

B.S. Computer Science

2023-24

WEBSITE

[https://www.swau.edu/
computer-science](https://www.swau.edu/computer-science)

DEPARTMENT PERSONNEL

Chair

Daryl Thomas, Ph.D.

Adjunct Faculty

Keith Beucler, M.S.

David Mendoza

LOCATION

Scales Hall

CONTACT

admissions@swau.edu

thomas@swau.edu

(817) 202-6671

The primary mission of the Department of Computer Science is to prepare students for professional work in the field of computer science, within a Christian context. We believe that each of our students has a calling in life and that each is uniquely equipped with native talents to fulfill that calling. Our goal is to help our students to develop their talents to the full in order that they might be successful in meeting the challenges ahead of them.

The Bachelor of Science in Computer Science is intended for students who wish to pursue careers in computer science, either in industry or in academia.

Job Market

Graduates from our program have found employment as programmers, web developers, database managers, network managers, system administrators, and helpdesk managers. Others have gone on to open their own businesses. Several have continued their education in graduate school. Some have applied their knowledge in fields outside of computer science. For example, two have become teachers. Another has graduated from medical school.

Job Outlook

According to the U.S. Bureau of Labor Statistics, the employment of application software developers is projected to grow an astounding 30.7 percent from 2016 to 2026, far faster than the average for all occupations. They also report that the employment of information security analysts is projected to grow a remarkable 28.5 percent from 2016 to 2026, again far faster than the average for all occupations.

Earnings

According to the U.S. Bureau of Labor Statistics, the median annual wage for applications software developers was \$103,620 per year in 2018. They also reported that the median income for information security analysts was \$90,120 per year in 2018.



Required Courses			Required Cognates		
Item #	Title	Credits	Item #	Title	Credits
CSIS 110	Principles of Computer Programming I	3	COMM 115	Group Communication	3
CSIS 111	Principles of Computer Programming II	3	MATH 141	Introduction to Probability and Statistics	3
CSIS 125	Discrete Structures I	3		Sub-Total Credits	6
CSIS 201	Information Literacy for CS Majors	1			
CSIS 211	Data Structures and Algorithms	3			
CSIS 215	Object-Oriented Programming in C++	3			
CSIS 225	Discrete Structures II	3			
CSIS 245	Introduction to Local Area Network Technology	4			
CSIS 255	Issues and Practices in Information Security	3			
CSIS 315	Application Development for Event-Driven GUI Applications	3			
CSIS 360	Operating Systems	3			
CSIS 375	Introduction to Robotic Systems	4			
CSIS 405	Formal Languages and Automata	3			
CSIS 450	Principles of Database Design	3			
CSIS 490	Software Engineering	3			
CSIS 495	Special Topics Seminar	3			
	CSIS Electives Upper Division	6			
	Sub-Total Credits	54			

Sample 4 Year Curriculum

General Education Requirements
 To view general education requirements for this major please visit: <https://catalog.swau.edu/core-curriculum-for-a-bachelors-degree>

First Year First Semester			First Year Second Semester		
Item #	Title	Credits	Item #	Title	Credits
CSIS 110	Principles of Computer Programming I	3	COMM 115	Group Communication	3
CSIS 125	Discrete Structures I	3	CSIS 111	Principles of Computer Programming II	3
ENGL 121	Freshman Composition	3	CSIS 225	Discrete Structures II	3
	History GE Requirement	3	MATH 141	Introduction to Probability and Statistics	3
UNIV 111	Wellness for Life	2		Religion GE Requirement	3
	Sub-Total Credits	14		Sub-Total Credits	15
Second Year First Semester			Second Year Second Semester		
Item #	Title	Credits	Item #	Title	Credits
CSIS 201	Information Literacy for CS Majors	1	CSIS 215	Object-Oriented Programming in C++	3
CSIS 211	Data Structures and Algorithms	3	CSIS 255	Issues and Practices in Information Security	3
CSIS 245	Introduction to Local Area Network Technology	4		Elective Course for 120	3
ENGL 220	Research Writing	3		Fine Arts GE Requirement	3
	Kinesiology GE Requirement	1		Religion GE Requirement	3
	Life and Physical Science GE Requirement	4		Sub-Total Credits	15
	Sub-Total Credits	16			
Third Year First Semester			Third Year Second Semester		
Item #	Title	Credits	Item #	Title	Credits
CSIS 360	Operating Systems	3	CSIS 375	Introduction to Robotic Systems	4
CSIS 450	Principles of Database Design	3		CSIS Electives Upper Division Curriculum Guide	3
CSIS 495	Special Topics Seminar	3		History GE Requirement	3
	Elective Course for 120	3		Kinesiology GE Requirement	1
	Life and Physical Science GE Requirement	4		Religion GE Requirement	3
	Sub-Total Credits	16		Sub-Total Credits	14
Fourth Year First Semester			Fourth Year Second Semester		
Item #	Title	Credits	Item #	Title	Credits
CSIS 315	Application Development for Event-Driven GUI Applications	3	CSIS 405	Formal Languages and Automata	3
	CSIS Electives Upper Division Curriculum Guide	3	CSIS 490	Software Engineering	3
	Elective Course for 120	3		Elective Course for 120	3
	Literature GE Requirement	3		Elective Course for 120	3
	Social Science GE Curriculum Guide	3		Religion GE Requirement	3
	Sub-Total Credits	15		Sub-Total Credits	15