Degree Requirement Comparison
Fall 2010

B.S. in Computer Science

Computer Science
CS 1000 Explorations in Computing
CS 1121, 1122 – Intro to Programming I, II
(or CS 1131 – Accelerated Intro to Programming)
CS 1141 C for Java Programmers
CS 2311 Discrete Structures
CS 2321 Data Structures
CS 3000 Ethical & Social Aspects of Computing
CS 3141 Team Software Project
CS 3311 Formal Models of Computation
CS 3331 Concurrent Computing
CS 3411 Systems Programming
CS 3421 Computer Organization
CS 4121 Programming Languages
Model electives
CS 4XXX (CS Elective)
CS 4YYY (CS Elective)
CS 4ZZZ (CS Elective)

Math Courses
MA 1160 Calculus with Technology I
(or MA 1161 Calculus Plus with Technology I)
MA 2160 Calculus with Technology II
MA 2330 Introduction to Linear Algebra
MA 2720 Statistical Methods
(or MA 3710 Engineering Statistics)
MA Elective (Upper level Math course, e.g. courses with Calculus as a prerequisite)

General Education Requirements

B.S. in Computer Systems Science

Computer Science
CS 1000 Explorations in Computing
CS 1121, 1122 – Intro to Programming I, II
(or CS 1131 – Accelerated Intro to Programming)
CS 1141 C for Java Programmers
CS 2311 Discrete Structures
CS 2321 Data Structures
CS 3331 Concurrent Computing
CS 3411 Systems Programming
CS 3421 Computer Organization
CS 4121 Programming Languages
CS 4321 Intro to Algorithms
CS 4411 Intro to Operating Systems
CS 4421 Database Systems
CS 4451 Network Administration
CS 4461 Computer Networks
CS 4471 Computer and Network Security

Math Courses
MA 1160 Calculus with Technology I
(or MA 1161 Calculus Plus with Technology I)
MA 2330 Introduction to Linear Algebra
MA 2720 Statistical Methods

Additional Major Requirements
BA 3200 IS/IT Management
(or BA 3610 Operations Management)
EE 3010 Circuits and Instrumentation (for non-majors)
Technical electives (selected courses in BA, CS, EE, MA)

General Education Requirements

B.S. in Software Engineering

Computer Science
CS 1000 Explorations in Computing
CS 1121, 1122 – Intro to Programming I, II
(or CS 1131 – Accelerated Intro to Programming)
CS 1141 C for Java Programmers
CS 2311 Discrete Structures
CS 2321 Data Structures
CS 3141 Team Software Project
CS 3311 Formal Models of Computation
CS 3331 Concurrent Computing
CS 3411 Systems Programming
CS 3421 Computer Architecture
CS 4321 Intro to Algorithms
CS 4421 Database Systems
CS 4710 Model-driven Software Development
CS 4711 Introduction to Software Engineering
CS 4712 Software Quality Assurance
CS 4760 Human-Computer Interactions
CS 4791 Senior Software Engineering Project I and
CS 4792 Senior Software Engineering Project II
(or ENT 3950, 3960, 4950, 4960)

Math Courses
MA 1160 Calculus with Technology I
(or MA 1161 Calculus Plus with Technology I)
MA 2160 Calculus with Technology II
MA 2330 Introduction to Linear Algebra
MA 2720 Statistical Methods
(or MA 3710 Engineering Statistics)

Additional Major Requirements
BA 3200 IS/IT Management
(or BA 3620 Project Management
or BA 3780 Entrepreneurship)

General Education Requirements

Note: These are unofficial requirements for comparison purposes.
B.S. in Computer Science

Computer science is a science of abstraction. Computer scientists focus on creating the right model for a problem and devising the appropriate (automatable) techniques for solving it. Computer scientists can specialize in subdisciplines such as graphics, artificial intelligence, networking, and parallel computing.

Computer science graduates are employed in a wide range of careers including software development and testing, analysis, system and network administration, management and education in a wide range of industries including the computer and telecommunications industry, education, banking, automotive, financial, commercial, computing gaming, and even the toy industry.

B.S. in Computer Systems Science

Computer systems science focuses on computing systems. The goal of this new degree program is to provide students with a solid theoretical and practical foundation in all aspects of computer systems including operating systems, networking, administration, performance analysis, and security.

Graduates with a computer systems science degree will be well-prepared to enter careers as system and network administrators and systems developers. Long-term career objectives might include computer system architecture or IT management in nearly all types of industrial, educational and government institutions.

B.S. in Software Engineering

Software engineering focuses on the study and practices of well-founded techniques for the development and maintenance of large scale software products. Software engineers are particularly concerned with the reliability, usability, and cost-effectiveness of software. They must also have domain knowledge of the application area (e.g. business, science, health).

Software engineering graduates will be prepared to enter software development positions in a wide range of application areas. They are likely to be highly sought after by corporation developing safety-critical software in the transportation, medical, and defense industries, among others.

Unsure which degree program is right for you?

Many high school students are unsure about their exact objectives. For this reason, we designed these three degree programs with a similar curriculum the first two years. This gives you time to learn more about your interests and talents before making a final degree choice.