SOFTWARE ENGINEERING ELECTIVES			
COURSE #	**TITLE**	**CREDITS**	**PREREQUISITES**
S E 342 x: COM S	Principles of Programming Languages	3	Math 165; Com S 228; Com S 230 or CPR E 310
S E 362 x: COM S	Object-Oriented Analysis and Design	3	Com S 228; ENGL 250
S E 409 x: COM S	Software Requirements Engineering	3	COM S 309
S E 412 x: COM S/CPR E	Formal Methods in Software Engineering	3	COM S 230 or CPR E 310; COM S 311; and STAT 330
S E 416 x: CPR E	Software Evolution and Maintenance	3	COM S 309
S E 417 x: COM S	Software Testing	3	COM S 309; COM S 230 or CPR E 310; ENGL 250; SP CM 212
S E 419 x: CPR E	Software Tools for Large Scale Data Analysis	4	COM S 352 or CPR E 308; COM S 309
S E 421 x: CPR E	Software Analysis & Verification for Safety and Security	3	SE 309 and either CPRE 310 or COMS 230 or COMS 311

TECHNICAL ELECTIVES			
Any SE Elective can be used to fill this requirement.			
COURSE #	**TITLE**	**CREDITS**	**PREREQUISITES**
COM S 402A	Computer Science Senior Project: Multimedia and Computer Gaming I	2 to 3	COM S 437
COM S 402B	Computer Science Senior Project: Multimedia and Computer Gaming II	2 to 3	COM S 402A
COM S 415/515	Software System Safety	3	COM S 309 or COM S 311, COM S 342
COM S 418/518	Introduction to Computational Geometry	3	COM S 311 or permission of the instructor
COM S 430	Advanced Programming Tools	3	COM S 311; COM S 362 or 363; ENGL 250; and SP CM 212
COM S 435	Algorithms for Large Data Sets: Theory & Practice	3	COM S 228; COM S 230 or CPR E 310; COM S 311 or equivalent
COM S 437	Computer Game and Media Programming	3	COM S 336 or permission of the instructor
COM S 454/554 x: CPR E	Distributed & Network Operating Systems	3	COM S 311; COM S 352
COM S 461/561	Database System Concepts & Internals	3	COM S 311; ENGL 250; and SP CM 212
COM S 486	Fundamental Concepts in Computer Networking	3	COM S 352

CPR E 388	Embedded Systems II: Mobile Platforms	4	CPR E 288
CPR E 426/526 x:COM S	Intro to Parallel Algorithms & Programming	4	CPR E 315 or COM S 311; CPR E 308 or COM S 321
CPR E 430/530 x:INFAS	Network Protocols and Security	3	CPR E 381 or equivalent
CPR E 450/550	Distributed Systems and Middleware	3	CPR E 308 or COM S 352
CPR E 458/558	Real Time Systems	3	CPR E 308 or COM S 352
CPR E 489	Computer Networking & Data Communications	4	CPR E 381 or E E 324

Note on Supplementary Electives

Nine (9) semester credit hours of Supplementary Electives are required for completing the software engineering program of study. Courses not on the Supplementary Elective list may be counted as Supplementary Electives only if approved by the Software Engineering Program Petition Committee. A written request must be submitted and approved before the course is taken. For 500-level Supplementary Elective courses, see your academic advisor. 500-level courses are open to "qualified undergraduate students" (students in the upper half of their class).

Students who have taken four (4) credit lab courses, such as CPR E 288, CPR E 308, and CPR E 381, are required to take six (6) credits of Supplementary Elective courses. Excess credits from CPR E 288, CPR E 381, and/or CPR E 308 may be applied to meet the Supplementary Elective credit requirement.

SUPPLEMENTARY ELECTIVES			
Any SE Elective & Technical Elective can be used to fill this requirement.			
COURSE #	**TITLE**	**CREDITS**	**PREREQUISITES**
C E 388 x: A B E/E E	Sustainable Engineering and International Development	3	Junior classification in engineering
M E 484/584 x: WLC	Technology, Globalization, and Culture	3	Junior or Senior classification for M E 484; graduate classification for M E 584
COM S 252	Linux Operating System Essentials	3	COM S 107 or COM S 207 or COM S 227
COM S 327	Advanced Programming Techniques	3	COM S 228; credit or enrollment in MATH 166
COM S 331 x: LING	Theory of Computing	3	Minimum of C- in COM S 228, MATH 166, and COM S 230 or CPR E 310; ENGL 250
COM S 336	Introduction to Computer Graphics	3	COM S 327; co-requisite MATH 207 or MATH 317
COM S 425 x: CPR E	High Perform. Computing for Science and Engr. Applications	3	COM S 311; COM S 230; ENGL 250; and SP CM 212
COM S 433/533	Computational Models of Nanoscale Self-Assembly	3	Minimum of C- in COM S 331 or consent of the instructor
COM S 440/540	Principles and Practice of Compiling	3	COM S 331; COM S 342; ENGL 250; and SP CM 212

COM S 444 x: BCB/BCBIO/ BIOL/CPR E/ GEN	Introduction to Bioinformatics	4	MATH 165 or STAT 401 or equivalent
COM S 455/555	Simulation: Algorithms and Implementation	3	COM S 311 and COM S 230; STAT 330; ENGL 150; and SP CM 212
COM S 472/572	Principles of Artificial Intelligence	3	COM S 311, COM S 230 or CPR E 310, STAT 330, ENGL 250, SP CM 212, COM S 342 or comparable programming experience
COM S 474	Introduction to Machine Learning	3	COM S 311, COM S 230 or CPR E 310, STAT 330, MATH 165, ENGL 250, SP CM 212, COM S 342 or comparable programming experience
COM S 476X/ 576X	Motion Strategy Algorithms and Applications	3	ENGL 250, SP CM 212, COM S 311
COM S 477/577	Problem Solving Tech. for Applied Computer Science	3	COM S 228; CPR E 310 or COM S 230; MATH 166; MATH 207 or MATH 317; or consent of instructor
COM S 481 x: MATH	Numerical Methods for Differential Equations	3	MATH 265; MATH 266 or MATH 267; knowledge of a programming language
COM S 490	Independent Study	1-2	Permission of instructor NOTE: Can only apply 2 credits to supplementary electives
COM S 575 (Cross-listed with CPR E, HCI)	Computational Perception	3	Graduate standing or permission of instructor
SE 490	Independent Study	1-2	Permission of instructor NOTE: Can only apply 2 credits to supplementary electives
CPR E 288	Embedded Systems I: Introduction	4	CPR E 281; either COM S 207, COM S 227, or E E 285
CPR E 418 x: E E	High Speed Systems Engr. Measurement & Testing	4	E E 230; E E 311
CPR E 431	Basics of Information System Security	3	Credit or enrollment in CPR E 308 or COM S 352
CPR E 483	Hardware Software Integration	4	CPR E 381
CPR E 488	Embedded Systems Design	4	CPR E 381 or COM S 321
CPR E 490	Independent Study	1-2	Senior classification in computer engineering NOTE: Can only apply 2 credits to supplementary electives

CPR E 575 (Cross-listed with COM S 575, HCI)	Computational Perception	3	Graduate standing or permission of instructor

ECON ELECTIVES			
COURSE #	**TITLE**	**CREDITS**	**PREREQUISITES**
ECON 101	Principles of Microeconomics	3	
ECON 102	Principles of Macroeconomics	3	ECON 101 recommended
I E 305	Engineering Economic Analysis	3	MATH 166

MATH ELECTIVES			
COURSE #	**TITLE**	**CREDITS**	**PREREQUISITES**
MATH 207	Matrices and Linear Algebra	3	Two semesters of calculus
MATH 265	Calculus III	4	Minnimum of C- in MATH 166 or MATH 166H
MATH 304	Combinatorics	3	MATH 166 or 166H; MATH 201 or experience with proofs
MATH 314	Graphs Theory	3	MATH 166 or 166H; MATH 201 or experience with proofs
MATH 317	Theory of Linear Algebra	4	MATH 166; credit or enrollment in MATH 201