

WEB DEVELOPMENT

Full Stack Web Developer Occupational Outlook Information

>>>> WHAT WEB DEVELOPERS DO



- Design, create, & modify websites
- Analyze user needs to implement website content, graphics, performance, and capacity
- Integrate websites with other computer applications
- Convert written, graphic, audio, & video components to compatible web formats by using software designed to facilitate the creation of web & multimedia content

>>>> PAY



\$66,130 annually. Entry-level wages are often lower than the median.

>>>> SKILLS



- Logic and Reasoning
- Critical Thinking
- Active Listening
- Communicating
- Analyze needs and product requirements to create a design

>>>> HOW TO BECOME A WEB DEVELOPER



- Training in vocational schools
- Related on-the-job experience
- Associate's Degree

>>>> WORK ENVIRONMENT



- Independent Contractors
- Full or part-time
- Work from home

>>>> JOB OUTLOOK



Employment is expected to increase 14% by 2024.

Source: www.onnetonline.org

SU MOBILE APPLICATION DEVELOPER CREDENTIAL

16 credits

This credential is designed to prepare students for a career in developing mobile applications for tablets and smartphones using both the Android and Apple iOS Operating Systems. This 16-credit program is designed to fit within SUNY Ulster's Network A.S. Computer Science and A.S. Computer Science (Online) degree programs. The program curriculum is made up of two courses in Computer Science and two courses in Mobile Application Development.



SU ANDROID APP DEVELOPMENT

Android is now the most widely used operating system among smart phones, tablets, and PCs. This course prepares the student to be a professional Android software developer. It is based on an app-driven approach. Mobile system concepts specific to Android are presented in the context of complete working Android apps, rather than using sample code snippets. The student is expected to construct these applications and test them in a simulated mobile device environment. Concepts and techniques introduced in this course include: Fundamentals of the Android Studio development environment, Concepts and structure of the Android application environment Graphical user interface conventions and graphical concepts, Remote access to information using industry standard protocol, Access to relational data stored on the Android device (via SQLite or equivalent) Animation and simple game development Corerequisite: CSC 180 or permission of the instructor.

CSC 210-01B T/H 8/28-12/19 1:10am - 2:30pm SRC

\$780

CSC 210-S01 ONLINE 8/28-12/19

\$780



SU APPLE IOS DEVELOPMENT

This course will be offered in January 2018.



WEB DEVELOPMENT

WEB APPLICATION DEVELOPER

This credential is designed to prepare students for a career in Web Application development. Educational and financial institutions and small businesses of all types have expressed this need. This 16-credit program is designed to fit within SUNY Ulster's Network A.S. Computer Science and A.S. Computer Science (Online) degree programs. The program curriculum is made up of two courses in Computer Science and two courses in Web Development.

COMPUTER SCIENCE I

This course covers the fundamentals of computer problem solving and programming. Topics include: program development process, differences between the object-oriented, structured, and functional programming methodologies, phases of language translation (compiling, interpreting, linking, executing), and error conditions associated with each phase, primitive data types, memory representation, variables, expressions, assignment, fundamental programming constructs (sequence, selection, iteration), algorithms for solving simple problems, tracing execution, subprograms/functions/methods, parameter passing, secure coding techniques (criteria for selections of a specific type and use, input data validation), and professional behavior in response to ethical issues inherent in computing. The Java programming language is used. Corequisite: MAT 115 or equivalent or permission of the instructor. **Instructor: J. Sheehan**

CSC 150-01B	M/W/F	8/28-12/19	noon-12:55pm	SRC/HAS 219	\$780	
CSC 150-S01	ONLINE	8/28-12/19			\$780	
DCB 2140-01	M/W/F	8/28-12/19	noon-12:55pm	SRC/HAS 219	\$780	
DCB 2158-01	ONLINE	8/28-12/19			\$780	



The DCB course is a non-credit option for the 4-credit CSC course. Students will be expected to do all homework assignments and quizzes but no grade will be awarded. For assistance in selecting a course, please contact SUNY Ulster at 845-802-7171.

COMPUTER SCIENCE II

This course covers the fundamentals of algorithms and object oriented software development. Topics include: modern IDE for software development, primitive and reference data types, encapsulation, information hiding, selection, iteration, functions/methods, parameters, recursion, exception handling, generic linear data structures (arrays, records/structs) and maps, file types, file I/O, simple GUIs with event handling, programming to an interface, lambda expressions, semantics of inheritance and use of polymorphism, relation with subtyping, search (sequential, binary), select (min, max), and sort (bubble, insertion, selection) algorithms, complexity notation, documentation using standard tools, program testing (unit testing) and debugging, reasoning about control flow in a program, and societal impacts related to computing and software. Prerequisite: CSC 150 with a C- or better or permission of the instructor. **Instructor: J. Sheehan. Course will be offered January 2018.**

WEB APPLICATION DEVELOPER I

This course explores the web development processes and tools used to support the creation of websites and web applications. Students explore HTML, CSS and JavaScript and use them to create websites and web applications hosted by a web server. Web application development frameworks will also be introduced. Through labs and projects students create both static and dynamic web content in the context of producing a professional quality web site. The course focuses on the underlying tools of web development. Prerequisite: familiarity with text file editing as determined by the instructor. **Instructor: J. Sheehan**

CSC 131-01B	T/R	8/28-12/19	11:40am-1pm	SRC/HAS 219	\$780	
CSC 131-S01	ONLINE	8/28-12/19			\$780	
DCB 2142-01	T/R	8/28-12/19	11:40am-1pm	SRC/HAS 219	\$780	
DCB 2160-01	ONLINE	8/28-12/19			\$780	

The DCB course is a non-credit option for the 4-credit CSC course. Students will be expected to do all homework assignments and quizzes but no grade will be awarded. For assistance in selecting a course, please contact SUNY Ulster at 845-802-7171.

WEB APPLICATION DEVELOPER II

This course covers advanced web application development frameworks, languages and techniques such as Ruby on Rails, jQuery, AngularJS, PHP, and Node.js or equivalent. Students work in teams to develop real-world web application projects. Topics include an overview of the Model-View-Controller (MVC) software architectural pattern and database fundamentals using MySQL or equivalent. Prerequisite: CSC 131 with a grade of C- or better or permission of the instructor. **Course will be offered January 2018.**

WEB DEVELOPMENT

SU NEW! FULL STACK WEB DEVELOPER - FAST TRACK OPTION

Interested in starting a career in web development? Join us for this FAST TRACK program that consists of four modules plus the foundation course Computer Science I. Students may take one or more module to develop their skills or to start building skills needed in the profession. Students will work on building a portfolio of work and will be eligible to apply for an entry level position as a web developer. Corequisite: Computer Science I or equivalent knowledge. Prerequisite: College Algebra suggested, Basic Algebra required.

DCB 2144-01 F 9/29-12/22 9am-3pm KSU **\$1,976** (includes Computer Science I)

SU COMPUTER SCIENCE I

Please refer to page 15 for course description and availability.

SU WEB DESIGN (HTML, CSS, JAVASCRIPT, ACCESSIBILITY, USABILITY) - INTRODUCTORY LEVEL

In this 15-hour course, students will study the Client-Server Architecture of the World Wide Web, Static vs. Dynamic Web Pages, Accessibility and Usability Heuristics, Hypertext Markup Language (HTML), Cascading Style Sheets (CSS) and JavaScript and Dynamic Hypertext Markup Language (DHTML).

Instructor: C. Marcello

DCB 2145-01 F 9/29-10/13 9am-3pm KSU **\$299**

SU WEB DEVELOPMENT (PHP PROGRAMMING) - INTERMEDIATE LEVEL

Students will continue on to learn PHP Server-Side-Scripting, AJAX, PHP POST and GET Methods, PHP Functions, Programmer-Defined Functions and PHP Development and Testing. Prerequisite: Introduction to Web Design. Instructor: C. Marcello

DCB 2146-01 F 10/20/-11/3 9am-3pm KSU **\$299**

SU DATABASE DESIGN AND DEVELOPMENT (MYSQL) - INTERMEDIATE LEVEL

In this intermediate course, students will learn Relational Database Basics, Normalization and Data Integrity, Entity Relational Data Modeling, Structured Query Language (SQL) and Advanced Structured Query Language Commands. Prerequisite: Web Design and Web Development. Instructor: C. Marcello

DCB 2147-01 F 11/10-12/1 9am-3pm KSU **\$299**

SU BUILDING AN E-COMMERCE DATA-DRIVEN WEBSITE IN PHP/MYSQL - ADVANCED LEVEL

Students ready for advanced level learning will learn how to Create a Database-Driven Online Store, Connecting to the MySQL Database Using PHP, Create a Database-Driven Product Catalog, Create a Database-Driven Shopping Cart and Create a Database-Driven Purchase and Checkout System.

Prerequisite: Web Design, Web Development, Database Design and Development. Instructor: C. Marcello

DCB 2148-01 F 12/8-22 9am-3pm KSU **\$299**



WEB DEVELOPMENT

NEW! WEB DEVELOPER – EVENING OPTION

SU DESIGNING YOUR BUSINESS WEBSITE CONTENT FOR MAXIMUM SUCCESS

Not all websites are created equal. For your online business presence to yield maximum benefit to your business, all content on the site must be designed to communicate value to your ideal customer in an easy and natural way. In this course, students will learn how to define and plan their website content for the optimal conversion to business goals. This course covers: content blocks and flow, user journey, graphic branding, calls to action, online marketing strategy, mockups and wireframes. **Instructor: Y. Ovchinnikova**
DCB 2170-01 R 9/7-9/28 6-8pm KSU \$199

SU LEARN TO BUILD A WEBSITE - PART I

Students are provided with a hands-on introduction to the universal architecture of the web. This course covers website construction with HTML5 and CSS, design and usability concepts, website hosting and administration. Students will learn how to build a simple, professional-class website. **Instructor: S. White**
DCB 2171-01 M 9/11-10/16 6-9pm KSU \$499
No class 10/9

SU LEARN TO BUILD A WEBSITE - PART II

In this course, students will extend their knowledge of HTML5 and CSS in building multipage websites. Students will explore file structure and hierarchy, CSS strategies for managing multi-column layout, CSS drop-down menus, tables, forms and multimedia. Optional: Students who take Designing Your Business Website Content for Maximum Success can use their own business content from that course to develop their own professional multi-page website in this course. Prerequisite: Learn to Build a Website-Part I or equivalent knowledge (instructor-approved) **Instructor: S. White**
DCB 2172-01 M 10/23-11/20 6-9pm KSU \$499

SU INTRODUCTION TO JAVASCRIPT & JQUERY

This course is designed for JavaScript novices who have little or no experience with the language. Students will learn the structure of JavaScript - variables, scope, control flow and functions. Students will create code that interacts with DOM and adds interactive behavior to a website. The course will discuss best practices and introduce jQuery - a widely used JavaScript library. Prerequisite: knowledge of HTML and CSS or Learn to Build a Website - Part I. **Instructor: D. Pavlov**
DCB 2173-01 R 10/19-11/9 6-9pm KSU \$399

SU WEBSITE OPTIMIZATION FOR GOOGLE

This course examines the interplay between clear business messaging and search engine optimization. Principles covered include: Niche Service, Location, Speed, Proper Website Structure, Blogs, Target Keywords, Tags, Metadata, Google Analytics basics, Google Search Console basics, AdWords basics and Tips and Tricks. **Instructor: Y. Ovchinnikova**
DCB 2174-01 R 11/16-12/14 6-8pm KSU \$259
No class 11/23

SU COMPUTER GAME DESIGN CREDENTIAL 16 credits

This credential is designed to prepare students for a career in designing and developing computer games. This 16-credit program is designed to fit within SUNY Ulster's Network A.S. Computer Science and A.S. Computer Science (Online) degree programs. The program curriculum is made up of two courses in Computer Science and two courses in Mobile Application Development.

SU COMPUTER GAME DESIGN I This course will be offered in January 2018 COMPUTER GAME DESIGN II

This course expands on the fundamental computer game concepts and techniques introduced in CSC 220, Computer Game Design I. It advances use of the C# programming language to animate and handle interactions with the game environment, game elements and the players. Special emphasis will be given to insuring good game performance. Physical principles of mechanics and lighting will be enlarged to include more natural movement, interaction among objects such as wind and lighting with shading and textures. Computer programming scripts will interact in advanced ways with objects composed of curves, and coverings such as clothed human actors in the game. Prerequisite: CSC 220 or permission of the instructor.

CSC 225-01B	T/H	8/28-12/19	10:10-11:30am	SRC	\$780
CSC 225-S01	ONLINE	8/28-12/19			\$780