COMPUTER SCIENCE (CS) COURSES

CS 074 3 Units
iOS App Development
Lecture: 18 contact hours
Lab: 108 contact hours
This course will cover the fundamentals of iPhone application development using the Objective-C, Swift, and the iPhone SDK (Software Development Kit). The theory and use of using and managing Xcode, 3D Game Development, Storyboard Builder, Audio /Animation /Data /Location, User Interface (UI) development, game and app design will be covered. Students will gain valuable experience using front end and back end development tools to complete production ready iPhone applications.
Associate Degree Applicable

CS 075 3 Units
Introduction to Web Development
Lecture: 18 contact hours
Lab: 108 contact hours
This course focuses on web development and addresses the essentials for skilled web developers who can create digital media, web, and mobile applications for modern desktop and portable devices. Students in this program are offered an in-depth, project-driven curriculum that provides a comprehensive study of HTML, CSS, JavaScript, Web Animation, Multimedia Creation. Students will learn to develop visually aesthetic, user friendly, and interactive web-based applications. Students will also gain valuable experience using front end and backend development tools like Adobe Dreamweaver, Adobe Animate, and Visual Studio. Students will also be exposed to the programming languages that cross over from web development to mobile device development. The synergy between the many web and mobile technologies will help each student build a foundation suitable for professional content.
Associate Degree Applicable

CS 076 3 Units
Android App Development
Lecture: 18 contact hours
Lab: 108 contact hours
This course will cover Android Developer Fundamentals and basic Android programming concepts and build a variety of apps, starting with Hello World and working their way up to apps for business solutions and game development. Creating assets for applications and utilities is also covered.
Associate Degree Applicable

CS 077 4 Units
Introduction to C-Sharp
Lecture: 54 contact hours
Lab: 54 contact hours
Advisory: Eligibility for college level Mathematics based on the SBVC Guided-Self Placement process.
This course is an introduction to C# (C Sharp) app development. C# is a sophisticated and type-safe object-oriented language that empowers developers to build a variety of secure and robust applications that run on the .NET Framework. Topics will include fundamental object-oriented programming concepts like loops, arrays, logic, debugging, database, using the C# languages in a game development environment, files, and game development.
Associate Degree Applicable

CS 098 1-4 Units
Computer Science Work Experience
WRKEX: 300 contact hours
Supervised training, in the form of on the job employment that will enhance the student's knowledge in the selected field of study. The student's major and job must match. For paid work, 75 hours = 1 unit; for volunteer work, 60 hours = 1 unit. Students may earn a total of 16 units toward graduation in Work Experience 098 courses. See department for specific guidelines.
Associate Degree Applicable

CS 100 4 Units
Advanced C-Sharp Programming
Lecture: 54 contact hours
Lab: 54 contact hours
This course is the advanced C-Sharp course designed to further the learner's C-Sharp and programming knowledge beyond the Introductory level. Advanced programming using C-Sharp .NET is designed to emphasize software development, whether it is part of game development, web technologies, cloud computing technologies, Internet of Things (IoT), educational solutions, and innovative, original ideas conceived in the process of learning. Topics include object-oriented design, class(object) development, interfaces, design patterns, database access, and utilities.
Associate Degree Applicable
Transfers to both UC/CSU

CS 102 3 Units
Introduction to Python Programming
Lecture: 36 contact hours
Lab: 54 contact hours
Advisory: MATH 102 or MATH 108 or MATH 115
This course will cover the most common Python libraries as well as teach you programming best practices. We will explore different aspects of Python, including web, utility applications, machine learning, computer vision, IoT (Internet of Things), and data modeling applications. By the completion of the course, learners will complete a project using Python related to their major or area of interest.
Associate Degree Applicable
Transfers to both UC/CSU

CS 110 3 Units
Fundamentals of Computer Science
Lecture: 36 contact hours
Lab: 54 contact hours
Prerequisite: Eligibility for college level English and Mathematics based on the SBVC Guided-Self Placement process.
This course is an overview of the computer science discipline investigating the design and use of the computer devices, the art and science of problem solving and programming, the representation of data, human-computer interactions and ethical considerations, and information security principles. Also included is hands-on experience with command line and GUI operating systems; application of HTML, CSS, and scripts to web pages; and computer programming with an object-oriented language such as C++, Java, or C#.
Associate Degree Applicable
Transfers to both UC/CSU
C-ID: COMP 122

CS 120 4 Units
Introduction to Visual Basic.NET
Lecture: 54 contact hours
Lab: 54 contact hours
Advisory: Eligibility for college level Mathematics based on the SBVC Guided-Self Placement process.
This is an introduction to the Visual Basic.NET programming language. Topics include problem solving, graphical user interface, program design, software tools, structured logic, object-oriented programming, graphics and animation, procedures, arrays, files, and programming projects.
Associate Degree Applicable
Transfers to both UC/CSU

CS 130 3 Units
Discrete Structures
Lecture: 54 contact hours
Prerequisite: CS 110 and MATH 102
This course surveys discrete structures used in computer science with an emphasis on applications. Topics covered include: functions, relations, and sets; basic logic; proof techniques; basics of counting; graphs and trees; and discrete probability.
Associate Degree Applicable
Transfers to both UC/CSU
C-ID: COMP 152

CS 170 4 Units
Assembly Language
Lecture: 54 contact hours
Lab: 54 contact hours
Prerequisite: CS 110
This course focuses on the organization and behavior of computer systems at the assembly-language level. The mapping of high-level language statements and constructs to machine-level instructions and internal representation of common data types and simple structures is studied including the methods of numerical computation with assembly language constructs emphasizing common pitfalls associated with data representation and procedural errors encountered during the creation of machine language routines. This course includes hands on experience creating assembly language programs.
Associate Degree Applicable
Transfers to both UC/CSU
C-ID: COMP 142

CS 190 4 Units
Programming in C++
Lecture: 54 contact hours
Lab: 54 contact hours
Prerequisite: CS 110 and Eligibility for college level English based on the SBVC Guided-Self Placement process.
This course is an examination of intermediate object-oriented programming concepts and their application using the C++ language. Topics include programming control mechanisms; algorithm development; analysis of iterative and recursive solution complexity for various algorithms; templates and data structures; exception handling; object-oriented design and modeling; object-oriented programming in software engineering; pointers architecture.
Associate Degree Applicable
Transfers to both UC/CSU
C-ID: COMP 122

CS 215 4 Units
Programming with Java
Lecture: 54 contact hours
Lab: 54 contact hours
Prerequisite: CS 110
An introduction to Java. Topics include object-oriented design, multiple platform environment, program logic structures, graphical user interface, Java Applet, and recursion.
Associate Degree Applicable
Transfers to both UC/CSU

CS 220 4 Units
Advanced Visual Basic.Net Programming
Lecture: 54 contact hours
Lab: 54 contact hours
Prerequisite: CS 120
This course covers advanced programming using Visual Basic .NET with an emphasis on software development and maintenance. Topics include object-oriented design, multiple class modules, interface and linking, windows and Internet controls, and database access.
Associate Degree Applicable
Transfers to both UC/CSU

CS 222 1-3 Units
Special Problems in Computer Science I
DIR: 54 contact hours
Prerequisite: CS 110
Assigned problems involving computer laboratory work for selected students who are interested in furthering their knowledge of computer science on an independent study basis. Students are required to devote three contact hours per week to their project throughout the semester. Prior to registration, a contract must be prepared. See Instructor for details.
Associate Degree Applicable
Transfers to CSU only

CS 265 3 Units
Data Structures and Algorithms with C++
Lecture: 36 contact hours
Lab: 54 contact hours
Prerequisite: CS 130 and CS 190 and MATH 250
Corequisite: CS 130 and MATH 250
This course is an introduction to algorithmic analysis and data structures. Topics include formal computing algorithms, algorithmic strategies, and basic algorithm analysis; canonical data structures; intermediate recursion; human-computer interaction; professionalism and ethical behavior; software information assurance, software engineering, and software reuse.
Associate Degree Applicable
Transfers to both UC/CSU
C-ID: COMP 132