

B.S. Computer Science

2020-21

WEBSITE

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

DEPARTMENT PERSONNEL

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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

Item #	Title	Credits
CSIS 110	Principles of Computer Programming I	3
CSIS 111	Principles of Computer Programming II	3
CSIS 125	Discrete Structures I	3
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

Required Cognates

Item #	Title	Credits
COMM 115	Discussion Techniques	3
MATH 141	Introduction to Probability and Statistics	3
	Sub-Total Credits	6

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

Item #	Title	Credits
CSIS 110	Principles of Computer Programming I	3
CSIS 125	Discrete Structures I	3
ENGL 121	Freshman Composition	3
	History GE Curriculum Guide	3
UNIV 111	Wellness for Life	2
	Sub-Total Credits	14

First Year Second Semester

Item #	Title	Credits
COMM 115	Discussion Techniques	3
CSIS 111	Principles of Computer Programming II	3
CSIS 225	Discrete Structures II	3
MATH 141	Introduction to Probability and Statistics	3
	Religion GE Curriculum Guide	3
	Sub-Total Credits	15

Second Year First Semester

Item #	Title	Credits
CSIS 201	Information Literacy for CS Majors	1
CSIS 211	Data Structures and Algorithms	3
CSIS 245	Introduction to Local Area Network Technology	4
ENGL 220	Research Writing	3
	Kinesiology GE Curriculum Guide	1
	Life and Physical Science GE Curriculum Guide	4
	Sub-Total Credits	16

Second Year Second Semester

Item #	Title	Credits
CSIS 215	Object-Oriented Programming in C++	3
CSIS 255	Issues and Practices in Information Security	3
	Electives for 120	3
	Fine Arts GE Curriculum Guide	3
	Religion GE Curriculum Guide	3
	Sub-Total Credits	15

Third Year First Semester

Item #	Title	Credits
CSIS 360	Operating Systems	3
CSIS 450	Principles of Database Design	3
CSIS 495	Special Topics Seminar	3
	Electives for 120	3
	Life and Physical Science GE Curriculum Guide	4
	Sub-Total Credits	16

Third Year Second Semester

Item #	Title	Credits
CSIS 375	Introduction to Robotic Systems	4
	CSIS Electives Upper Division Curriculum Guide	3
	History GE Curriculum Guide	3
	Kinesiology GE Curriculum Guide	1
	Religion GE Curriculum Guide	3
	Sub-Total Credits	14

Fourth Year First Semester

Item #	Title	Credits
CSIS 315	Application Development for Event-Driven GUI Applications	3
	CSIS Electives Upper Division Curriculum Guide	3
	Electives for 120	3
	Literature GE Curriculum Guide	3
	Social Science GE Curriculum Guide	3
	Sub-Total Credits	15

Fourth Year Second Semester

Item #	Title	Credits
CSIS 405	Formal Languages and Automata	3
CSIS 490	Software Engineering	3
	Electives for 120	3
	Electives for 120	3
	Religion GE Curriculum Guide	3
	Sub-Total Credits	15

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