COMPUTER SCIENCE (CS)

CS 112 Intermediate Spreadsheets, Databases, and Word Processing - 2 Hours
Advanced features of word-processing and spreadsheet software, and an introduction to database software and web page design. Offered fall semester in odd-numbered years for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

CS 120 Computer Programming I - 3 Hours
Development of problem-solving skills, emphasizing algorithm development and top-down design. Students will do extensive programming in a specified language. Computer laboratory fee. Offered fall semester for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

CS 160 Computer Hardware - 4 Hours
The exploration and troubleshooting of different aspects of a personal computer such as microprocessors, motherboards, the BIOS, sound and video cards, printers, network connectivity and memory. Will be taught in a lab environment that allows each student to disassemble and assemble the above components in a working computer. Will also have a component where the student assists in the troubleshooting of computer-related problems. Computer laboratory fee. Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

CS 220 Computer Programming II - 3 Hours
Continued study of problem-solving skills and algorithmic development. More advanced programming techniques in a specified language. Prerequisite: CS 120. Offered spring semester for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

CS 230 Applied Computer Technology - 3 Hours
Concerns the logic and reasoning necessary to make effective use of digital technology. Students will learn many of the issues and questions that must be addressed to make the best use of common computer applications such as communications, spreadsheets, word processing, databases, multimedia, and Internet design and research. Lab fee will be charged. Delivery mode: Florida undergraduate.

CS 235 Data Science I - 3 Hours
An overview of the goals, methods, and scope of data science. Includes data collection, manipulation, analysis, visualization, communication of results, and ethical issues related to data science. Prerequisite: CS 120. Offered fall semester in even-numbered years. Delivery mode: Deerfield traditional undergraduate.

CS 240 Discrete Mathematics - 3 Hours
A survey of discrete mathematical concepts including sets, logic, combinatorics, graph theory, trees, and the Boolean Algebra. Offered spring semester in even-numbered years for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

CS 251 Topics in Computer Languages - 1 Hour
A short, specific introduction to the structure and syntax of given computer languages. Assumes a strong background in programming. Prerequisite: CS 120. May be repeated with a different topic. Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

CS 260 Computer Networking - 3 Hours
An exploration of the concepts of computer networks, equipment, protocols, and network security. Network design, transmission media, and functions of a network will be examined. Prerequisite: CS 120. Computer laboratory fee. Offered spring semester in even-numbered years for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

CS 270 Computer Operating Systems - 3 Hours
The fundamental functions and concepts of operating systems, including their organization, architecture, and security. Prerequisite: CS 120. Offered spring semester in odd-numbered years for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

CS 280 Computer Architecture - 3 Hours
Internal representation of data and instructions in computers, assembly language, computer arithmetic, design and operation of the processor, pipelining, and the memory hierarchy. Prerequisite: CS 120. Offered fall semester in even-numbered years. Three hours.

CS 310 Database Management Systems - 3 Hours
The application, logical structure, and physical implementation of database systems. An examination of how data resources can be managed to support information systems in organizations. Includes an overview of big data. Prerequisite: CS 120. Offered spring semester in odd-numbered years for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

CS 312 Data Communications Networks - 3 Hours
Familiarizes the student with the concepts and terminology of data communications, network design, and distributed information systems. Equipment, protocols, architectures, and transmission alternatives. Prerequisite: CS 310. Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

CS 320 Data Structures - 3 Hours
Continued study of algorithmic development and analysis, along with the introduction of common data structures (arrays, linked lists, stacks, queues, and trees) and file structure (sequential, random, and indexed). Prerequisite: CS 220. Offered fall semester in even-numbered years for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

CS 330 Web Programming - 3 Hours
An introduction to programming for the World Wide Web, including instruction in HTML, CSS, JavaScript, or related languages. Prerequisite: CS 120 Offered spring semester in even-numbered years for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

CS 340 Programming Languages - 3 Hours
A study of the fundamental concepts underlying programming languages. Students will demonstrate the ability to master a new programming language on their own. Prerequisite: CS 220. Offered fall semester in odd-numbered years for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

CS 350 Topics in Computer Science - 1-4 Hours
Selected topics in computer science. May be repeated for credit with different topics. Computer laboratory fee may be required depending on topic. Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

CS 410 Systems Analysis and Design - 3 Hours
Information analysis and logical system specification. Emphasis on the iterative nature of the analysis and design process. Prerequisite: CS 310 or consent of instructor. Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

CS 420 Software Engineering - 3 Hours
Study of the software development process. Analysis, design, implementation, and testing of a semester-long, team software project. Prerequisite: CS 320. Offered fall semester in odd-numbered years for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

CS 435 Data Science II - 3 Hours
Mathematical foundations of data science models and methods. Machine learning approaches that include linear regression, classification models, and clustering. Algorithms and approaches for performing analysis on large datasets. Prerequisite: CS 235. Offered spring semester in odd-numbered years for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

CS 445 Internship - 1-6 Hours
The opportunity to use computing technologies in an approved on-campus or off-campus site. Satisfies the professional experience requirement for Computer Science majors. Prerequisites: Instructor approval and permission of the Dean of the College. Delivery mode: Deerfield traditional undergraduate.

CS 450 Independent Study - 1-4 Hours
Specialized study designed to meet the needs of individual students. Prerequisite: consent of the instructor. Offered on demand for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.

CS 490 Technology, Ethics, and Society - 3 Hours
The capstone course of the Computer Science. An examination of ethical and societal implications of various information and communication technologies from a Christian perspective. Includes topics such as technology and interpersonal relationships, and artificial intelligence. This course fulfills the IDS 499X Integrative Thought Capstone requirement for students in Computer Science. Prerequisite: PH 180 or PH 182. Offered spring semester in odd-numbered years for Deerfield traditional undergraduate. Delivery mode: Deerfield traditional undergraduate.