)			Biological Sciences, Chemistry	SST	SHSS	
8	BIOL 231	Human Anatomy and Physiology II	4	8	BIOL 230 Human Anatomy and Physiology I (72) (C and above)			Biological Sciences, Chemistry	SST	SHSS	
9	BIOL 301	Molecular Biology of Cell with Lab	4	8	BIOL 120 Modern Biology II (177) (C and above) OR BIOL 120 Modern Biology II (177) (C and above) OR BIOL 120 Modern Biology II Lab (1445) (C and above) OR BIOL 120L Modern Biology II Laboratory (5443) (C and above)			Biological Sciences, Chemistry	SST	SHSS	

10	BIOL 341	Biochemistry I	3	6	CHEM 211 Organic Chemistry I (154) (C and above)			Biological Sciences, Chemistry	SST	SHSS	
11	BIOL 370	Genetics	3	6	BIOL 120 Modern Biology II (1195) (C and above)			Biological Sciences			
12	BIOL 399	Biology Internship	3	6				Biological Sciences			
13	BIOL 420	Bioethics	3	6	BIOL 120 Modern Biology II (1195) (C and above)			4 year UG SST Biological Sciences	Biological Sciences		
14	BIOL 430	Histology with Laboratory	4	8	BIOL 230 Human Anatomy and Physiology I (72) (C and above)			Biological Sciences			
15	BIOL 440	Neuroscience	3	6	BIOL 230 Human Anatomy and Physiology I (72) (C and above)			Biological Sciences			
16	BIOL 456	Biology Research Design	3	6	BIOL 355 Critical Research Reasoning (1000) (C and above)			Biological Sciences			
17	BIOL 491	Graduation Project 2	4	8	BIOL 490 Graduation Project 1 (1581) (C- and above)			Biological Sciences			
18	BIOL 530	Bioethics Principles and Practices	3	6							
19	BIOL 550	Structural and Molecular Biology in Health and Disease	3	6							
20	BIOL 560	Molecular Biology of Prokaryotic Cells	3	6							
21	BIOL 600	Graduate Seminar Series	3	6							
22	BIOL 699	Research Thesis II	6	12							
Chemistry											
23	CHEM 090	Chemistry for Non-Science majors	3	6				SHSS			
24	CHEM 092	Survey of Environmental Sciences for Non-Science Majors	3	6				SHSS			
25	CHEM 101	General Chemistry I	3	6				Chemistry	Biological Sciences	SST	
26	CHEM 102	General Chemistry II	3	6	CHEM 101 General Chemistry I (113) (C and above)			Biological Sciences, Chemistry	SST		
27	CHEM 102L	General Chemistry II lab	1	2	CHEM 101L General Chemistry I lab (179) (C and above)	CHEM 102 General Chemistry II (232) (C and above)					
28	CHEM 189c	Independent Study	3	6				Through Add form only			

29	CHEM 211	Organic Chemistry I	3	6	CHEM 102 General Chemistry II (232) (C and above)						
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)					
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 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)		Chemistry	Biological Sciences	SST	
33	CHEM 320	Instrumental Analysis	3	6	CHEM 220 Quantitative Chemical Analysis (555) (C and above)			Chemistry	Biological Sciences	SST	
34	CHEM 332	Physical Chemistry II	3	6	CHEM 331 Physical Chemistry I (634) (C and above) AND MATH 274 Introduction to Differential Equations (484) (C and above)			Chemistry	Biological Sciences	SST	
35	CHEM 332L	Physical Chemistry II Lab	1	2	CHEM 331L Physical Chemistry Lab (1060) (C and above)	CHEM 332 Physical Chemistry II (1056) (C and above)		Chemistry	Biological Sciences	SST	
36	CHEM 341	Biochemistry I	3	6	CHEM 211 Organic Chemistry I (154) (C and above) AND BIOL 120 Modern Biology II (1195) (C- and above)						
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)					
38	CHEM 380	Research Methods	3	6							
39	CHEM 400	Chemistry Seminar	3	6	CHEM 380 Research Methods (636) (C and above)			Chemistry	Biological Sciences	SST	
40	CHEM 413	Natural Product Chemistry	3	6	CHEM 212 Organic Chemistry II (443) (C and above) AND CHEM 220 Quantitative Chemical Analysis (555) (C and above)						
41	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)						

42	CHEM 451	Applied Homogenous Catalysis	3	6	CHEM 350 Advanced Inorganic Chemistry (1905) (C and above)						
43	CHEM 471	Environmental Chemistry	3	6	CHEM 320 Instrumental Analysis (1055) (C and above) AND CHEM 212 Organic Chemistry II (443) (C and above)			Chemistry	Biological Sciences	SST	
44	CHEM 490	Nanochemistry	3	6	CHEM 331 Physical Chemistry I (634) (C and above) AND CHEM 250 Descriptive Inorganic Chemistry (445) (C and above)						
Mathematics											
45	MATH 161	Calculus I	4	8				Biological Sciences, Chemistry	SST	SHSS	
46	MATH 162	Calculus II	4	8	MATH 161 Calculus I (118) (C and above)			1 year UG SST	SST	SHSS	
47	MATH 251	Discrete Mathematics	3	6	MATH 162 Calculus II (170) (C and above)			Mathematics	SST	SHSS	
48	MATH 263	Calculus III	4	8	MATH 162 Calculus II (170) (C and above)			Mathematics	SST	SHSS	
49	MATH 273	Linear Algebra with Applications	4	8	MATH 161 Calculus I (118) (C and above)	MATH 162 Calculus II (170) (C and above)		Mathematics	SST	SHSS	
50	MATH 274	Introduction to Differential Equations	3	6	MATH 162 Calculus II (170) (C and above)			Mathematics	SST	SHSS	
51	MATH 310	Applied Statistical Methods	3	6	MATH 161 Calculus I (118) (C and above)		MATH 322 Mathematical Statistics (1165) (D and above)	Mathematics	SST	SHSS	
52	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)	Mathematics	SST	SHSS	
53	MATH 322	Mathematical Statistics	3	6	MATH 321 Probability (482) (C and above) OR ECON 211 Economic Statistics (2280) (C and above)			Mathematics	SST	SHSS	
54	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	SST	SHSS	

55	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	SST	SHSS	
56	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	SST	SHSS	
57	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	SST	SHSS	
58	MATH 423	Actuarial Mathematics II	3	6	MATH 321 Probability (482) (C and above) OR ECON 211 Economic Statistics (2280) (C and above)			Mathematics	SST	SHSS	
59	MATH 460	Topology	3	6	MATH 361 Real Analysis I (483) (C and above)			Mathematics	SST	SHSS	
60	MATH 461	Real Analysis II	3	6	MATH 361 Real Analysis I (483) (C and above)			Mathematics	SST	SHSS	
61	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	SST	SHSS	
62	MATH 499	Capstone Project	3	6				Through Add form only			
Physics											
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 SST	SST	SHSS	
64	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 SST	SST	SHSS	
65	PHYS 202	Introductory Astrophysics	3	6	PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above)			SST	SHSS		
66	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	SST		

67	PHYS 270	Computational Physics with Laboratory	3	6	(CSCI 150 Fundamentals of Programming (1501) (C- and above) OR CSCI 151 Programming for Scientists and Engineers (192) (C- and above) AND MATH 263 Calculus III (81) (C- and above) AND (PHYS 162 Physics II for Scientists and Engineers with Laboratory (173) (C- and above) OR PHYS 172 Physics II for Physics Majors with Laboratory (1402) (C- and above))	MATH 273 Linear Algebra with Applications (84) (D and above)		Physics	Mathematics	SST		
68	PHYS 271	Applied Methods of Computational Physics with Laboratory	3	6	MATH 162 Calculus II (170) (C- and above) AND MATH 273 Linear Algebra with Applications (84) (C- and above)		PHYS 270 Computational Physics with Laboratory (488) (C- and above)	Economics	Mathematics	SST		
69	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	SST			
70	PHYS 362	Classical Electrodynamics II	3	6	PHYS 361 Classical Electrodynamics I (651) (C- and above)			Physics	SST			
71	PHYS 370	Optics with Laboratory	4	8	PHYS 361 Classical Electrodynamics I (651) (C- and above)			Physics	SST			
72	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)							
73	PHYS 474	Lasers and Photonics	3	6	PHYS 370 Optics with Laboratory (1405) (C- and above)			Physics	SST			
74	PHYS 491	Directed Study of Advanced Physics Topics	3	6				Through Add form only				
75	PHYS 495	Physics Colloquium	0	0				Physics	SST			
76	PHYS 499	Honors Thesis	3	6				Through Add form only				
77	PHYS 510	Quantum Mechanics	3	6								
78	PHYS 520	Statistical Physics	3	6								
79	SST 502	Teaching Practicum	3	6	SST 501 Teaching and Learning (2260) (C- and above)							
80	SST 504	Innovation & Entrepreneurship	3	6								
81	SST 592	Research Seminar	3	6								
82	SST 692	Thesis	15	30								

Computer Science

83	CSCI 151	Programming for Scientists and Engineers	4	8			ROBT 102 Programming for robotics and physics (188) (C- and above) OR CSCI 150 Fundamentals of Programming (1501) (C- and above)	1 year UG SST	SST	SHSS	
84	CSCI 152	Performance and Data Structures	4	8	CSCI 151 Programming for Scientists and Engineers (192) (C- and above) OR CSCI 150 Fundamentals of Programming (1501) (C- and above) OR CSCI 261 Object Oriented Programming with Java I (171) (C- and above) OR ROBT 102 Programming for robotics and physics (188) (C- and above)			1 year UG SST	SST	SHSS	
85	CSCI 235	Programming Languages	4	8	CSCI 152 Performance and Data Structures (489) (C and above)			3 year UG SST Computer Science	Computer Science	SST	
86	CSCI 245	System Analysis and Design	3	6	CSCI 341 Database Systems (195) (C- and above)			Computer Science	SST	SHSS	
87	CSCI 307	Research Methods	3	6				3 year UG SST Computer Science			
88	CSCI 332	Operating Systems	3	6	CSCI 231 Computer Systems and Organization (194) (C- and above)			2 year UG SST Computer Science	Computer Science	SST	
89	CSCI 333	Computer Networks	3	6	CSCI 152 Performance and Data Structures (489) (C- and above)			Computer Science	SST	SHSS	
90	CSCI 336	Ubiquity and Sensing	3	6	CSCI 333 Computer Networks (1145) (C- and above)			Computer Science	SST	SHSS	
91	CSCI 398	Directed Study	3	6				Through Add form only			
92	CSCI 408	Senior Project I	3	6							
93	CSCI 409	Senior Project II	3	6	CSCI 408 Senior Project I (1481) (C- and above)			Through Add form only			
94	CSCI 455	Scripting Languages	3	6		CSCI 235 Programming Languages (638) (C- and above)		Computer Science	SST	SHSS	
95	CSCI 462	Open Source Software	3	6	CSCI 361 Software Engineering (640) (C- and above)			Computer Science	SST	SHSS	

96	CSCI 502	Hardware Software Co-Design	3	6	CSCI 501 Software Principles and Practice (2408) (C- and above)					
97	CSCI 591	Advanced Artificial Intelligence	3	6	CSCI 501 Software Principles and Practice (2408) (C- and above)					
Robotics and Mechatronics										
98	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 and Mechatronics	SST	
99	ROBT 204	Electrical and Electronic Circuits II with Lab	4	8	ROBT 203 Electrical and Electronic Circuits I with Lab (62) (C- and above)			Physics, Robotics and Mechatronics	SST	
100	ROBT 206	Microcontrollers with Lab	4	8	CSCI 151 Programming for Scientists and Engineers (192) (C- and above) OR ROBT 102 Programming for robotics and physics (188) (C- and above) OR CSCI 150 Fundamentals of Programming (1501) (C- and above)			Computer Science, Robotics and Mechatronics	SST	
101	ROBT 302	Mechanical Design II with Machining Laboratory	4	8	ROBT 301 Mechanical Design with CAD and Machining Laboratory (622) (C- and above)			Robotics and Mechatronics	SST	
102	ROBT 304	Electromechanical Systems with lab	4	8	ROBT 204 Electrical and Electronic Circuits II with Lab (491) (C- and above)			Robotics and Mechatronics	SST	
103	ROBT 308	Industrial Automation	3	6				Computer Science, Robotics and Mechatronics	SST	
104	ROBT 310	Image Processing	3	6	MATH 162 Calculus II (170) (C- and above) AND MATH 273 Linear Algebra with Applications (84) (C- and above)			Computer Science, Robotics and Mechatronics	SST	
105	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) AND ROBT 302 Mechanical Design II with Machining Laboratory (1170) (C- and above)			Robotics and Mechatronics		
106	ROBT 491	Graduation Project	3	6				Robotics and Mechatronics		
107	ROBT 502	Robot Perception & Vision	3	6	ROBT 501 Robot Manipulation and Mobility (2263) (C- and above)					