

Web Programming

Information and Communications Technology

Course Number: CST8285	Co-Requisites: N/A	Pre-Requisites: CST8110
Applicable Program(s): 0336X01FWO - Computer Programmer 0336X03FWO - Computer Programmer	AAL: 2 2	Core/Elective: Core Core
Prepared by:	Reg Dyer, Professor, Coordinator Computer Programmer	
Approved by:	Andrew Pridham, Academic Chair, ICT	
Approval Date:	Thursday, June 22, 2017	
Approved for Academic Year:	2017-2018	
Normative Hours:	60.00	

Course Description

Learn the basics of web programming, website design and implementation. JavaScript, HTML5, and PHP are used to explore web-based solutions to problems of increasing interactivity and complexity. Lectures are reinforced by practical assignments that encourage students to construct and maintain their own websites.

Relationship to Vocational Learning Outcomes

This course contributes to your program by helping you achieve the following Vocational Learning Outcomes:

0336X01FWO - Computer Programmer

- VLO 1 Use documented solutions to troubleshoot problems associated with software installation and customization. (T, A,)
- VLO 2 Develop, test, document, deploy, and maintain secure program code based on specifications. (T, A,)
- VLO 4 Apply knowledge of networking concepts to develop, deploy, and maintain program code. (T, A,)
- VLO 6 Use relevant methodologies, policies, and standards to develop secure program code. (T, A,)
- VLO 8 Conform to workplace expectations found in information technology (IT) environments. (T, A,)

0336X03FWO - Computer Programmer

VLO 1	Use documented solutions to troubleshoot problems associated with software installation and customization. (T, A,)
VLO 2	Develop, test, document, deploy, and maintain secure program code based on specifications. (T, A,)
VLO 4	Apply knowledge of networking concepts to develop, deploy, and maintain program code. (T, A,)
VLO 6	Use relevant methodologies, policies, and standards to develop secure program code. (T, A,)
VLO 8	Conform to workplace expectations found in information technology (IT) environments. (T, A,)

Relationship to Essential Employability Skills

This course contributes to your program by helping you achieve the following Essential Employability Skills:

EES 1	Communicate clearly, concisely and correctly in the written, spoken and visual form that fulfills the purpose and meets the needs of the audience. (T, A,)
EES 2	Respond to written, spoken or visual messages in a manner that ensures effective communication. (A,)
EES 4	Apply a systematic approach to solve problems. (T, A,)
EES 5	Use a variety of thinking skills to anticipate and solve problems. (T, A,)
EES 7	Analyze, evaluate and apply relevant information from a variety of sources. (T, A,)
EES 10	Manage the use of time and other resources to complete projects. (A,)
EES 11	Take responsibility for one's own actions, decisions and consequences. (A,)

Course Learning Requirements/Embedded Knowledge and Skills

When you have earned credit for this course, you will have demonstrated the ability to:

1.) Write program code using structured programming, and top-down coding techniques.

Create informational web pages (with HTML tags) and interactive data-entry web pages using HTML (combined with JavaScript and PHP).

Use of HTML tags and JavaScript document objects and functions to access, navigate and manipulate web-based related information.

Produce appropriate web-based outputs relating to user navigation requests and screen input data via a combination of HTML, JavaScript and PHP commands and functions.

2.) Produce tested code that executes correctly and consistently through the use of valid and invalid data.

Develop comprehensive and interactive input test data which will test the functionality of JavaScript and PHP interactive web pages.

3.) Prepare program documentation using prescribed program specifications

Develop non-processing, descriptive comments in JavaScript and PHP web-based program source code in appropriate locations.

Produce supplemental program code files linked to web-based output (e.g. PHP files connecting to MySQL database records).

4.) Debug program problems using manual methods and computerized tools in an appropriate manner.

Test code integrity and data validity by researching textbook references (paper-based and online resources), as well as web-based resources for JavaScript and PHP (such as application home sites (PHP), third-party tutorials, canned testing code, etc.).

5.) Modify an existing program according to program specifications

Edit existing HTML pages to become more interactive by inserting JavaScript functionality.

Modify existing interactive web pages to operate with other programming languages to produce input-related output (e.g. input data from a web page becoming displayed output from a PHP file).

6.) Access and modify a database table from within a web browser interface.

Use of input from data controls to provide database management in a graphical programming environment.

Use and execution of SQL queries to provide database access and management (MySQL) within a programming (PHP) environment.

7.) Install required software applications

Download and install a database server (MySQL) web application server (Apache Tomcat) and PHP programming package.

Learning Resources

Required Software (all open-source material accessed and installed during appropriate lab sessions):

1. Apache Web Server
2. PHP Programming module
3. MySQL DBMS application

Required Hardware:

This course is part of the mobile (laptop) program initiative at Algonquin College.

Students are required to have a functioning laptop at all lecture and lab classes.

The specifications for the required laptop and additional information about the mobile program initiative can be found at <http://www3.algonquincollege.com/mlearning/>

Recommended Textbook:

1. Learning PHP, MySQL & JavaScript, Nixon, Robin, O'Reilly 2009 (ISBN 978-0596157135)

2. HTML & XHTML: The Definitive Guide, 6th Edition, Chuck Musciano, O'Reilly 2009 (ISBN 978-0-596-52732-7)

Other References:

1. Lynda.com
2. Online course notes

Learning Activities

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1. Online and classroom lectures
 2. Laboratory work
 3. Practical and reading assignments
 4. Research of course-related material

Evaluation/Earning Credit

The following list provides evidence of this course's learning achievements and the outcomes they validate:

Assignment(s) (50%)

Validates Outcomes: CLR 1, CLR 2, CLR 3, CLR 4, CLR 5, CLR 6, CLR 7, EES 1, EES 2, EES 4, EES 5, EES 7, EES 10, EES 11

Midterm Exam(s) (20%)

Validates Outcomes: CLR 1, CLR 2, CLR 3, CLR 4, CLR 5, EES 4, EES 5

Final Exam (30%)

Validates Outcomes: CLR 1, CLR 2, CLR 4, CLR 5, CLR 6, EES 4, EES 5

Students are expected to meet evaluation and completion deadlines as stated in course outline and course section information documents. In circumstances where evaluation and/or completion deadlines are missed or student performance has been affected by a temporary or permanent disability (including mental health), interim or retroactive accommodations may be considered. In such instances, please consult your course faculty member. For other situations where deferral of evaluations may be warranted, please refer to college policy AA21.

Prior Learning Assessment and Recognition

Students who wish to apply for prior learning assessment and recognition (PLAR) need to demonstrate competency at a post-secondary level in all of the course learning requirements outlined above. Evidence of learning achievement for PLAR candidates includes:

- Other:

At the discretion of the department, an interview, portfolio, assignment and/or test may be required. The specifics will be determined on a case by case basis.

Grade Scheme

Final Grade	Mark Equivalent	Numeric Value	Final Grade	Mark Equivalent	Numeric Value
A+	90% - 100%	4.0	A	85% - 89%	3.8
A-	80% - 84%	3.6	B+	77% - 79%	3.3
B	73% - 76%	3.0	B-	70% - 72%	2.7
C+	67% - 69%	2.3	C	63% - 66%	2.0
C-	60% - 62%	1.7	D+	57% - 59%	1.4
D	53% - 56%	1.2	D-	50% - 52%	1.0
F	0% - 49%	0	FSP	0	0

Course Related Information

This course is a hybrid course – 25% of the course content is delivered through online session via Blackboard. The course consists of one hour of lecture, two hours of lab and one hour of online session per week.

The Information and Communications Technology Department requires that all course assignments (homework exercises, laboratory work, projects, etc) be submitted by students using a standard which could be specific to one or more courses. Professors will ensure, at the beginning of the term, that students are advised of the exact details of these course specific submission requirements. Professors will also post them online alongside the course outline. Student submissions that do not meet the course published submission standards may not be marked, and may incur a penalty of up to 100% of the submission mark.

In order to pass the course, the student must have a grade of at least 50% (or **"D-"**) on the theory component (total of the three unit tests), as well as on the practical component (lab exercises and assignments).

Lab exercises and assignments will not be included in the final grade unless the student achieves at least a grade of 50% or **"D-"** on the theory component. (Students who have a failing grade on the theory component will receive a grade of **"F"**.)

This course is part of the mobile (laptop) program initiative at Algonquin College. Students are required to have a functioning laptop at all lecture and lab classes. The specifications for the required laptop and additional information about the mobile program initiative can be found at <http://mlearning.algonquincollege.com>

Department Related Information

STUDENT ACADEMIC RESPONSIBILITIES

Each student is responsible for:

- Knowing the due dates for marked out-of-class assignments.
- Attending all classes and knowing the dates of in-class marked assignments and exercises.
- Maintaining a folder of all work done in the course during the semester for validation claims in cases of disagreement with faculty.
- Keeping both paper and electronic copies of all assignments, marked and unmarked, in case papers are lost or go missing.
- Regularly checking both Blackboard announcements as well as one's Algonquin e-mail account for important messages from both professors and college administration.
- Participating in on-line and classroom exercises and activities as required.
- Retaining course outlines for possible future use to support applications for transfer of credit to other educational institutions.

Harassment/Discrimination/Violence will not be tolerated. Any form of harassment (sexual, racial, gender or disability-related), discrimination (direct or indirect), or violence, whether involving a professor and a student or amongst students, will not be tolerated on the college premises. Action taken will start with a formal warning and proceed to the full disciplinary actions as outlined in Algonquin College Policies - HR22 and SA07.

Harassment means one or a series of vexatious comment(s) (whether done verbally or through electronic means), or conduct related to one or more of the prohibited grounds that is known or ought reasonably to be known to be unwelcome/unwanted, offensive, intimidating, derogatory or hostile. This may include, but is not limited to: gestures, remarks, jokes, taunting, innuendo, display of offensive materials, offensive graffiti, threats, verbal or physical assault, stalking, slurs, shunning or exclusion related to the prohibited grounds.

For further information, a copy of the official policy statement can be obtained from the Student Association.

Violation of the Copyright Act

General – The Copyright Act makes it an offence to reproduce or distribute, in whatever format, any part of a publication without the prior written permission of the publisher. For complete details, see the Government of Canada website at <http://laws.justice.gc.ca/en/C-42> . Make sure you give it due consideration, before deciding not to purchase a textbook or material required for your course.

Software Piracy - The Copyright Act has been updated to include software products. Be sure to carefully read the licensing agreement of any product you purchase or download, and understand the terms and conditions covering its use, installation and distribution (where applicable). Any infringement of licensing agreement makes you liable under the law.

Disruptive Behaviour is any conduct, or threatened conduct, that is disruptive to the learning process or that

interferes with the well being of other members of the College community. It will not be tolerated. Members of the College community, both students and staff, have the right to learn and work in a secure and productive environment. The College will make every effort to protect that right. Incidents of disruptive behaviour must be reported in writing to the departmental Chair as quickly as possible. The Chair will hold a hearing to review available information and determine any sanctions that will be imposed. Disciplinary hearings can result in penalties ranging from a written warning to expulsion.

For further details, consult the Algonquin College Policies AA32, SA07 and IT01 in your Instaguide.

College Related Information

Email

Algonquin College provides all full-time students with an e-mail account. This is the address that will be used when the College, your professors, or your fellow students communicate important information about your program or course events. It is your responsibility to ensure that you know how to send and receive e-mail using your Algonquin account and to check it regularly.

Students with Disabilities

If you are a student with a disability, you are strongly encouraged to make an appointment at the Centre for Accessible Learning to identify your needs. Ideally, this should be done within the first month of your program, so that a Letter of Accommodation (LOA) can be provided to your professors. If you are a returning student, please ensure that professors are given a copy of your LOA each semester.

Retroactive Accommodations

Students are expected to meet evaluation and completion deadlines as stated in course outline and course section information documents. In circumstances where evaluation and/or completion deadlines are missed or student performance has been affected by a temporary or permanent disability (including mental health), interim or retroactive accommodations may be considered. In such instances, please consult your course faculty member. For other situations where deferral of evaluations may be warranted, please refer to college policy AA21.

Academic Integrity & Plagiarism

Adherence to acceptable standards of academic honesty is an important aspect of the learning process at Algonquin College. Academic work submitted by a student is evaluated on the assumption that the work presented by the student is his or her own, unless designated otherwise. For further details consult Algonquin College Policies AA18: Academic Dishonesty and Discipline and AA20: Plagiarism

Student Course Feedback

It is Algonquin College's policy to give students the opportunity to share their course experience by completing a student course feedback survey for each course they take. For further details consult Algonquin College Policy AA25: Student Course Feedback

Use of Electronic Devices in Class

With the proliferation of small, personal electronic devices used for communications and data storage, Algonquin College believes there is a need to address their use during classes and examinations. During classes, the use of such devices is disruptive and disrespectful to others. During examinations, the use of such devices may facilitate cheating. For further details consult Algonquin College Policy AA32: Use of Electronic Devices in Class

Transfer of Credit

It is the student's responsibility to retain course outlines for possible future use to support applications for transfer of credit to other educational institutions.

Note: It is the student's responsibility to refer to the Algonquin College Policies website for the most current information at <http://www.algonquincollege.com/policies/>

Legend

Terms

- ALO: Aboriginal Learning Outcome
- Apprenticeship LO: Apprenticeship Learning Outcome
- CLR: Course Learning Requirement
- DPLO: Degree Program Learning Outcome
- EES: Essential Employability Skill
- EOP: Element of Performance
- GELO: General Education Learning Outcome
- LO: Learning Outcome
- PC: Program Competency
- PLA: Prior Learning Assessment
- PLAR: Prior Learning Assessment and Recognition
- VLO: Vocational Learning Outcome

Assessment Levels

- T: Taught
- A: Assessed
- CP: Culminating Performance