

**B.S. Computer Science (CSC)**

(Option 2 –Geographic Information Science [GIS] Concentration)

*College: Arts & Sciences***DEGREE REQUIREMENTS**

Course requirements for all UNCW degrees include: (1) Basic Studies, (2) specific major requirements, and (3) sufficient elective hours for a combined total of a minimum of 124 hours.

**(1) BASIC STUDIES** (45 semester hours)

See Basic Studies sheet and/or information on the WEB at <http://www.uncw.edu/uc/basic/basic.html>

**(2) MAJOR REQUIREMENTS – CSC Option 2 – GIS** (67-74 hours [core plus concentration])

Check when complete:

- CSC 100 Orientation to Computer Science (1)  
 +CSC 121 Introduction to Computer Science (3) Prerequisite: MAT 111 or 115 [note: students w/no programming experience should complete CSC 112 prior to CSC 121] (Meets **Computer Competency Requirement**)  
 CSC 133 Discrete Structures (4) Prerequisite: MAT 111 or 115; corequisite: CSC 121  
 CSC 221 Introduction to Computer Science II (4) Prerequisite: CSC 121  
 CSC 242 Digital Logic, Computer Organization and Assembly Language (4) Prerequisites: CSC 121 and 133  
 CSC 332 Data Structures (3) Prerequisite: CSC 221; prerequisite or corequisite MAT 161  
 CSC 344 Computer Networks (3) Prerequisite: CSC 242  
 CSC 360 Formal Languages and Computability I (3) Prerequisite: CSC 242 and CSC 332  
 CSC 385 Professional and Ethical Issues in Computer Science (1) Prerequisite: Junior or Senior standing in Comp. Sci.  
 CSC 434 Programming Languages (3) Prerequisite: CSC 332 and CSC 360  
 CSC 450 Software Engineering (3) Prerequisite: CSC 332 and senior standing  
 CSC 455 Data Base Management Systems (3) Corequisite: CSC 332  
 +MAT 161 Calculus w/Analytical Geometry (4) Prerequisite: MAT 112 or 115 or equivalent prep in algebra and trig  
 +MAT 162 Calculus with Analytical Geometry (4) Prerequisite: MAT 161  
 QMM 280 **or** Statistical Analysis for Business and Economics (3) Prerequisite: MAT 111 or 115  
 +STT 215 Introduction to Statistics (3) Prerequisite: MAT 111 or 115  
 CSC \_\_\_\_ 300 or 400 level CSC course approved by the advisor  
 CSC \_\_\_\_ 300 or 400 level CSC course approved by the advisor  
 CSC 495 Sem. in Computer Sci. (1) Prerequisite: Junior or senior standing & consent of instructor (or any other approved oral intensive course – see UNCW catalogue) (Meets **Oral Communication Competency Requirement**)

**GIS CONCENTRATION:**

- \*GGY 220 Cartography (3) Prerequisite: GGY 130 or GGY 140  
 GGY 222 Quantitative Methods in Earth Sciences (3)  
 \*GGY 328 Introduction to Geographic Information Systems (3) Prerequisite: GGY 220 or consent of instructor  
 GGY 422 (522) Remote Sensing in Environmental Analysis (3) Prerequisite: GGY 130 or GLY 205 or GLY 101 or consent of instructor.  
 GGY 424 (524) **or** Advanced Geographic Information Systems (4) Prerequisite: GGY 328  
 GGY 426 Environmental Geographic Information Systems (4) Prerequisite: GGY 328 or consent of instructor

A grade point average of “C” (2.00) or better computed over the CSC courses and all the courses used to fulfill the requirements of the major are required.

*\*These courses require a lab*

*+May also be used to satisfy Basic Studies requirements*

**(3) ELECTIVES**

\_\_\_\_ Elective hours to equal a minimum of 124 hours

**Requirements to declare PRE-CSC:** Completion of 24 hours

**Requirements to declare CSC:** CSC 100, CSC 121, 133, and 221 with a GPA of at least 2.5 on these four courses.

For further information see the CSC WEB sites: <http://www.uncw.edu/csc> and

<http://www.uncw.edu/catalogue/undergraduate/catalogue/91010COU%20DESC.pdf#page=29>

## COMPUTER SCIENCE COURSES

- CSC 100.** Orientation to Computer Science (1)  
**CSC 105.** Introduction to Computing and Computer Applications (3) [For non-CSC majors]  
**CSC 110.** Fluency in Information Technology (3)  
**CSC 112.** Introduction to Computer Programming (3) Prerequisite: MAT 111 or 115  
**CSC 121.** Introduction to Computer Science I (3) Prerequisite: MAT 111 or 115  
**CSC 133.** Discrete Mathematical Structures (4) Prerequisite: MAT 111 or 115 Corequisite: CSC 121  
**CSC 204.** Multimedia Systems (3) Prerequisite: CSC 105 or 110 or equivalent  
**CSC 220.** (ART 220) (FST 220) 3-D Computer Graphics Tools and Literacy (3) Prerequisite: CSC 105, 121 or permission of instructor  
**CSC 221.** Introduction to Computer Science II (4) Prerequisite: CSC 121  
**CSC 242.** Digital Logic, Computer Organization and Assembly Language (4) Prerequisite: CSC 121 and CSC 133  
**CSC 255.** Database Management With Internet Applications (3)  
**CSC 275.** Topics in Computer Science and Technology (3) Prerequisite: Permission of instructor  
**CSC 320.** (ART 320) (FST 320) Computer Animation (3) Prerequisite: CSC 220 (ART 220) (FST 220) or permission of instructor  
**CSC 325.** (MAT 325) Numerical Algorithms (3) Prerequisite: CSC 112 or 121, MAT 162  
**CSC 332.** Data Structures (3) Prerequisite: CSC 221; prerequisite or corequisite MAT 161  
**CSC 340.** Scientific Computing (3) Prerequisites: MAT 162 and CSC 221  
**CSC 342.** Operating Systems (3) Prerequisite: CSC 242 and CSC 332  
**CSC 344.** Computer Networks (3) Prerequisite: CSC 242  
**CSC 360.** Formal Languages and Computability I (3) Prerequisite: CSC 242 and CSC 332  
**CSC 370.** Computer Graphics (3) Prerequisite: CSC 332 and MAT 162  
**CSC 385.** Professional and Ethical Issues in Computer Science (1) Prerequisite: Junior or senior standing in CSC  
**CSC 415.** (515) Artificial Intelligence (3) Prerequisite: CSC 332  
**CSC 421.** Computer Gaming (3) Prerequisite: CSC 320 (ART 320) (FST 320), 340, and 370.  
**CSC 422.** Performance Evaluation of Computer Systems (3) Prerequisite: STT 215, MAT 162, and CSC 221  
**CSC 425.** (525; MAT 425/525) Numerical Analysis (3) Prerequisite: MAT 325, 335, and 361  
**CSC 430.** (FST 430) Digital Special Effects (3) Prerequisite: CSC 332 and 220  
**CSC 434.** Programming Languages (3) Prerequisite: CSC 332 and CSC 360  
**CSC 437.** (CSC 537) Parallel Computing (3) Prerequisite: CSC 340  
**CSC 442.** Computer System Architecture (3) Prerequisite: CSC 242  
**CSC 444.** Network Programming (3) Prerequisite: CSC 342 and CSC 344  
**CSC 446.** (CSC 546) Grid Computing (3) Prerequisite: CSC 344 or 332  
**CSC 450.** Software Engineering (3) Prerequisite: CSC 332 and senior standing  
**CSC 453.** Object-Oriented Analysis and Design (3) Prerequisite: CSC 332 and senior standing  
**CSC 455.** Data Base Management (3) Corequisite: CSC 332  
**CSC 457.** Compiler Construction (3) Prerequisite: CSC 434 and senior standing  
**CSC 460.** Formal Languages and Computability II (3) Prerequisite: CSC 360  
**CSC 475.** Topics in Computer Science (3) Prerequisite: Senior standing and permission of instructor  
**CSC 491.** Directed Individual Study (1-3) Prerequisite: Overall GPA of at least 2.00, junior or senior standing, and consent of instructor, department chair and dean  
**CSC 495.** Seminar in Computer Science (1) Prerequisite: Junior or senior standing and consent of instructor  
**CSC 498.** Internship in Computer Science (1-3) Prerequisite: Overall GPA of at least 2.50 and a GPA in CSC of at least a 2.80  
**CSC 499.** Honors Work in Computer Science (2-3) Prerequisite: Eligibility for honors program