Cross-Platform Application Development II

Media Studies

Course Number:	**Co-Requisites:**	**Pre-Requisites:**
MAD9022	N/A	MAD9014
Applicable Program(s):	**AAL:**	**Core/Elective:**
1515X01FWO - Mobile App. Des. & Dev	2	Core
Prepared by:	Professor Steve Griffith, Program Coordinator	
Approved by:	Sandra Brancatelli, Chair, ICT - Applications & Programming	
Approval Date:	Sunday, January 6, 2019	
Approved for Academic Year:	2018-2019	
Normative Hours:	60.00	

Course Description

HTML-based web technologies, including a wide variety of Javascript toolkits and APIs, are used to create Hybrid Mobile applications that leverage native device capabilities. More advanced approaches to application development with Javascript are investigated. Designing to conserve battery life on mobile devices is emphasized.

Relationship to Vocational Learning Outcomes

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

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VLO 3	Create effective user interfaces that leverage evolving mobile device capabilities. (T, A,)
VLO 4	Design and develop websites that deploy to different devices and platforms. (T, A, CP,)
VLO 5	Design and develop cross-platform applications built with rich-media and HTML-based technologies. (T, A, CP,)
VLO 7	Research and apply various software development kits (SDKs), frameworks and toolkits. (T, A,)

Relationship to Essential Employability Skills

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

EES 5	Use a variety of thinking skills to anticipate and solve problems. (T, A,)
EES 10	Manage the use of time and other resources to complete projects. (T, A,)

Course Learning Requirements/Embedded Knowledge and Skills

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

1.) Build mobile applications using Javascript and Cordova for both the Android and iOS platforms

Create a script that will run after a mobile app has fully loaded itself and all its plugins.

Create a script that appropriately leverages a Cordova plugin.

Use Cordova from the command line to create a new mobile project.

Use Cordova from the command line to compile a mobile project.

Install and run Cordova based mobile applications in Emulators, Simulators, as well as physical devices.

2.) Build Single Page Applications and other web-based resources using JavaScript and HTML5 APIs

Create a web page that is optimized to load and run on a mobile browser.

Create a web page that uses an external Javascript library to add cross-platform functionality.

Write JavaScript to access a variety of HTML5 APIs

Write JavaScript to manage a Single Page Application which will use a minimal number of HTTP Requests for various assets.

Write JavaScript and HTML which will work within a proper CORS framework and demonstrate security best practices for the web,

3.) Plan the development of a cross-platform mobile application.

Outline the limitations of various mobile devices

Outline the requirements for building different mobile applications taking into account device capabilities, user ability and end purpose.

Explain mobile device interface differences and how changes in HTML and CSS can be made within a Hybrid app to address these differences.

Create platform specific mobile application graphical assets like Launcher icons and Splashscreens.

4.) Identify native mobile device capabilities that can and cannot be reached with HTML5 based technologies.

Outline mobile device capabilities which can be accessed through the PhoneGap / Cordova library and plugins.

Explain what native plugins for cross-platform solutions are.

Demonstrate how to add native device capabilities to a web technology based mobile app through Cordova.

Build web components that use HTML5 APIs to leverage native mobile device capabilities.

5.) Design cross-platform mobile applications with web-based technologies.

Use Node.js to install Cordova.

Use Cordova Command Line tools to add support for multiple mobile platforms.

Build a Cordova project on the Windows OS as well as on the Mac OS.

Test a hybrid mobile application on an iOS Simulator.

Test a hybrid mobile application on an Android Emulator

Install a hybrid mobile application on a variety of actual mobile devices.

6.) Solve programming problems within a limited time frame using research skills.

Respond verbally to questions about programming tasks.

Complete programming challenges within a limited amount of time.

Solve development problems related to new technologies.

Demonstrate the ability to research and solve a problem under a deadline.

Answer questions in front of other classmates in a format similar to a technical interview.

Learning Resources

Weekly Activities

In-class lectures, quizzes, coding practice and exercises - 4 hours per week.

Assigned readings, video tutorials, practice work, and exercises outside of class - minimum 4 hours per week.

Supporting Resources

No required textbook.

Course website filled with tutorials, videos, and other links.

Numerous online written and video tutorials.

Required Software

VS Code IDE for web and mobile development

Android Studio IDE plus Android SDK and APIs

Xcode IDE iOS SDK and APIs

Apple Developer Account

Git

Node JS and NPM

Learning Activities

1. Hands-on exercises, assignments and projects
2. Online quizzes
3. In-class discussions
4. Verbal quizzes
5. Classroom lectures
6. Video tutorials
7. Pairs Programming

Evaluation/Earning Credit

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

Project(s) (40%)

Validates Outcomes: CLR 1, CLR 3, CLR 4, CLR 5, EES 10

In-class Work (20%)

Validates Outcomes: CLR 2, CLR 6, EES 10

Quiz(zes)/Test(s) (20%)

Validates Outcomes: CLR 6, EES 5, EES 10

Assignment(s) (20%)

Validates Outcomes: CLR 2, EES 5, EES 10

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:

- Portfolio
- Project/Assignment

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

Additional Resources

Adobe Creative Cloud Account

http://lynda.com - video library

http://www.algonquincollege.com/library/digital-resource-collections-by-type-ebook/ - Safari e-books online library

https://www.youtube.com/channel/UCTBGXCJHORQjivtgtMsmkAQ - ?Professor's YouTube Channel

Program Related Information

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The late policy for assignments is a 10% per day deduction to a maximum of 30%.

If an assignment is still not submitted 10 days after the due date then a grade of zero will be given for the assignment. Students can still submit work for review and feedback after the 10 days but no grade will be given.

Any extensions to due dates must be arranged with the course instructor before the due date.

Department Related Information

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