COMPUTER SCIENCE (BS)

Bachelor of Science

The Bachelor of Science degree program in computer science focuses on theory and practical skill development to prepare students for a career in the field of computer science. The program provides a breadth of focus on the foundational concepts of computer science while allowing students to choose additional coursework appropriate to their post-graduation goals. Students are exposed to current technologies and best practices, learn teamwork skills, and develop an awareness of ethical and social
issues within this field.

All students in the major take core coursework that develops their programming skills and provides foundational knowledge in the field. Students choose either the software engineering track or information technology track to complete their major requirements. Students interested in pursuing graduate study are encouraged to complete the software engineering track and additional math coursework.

Program Requirements

Code	Title	Credits
Required Computer Science Courses		
CSC-1700	Introduction to Computer Programming	4
CSC-2150	Data Structures & Algorithms	4
CSC-2300	Computer Systems and Architecture	4
CSC-4500	Database Design and Implementation	4
CSC-4990	Computer Science Capstone	4
Required Mathematics Courses		
MTH-2100	Statistics	4
MTH-3270	Discrete Mathematics	4
Other Required Course		
Select any 1000/2000 COM course		4
Select one of the following tracks:		**20**
Information Technology		
CSC-2200	Web Application Development	
CSC-2450	Operating Systems Admininstration	
CSC-3350	Enterprise Networking	
CSC-3400	Computer Security	
CYB-4610	Ethical Hacking	
or CYB-4620	Digital Forensics	
Software Engineering		
CSC-2200	Web Application Development	
CSC-3250	Object Oriented Software Design and Development	
CSC-3510	Software Testing Verification, Validation and Quality Assurance	
CSC-3700	Advanced Web Application Development	
CSC-4450	Programming Languages	
Total Credits		**52**

Undergraduate Degree Requirements

A student who graduates from Aurora University with a baccalaureate degree will have met the following requirements:

1. Completion of all requirements for an approved major (with no grades lower than "C").
2. Overall completion of at least 120 semester hours of coursework with a GPA of at least 2.0 on a 4.0 scale (a course may be utilized only once in application toward a degree requirement, unless otherwise noted in the academic regulations). The 120 semester hours of coursework must include:
   - At least 52 semester hours completed at a senior college.
   - Residency Requirement - At least 30 semester hours completed at Aurora University, including the last 24 semester hours in the degree, and including at least 18 semester hours in the major. (Portfolio assessment credit, life and vocational experience credit, off-campus experience credit, examination credit, participation credit, and block credit, shall not count toward the residency requirement).
   - Upper-Division Requirement - A minimum of 30 semester hours numbered 3000 or above. Of these 30 semester hours, 15 semester hours must lie within the major and 15 semester hours must be completed at Aurora University.
3. Completion of all General Education requirements (with no grades lower than "C"), as follows:
   - Quantitative and Formal Reasoning competency requirement (https://catalog.aurora.edu/regulations-policy-catalog/academic-regulations-procedures/general-education/#satisfy-quantitative-reasoning-requirement)
   - ENG-1000 Introduction to Academic Writing
   - IDS-1200 Discover What Matters or IDS-3040 Global Justice
   - IDS-1150 First Year Experience - *Not required for Transfer or AU Online students)*
   - Satisfactory participation in the junior-year mentoring and assessment process designed to guide students to successful completion of their degree and to encourage planning for next steps beyond graduation. (IDS-3500 Junior Mentoring Program I and IDS-3550 Junior Mentoring Program II - *Not required for ADC or AU Online students but may be designated electives for AU Online students admitted with fewer than 15 hours of transfer credit.)*
   - Distribution Requirements
     Students will complete one approved course[1] from each of the following categories:
     - Artistic Literacy
     - Cultural Literacy
     - Human Inquiry
     - Scientific Inquiry

   In addition to the above, ADC and Online students will also complete one approved course[1] from the following category:

     - Discovery and Reflection

[1] Only courses that are approved to meet the distribution requirement can be used toward this requirement. See the list of approved courses (https://catalog.aurora.edu/regulations-policy-catalog/academic-regulations-procedures/general-education/#approved-courses-gen-ed-distribution) for available options. Courses taken to meet distribution requirements are 4 semester hours apiece, with the following exceptions:
- An approved transfer course of at least 2.50 semester hours can be used to satisfy a distribution requirement.
- Courses with co-requisite laboratory components may be used to satisfy a distribution requirement, provided that the student

successfully complete both the three-credit-hour course and the single-credit-hour lab component.

Learning Outcomes

1. Problem Solving - Students will be able to create and implement well designed computing problem solutions demonstrating correct, efficient, and well-structured code.
2. Requirements Fulfillment - Students will be able to implement and evaluate a complete, efficient, and correct computing solution given a set of technical requirements that solve a real-world problem.
3. Advanced Technical Knowledge - Students will demonstrate and be able to use newer technologies and tools used in software or systems development, recognize their professional responsibility to stay current in the field, and use informed judgements and best practices used in the technology field to implement computing solutions.
4. Teamwork and Communication - Students will be able to effectively contribute as a member of a problem-solving team and communicate effectively within a group using best practices commonly used in technology fields.