13-14

BS COMPUTER SCIENCE CURRICULUM

TERM	GRADE		
		FRESHMAN	
1	_____	CS 164	Intro to Computer Science (3cr)
	_____	MATH 121	Calculus I (4cr)
	_____	ENGR 121	Computation Lab I (2cr)
	_____	ENGL 101	Expository Writing and Reading (3cr)
	_____	ENGR 101	Freshman Engr Design I (2cr)
	_____	UNIV 101	University Seminar (1cr)
	_____		Science Elective 1
2	_____	CS 171	Computer Programming I (3cr)
	_____	MATH 122	Calculus II (4cr)
	_____	ENGR 122	Computation Lab II (1cr)
	_____	ENGL 102	Persuasive Writing and Reading (3cr)
	_____	ENGR 102	Freshman Engr Design II (2cr)
	_____	UNIV 101	University Seminar (0.5cr)
	_____		Science Elective 2
3	_____	CS 172	Computer Programming II (3cr)
	_____	MATH 123	Calculus III (4cr)
	_____	ENGL 103	Analytical Writing and Reading (3cr)
	_____	ENGR 103	Freshman Engr Design III (2cr)
	_____	UNIV 101	University Seminar (0.5cr)
	_____		Science Elective 3
		SOPHOMORE	
4	_____	CS 265	Adv Prog Tools and Techniques (3cr)
	_____	CS 270	Math. Foundations of Comp Science (3cr)
	_____	MATH 201	Linear Algebra (4cr)
	_____		Science Elective 4 (3cr)
	_____		Social Studies Elective (3cr)
5	_____	CS 260	Data Structures (3cr)
	_____	CS 275	Web & Mobile App Development
	_____	MATH 221	Discrete Mathematics (3cr)
	_____		Science Elective 5 (3cr)
	_____		Business Elective (4cr)
		PRE-JUNIOR	
6	_____	CS 281	Systems Architecture I (4cr)
	_____	CS 350	Software Design (3cr)
	_____		General Education Elective 1 (3cr)
	_____	COM 230	Techniques of Speaking (3cr)
	_____		Science Elective 6 (3cr)
7	_____	CS 283	Systems Programming (4cr)
	_____	CS 360	Programming Language Concepts (3cr)
	_____		General Education Elective 2 (3cr)
	_____		Writing/Com Elective 1 (3cr) - *from list*
	_____		Science Elective 7 (3-4cr)
		JUNIOR	
8	_____	MATH 311	Probability and Statistics I (4cr)
		or MATH 410	or Scientific Data Analysis I (3cr)
	_____	CS	Computer Science Elective (3cr)
	_____	CS	Computer Science Elective (3cr)
	_____	PHIL 311	Computer Ethics (3cr)
	_____		General Education Elective 3 (3cr)
9	_____	CS 451	Software Engineering (3cr)
	_____	CS	Computer Science Elective (3cr)
	_____	MATH	Mathematics elective (3-4cr)
	_____		General Education Elective 4 (3cr)
	_____		Free Elective (3cr)
		SENIOR	
10	_____	CS 491	Software Engineering Workshop I (3cr)
	_____	CS	Computer Science Electve (3cr)
	_____	CS	Computer Science Electve (3cr)
	_____		General Education Elective 5 (3cr)
	_____		Free Elective (3cr)
11	_____	CS 492	Software Engineering Workshop II (3cr)
	_____	CS	Computer Science Elective 6 (3cr)
	_____	CS	Computer Science Elective 7 (3cr)
	_____		General Education Elective 6 (3cr)
	_____		Free Elective (3cr)
12	_____	CS 493	Software Engineering Workshop III (3cr)
	_____	CS	Computer Science Elective 8 (3cr)
	_____		Writing/Com Elective 1 (3cr) - *from list*
	_____		Free Elective (3cr)

Total Credits Needed: 186.5

COMPUTER SCIENCE ELECTIVES (24cr- including 2 required tracks)

* Required Track Course ** Tracks may only overlap by one course

Algorithms and Data Structures (3 courses)

*	CS 457	Data Structures and Algorithms I
*	CS 458	Data Structures and Algorithms II
*	CS 440 **	Theory of Computation

Artificial Intelligence (3 courses)

*	CS 380	Artificial Intelligence
	CS 383	Machine Learning
	CS 385	Evolutionary Computing
	CS 387 **	Game AI Development
	CS 481	Advanced Artificial Intelligence
	CS 485	Topics in Artificial Intelligence

Computer & Network Security (3 courses)

*	CS 472 **	Computer Networks
*	CS 475	Computer and Network Security
*	CS 303 **	Alg Number Theory & Crytography

Computer Architecture (3 courses) - ECEC 304 possible prereq

*	CS 352	Processor Arch & Analysis
	CS 476/ECEC 414	High Performance Computing
	ECEC 356	Embedded Systems
	ECEC 413	Intro to Parallel Computer Architecture

Computer Graphics & Vision (3 courses)

*	CS 430 **	Computer Graphics
*	CS 435 **	Computational Photography
	CS 338 **	Graphical User Interfaces
	or CS 431	Advanced Rendering Techniques
	or CS 432	Interactive Graphics

Computing Systems (3 courses)

*	CS 361	Concurrent Programming
*	CS 370	Operating Systems
	CS 472 **	Computer Networks
	or CS 365	Systems Administration
	or CS 461	Database Systems

Game Design & Development (3 courses) - GMAP 260 prereq

*	CS/GMAP 345 **	Game Design & Development
	CS 347	Experimental Game Development
	CS 348	Serious Game Development
	CS 387 **	Game AI Development
	CS 445	Topics in Computer Gaming
	GMAP 377	Game Development: Workshop I
	GMAP 378	Game Development: Workshop I I

Human-Computer Interaction (3 courses) - PSY 101 prereq

*	CS/PSY 337	Human Computer Interaction
*	CS 338 **	Graphical User Interfaces
	PSY 330	Cognitive Psychology
	or CS 430 **	Computer Graphics
	or CS/GMAP 345 **	Game Design & Development
	or CS 435 **	Computational Photography

Numeric & Symbolic Computation (3 courses) - MATH 200 prereq

*	MATH 300	Numerical Analysis
*	CS 300	Applied Symbolic Computation
	MATH 301	Numerical Analysis II
	or MATH 305	Intro Optimization Theory
	or CS 303 **	Alg Number Theory & Crytography

Software Engineering (3 courses)

*	SE 311	Software Architecture II
*	SE 320	Software Verification & Validation
*	SE 410	Software Evolution

SCIENCE ELECTIVES (25 credits - including 1 lab sequence below)

__	BIO 122	__	CHEM 101	__	PHYS 101
__	BIO 124	__	CHEM 102	__	PHYS 102
__	BIO 126	__	CHEM 103	__	PHYS 201

WRITING & COMMUNICATION ELECTIVES (9 credits)

__	COM 230 (Required)				
__	COM 260	__	WRIT 220	__	ENGL 215
__	COM 270	__	WRIT 225	__	ENGL 216
__	COM 310	__	WRIT 301	__	ENGL 300
__	COM 320	__	WRIT 304	__	ENGL 305
__	COM 330	__	ENGL 200	__	ENGL 310
__	COM 350	__	ENGL 202	__	ENGL 315
__	COM 370	__	ENGL 203	__	ENGL 320
__	COM 375	__	ENGL 205	__	ENGL 355
__	COM 390	__	ENGL 206	__	ENGL 360
__	COM 410	__	ENGL 207	__	ENGL 395
__	WRIT 210	__	ENGL 211	__	UNIV 320