

THE UNIVERSITY OF NORTH CAROLINA AT ASHEVILLE  
FACULTY SENATE

Senate Document Number 6217S  
Date of Senate Approval 05/04/17

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Statement of Faculty Senate Action:

**APC Document 55 (CSCI):** **Delete CSCI 255, 320 and 331, replacing with CSCI 235, Systems I and CSCI 335, Systems II**

**Effective Date: Fall 2017**

**1a. Delete:** On page 116, the entry for CSCI 255:

**255 Computer Organization (4)**  
Organization of digital computers including data representation, logic design and architectural features needed to support high-level languages. Includes a formal laboratory section using circuit design tools. Prerequisite: CSCI 181 or 182. Fall.

**1b. Delete:** On page 116, the entry for CSCI 320:

**320 Computer Architecture (3)**  
Architectural features of modern computer architectures, including instruction set design, pipelining, memory management and bus structures. Quantitative analysis of computer design choices. Prerequisites: CSCI 202, 255. Even years Spring.

**1c. Delete:** On page 116, the entry for CSCI 331:

**331 Operating Systems (3)**  
Concepts of operating systems: processes, synchronization, memory management, file systems and security. Prerequisites: CSCI 202, 255. Odd years Spring.

**2. Add:** On page 116, new course, CSCI 235:

**235 Systems I (3)**  
Fundamentals of computer systems for programmers. Computer organization; machine representation of data and programs; program performance and optimization; memory hierarchy and memory management. Prerequisite: one course from CSCI 201 or 202 with a grade of C or higher. Fall and Spring.

**3. Add:** On page 116, new course, CSCI 335:

**335 Systems II (3)**  
Advanced computer systems for programmers. Selected topics in operating systems, networking, and parallel computing. Prerequisite: CSCI 202 with a grade of C or higher and CSCI 235. Fall.

**Impact:** In our transition plan, students choosing to redeclare their major to the new curriculum, will receive credit for Systems I and System II if they have taken CSCI 255 and either CSCI 320 or 331. Students choosing not to redeclare their majors may fulfill CSCI 320 and CSCI 331 requirements by enrolling in other 300-level electives. As shown in our curriculum document, we have a proposed schedule that allows students entering UNC Asheville immediately after high school to complete their selected CSCI concentration within four years. The curriculum document also contains sample schedules for transfer students.

**Rationale:** We are replacing Computer Organization, Computer Architecture and Operating Systems (CSCI 255, 320 and 331) with Systems I and Systems II (CSCI 235 and 335). This change is largely in response to the new Computer Science Curriculum Guidelines that were published in 2013 (CS 2013) by the Joint Task Force on Computing Curricula from the Association for Computing Machinery (ACM) and IEEE Computer Society. These new undergraduate curriculum guidelines reflected changes in the discipline of computer science since the previous guidelines were published in 2008. Among the changes are a reduced emphasis on computer organization and computer architecture and an increased emphasis in “Systems Fundamentals” (understanding how hardware and software resources work together in efficient applications). Our curriculum changes mirror these recommendations. We will introduce fundamental systems topics in Systems I and advanced topics in Systems II. These courses will allow us to present the most important topics from Computer Organization, Architecture and Operating Systems in an integrated way.

We envision that our students will typically follow the course sequence CSCI 201, 202, then 235. However, certain capable students will be able to complete 202 and 235 simultaneously. Therefore we are allowing the option of CSCI 201 with a grade of C or higher. To maintain our CSCI 202 “C wall” we are including the prerequisite of CSCI 202 with a grade C or higher for 335.