

Computer Science - Web Development (Certificate)

Certificate of Mastery

Minimum of 27 credit hours

Creating and maintaining websites has become big business – which means big opportunity for you in this growing career field. A web presence is used by businesses to get their message across to prospective clients and customers, to reach the largest audience, to advertise products and services, to provide support and to network socially. Most companies and organizations now have a presence on the World Wide Web and are in need of highly skilled, trained web designers and developers who can continually keep the content and design of those sites fresh, interesting and accessible. OCCC provides a strong foundation in computer science and web-related topics that are essential to those pursuing a career in this area. The Certificate of Mastery in Web Development is a course of study designed to teach you the technical elements of web site creation including database, security, programming, client-side scripting, and server-side scripting. It's a quick turn-around program that can get you out-the-door and into the job market, or you can return to college and build on what you've learned by applying your credits to an associate degree or additional certificate program.

Course Sequence

Course ID	Course Name	Credits	Type	Min Gd
Suggested Freshman 1st Semester				
CS 1103	Introduction to Computers and Applications	3	Major	C
CS 1143	Beginning Programming	3	Major	C
CS 2413	Web Site Development	3	Major	C
Suggested Freshman 2nd Semester				
CS 1333	Database Management Applications	OR	Major	C
CS 2173	Oracle	OR	Major	C
CS 2443	SQL Server	3	Major	C
CS 2163	Java	OR	Major	C
CS 2453	Visual Basic	3	Major	C
CS 2623	Server-Side Programming	3	Major	C
Suggested Sophomore 1st Semester				
CS 2183	Linux	3	Major	C
CS 2513	Client-Side Programming	3	Major	C
CS 2723	Secure Electronic Commerce	3	Major	C

Course Grouping

Major Courses: (27 Credit Hours) Computer Science: CS 1103, CS 1143, CS 1333 or CS 2173 or CS 2443, CS 2163 or CS 2453, CS 2183, CS 2413, CS 2513, CS 2623, CS 2723
 General Education Courses: None
 Life Skills Courses: None
 Support Courses: None

Program Notes

Notes: A Certificate of Mastery program is designed to meet the needs of an individual who wants to enter the job market following the completion of the certificate.

Must have a grade of "C" or higher in all Computer Science courses.

Degree Program Course Descriptions

CS 1103 - Introduction to Computers and Applications

Prerequisites: Math 0103 or adequate math placement test score; ENGL 0203, adequate placement score, or by meeting determined placement measures

3 Credits This hands-on course affords students a basic understanding of computers and their application. Upon completion of this course, the student will be able to demonstrate the ability to use a computer operating system, an office suite, productivity tools, as well as the Internet at an introductory level. Advanced Standing is available. This course satisfies the computer proficiency requirement.

CS 1143 - Beginning Programming

Prerequisites: ENGL 0203, adequate placement score, or by meeting determined placement measures; Math 0303 or adequate math placement test score or by evaluation. § Criteria for evaluation is in division office.

3 Credits Designed for Computer Science majors, this course affords students a basic understanding of computer programming. Students will utilize accepted programming concepts and perform number system conversions and arithmetic. In addition, they will design and code structured modular programs using design tools such as hierarchy charts, flowcharts, and pseudocode. This course satisfies the computer proficiency requirement.

CS 1333 - Database Management Applications

Prerequisites: ENGL 0203, adequate placement score, or by meeting determined placement measures; Math 0203 or adequate math placement test score.

3 Credits The student will use a selected database management program to create and edit database files. The student will also search, organize, and build reports, forms, and templates with the database files. This course satisfies the computer proficiency requirement.

CS 2163 - Java

Prerequisites: Math 0303 or adequate math placement test score, CS 1143 or by evaluation. § Criteria for evaluation is in division office.

3 Credits Student will develop object-oriented Java applications and applets, which demonstrate comprehension of fundamental programming structures, object-oriented programming, graphics, event handling, interface components, programming for the Internet, data structures, and exception handling. This course satisfies the computer proficiency requirement.

CS 2173 - Oracle

Prerequisites: Math 0303 or adequate math placement test score, CS 1143.

3 Credits Using Oracle as a platform, students will learn relational database concepts, sound database design and development techniques, and SQL commands. Topics include how to create and modify database tables; retrieve data from database tables; use subqueries to retrieve data; use table constraints, sequences, indexes, synonyms, views and functions; create users and assign privileges to users; create printable reports through SQL*Plus commands; practice SQL statement tuning. This course satisfies the computer proficiency requirement.

CS 2183 - Linux

Prerequisites: Math 0203 or adequate math placement test score, CS 1103 or by evaluation. § Criteria for evaluation is in division office.

3 Credits This course is an introduction to the Linux operating system for users. It is designed for those with a DOS/Windows operating system background with little or no knowledge of Linux. Topics include the development of Linux; basic Linux operating system concepts; a comparison of Linux to MS Windows; frequently used Linux programs and utilities, shells, editors, and tools; X window GUI and applications; Linux and the internet; setting up Apache web server software; basic HTML and CGI programming for Linux; use of virtual machine software to create virtual machines of guest operating system on top of host operating system. A+ Certification Preparation Course. This course satisfies the computer proficiency requirement.

CS 2413 - Web Site Development

Prerequisites: MATH 0203 College Prep Math II or adequate Math Placement test score. ENGL 0203, adequate placement score, or by meeting determined placement measures.

3 Credits Students will develop the skills needed to create a web site for personal or professional use. Design considerations will include accessibility standards, navigation techniques, audience needs, browser/platform concerns, and connection speeds. HTML, CSS along with a combination of other current technologies will be utilized for topics such as: building, formatting, enhancing, and publishing pages; maintaining a web site; manipulating graphics; creating printer and mobile versions; and incorporating JavaScript at an introductory level. This course satisfies the computer proficiency requirement.

CS 2443 - SQL Server

Prerequisites: Math 0303 or adequate math placement test score, CS 1143 or by

evaluation. § Criteria for evaluation is in division office.

3 Credits Students will learn terms, concepts and features needed to work with most relational databases. Using SQL Server databases and tools, they will learn concepts on how to design a database, retrieve data from and manipulate data in a database. They will also learn SQL programming and will be able to work with database features that will include views, stored procedures, functions, triggers and others. This course satisfies the computer proficiency requirement.

CS 2453 - Visual Basic

Prerequisites: Math 0303 or adequate math placement test score, CS 1143 or by evaluation. § Criteria for evaluation is in division office.

3 Credits The students will use Visual Basic to create object-oriented, event-driven programs. This course teaches the students to handle the visual interface and also learn programming concepts that include objects, decisions, loops, dialog boxes, arrays, menus, subs, functions, files, simple data access and various other programming topics as they apply to Visual Basic. This course satisfies the computer proficiency requirement.

CS 2513 - Client-Side Programming

Prerequisites: Math 0303 or adequate math placement test score, CS 2413 and CS 1143 or by evaluation. § Criteria for evaluation is in division office.

3 Credits Students will create dynamic web applications using client-side programming. A combination of current scripting/programming languages and web page authoring software will be utilized for topics such as: using the Document Object Model, coding event handlers, validating user input, manipulating graphics, and creating interactive web pages. This course satisfies the computer proficiency requirement.

CS 2623 - Server-Side Programming

Prerequisites: Math 0303 or adequate math placement test score, CS 1143 and CS 2413 or by evaluation. § Criteria for evaluation is in division office.

3 Credits Students will create interactive and dynamic web applications using server-side programming. A combination of current scripting/programming languages and web page authoring software will be used for topics such as maintaining state, processing data from the user, creating cookies, and interacting with databases. This course satisfies the computer proficiency requirement.

CS 2723 - Secure Electronic Commerce

Prerequisites: ENGL 0203, adequate placement score, or by meeting determined placement measures; Math 0203 or adequate math placement test score.

3 Credits Students will learn the fundamentals of secure electronic commerce technology, models and issues. This course includes principles and case studies of secure electronic commerce as well as an introduction to security architectures for secure electronic commerce. These include digital signatures, certificates, and public key infrastructure (PKI). Legal and national policy secure electronic commerce issues are included. This course satisfies the computer proficiency requirement.