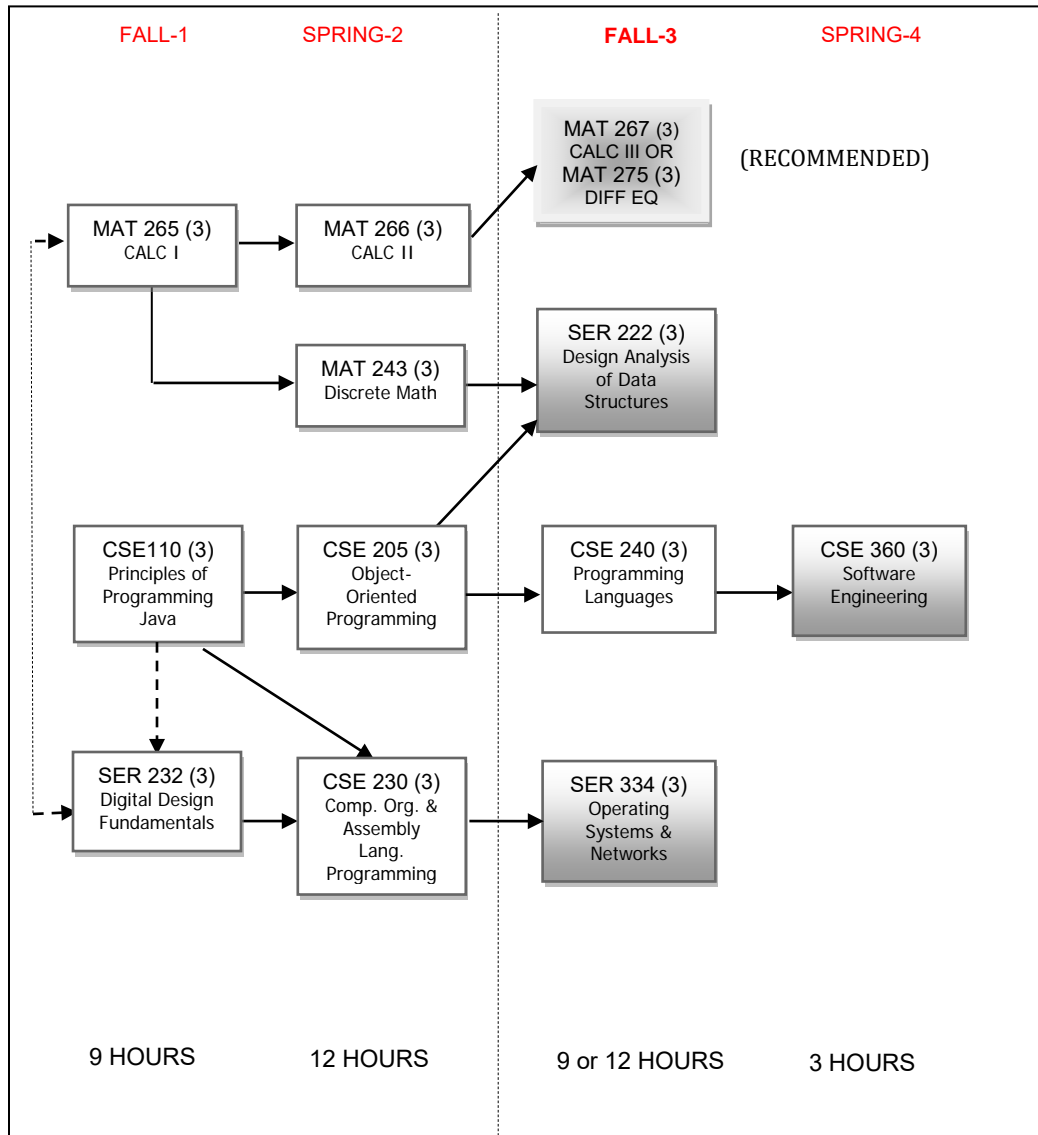


## Software Engineering, MS

### Prerequisite and Deficiency Courses

<https://scai.engineering.asu.edu/graduate-program-software-engineering/s/>



Notes: Shaded courses are deficiency courses. A grade of C or higher is required for deficiency courses.

Prerequisite —————▶

Co-requisite - - - - -▶

### Additional Admission Requirements (See website for details)

1. Transcripts/Academic Credential
2. Statement of Purpose
3. If applicable, English Proficiency (TOEFL, IELTS, Duolingo)
4. GPA Requirement is 3.0 or higher in the last 60 hours of the undergraduate degree

*Ready to apply?*

Apply now through the Office of Graduate Education's [online graduate application](https://webapp4.asu.edu/dgsadmissions/Index.jsp) (<https://webapp4.asu.edu/dgsadmissions/Index.jsp>).

Read the [FAQs](https://students.asu.edu/graduate/faqs) (<https://students.asu.edu/graduate/faqs>) about your graduate application.

Term 1:

**CSE 110: Principles of Programming**-Concepts of problem solving using an object-oriented programming language, algorithm design, structured programming, fundamental algorithms and techniques.

**MAT 265: Calculus for Engineers I**-Limits and continuity, differential calculus of functions of one variable, introduction to integration. Not open to students with credit in MAT 270.

**SER 232: Computer Systems Fundamentals I**-Logic design, number systems and arithmetic, boolean algebra; digital systems components, and hardware description languages.

Term 2:

**CSE 205: Object-Oriented Programming & Data Structures**-Problem solving by programming with an object-oriented programming language. Introduces data structures. Overview of computer science topics.

**CSE 230: Computer Organization & Assembly Language Programming**-Register-level computer organization. Instruction set architecture. Assembly language. Processor organization and design. Memory organization. IO programming, Exception/interrupt handling.

**MAT 243: Discrete Mathematical Structures**-Logic, sets, functions, elementary number theory and combinatorics, recursive algorithms, and mathematical reasoning, including induction. Emphasizes connections to computer science.

**MAT 266: Calculus for Engineers II**-Methods of integration, applications of calculus, elements of analytic geometry, improper integrals, Taylor series.

Term 3:

**CSE 240: Introduction to Programming Languages**-Introduces the procedural (C/C++/Python), applicative (LISP/Scheme), and declarative (Prolog) languages.

**MAT 267: Calculus for Engineers III**-Vector-valued functions of several variables, partial derivatives, multiple integration. **OR MAT 275: Modern Differential Equations**-Introduces differential equations, theoretical and practical solution techniques. Applications. Problem solving using MATLAB. (RECOMMENDED)

**SER 222: Design and Analysis of Data Structures and Algorithms**-Data structures and related algorithms for their specification, complexity analysis, implementation and application. Sorting and searching. Professional responsibilities that are part of program development, documentation and testing.

**SER 334: Operating Systems and Networks**-Fundamentals of operating systems, process management, scheduling, synchronization techniques and file management. Network technology, topologies, protocols, application control; network and operating system security.

Term 4:

**CSE 360: Introduction to Software Engineering**-Software life cycle models; project management, team development environments and methodologies; software architectures; quality assurance and standards; legal, ethical issues.