MAJOR IN COMPUTER SCIENCE WITH A TRACK IN COMPUTER SECURITY

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Code	Title	Units
Required Computer Science Courses		
COSC 236	INTRODUCTION TO COMPUTER SCIENCE I	4
COSC 237	INTRODUCTION TO COMPUTER SCIENCE II	4
COSC 290	PRINCIPLES OF COMPUTER ORGANIZATION	4
COSC 336	DATA STRUCTURES AND ALGORITHM ANALYSIS	4
COSC 350	DATA COMMUNICATIONS AND NETWORKING	3
COSC 412	SOFTWARE ENGINEERING	3
COSC 439	OPERATING SYSTEMS	3
COSC 455	PROGRAMMING LANGUAGES: DESIGN & IMPLEMENTATION	3
COSC 457	DATABSE MNGT SYS	3
Required Math Courses		
MATH 263	DISCRETE MATHEMATICS	3
or MATH 267	INTRODUCTION TO ABSTRACT MATHEMATICS	
MATH 273	CALCULUS I	4
MATH 274	CALCULUS II	4
MATH 314	INTRODUCTION TO CRYPTOGRAPHY	3
MATH 330	INTRODUCTION TO STATISTICAL METHODS	4
Required Security Track Courses		
COSC 310	SPECIAL TOPICS: ADVANCED PROGRAMMING	3
COSC 440	OPERATING SYSTEMS SECURITY	3
COSC 450	NETWORK SECURITY	3
COSC 458	APPLICATION SOFTWARE SECURITY	3
COSC 481	CASE STUDIES IN COMPUTER SECURITY	3
COSC 485	REVERSE ENGINEERING AND MALWARE ANALYSIS	3
Science Requirement		
Two lab science courses taken from physics, biology or chemistry, which must be accepted in that major. A list of approved courses can be found on the department's website.		8
Elective Math/Science Courses		
Select either one 4-unit or two 3-unit math courses (from the following), or one math course and one science course accepted in that major, for a minimum of 4 units.		4-6
MATH 265	ELEMENTARY LINEAR ALGEBRA	4
MATH 275	CALCULUS III	4
MATH 374	DIFFERENTIAL EQUATIONS	3
MATH 377	MATHEMATICAL MODELS	3
MATH 378	SCIENTIFIC MODELNG AND SIMULATION	3
MATH 435	NUMERICAL ANALYSIS I	3
MATH 437	OPERATIONS RESEARCH	3
MATH 451	GRAPH THEORY	3
MATH 467	ALGEBRAIC STRUCTURES	3
Core Curriculum Requirements		
Must be completed with a grade equivalent of 2.00 or higher.		
COMM 131	FUNDAMENTALS OF SPEECH COMMUNICATION (Core 5)	3
COSC 418	ETHICAL AND SOCIETAL CONCERNS OF COMPUTER SCIENTISTS (Core 14)	3
Total Units		85-87

Suggested Four-Year Plan

Freshman

Term 1	Units	Term 2	Units
COSC 236	4	COSC 237	4
MATH 273 (Core 3)	4	MATH 274	4
COMM 131	3	Lab-Science (from approved list)	4
Core	3	Core	3
	14		15

Sophomore

Term 1	Units	Term 2	Units
COSC 336	4	COSC 290	4
MATH 263	3	MATH 330	4
Lab-Science (from approved list)	4	COSC 412	3
Core	3	Core	3
		Core	3
	14		17

Junior

Term 1	Units	Term 2	Units
COSC 310	3	COSC 439	3
COSC 350	3	COSC 455	3
MATH 314	3	COSC 457	3
ENGL 317	3	COSC 418	3
Core 9	3	Core or Elective	3
	15		15

Senior

Term 1	Units	Term 2	Units
COSC 440	3	COSC 481	3
COSC 450	3	COSC 485	3
COSC 458	3	Science/Math Elective (from approved list)	3
Core or Elective	3	Core or Elective	3
Core or Elective	3	Core or Elective	3
	15		15

Total Units 120

1. Use their proficiency in theoretical and applied computing principles and practices to solve a variety of problems.
2. Explain the theoretical and applied principles that underlie computer science.

3. Understand the ethical and societal concerns and dilemmas facing computer scientists, and formulate appropriate solutions and courses of action.
4. Work effectively in teams and communicate effectively.