

SOFTWARE ENGINEERING



Software Engineering at Drexel

Software engineering can be defined as the application of processes, methods, and tools to building and maintaining computer software with a defined level of quality at a predictable cost and on a predictable schedule. Advances in information technology have captured the public imagination and have had tremendous economic and social impact over the last 50 years. These advances offer great benefit, but have also created a great need for highly dependable systems. The ability to produce software for these systems in a way that meets cost and quality requirements is quite limited. Software engineering attempts to solve this problem.

Drexel University offers a Bachelor of Science in Software Engineering (BSSE). The BSSE degree is a multidisciplinary University degree sponsored by the College of Engineering and the College of Information Science and Technology. The program provides a curriculum that encompasses behavioral, managerial, and technical aspects of software engineering and attempts to synthesize disciplinary paradigms and themes. This program is designed specifically for students interested in a range of application domains.

Drexel Co-op for Software Engineering

A key part of the major is Drexel's prestigious co-operative education program, in which students alternate periods of classroom study with periods of professional work experience. Software Engineering students can participate in the following:

- Three Co-op Option (Five Years): includes three six-month periods of full-time employment

A Few Drexel Co-op Position Titles

- Architecture Team Member
- Internet Developer
- Network Analyst
- Software Engineer

Employers

Here are some of the companies that have hired Drexel students as co-op or full-time employees:

- Lockheed Martin
- Microsoft Corporation
- Motorola
- Siemens

Potential Careers

Software Engineer. Analyzes users' needs, and designs, builds, tests, and maintains application software or computer systems. Develops many types of software — including software for operating systems and networks — and compilers, which convert programs for execution on a computer. Solves technical problems.

Software Analyst. Elicits the requirements from customers using a combination of interviews, software prototyping, and use case design.

Software Architect. Specifies the structure or structures of a software system, which comprise software components, the externally visible properties of those components, and the relationships between them.

Courses You'll Really Enjoy

Foundations of Software Engineering. Teaches basic programming concepts within a software engineering process that involves specification, documentation, and testing. Concepts include the declaration and assignment of variables, standard data types, constants, conditional statements, loops, introduction to classes and methods, standard and file input/output, arrays, and strings. Process concepts emphasize good internal documentation practices, specifying functional requirements, defect tracking and analysis, and functional testing.

Software Evolution. Covers issues related to change in software systems. Addresses principles and techniques of corrective software maintenance, software enhancements, and software product families. Introduces students to issues of change in large software systems, including configuration control, change, and product management.

Software Architecture. Involves the study of macro-level software system architectures with an emphasis on approaches to interconnection and distribution of current and emerging architectural styles as well as the study of micro-level architecture including patterns, frameworks, and component-based software engineering, and commercial off-the-shelf software.

Learn More

A list of required courses for the Software Engineering major is available online at www.drexel.edu/catalog and www.cs.drexel.edu/bsse.

Accelerated Degree Options

Accelerated degree programs, such as the BS/MD, BS/PhD in Engineering, BS/JD, and BS/MBA, enable academically qualified students to earn both a bachelor's and an advanced degree, graduating sooner than they would in traditional programs. Eligible students can be admitted to an accelerated degree program in one of two ways: apply as an incoming freshman through Undergraduate Admissions or apply to the Graduate Studies Office after completing a minimum of 90 credits. To learn more about accelerated degree options, visit www.drexel.edu/em/ug/accelerated.

For More Information

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