

Software Engineering, B.S.

The Software Engineering major gives students a strong foundation in software engineering as well as a solid basis in computer science. Students who complete the major will be able to be productive members of software engineering teams in a variety of application domains including, but not restricted to, Web and mobile applications. The acquired technical knowledge and appreciation for life-long learning, combined with the ability to place software in the social context in which it is developed, empowers students to create novel applications that have the potential to bring social change.

Freshman Applicants: See the Undergraduate Admissions section (<http://catalogue.uci.edu/informationforprospectivestudents/undergraduateadmissions/#admissionasafreshmanapplicanttext>).

Transfer Applicants:

Transfer applicants who satisfactorily complete course prerequisites will be given preference for admission. All applicants must complete the following required courses: one year of approved calculus, one year of object-oriented programming (python, java, C++), additional courses as specified by the major, and completion of lower-division writing. Students are encouraged to complete as many of the lower-division degree requirements as possible prior to transfer. Visit the *UCI Office of Admissions website* for information on transfer requirements for our major.

All students must meet the University Requirements (<http://catalogue.uci.edu/informationforadmittedstudents/requirementsforabachelorsdegree/>).

Lower-division

A. Select one of the following series:

I&C SCI 31- 32- 33

Introduction to Programming
and Programming with Software Libraries
and Intermediate Programming

or

I&C SCI 32A- 33

Python Programming and Libraries (Accelerated)
and Intermediate Programming

B. Complete:

I&C SCI 45C

Programming in C/C++ as a Second Language

I&C SCI 45J

Programming in Java as a Second Language

I&C SCI 46

Data Structure Implementation and Analysis

I&C SCI 51

Introductory Computer Organization

IN4MATX 43

Introduction to Software Engineering

MATH 2A- 2B

Single-Variable Calculus
and Single-Variable Calculus

I&C SCI 6B

Boolean Logic and Discrete Structures

I&C SCI 6D

Discrete Mathematics for Computer Science

I&C SCI 6N

Computational Linear Algebra

or MATH 3A

Introduction to Linear Algebra

STATS 67

Introduction to Probability and Statistics for Computer Science

Upper-division

A. Core Requirements

COMPSCI 122A

Introduction to Data Management

COMPSCI 143A

Principles of Operating Systems

COMPSCI 132

Computer Networks

COMPSCI 161

Design and Analysis of Algorithms

IN4MATX 101/COMPSCI 141

Concepts in Programming Languages I

IN4MATX 113

Requirements Analysis and Engineering

IN4MATX 115

Software Testing, Analysis, and Quality Assurance

IN4MATX 131

Human Computer Interaction

IN4MATX 121

Software Design: Applications

IN4MATX 122

Software Design: Structure and Implementation

IN4MATX 124

Internet Applications Engineering

IN4MATX 151

Project Management

IN4MATX 191A

Senior Design Project

IN4MATX 191B	Senior Design Project
I&C SCI 139W	Critical Writing on Information Technology
B. Select four of the following:	
IN4MATX 102	Concepts of Programming Language II
IN4MATX 125/COMPSCI 113	Computer Game Development
IN4MATX 132	Project in Human-Computer Interaction Requirements and Evaluation
IN4MATX 133	User Interaction Software
IN4MATX 134	Project in User Interaction Software
IN4MATX 141/COMPSCI 121	Information Retrieval
IN4MATX 143	Information Visualization
IN4MATX 148	Project in Ubiquitous Computing
IN4MATX 161	Social Analysis of Computing
COMPSCI 133	Advanced Computer Networks
COMPSCI 134	Computer and Network Security
COMPSCI 142A	Compilers and Interpreters
COMPSCI 142B	Language Processor Construction
COMPSCI 145- 145L	Embedded Software and Embedded Software Laboratory
COMPSCI 146	Programming in Multitasking Operating Systems
COMPSCI 165	Project In Algorithms And Data Structures
I&C SCI 167	Multiplayer Game Systems
I&C SCI 168	Multiplayer Game Project

Software Engineering elective courses may not be counted as part of the Management minor.

Freshman		
Fall	Winter	Spring
I&C SCI 31	I&C SCI 32	I&C SCI 33
MATH 2A	MATH 2B	IN4MATX 43
WRITING 39A	WRITING 39B	I&C SCI 6B
	General Education III	WRITING 39C
Sophomore		
Fall	Winter	Spring
I&C SCI 45C	I&C SCI 46	COMPSCI 143A
I&C SCI 51	IN4MATX 113	STATS 67
I&C SCI 6D	I&C SCI 6N	General Education III
General Education III/VII	IN4MATX 131	General Education IV/VIII
Junior		
Fall	Winter	Spring
I&C SCI 45J	COMPSCI 132	COMPSCI 161
IN4MATX 115	IN4MATX 101	IN4MATX 124
IN4MATX 121	IN4MATX 122	General Education IV
General Education IV	IN4MATX 151	
Senior		
Fall	Winter	Spring
COMPSCI 122A	IN4MATX 191B	Software Engineering Elective
IN4MATX 191A	I&C SCI 139W	Software Engineering Elective
Software Engineering Elective	Software Engineering Elective	General Education VI
General Educaiton III		

NOTES:

1. Students are advised that this sample program lists the minimum requirements; it is possible that students may have to take additional courses to prepare for required courses.
2. The lower-division writing requirement must be completed by the end of the seventh quarter at UCI.
3. This is only a sample plan. Course offerings may be moved due to unforeseen circumstances. It is strongly recommended that students meet with an academic advisor to create an academic plan tailored to meet their specific areas of interest. Please pay close attention to course prerequisites while creating your academic plan. For example, IN4MATX 124 requires CS 132 and CS 132 requires Stats 67.