

## **COMPUTER SCIENCE MAJOR (129-131 CREDITS)**

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### **Required Computer Science Courses**

CSCD 210 Programming Principles I (5)  
CSCD 211 Programming Principles II (5)  
CSCD 240 C and Unix Programming (5)  
CSCD 260 Architecture and Organization (4)  
CSCD 300 Data Structures (5)  
CSCD 320 Algorithms (4)  
CSCD 327 Relational Database Systems (4)  
CSCD 330 Computer Networks (4)  
CSCD 340 Operating Systems (5)  
CSCD 350 Software Engineering (4)  
CSCD 370 Graphical User Interface Programming (4)  
CSCD 488 Senior Project (5)  
CSCD 490 Senior Capstone (5)

### **Advanced Coursework—select three from the following list of courses**

CSCD 409 Scientific Programming (4)  
CSCD 420 Automata (4)  
CSCD 427 Advanced Database Systems (4)  
CSCD 429 Data Mining (4)  
CSCD 433 Advanced Computer Networks (4)  
CSCD 434 Network Security (4)  
CSCD 440 Advanced Operating Systems (4)  
CSCD 443 Distributed Multiprocessing Environments (4)  
CSCD 454 Design Patterns (4)  
CSCD 460 Advanced Architecture and Organization (4)<sup>1</sup>  
CSCD 461 Embedded Systems (4)  
CSCD 470 3D Computer Graphics Principles (4)  
CSCD 471 Advanced 3D Computer Graphics Programming (4)<sup>2</sup>

### **Required Supporting Courses**

#### **Engineering & Design**

EENG 160 Digital Circuits (4)

#### **Mathematics**

MATH 161 Calculus I (5)  
MATH 162 Calculus II (5)  
MATH 231 Linear Algebra (5)  
MATH 301 Discrete Math (5)  
MATH 380 Elementary Probability and Statistics (5)

#### **Philosophy**

PHIL 212 Introduction to Ethics (5)

### **Required Laboratory Science Courses**

#### **Choose one of the following sequence**

##### **Biology**

BIOL 171 Biology I (5)  
BIOL 172 Biology II (5)  
BIOL 270 Biological Investigation (3)

##### **Chemistry**

CHEM 151 General Chemistry I (5)  
CHEM 152 General Chemistry II (5)

##### **Geology**

GEOL 120 Physical Geology—The Solid Earth (5)  
GEOL 121 Physical Geology—Surficial Processes (5)

##### **Physics**

PHYS 151 General Physics I (4)  
PHYS 152 General Physics II (4)

#### **And two of the following:**

PHYS 161 Mechanics Laboratory (1)  
PHYS 162 Heat and Optics Laboratory (1)  
PHYS 163 Instrumentation Lab I (1)  
PHYS 164 Instrumentation Lab II (1)

### **Natural Science Breadth**

Any 5 credit course that satisfies a natural science GEGR in a discipline other than that chosen for the sequence above.

## **Elective Courses**

**Three additional elective courses.**

**Select at least one course from Group A and at least one course from Group B.**

### **Group A**

CSCD 303 Computer & Information Security (4)  
CSCD 305 C++ Programming (4)  
CSCD 306 .NET Programming (4)  
CSCD 316 Practical Problem Solving (2, 2) <sup>1</sup>  
CSCD 378 Web Application Development (4)  
CSCD 379 .NET Web Application Development (4)  
CSCD 416 3D Modeling and Animation II (4) <sup>3</sup>  
CSCD 417 3D Modeling and Animation III (4)  
CSCD 418 3D Modeling and Animation IV (4)  
CSCD 435 Principles of Programming Languages (4)  
CSCD 437 Secure Coding (4)  
CSCD 474 Computer Game Development (4)  
CSCD 487 Human Computer Interface (4)  
CSCD 495 Internship (two 4–5 credit internships are allowed)  
Any course from the advanced coursework list not used to satisfy the advanced coursework requirement.  
CSCD 396, 398, 399, 3xx, 439, 496, 498, 499, 4xx (4–5) prior departmental approval of topic content is required.

### **Group B**

Must choose at least one course from the following list:

BIOL 173 Biology III (4)  
CHEM 153 General Chemistry III (5)  
GEOL 122 Historical Geology (5)  
MATH 163 Calculus III (5)  
MATH 241 Calculus IV (5)  
MATH 370 Survey of Geometries (5)  
MATH 401 Advanced Formal Logic (5)  
PHIL 301 Introduction to Formal Logic (5)  
PHYS 153 General Physics III (4)  
and one of the following not previously taken:  
PHYS 161 Mechanics Laboratory (1)  
PHYS 162 Heat and Optics Laboratory (1)  
PHYS 163 Instrumentation Lab I (1)  
PHYS 164 Instrumentation Lab II (1)  
Other course with prior approval of the department required.