

COMPUTER SCIENCE (CSCI)

CSCI 1040 Computers for Multimedia and Electronic Communications – 2 credits

Learn how a computer works while using applications such as word processors to make professional publications and presentation packages to make quick videos. Also make interactive web pages with nothing more than Notepad and a web browser. Learning the underlying computer concepts helps people get the most out of computer applications. The foundations include history, hardware, languages and impact on society, introduction to structures programming and algorithms, and the use of software packages such as word processing, presentation, and web browsers.

CSCI 1050 Computers for Research and Business – 2 credits

Learn how a computer works while using applications such as spreadsheets, databases, and visual organization tools. Practice basic programming to manipulate and transfer data in and among applications. Learning the underlying computer concepts helps people get the most out of computer applications. The foundations include history, hardware, languages and impact on society, introduction to structures programming and algorithms, and the use of software packages such as spreadsheets, databases, and visual diagramming.

CSCI 1110 Algorithms and Computer Programming I – 4 credits

Introduction to problem solving methods and algorithm development; designing, coding, debugging and documenting programs. Implementation of problem solutions in a suitable high-level language. Offered fall semester. Offered in the College for Women.

Prerequisite: Grade of C or better in MATH 1090, or appropriate level on mathematics/statistics placement assessment or ACT math score.

CSCI 1120 Algorithms and Computer Programming II – 4 credits

Continuation of the development of discipline in program design, style and expression. Introduction to algorithm analysis, string processing, recursion, internal search/sort methods and simple data structures. Offered annually. Offered in the College for Women.

Prerequisite: A grade of C or better in CSCI 1110. NOTE: If you transferred CSCI 1110 to St. Catherine University and the course did not include Java or object-oriented programming techniques, you must learn them before enrolling in CSCI 1120.

CSCI 2070 Principles Of Computer Organization – 4 credits

Introduction to the fundamental concepts of computer organization and machine architecture. Implementation of these concepts with the assembler of a particular machine. Offered alternate years.

Prerequisites: CSCI 1110.

CSCI 2080 Data Structures and Algorithm Analysis – 4 credits

Systematic study of algorithms and their complexity. Includes searching and sorting techniques not included in CSCI 1120; tree and graph traversal algorithms; the class P and NP; NP complete problems. Offered alternate years.

Prerequisites: CSCI 1120, MATH 1800.

CSCI 2994 Topics – 4 credits

The subject matter of the course is announced in the annual schedule of classes. Content varies from year to year but does not duplicate existing courses. Offered in the College for Women.

CSCI 3100 Computer Graphics Algorithms – 4 credits

This course covers algorithms and data structures for 2- and 3-dimensional computer graphics. Topics include graphic applications, object and bitmap graphics, raster graphics, interactive graphics, geometrical transformations, 2-D and 3-D projections and spline curves. Offered in alternate years.

Prerequisites: CSCI 1120, MATH 2050.

CSCI 4602 Internship – 2 credits

Structured out-of-class learning experience that takes place on- or off-campus and includes a substantial work component. An internship involves students in a particular profession in an exploratory way to test career interests and potential. To initiate an internship experience, meet with the internship coordinator in the Career Development Office.

Prerequisites: Faculty sponsorship and department chair approval.

CSCI 4604 Internship – 4 credits

Structured out-of-class learning experience that takes place on- or off-campus and includes a substantial work component. An internship involves students in a particular profession in an exploratory way to test career interests and potential. To initiate an internship experience, meet with the internship coordinator in the Career Development Office.

Prerequisites: Faculty sponsorship and department chair approval.

CSCI 4684 Directed Study – 4 credits

Directed study is provided for students whose unusual circumstances prohibit taking a regularly scheduled course but who need the material of that course to satisfy a requirement. Availability of this faculty-directed learning experience depends on faculty time and may be limited in any given term and restricted to certain courses.

Prerequisites: Faculty, department chair and dean approval.

CSCI 4952 Independent Study – 2 credits

Independent study offers students the opportunity for specialized research not covered in a course offering, by the action project or thesis. Students work with a faculty advisor to develop a learning contract, which specifies the content and objectives of the study as well as the requirements and procedures for evaluation. The amount of credit earned for the study also is included in the learning contract.

Prerequisites: Permission of the faculty and department chair or program director.

CSCI 4954 Independent Study – 4 credits

Independent study offers students the opportunity for specialized research not covered in a course offering, by the action project or thesis. Students work with a faculty advisor to develop a learning contract, which specifies the content and objectives of the study as well as the requirements and procedures for evaluation. The amount of credit earned for the study also is included in the learning contract.

Prerequisites: Permission of the faculty and department chair or program director.

CSCI 4994 Topics: Advanced Concepts In Computer Science – 4 credits

Focus differs from term to term with such offerings as database management, artificial intelligence, analysis and design of software. Credit may be obtained under this course number more than once for different emphases. Offered alternate years.

Prerequisite: CSCI 1120.