11-12

BS COMPUTER SCIENCE CURRICULUM

TERM	GRADE		
		FRESHMAN	
1	_____	MATH 121	Calculus I (4cr)
	_____	CS 121	Computation Lab I (1cr)
	_____	CS 164	Intro to Computer Science (3cr)
	_____	ENGL 101	Expository Writing and Reading (3cr)
	_____	ENGR 101	Freshman Engr Design I (2cr)
	_____	UNIV 101	University Seminar (1cr)
	_____		Science Elective 1
2	_____	MATH 122	Calculus II (4cr)
	_____	CS 122	Computation Lab II (1cr)
	_____	CS 171	Computer Programming I (3cr)
	_____	ENGL 102	Persuasive Writing and Reading (3cr)
	_____	ENGR 102	Freshman Engr Design II (2cr)
	_____	UNIV 101	University Seminar (0.5cr)
	_____		Science Elective 2
3	_____	MATH 123	Calculus III (4cr)
	_____	CS 123	Computation Lab III (1cr)
	_____	CS 172	Computer Programming II (3cr)
	_____	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	_____	MATH 201	Linear Algebra (4cr)
	_____	CS 265	Adv Prog Tools and Techniques (3cr)
	_____	CS 270	Math. Foundations of Comp Science (3cr)
	_____		Science Elective 4 (3cr)
	_____		Social Studies Elective (3cr)
5	_____	ECE 200	Digital Logic Design (3cr)
	_____	MATH 221	Discrete Mathematics (3cr)
	_____	CS 260	Data Structures (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	_____	MATH	Mathematics elective (3-4cr)
	_____	CS 451	Software Engineering (3cr)
	_____	CS	Computer Science Elective (3cr)
	_____		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

8 COMPUTER SCIENCE ELECTIVES

(Including 2 track completions - see below)

COMPUTER SCIENCE TRACKS (2 tracks required):

* 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 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 282	Systems Architecture II
CS 476/ECEC 414	High Performance Computing
ECEC 356	Embedded Systems
ECEC 413	Intro to Parallel Computer Architecture

Computer Graphics & Vision (3 courses) - MATH 200 prereq

* 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/DIGM 345 **	Game Design & Development
CS 347	Experimental Game Development
CS 348	Serious Game 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/DIGM 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)

Must choose one of the following lab sequences.

__	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)

Must choose two from the following list.

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

FREE ELECTIVES (As needed to meet total number of credits - 186.5)