

Bachelor of Software Engineering

Professional Occupations

- Software Engineer
- Software Analyst
- Software Developer
- Software Architect
- Software Project Manager
- Software Quality Manager

Program Overview

Software Engineering is the study and application of engineering principles to design, develop, and maintain software systems. It combines computer science, engineering, and mathematics into a unique and potent blend. The demand for software engineers has been high worldwide and is still on the rise. At Alfaisal, the Software Engineering curriculum will prepare you with both theoretical and applied expertise in this technically challenging and highly competitive field. Students will build problem-solving skills to develop market-driven innovations and become leaders in software systems development and maintenance. They will also be exposed to the business and management side of software engineering; This exposure will develop excellent entrepreneurship skills and prepare them for employment opportunities, especially in the fast growing sector of software companies.

Competitive Edge

Our Software Engineering program is designed to provide a solid foundation in the software engineering body of knowledge. This knowledge allows our graduates to excel in the design, development, operation, and maintenance of complex software systems. Our faculty members hold degrees from world-renowned western universities. Additionally, our faculty have a high success rate in securing research projects in both new and established disciplines. Furthermore, small class sizes at Alfaisal provide students with the opportunity for individualized instruction.

Tracks

Optional tracks are available for students in the areas of:

- **AI & Big Data**
- **Cybersecurity**
- **Games Development and Digital Media**

Students will be able to tailor their senior-level technical electives to study new and emerging technologies in the above areas. More details are available on the department's website.

Minors

Optional minors are available for students in the areas of:

- **Artificial Intelligence**
- **Cybersecurity**

Non - Software Engineering Students will be able to take minors in AI or Cybersecurity if they fulfill the pre-requisites.

Collaborators



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Alfaisal University
Bachelor of Software Engineering | Study Plan Summary | Effective: Fall 2024

4-Year Curriculum: 133 Credit Hours Total

Freshman Year - Fall Semester

Course Code	Course-Title	CRHs
SE 100	Programming for Engineers	3
SE 100 L	Programming for Engineers Lab	1
SE 117	Software Practice and Society	3
MAT 101	Calculus I	3
PHU 103	Mechanics and Waves for Engineers	3
PHU 103 L	Mechanics and Waves for Engineers Lab	1
ENG 101	University Writing	3
	Total	17

Sophomore Year - Fall Semester

Course Code	Course-Title	CRHs
SE 201	Introduction to Software Engineering	3
SE 214	Algorithms and Data Structures	3
SE 214 L	Algorithms and Data Structures Lab	1
SE 220	Object-Oriented Programming II	3
SE 220 L	Object-Oriented Programming II Lab	1
MAT 212	Linear Algebra	3
ISL 101	Islamic Studies I	2
	Total	16

Junior Year - Fall Semester

Course Code	Course-Title	CRHs
SE 310	Software Design and Architecture	3
SE 312	Database Management Systems	3
SE 312 L	Database Management Systems Lab	1
SE 314	Operating Systems	3
SE 314 L	Operating Systems Lab	1
EE 305	Computer Networks	3
EE 305 L	Computer Networks Lab	1
ENG _ _ _	English Elective	3
	Total	18

Junior Year - Summer Semester

Course Code	Course-Title	CRHs
SE 390	Software Engineering Summer Internship	0
	Total	0

Senior Year - Fall Semester

Course Code	Course-Title	CRHs
SE 412	Software Testing & Quality Assurance	3
SE 414	Software Project Management	3
SE 4 _ _	Technical Elective	3
SE 4 _ _	Technical Elective	3
SE 495	Software Engineering Capstone Project I	3
-----	General Education Elective I	2
	Total	17

Freshman Year - Spring Semester

Course Code	Course-Title	CRHs
SE 120	Object-Oriented Programming I	3
SE 120 L	Object-Oriented Programming I Lab	1
CHM 102	Introduction to Chemistry	3
CHM 102 L	Introduction to Chemistry Lab	1
MAT 112	Calculus II	3
PHU 124	Electromagnetism and Optics for Engineers	3
PHU 124 L	Electromagnetism and Optics for Engineers Lab	1
ARB 101	Arabic Language and Literature I	2
	Total	17

Sophomore Year - Spring Semester

Course Code	Course-Title	CRHs
SE 212	Discrete Structure for Software Engineers	3
SE 225	Software Requirements	3
SE 225 L	Software Requirements Lab	1
EE 210	Digital Logic Design	3
EE 210 L	Digital Logic Design Lab	1
MAT 224	Numerical Methods	3
STA 212	Probability and Statistics for Engineers	3
	Total	17

Junior Year - Spring Semester

Course Code	Course-Title	CRHs
SE 322	Internet of Things Application Development	3
SE 324	Web Application Development	3
SE 324 L	Web Application Development Lab	1
SE 328	Mobile Application Development	3
SE 328 L	Mobile Application Development Lab	1
SE 330	Introduction to Cybersecurity	3
ENG 222	Technical Writing	3
	Total	17

Senior Year - Spring Semester

Course Code	Course-Title	CRHs
SE 423	Software Construction and Processes	3
SE 4 _ _	Technical Elective	3
SE 4 _ _	Technical Elective	3
SE 496	Software Engineering Capstone Project II	3
-----	General Education Elective II	2
	Total	14

Smart, desirable, feasible, marketable innovation to make the world better is what we do. IT's WHAT YOU'LL DO.