Web Technologies, A.A.S.

Today's web developers have a huge audience for their work, thanks in large part to the Internet, as well as numerous employment possibilities. The various applications of the World Wide Web are limited only by human creativity. Email gave way to instant messaging and social networking. Early e-commerce led to online banking and trading. Where once it took minutes for a single picture to load onto a Web site, today you can watch TV and movies online and download DVDs. The driving force behind all of these advances is Web application developers, who are responsible for all technical aspects of a Web site.

Johnson County Community College's Web Technology program focuses on "real world"/hands-on and interactive learning. Web developers fuel the Internets explosive growth by identifying and developing new applications for the Web, as well as refining existing uses, making Internet use simpler and more seamless. Web developers make the Web interface perform as it was designed and intended.

Associates of Applied Science in Web Technology program prepares students for current software and industry practices, application development specifically for the World Wide Web and applications for the mobile web. The core courses provide a broad foundation of software and industry skills. Students can then use the elective courses to tailor their AAS degree and develop their portfolio for specific work areas such as web programming, rich media applications, and mobile web applications. This program prepares students for entry-level positions and/or preparation for transfer to a four-year degree program at a college or university.

Graduates may work as Web Developers, Web Developer Consultants, Rich Media Applications Developers, Mobile Web Technologists/Developers, Web-based Game Developers, Smart Phone Application Developers, E-Commerce Developers, and entrepreneurs. Graduate's employment opportunities include a wide range of companies that are interested in using the Internet to market and/or sell their products and services or companies that provide Web development and
maintenance as a contracted service.

(Major Code 2300; State CIP Code 11.0801)

- Information Systems (http://www.jccc.edu/information-systems)

Associate of Applied Science

First Semester

Full Semester Courses		
CWEB 110	XHTML and CSS	3
CWEB 103	Professional Skills for the Digital Developer	3
CS 134	Programming Fundamentals	4
ENGL 121	Composition I*	3
First Five Week Session		
CWEB 101	Introduction to the Web using Internet Explorer*	1
CWEB 105	Introduction to Web Pages: Dreamweaver*	1
or CWEB 104	Introduction to Web Pages: Expression Web*	
Second Five Week Session		
CWEB 160	Introduction to JavaScript*	1
Total Hours		16

Second Semester

Full Semester Courses		
Health and/or Physical Education Elective ^		1
CWEB 212	Technical Interface Skills*	3
CWEB 166	Introduction to eXtensible Markup Language*	3
IT 140	Networking Fundamentals	4
First Five Week Session		
CWEB 130	Introduction to Flash*	1
CWEB 126	Survey of Web Technologies*	2
Second Five Week Session		
CWEB 140	Intermediate Flash*	1
CWEB 167	Introduction to Asynchronous JavaScript and XML*	1
Third Five Week Session		

CWEB 150	Advanced Flash*	1
Total Hours		17

^ Health and/or Physical Education Elective (http://catalog.jccc.edu/spring/degreecertificates/electives/health-and-or-physical-ed-aas)

Third Semester (Mobile Web Option)

Full Semester Courses		
Humanities/Art Elective ^		3
Social Science and/or Economic Elective ^^		3
ENGL 140	Writing for Interactive Media*	3
CWEB 121	Introduction to Mobile Media*	3
CWEB 221	Design and Development for Mobile Web*	3
Second Five Week Session		
CPCA 114	Databases I: MS Access*	1
Third Five Week Session		
CWEB 136	Introduction to PHP*	1
Total Hours		17

^ Humanities/Art Elective (http://catalog.jccc.edu/spring/degreecertificates/electives/humanities-aas)

^^ Social Science and/or Economics Elective (http://catalog.jccc.edu/spring/degreecertificates/electives/social-sci-econ-aas)

Third Semester (Rich Media Applications Option)

Full Semester Courses		
Humanities/Art Elective ^		3
Social Science and/or Economic Elective ^^		3
ENGL 140	Writing for Interactive Media*	3
CS 205	Concepts of Programming Algorithms using Java*	4
CWEB 250	Rich Internet Applications I*	3
Third Five Week Session		
CWEB 190	ActionScript for Flash*	1
Total Hours		17

^ Humanities/Art Elective (http://catalog.jccc.edu/spring/degreecertificates/electives/humanities-aas)

^^ Social Science and/or Economics Elective (http://catalog.jccc.edu/spring/degreecertificates/electives/social-sci-econ-aas)

Third Semester (Web Programming Option)

Full Semester Courses		
Humanities/Art Elective ^		3
Social Science and/or Economic Elective ^^		3
ENGL 140	Writing for Interactive Media*	3
CWEB 260	CSS Techniques & Projects*	3
First Five Week Session		
CPCA 114	Databases I: MS Access*	1
Second Five Week Session		
CWEB 115	Intermediate Web Pages: Dreamweaver*	1
or CWEB 114	Intermediate Web Pages: Expression Web*	
CWEB 136	Introduction to PHP*	1
Third Five Week Session		
CWEB 125	Introduction to Dynamic Web Pages: Dreamweaver*	1
CWEB 190	ActionScript for Flash*	1
Total Hours		17

^ Humanities/Art Elective (http://catalog.jccc.edu/spring/degreecertificates/electives/humanities-aas)

^^ Social Science and/or Economics Elective (http://catalog.jccc.edu/spring/degreecertificates/electives/social-sci-econ-aas)

Fourth Semester (Mobile Web Option)

Full Semester Courses		
Program Electives (see below)		7
Science and/or Math Elective ^		3
CWEB 250	Rich Internet Applications I*	3
CWEB 290	Web Technologies Capstone*	3
Third Five Week Session		
CWEB 146	PHP with MySQL*	1
Total Hours		17

^ Science and/or Math Elective (http://catalog.jccc.edu/spring/degreecertificates/electives/sci-and-or-math-aas)

Fourth Semester (Rich Media Applications Option)

Full Semester Courses		
Program Electives (see below)		7
Science and/or Math Elective ^		3
CIS 208	Mobile Application Development*	4
CWEB 290	Web Technologies Capstone*	3
Total Hours		17

^ Science and/or Math Elective (http://catalog.jccc.edu/spring/degreecertificates/electives/sci-and-or-math-aas)

Fourth Semester (Web Programming Option)

Full Semester Courses		
Program Electives (see below)		7
Science and/or Math Elective ^		3
CWEB 270	Web Analytics*	3
CWEB 290	Web Technologies Capstone*	3
Third Five Week Session		
CWEB 146	PHP with MySQL*	1
Total Hours		17

^ Science and/or Math Elective (http://catalog.jccc.edu/spring/degreecertificates/electives/sci-and-or-math-aas)

Program Electives

BUS 150	Business Communications*	3
CDTP 135	Desktop Photo Manipulation I: Photoshop	1
CDTP 155	Desktop Photo Manipulation II: Photoshop*	1
CDTP 175	Desktop Photo Manipulation III: Photoshop*	1
CDTP 140	Desktop Publishing I: InDesign	1
CDTP 160	Desktop Publishing II: InDesign*	1
CDTP 168	Desktop Publishing III: InDesign*	1
CDTP 145	Desktop Illustration I: Illustrator	1
CDTP 165	Desktop Illustration II: Illustrator*	1
CDTP 185	Desktop Illustration III: Illustrator*	1
CS 205	Concepts of Programming Algorithms using Java*	4
CIS 162	Database Programming*	4
CPCA 109	Google Apps*	1
CPCA 121	Introduction to Project Management*	1

CPCA 139	UNIX*	1
CWEB 104	Introduction to Web Pages: Expression Web*	1
CWEB 105	Introduction to Web Pages: Dreamweaver*	1
CWEB 114	Intermediate Web Pages: Expression Web*	1
CWEB 115	Intermediate Web Pages: Dreamweaver*	1
CWEB 125	Introduction to Dynamic Web Pages: Dreamweaver*	1
CWEB 250	Rich Internet Applications I*	3
CWEB 292	Special Topics:	1-3
ENTR 120	Introduction to Entrepreneurship	2
IT 221	Windows Server*	3
IT 230	Linux Fundamentals	3

Total Program Hours: 67

Courses

CWEB 101 Introduction to the Web using Internet Explorer* (1 Hour)
Prerequisites: CPCA 105 or CPCA 106 or CPCA 128 or CIS 124 or appropriate score on an assessment test

This course will introduce the student to commands and techniques required to effectively use the resources of the World Wide Web. Topics to be covered will include how to browse, search and retrieve information on the Internet using Internet Explorer, how to create and manage "favorites", how to protect computers from viruses, how to send and receive electronic mail, and how to create a basic home page. 1 hr. lecture/wk.

CWEB 103 Professional Skills for the Digital Developer (3 Hours)
Upon successful completion of this course, the student will be able to demonstrate effective communications and professional skills important to a career in digital development. Topics covered include the use of technology to achieve effective written and verbal communication skills, team management, project management, and problem solving skills. Current and relevant legal, ethical, and governmental issues important to a career in digital development are also covered. 3 hrs. lecture/wk.

CWEB 104 Introduction to Web Pages: Expression Web* (1 Hour)
Prerequisites or corequisites: CWEB 101

This course will cover the commands and techniques required to create and revise web pages using Expression Web. Topics to be covered will include researching, planning, and creating a web site, identifying the purpose of Extensible Hypertext Markup Language (XHTML) and Cascading Style Sheets (CSS), inserting background color, inserting and editing images, creating lists, creating and applying style sheets, inserting files, creating internal and external links, and publishing a web site. 1 hr. lecture/wk.

CWEB 105 Introduction to Web Pages: Dreamweaver* (1 Hour)
Prerequisites: CWEB 101

This course will cover the commands and techniques required to create and revise Web pages using Dreamweaver. Topics to be covered will include basic text layout, viewing and identifying basic HTML tags, creating a site map, formatting a Web page, applying background color, inserting images and sounds, creating ordered and unordered lists, inserting files, and creating links on Web pages. 1 hr. lecture/wk. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.

CWEB 110 XHTML and CSS (3 Hours)
This course will cover the essential skills needed to create Web sites, with a focus on using Extensible Hypertext Markup Language (XHTML) and Cascading Style Sheets (CSS). Students will be introduced to the concepts, foundations, syntax and structure of XHTML. Additional topics include the use of File Transfer Protocol (FTP) as a way to publish a web site, validation, and Web standards established by the World Wide Web Consortium (W3C) and other organizations. 3 hrs. lecture/wk.

CWEB 111 Intermed Web Concepts/Techniques using Explorer* (1 Hour)
Prerequisites: CWEB 101

This course is a continuation of CWEB 101, Introduction to the Web using IE, and will cover intermediate commands and techniques required to use various Web-based tools and programs. Topics to be covered will include using complex search strategies; finding people, businesses and e-mail addresses on the Web; accessing and using Newsgroups; joining and leaving mailing lists; using a Web-based chat facility; locating and downloading freeware and shareware programs; and identifying online backup and storage options. 1 hr. lecture/wk.

CWEB 114 Intermediate Web Pages: Expression Web* (1 Hour)
Prerequisites: CWEB 104

This course is a continuation of CWEB 104, Introduction to Web Pages: Expression Web, and will cover intermediate-level commands and techniques required to create and enhance web sites using Expression Web. Topics to be covered will include creating and modifying dynamic links, working with tables, creating forms, and using templates to design web pages. 1 hr. lecture/wk.

CWEB 115 Intermediate Web Pages: Dreamweaver* (1 Hour)
Prerequisites: CWEB 105

This course will cover intermediate-level commands and techniques required to create and enhance a Web page using Dreamweaver. Topics to be covered will include tracing images, layers, converting layers to tables, custom tables, cascading style sheets, templates and libraries, and publishing a Web site. 1 hr. lecture/wk. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.

CWEB 120 Internet Applications: Fireworks I* (1 Hour)
Prerequisites: CPCA 105 or CPCA 106 or waiver test scores

This course is an introduction to the fundamentals, tools and techniques of Web imaging using Macromedia Fireworks. Students will gain an understanding how to import, manipulate, optimize and animate Web graphics. Students will combine graphics with HTML and JavaScript creating image slices, navigation menus and hotspots. 1 hr. lecture/wk.

CWEB 121 Introduction to Mobile Media* (3 Hours)
Prerequisites: CWEB 110

Mobile devices outnumber desktop and laptop computers three to one worldwide. This course will cover practical guidelines, standards, techniques and best practices for building mobile products from start to finish, including basic design and development principles for all mobile devices and platforms. 3 hrs. lecture/wk.

CWEB 125 Introduction to Dynamic Web Pages: Dreamweaver* (1 Hour)
Prerequisites: CWEB 115 and CPCA 114

This course explores the Dreamweaver database environment and dynamic site concepts. Students will learn how to create, sort and display recordset content in a Web page. Students will create search applications, allowing movement between master and detail record pages, and to display the results of database searches. 1 hr. lecture/wk.

CWEB 126 Survey of Web Technologies* (2 Hours)
Prerequisites or corequisites: CWEB 101

This course introduces students to the careers, technologies, and skills used in the field of Web technology. Students will also publish files to Web servers and start a professional Web-based portfolio. 2 hrs. lecture/wk.

CWEB 130 Introduction to Flash* (1 Hour)
Prerequisites: CPCA 161 or CWEB 104 or CWEB 105

This course will cover the commands and techniques available to add Flash content to Web pages and CD-ROMs. Topics covered will include using drawing tools, manipulating text with text tools, adding and modifying sound, creating animation and publishing work. This class will be taught in a classroom with both Macintosh and Windows computers. 1 hr. lecture/wk. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.

CWEB 136 Introduction to PHP* (1 Hour)
Prerequisites: (CWEB 101 and CPCA 114) or (CS 134 or CIS 134)

This course covers the commands and techniques available to add functionality to Web pages using PHP (Hypertext Preprocessor). Students will build client-side PHP scripts with variables, functions, expressions, methods and events to validate forms and enhance Web page functionality. The basics of server-side scripting are introduced. 1 hr. lecture/wk.

CWEB 140 Intermediate Flash* (1 Hour)
Prerequisites: CWEB 130

This course will build on the fundamental skills learned in CWEB 130, Introduction to Flash. Topics will include complex animation techniques; interactivity with simple frame actions; and interactivity using objects such as buttons, hot spots and movie clips. 1 hr. lecture/wk.

CWEB 146 PHP with MySQL* (1 Hour)
Prerequisites: CWEB 136

This course covers the commands and techniques required to connect a Web page to a relational database using PHP (Hypertext Preprocessor) and MySQL (database management system). Students define and build a relational database using MySQL, then use PHP scripts as well as SQL in a Web page to connect to the database to edit, delete, and enter records. 1 hr. lecture/wk.

CWEB 150 Advanced Flash* (1 Hour)
Prerequisites: CWEB 140

This course will build on the skills learned in CWEB 131, Intermediate Flash. Students will do projects to control movie clips, sound, external data, multiple timelines and text fields. Some ActionScripting will be introduced. 1 hr. lecture/wk.

CWEB 160 Introduction to JavaScript* (1 Hour)
Prerequisites: CWEB 104 or CWEB 105 or CWEB 106 or CPCA 161 or (CS 134 or CIS 134)

This course will cover the commands and techniques available to add functionality to Web pages using JavaScript. Topics to be covered include integrating JavaScript into an HTML file, creating pop-up windows, adding scrolling messages, validating forms and enhancing the use of image and form objects. 1 hr. lecture/wk.

CWEB 166 Introduction to eXtensible Markup Language* (3 Hours)
Prerequisites: CWEB 160

This course will introduce and explain the use of XML(eXtensible Markup Language) documents to encapsulate and transfer data across the Internet. Students will learn to use document type definitions, attributes and entities, and XML schemas to build valid and useful XML documents. CSS(Cascading Style Sheets) will be introduced to format the XML documents. JavaScript will be used to incorporate programming instructions into the XML document. 3 hrs. lecture/wk.

CWEB 167 Introduction to Asynchronous JavaScript and XML* (1 Hour)
Prerequisites: CWEB 160

This course will introduce and explain the use of AJAX technology. AJAX is a loose acronym for Asynchronous JavaScript and XML(eXtensible Markup Language). AJAX is not a technology itself but is a combination of XHTML(eXtended Hypertext Markup Language), CSS(Cascading Style Sheets) and JavaScript?s use of the DOM (Document Object Model). Students will use AJAX to build dynamically load data into a web page, to build lists on the fly, include auto complete functionality and other interactive features to a web page. 1 hr. lecture/wk.

CWEB 170 Intermediate JavaScript* (1 Hour)
Prerequisites: CWEB 160

This course builds on the skills learned in CWEB 160, Introduction to Web Scripting: JavaScript. Students will learn to use JavaScript in their Web pages to build menus and navigational structures. They will also learn to use intermediate techniques for cookie manipulation and storage. Complex use of operators (Bitwise, Assignment, Comparison, Arithmetic and Boolean) will be explained. 1 hr. lecture/wk.

CWEB 180 E-Commerce Using JavaScript* (1 Hour)
Prerequisites: CWEB 170

This course builds on the skills learned in CWEB 160, Introduction to Web Scripting: JavaScript, and CWEB 161, Intermediate JavaScript. The student will build a complete e-commerce site that will support online ordering and payment with JavaScript. 1 hr. lecture/wk.

CWEB 190 ActionScript for Flash* (1 Hour)
Prerequisites: CWEB 150

This course will teach the basic skills needed to use ActionScripts in Flash movies. Students will build interactivity into their movies using ActionScript. They will also manipulate data and control Flash objects such as movie clips. ActionScript logic and functions will be explained. 1 hr. lecture/wk.

CWEB 200 Podcasting I* (3 Hours)
Prerequisites: CWEB 101

Podcasting is a web-based broadcast medium. Audio files (most commonly in MP3 format) are made available online in a way that allows software to automatically detect the availability of new files (generally through RSS [Really Simple Syndication]), and download the files for listening at the user's convenience. This course will cover how to create sound, use the appropriate software, develop a show, distribute a podcast, and build an audience. Students will begin by learning the basics of blogging and develop their blogs into audio and/or video podcasts. More advanced topics include audio editing, podcasting on the go, and videocasting. 3 hrs. lecture/wk.

CWEB 205 Search Engine Optimization* (1 Hour)
Prerequisites: CWEB 104 or CWEB 105

This course will cover how to optimize a Website to maximize search engine ranking. Upon completion of the course students will be able to identify and implement effective Web site designs and strategies for search engine optimization. 1 hr. lecture/wk.

CWEB 212 Technical Interface Skills* (3 Hours)
Prerequisites: CWEB 110

This course will cover the skills needed to successfully develop Information Architecture (IA) blueprints from concept to completion. Students will use fundamental visual principles, perception, color, composition and typography to analyze and modify existing IA plans while keeping consistent structure. They will create complementary visuals that maintain a client?s brand while working through the modification process. Students will review and memorize the critical universal usability rules and basic visual design principles quintessential of a design team and to implement an aesthetic vision through every step of development. 3 hrs. lecture/wk.

CWEB 221 Design and Development for Mobile Web* (3 Hours)
Prerequisites or corequisites: CWEB 121

This course provides practical knowledge to effectively plan, engineer, and deliver websites for Mobile devices, such as phones, PDA's, Blackberry's, etc. Students will combine XHTML and CSS (Cascading Style Sheets) to create accessible Mobile websites. 3 hrs. lecture/wk.

CWEB 230 Introductory E-Commerce Applications* (1 Hour)
Prerequisites: CWEB 101 or CPCA 141

This course will introduce students to e-commerce in a software-driven, hands-on way. It will use software tools to discuss and explore a variety of e-commerce activities. Students will examine an extensive list of e-commerce sites, such as those that support purchasing, delivery, support, auction, business-to-business, virtual community and Web-portal business goals. They will examine e-commerce stores that incorporate advertising, marketing, branding, and business efficiency goals. They will explore how to populate a store catalog, create site-wide navigation links and publish a store. 1 hr. lecture/wk.

CWEB 240 Intermediate E-Commerce Applications* (1 Hour)
Prerequisites: CWEB 230

This course will use software tools such as Internet Explorer and Netscape Communicator to discuss and explore a variety of intermediate e-commerce activities. For example, students will examine e-commerce security issues, such as cookies, privacy risks and property threats, including copyright issues, viruses, security policies, encryption, digital signatures and transaction integrity. Students will study electronic payment systems, including script, electronic checks, credit card purchases, electronic wallets, smart cards and electronic cash. Students will explore international and legal issues, such as language and custom barriers, laws and regulations, and tax considerations. They will also explore ethical issues, such as trust and defamation issues. Finally, they will explore careers in electronic commerce. 1 hr. lecture/wk.

CWEB 250 Rich Internet Applications I* (3 Hours)
Prerequisites: CS 134

This course provides students with hands-on, practical experience to build functional, well architected front-end for a Rich Internet Application (RIA). Students will build complex applications using industry-accepted best practices. 3 hrs. lecture/wk.

CWEB 260 CSS Techniques Projects* (3 Hours)
Prerequisites: CWEB 110

Students will apply Cascading Style Sheet (CSS) techniques through the use of professional, advanced Web site development projects. Industry-standard Hypertext Markup Language (HTML) semantic markup practices and presentation separation through CSS is emphasized. CSS topics include professional syntax practices, formatting, and layout skills. Advanced CSS skills for float, positioning, alignment, and image formatting are covered. 3 hrs. lecture/wk.

CWEB 270 Web Analytics* (3 Hours)
Prerequisites: CWEB 110

Upon successful completion of this course, students should be able to implement and apply web analytics techniques. Topics to be covered include web traffic analysis, data collection methodologies, report analysis, best-practices configuration, and search engine optimization. 3 hr. lecture/wk.

CWEB 290 Web Technologies Capstone* (3 Hours)
Prerequisites: CWEB 270 (Web Technologies Track) or CWEB 221 (Mobile Web Track) or CWEB 250 (Rich Media Applications Track)

This is the capstone course in the Web Technologies AAS degree program. In this course, students will explore the latest trends in web technology. Students will also review materials and practice skills from their previous courses in the program in order to create a flexible portfolio web presence which will showcase their expertise in web technologies. In addition to creating the portfolio, students will explore career opportunities in web technology and practice resume-writing and interviewing skills. 3 hrs. lecture/wk.

CWEB 292 Special Topics: (1-3 Hour)
This course periodically presents specialized topics in Web Technologies and Interactive Media that are not available in the regularly offered curriculum. Special Topics may be repeated for credit, but only on different topics. 1 - 3 hrs. lecture/wk.