COMPUTER SCIENCE, BACHELOR OF SCIENCE (629)

Systems/Scientific Applications Concentration

Program Coordinator
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Computer Science Program Educational Objectives
The program achieves its mission by focusing on specific educational objectives. Within three to five years after graduation, WKU CS graduates are expected to be:

> **Objective 1:** Attain, contribute to, and advance in a fulfilling professional computing career, utilizing and continuously improving technical skills and non-technical communication, while demonstrating a commitment to ethical computing and social responsibility.
> **Objective 2:** Effectively manage and lead complex computing initiatives, projects, and teams using adaptable leadership skills.

The CS student outcomes are listed on the program website at https://www.wku.edu/cs/.

Admission Requirements

The major in computer science requires a minimum of 53 semester hours. To be admitted to the computer science major, students must complete CS 290 (https://catalog.wku.edu/search/?P=CS%20290) or CS 221 (https://catalog.wku.edu/search/?P=CS%20221) with grades of "C" or better. In addition, all CS courses counting toward the CS program major must be completed with a grade of "C" or better. Computer Science electives may include from 0-3 hour of 200-level courses. Students must adhere to all University Policies as indicated in the WKU catalog section, "Academic Information."

Program Requirements (53 hours)

A baccalaureate degree requires a minimum of 120 unduplicated semester hours. More information can be found at www.wku.edu/registrar/degree_certification.php. (https://www.wku.edu/registrar/degree_certification.php)

Students who began WKU in the Fall 2014 and thereafter should review the Colonnade requirements located at: https://www.wku.edu/colonnade/colonnaderequirements.php. (https://www.wku.edu/colonnade/colonnaderequirements.php)

Code	Title	Hours
Core Courses		
CS 180	Computer Science I	4
CS 290	Computer Science II	4
CS 325	Computer Organization and Architecture	3
CS 331	Data Structures	3
CS 339	Discrete Structures	3
CS 351	Database Management Systems I	3
CS 360	Software Engineering I	3
CS 382	Programming Languages	3
CS 396	Intermediate Software Project	3
CS 421	Data Structures and Algorithm Analysis	3
CS 425	Operating Systems I	3
CS 496	CS Senior Project and Professional Practice	3
STAT 301	Introductory Probability and Applied Statistics	3
Electives		
Select 12 hours from the following courses:		12
CS 270	Introduction to Web Programming	
CS 315	Introduction to Unix	
CS 372	Mobile App Development	
CS 381	Introduction to Computer Networks	
CS 443	Database Management Systems II	
CS 445	Operating Systems II	
CS 446	Interactive Computer Graphics	
CS 450	Computer Networks	
CS 456	Artificial Intelligence	
Total Hours		**53**

Code	Title	Hours
Additional Requirements for the Systems/Scientific Applications Concentration		
MATH 136	Calculus I	4
Math Electives		**6-7**
Choose two for the following list:		
MATH 137	Calculus II	
MATH 305	Introduction to Mathematical Modeling	
MATH 307	Introduction to Linear Algebra	
MATH 331	Differential Equations	
MATH 405	Numerical Analysis I	
MATH 406	Numerical Analysis II	
MATH 470	Introduction to Operations Research	
MATH 473	Introduction to Graph Theory	
STAT 401	Regression Analysis	
STAT 402	Experimental Design	
Total Hours		**10-11**

Finish in Four Plans

First Year

Fall	Hours	Spring	Hours
CS 180	4	CS 290	4
ENG 100	3	MATH 136	4
HIST 101 or HIST 102	3	COMM 145	3
General Elective	3	Colonnade - Arts & Humanities	3
World Language Requirement or General Elective	3		
	16		**14**

Second Year

Fall	Hours	Spring	Hours
CS 331	3	CS 339	3
CS 325	3	CS 351	3
Colonnade - Literary Studies	3	Math Elective	3
Colonnade - Natural & Physical Sciences w/ lab	4	Colonnade - Natural & Physical Sciences w/ no lab	3
General elective	3	General elective	3
	16		**15**

Third Year

Fall	Hours	Spring	Hours
STAT 301	3	CS 382	3
CS 360	3	CS Elective (CS 372 or CS 381 or CS 446)	3
CS Elective (CS 443, CS 450, or CS 456)	3	Colonnade - Social & Behavioral	3
ENG 300	3	Math Elective	3
Colonnade - System	3	General Elective	3
	15		**15**

Fourth Year

Fall	Hours	Spring	Hours
CS 425	3	CS 496	3
CS 421	3	CS Elective (CS 445 or CS 446)	3
General Elective	3	Colonnade - Local to Global	3
CS Elective (CS 443 or CS 456)	3	Colonnade - Social & Cultural	3
CS 396	3	Math/Science Elective	3
	15		**15**

Total Hours 121