

DISCOVERY COMMUNITY COLLEGE

CURRICULUM GUIDE

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SCHOOL OF BUSINESS AND TECHNOLOGY

Web Development Technology Programs

- Core Web Technologies
- Integrated Technology and Media Arts
- Dynamic Scripting
- Advanced Web Architecture
- Web Architecture and Media Art Design

PURPOSE

Each of these programs is designed to provide the learners with the hands-on training required to develop the skills, knowledge, best practices, and attitudes that will enable them to work as web developers who can plan, design, and develop advanced, full-featured web sites. Upon graduation, students will have developed a portfolio of website and graphic design projects.

PROGRAM LEARNING OUTCOMES

EMPLOYABILITY SKILLS

Use fundamental skills such as the ability to communicate, manage and use information, think and solve problems. Use personal management skills such as the ability to work safely, learn continuously, demonstrate positive attitudes and behaviours; be responsible, and be adaptable. Use teamwork skills such as the ability to work with others, and to participate in projects and tasks.

CORE WEB TECHNOLOGIES

This program of studies begins from the very basics of each aspect of website development tools, technologies and concepts. By the end of this program, students will have created a minimum of six complete websites of different styles and layouts. They will be familiar with the interface and tools of all relevant software platforms. They will have learned how to read, write, and troubleshoot both custom code and pre-written modules. They will be familiar with the interface and tools in Adobe Photoshop and will have used them to create custom buttons, headers, backgrounds, banners and effects, as well as complete website layouts.

Each module is first approached with a foundation of theory, which is applied to the learning of new skills and tools. Focus throughout is placed on consistently demonstrating best practices including organized file structure, descriptive naming conventions, commenting code and labeling design elements, keyboard shortcuts, and documenting each aspect of the development process. This will serve students well as the complexity of their code increases.

Components:

Comp. Basics	Front End Development	Web 2.0 Design & Typography	Project Management	Practical	
4	120	112	28	56	320

Technologies	Software	Application
<ul style="list-style-type: none"> ○ eXtensible Hypertext Markup Language (XHTML) ○ Cascading Style Sheets (CSS) ○ PHP (Basic variable use and form handler to compliment XHTML & CSS) ○ jQuery (Visual elements for headers and image galleries) ○ Search engine optimization (SEO) & Internet Marketing 	<ul style="list-style-type: none"> ○ Microsoft Windows Environment ○ Adobe Dreamweaver ○ Adobe Photoshop ○ WAMP ○ Adobe Kuler ○ Internet Explorer, Google Chrome, Firefox, Safari 	<ul style="list-style-type: none"> ○ Computer Basics ○ Technology Integration ○ Search Engine Optimization ○ Interface Design ○ Project / Client Management ○ Portfolio Development ○ Search Engine Optimization ○ Internet Marketing ○ Social Networking

Students will apply their cumulative skills to plan, design and build multipage websites of increasing complexity.

Portfolio:

Week 4	First applied project (4-5 pages)
Week 6	Second applied project (6-8 pages) + <i>PHP & basic variable usage</i>
Week 8	Third applied project (6-8 pages) + <i>PHP contact form handler</i>
Week 10	Fourth applied project (8-10 pages) + <i>jQuery module</i>
Week 12	Fifth applied project (8-10 pages) + <i>SEO</i>
Week 14	Sixth applied project (8-10 pages) + <i>Technology Integration</i>
Week 16	Term end project – <i>plan, design, and code a custom website integrating all technologies</i>

This broad foundation across the core technologies will both provide a thorough understanding of the core technologies involved in website development, and create a platform from which students may progress into specializations in more advanced languages and techniques in the following programs.

INTEGRATED TECHNOLOGY AND MEDIA ARTS

The goal of this program is to introduce students to the rich world of ‘multi-media’ as applied to the web. The distinction between ‘media’ and ‘programming’ revolves around the technologies being purely based on visual elements. Students preferring to focus on design can apply their natural tendencies towards applications based on visual versus logical requirements.

Students immersed in this 16-week intensive program begin with an in depth look at current design trends, “Web 2.0” theory, corporate branding and logo creation, and the similarities and unique challenges

of design for print and for the web. Students will use their experience with Adobe Photoshop to create advanced graphical elements including 3D design to produce high quality three dimensional objects as applied to the web.

The final module of this program, “Wordpress”, examines one of the three largest open source content management systems on the market. Wordpress developers are in very high demand as it allows individuals to create rich multi-media websites via a visual user interface rather than hand coding each element. We examine the benefits and challenges of using a CMS for website development including the differences in how planning and designing must be approached.

Components:

Web Creative	Illustrator	Advanced Photoshop	Design for Print	Wordpress Template Design	Wordpress Site Development	
60	40	40	40	80	60	320

Technologies <ul style="list-style-type: none"> ○ Custom Illustration ○ Print Design ○ Advanced Photoshop ○ Template Design ○ Wordpress Development 	Software <ul style="list-style-type: none"> ○ Microsoft Windows Environment ○ Adobe Illustrator ○ Adobe Dreamweaver ○ Adobe Photoshop ○ Adobe Kuler 	Application <ul style="list-style-type: none"> ○ Advanced Color Theory ○ Print Theory ○ Technology Integration ○ Branding & Marketing ○ Project / Client Management ○ Portfolio Development
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Portfolio:

Week 3	Custom illustration + website (6-8 pages)
Week 6	Branding package with logo development + website (6-8 pages)
Week 9	Print project
Week 12	Wordpress template design
Week 16	Full Wordpress website development

Today’s market requires well planned and well built sites, and a greater than ever emphasis is placed on the appearance of the final product. Students able to plan and design custom illustrations, develop full branding and logo packages including business cards, letterhead, posters, invitations, and point-of-sale advertisements have a strong advantage when competing against those who can only “code” websites.

DYNAMIC SCRIPTING

Students build on the skills and knowledge learned in *Core Web Technologies* by introducing the concept of the interactive scripting language Java Script to formerly static web content.

Beginning with the simple syntax and code structure, students develop a better understanding of the Document Object Model (DOM) to write custom JavaScript from scratch. They also learn how to tap into the vast resource of code libraries created by the development community in the form of jQuery and other emerging JavaScript application platforms.

The focus remains on best practices for integrating technologies; students are introduced to the concept of using JavaScript to work with XML data within an XHTML document.

The final module of this program, “Ajax”, uses a combination of HTML and CSS to mark up and style information, while accessing the DOM with JavaScript and interfaces with XML to send and retrieve information – all technologies students have learned throughout the earlier portions of this program.

Students then apply their cumulative skills to plan, design and build multipage websites using PHP and MySQL (in conjunction with XHTML and CSS) to both capture from and store information inside of a database.

Components:

jQuery Integration	Interacting with JavaScript	Applied JavaScript & XML	AJAX Development	Joomla CMS	
20	60	80	80	80	320

Technologies <ul style="list-style-type: none"> ○ jQuery ○ Java Script ○ XML ○ Ajax ○ Joomla CMS 	Software <ul style="list-style-type: none"> ○ Microsoft Windows Environment ○ Adobe Dreamweaver 	Application <ul style="list-style-type: none"> ○ Logic ○ Information Exchange ○ Dynamic Content ○ Advanced Interface Design ○ Technology Integration ○ Project / Client Management ○ Portfolio Development
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Portfolio:

Week 1	Website (6-8 pages) + <i>jQuery module</i>
Week 4	Website (6-8 pages) + <i>Java Script module</i>
Week 8	Website (6-8 pages) + <i>Java Script & XML module</i>
Week 12	Project website (8-10 pages) + <i>Ajax module</i>
Week 16	Joomla website development

The addition of JavaScript/Ajax to their skill-set will allow students to create highly responsive interfaces that improve the user experience and provide dynamic functionality, without the need for a server database.

ADVANCED WEB ARCHITECTURE

Students build on their *Core Web Technologies* by introducing the concept of ‘database driven’ web content and content management systems.

Beginning with the basics of database design and programming logic, this program explores the power of dynamic content, culminating in the creation of full custom Content Management Systems (CMS) using PHP and MySQL and Open source CMS systems.

Students apply their cumulative skills to plan, design and build multipage websites using PHP and MySQL (in conjunction with XHTML and CSS) to both capture from and store information inside of a database.

The final module of the program leverages students' greater understanding of PHP to become power-users on the Drupal CMS platform, developing an e-commerce website as their major project.

Components:

Logic & Database Design	Dynamic Content – A Study in PHP & MySQL	Applied PHP Programming	Custom Content Management Systems	Drupal CMS	
20	60	80	80	80	320

Technologies <ul style="list-style-type: none"> ○ Databases ○ PHP ○ MySQL ○ Drupal CMS 	Software <ul style="list-style-type: none"> ○ Microsoft Windows Environment ○ Adobe Dreamweaver 	Application <ul style="list-style-type: none"> ○ Programming Logic ○ Database Design ○ Information Interface Design ○ Technology Integration ○ Project / Client Management ○ Portfolio Development
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Portfolio:

Week 1	Website (6-8 pages) + <i>with variable based content</i>
Week 4	Website (6-8 pages) + <i>with conditional statements</i>
Week 8	Website (6-8 pages) + <i>with PHP validation</i>
Week 12	Full website (8-10 pages) + <i>custom CMS</i>
Week 16	Full Drupal website development

The addition of PHP to their skill-set will allow students to meet the growing demand for applications which allow business to communicate with their clients via the internet: selling products, scheduling appointments, sending newsletters, and managing support/service requests.

PROGRAM OUTLINE

A list of courses in each program, their sequence, and the instructional hours allotted to each course will be given to students at the beginning of each program.

The *Core Web Technologies* program must be satisfactorily completed before beginning any of the remaining programs. The remaining programs may be taken in any order after completion of the *Core Web Technologies* program.

Individual Programs

Core Web Technologies

Hours/week

20

Weeks

16 weeks

Total hours

320

Graduates will be awarded the *Core Web Technologies Certificate*.

Integrated Technology and Media Arts 20 16 weeks 320

To graduate from this program you must successfully complete both the *Core Web Technologies* and the *Integrated Technology and Media Arts* programs for a total of 32 weeks. Graduates will be awarded the *Integrated Technology and Media Arts Certificate*.

Dynamic Scripting 20 16 weeks 320

To graduate from this program you must successfully complete both the *Core Web Technologies* and the *Dynamic Scripting* programs for a total of 32 weeks. Graduates will be awarded the *Dynamic Scripting Certificate*.

Advanced Web Architecture 20 16 weeks 320

To graduate from this program you must successfully complete both the *Core Web Technologies* and the *Advanced Web Architecture* programs for a total of 32 weeks. Graduates will be awarded the *Advanced Web Architecture Certificate*.

Combination Program

Web Architecture and Media Art Design 20 64 weeks 1280

To graduate from this program you must successfully complete each of the four programs listed above. Graduates will be awarded the *Web Architecture and Media Design Diploma*.

Schedule

Core Web Technologies – Mon to Fri:	4 hours each day, 9:00am to 1:00pm
Integrated Technology and Media Arts – Mon to Fri:	4 hours each day, 3:00pm to 7:00pm
Dynamic Scripting – Mon to Fri:	4 hours each day, 3:00pm to 7:00pm
Advanced Web Architecture – Mon to Fri:	4 hours each day, 3:00pm to 7:00pm

Scheduled class times may change.

Prerequisites

Core Web Technologies – satisfy program admission requirements
 Integrated Technology and Media Arts – satisfactorily complete Core Web Technologies
 Dynamic Scripting – satisfactorily complete Core Web Technologies
 Advanced Web Architecture – satisfactorily complete Core Web Technologies

Methods of Instruction

Each of these programs is offered in an instructor led learning format. Primary methods of instruction will include presentations, demonstrations, discussion, practice, individual guidance, and small group instruction.

Homework will be required.

ADMISSION REQUIREMENTS

- Grade 12 graduation from BC secondary school or equivalent (ABE, GED) or equivalent from another school system OR be a mature applicant (19 years of age on the first day of class)
- If a mature applicant then provide proof of completion of grade 10 English from a BC secondary school or equivalent from another school system OR complete a Discovery Community College English assessment

- Successful completion of a DCC entrance exam; this exam will cover simple mathematical calculation skills as well as Microsoft Windows based computer navigation skills. This exam will not cover any web or graphics related materials. A pass mark of 70% is required.
- A satisfactory entrance interview with a DCC official
- Submission of completed DCC application forms
- Applicants who are non-native English users must provide proof of satisfactory English proficiency: IELTS overall band score level 6.0 and a minimum score of 6.0 in each of speaking, listening, reading, writing OR an equivalent standard.

RECOMMENDED STUDENT CHARACTERISTICS

- Before applying for this program, applicants should learn as much as possible about this career. Students with any of the following characteristics can anticipate success in the program and in their future career:
 - Ready to participate in a cumulative learning experience that requires determination, full attendance, and approximately two to three hours per day of homework/lab exercises.
 - Some experience with Microsoft Windows based computers
 - Some experience in elements of design – traditional or digital
 - Some experience in elements of web coding
 - Any background of studies or experience involving business, project management, communications, design, layout, marketing, or promotions
 - Any background in administration e.g. business or non-profit organization

RESOURCES AND EQUIPMENT

The required digital textbooks for this program are available through the College and will be available as needed during the courses. The instructor will supply other resources as needed.

Students will be learning in a well equipped computer classroom. Media equipment available includes a DVD player, TV with internet access, and a multimedia projector. Computers are equipped with high speed internet access.

The curriculum and learning is delivered using the latest industry technologies and the most recent version of the industry standard Adobe Creative Suite of software tools.

ASSESSMENT AND EVALUATION

Student progress and success will be assessed regularly throughout each program. This will be accomplished using a variety of evaluation tools, including written evaluations such as quizzes, assignments, projects, portfolios, and presentations.

Information describing the calculation of final marks will be given to students by the instructor at the beginning of each program.

Final transcripts will record all marks for courses within each program.

The passing mark for all courses is 70%. Each course within a program must be passed to graduate.

REVISIONS

Information contained in this curriculum guide is correct at the time of publication. Content of courses and programs is revised on an ongoing basis to ensure relevance to changing educational, employment, and marketing needs. Students will be given notice of any changes as soon as possible.