Cross-Platform Application Development I

Media Studies

Course Number:	**Co-Requisites:**	**Pre-Requisites:**
MAD9014	MAD9013	N/A
Applicable Program(s):	**AAL:**	**Core/Elective:**
1515X01FWO - Mobile App. Des. & Dev	1	Core
Prepared by:	Professor Steve Griffith, Coordinator	
Approved by:	Dan Pihlainen, Chair, Media Studies	
Approval Date:	Monday, July 22, 2019	
Approved for Academic Year:	2019-2020	
Normative Hours:	70.00	

Course Description

While developing native applications for mobile devices holds many advantages, not every application requires direct access to native capabilities and there are many ways web developers can build applications using the programming skills they already possess. Students use HTML, CSS and Javascript to build applications which can quickly be deployed to multiple mobile platforms, such as iPhone and Android. Designing to conserve battery life is introduced as a concept in this course. Using mobile marketplaces to publish and market applications is introduced.

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 5	Design and develop cross-platform applications built with rich-media and HTML-based technologies. (T, A,)
VLO 7	Research and apply various software development kits (SDKs), frameworks and toolkits. (T,)
VLO 9	Build, test, and deploy secure mobile solutions using appropriate network technologies. (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.) Construct JavaScript programs that can run on the command line through NodeJS.

Demonstrate how to manipulate HTML elements with Javascript

Identify Javascript functions, properties, methods, and events.

Explain fundamental JavaScript concepts such as hoisting, variable scope, loops, events, functions, Arrays and Objects.

Use Git and GitHub to host and manage JavaScript projects.

2.) Develop websites and web apps, which run in the browser, with HTML5 and CSS which are enhanced with the latest features of JavaScript.

Connect external script files to multiple HTML pages

Build Single Page Applications that can simulate the appearance and navigation of multi-page websites.

Use JavaScript to add event listeners to web components which can make use of user interactions to trigger functionality.

Execute JavaScript functions with a variety of common design patterns, such as IIFEs, function expressions, function declarations, revealing module patterns, and more.

Enhance web page functionality with a variety of HTML5 APIs and external APIs.

3.) Create web pages that can make AJAX calls to APIs and dynamically update content.

Explain the differences between the older XMLHttpRequest API and the new fetch API.

Use the HTML5 Fetch API to retrieve JSON data from an external API.

Use Content-Security-Policies to protect web pages when fetching new data.

Convert XML data to JSON data.

Implement Cross-Origin Resource Sharing best practices when using the Fetch API.

4.) Develop hybrid mobile applications using HTML5, CSS and Javascript.

Construct hybrid mobile applications using Apache Cordova.

Explain the process of creating a hybrid application and which app files would be submitted to which app stores.

Install the Android SDK, configure an emulator, and install an Android application in the Emulator

Use the Android SDK to install a Cordova Android application on a physical device.

Convert a website into a secure hybrid mobile application that follows the best practices for security with Content-Security-Policies and CORS.

Create a Hybrid Application with custom launcher icons and splashscreens.

5.) Use professional Integrated Development Environments (IDE), such as Visual Studio Code, in combination with other SDKs, Toolkits, and Frameworks to create web pages, hybrid apps, and web apps.

Use Git from the Command Line Interface to create and manage projects.

Use Github to host and server websites and web app projects.

Create projects and scripts that run on Node and enhance the projects with NPM-based modules which get managed on the command line with Git.

Use VS Code extensions and features such as linting, code completion, built-in terminal access, and live server previews.

Learning Resources

In this course you will use all or many of the following resources to complete your coursework.

- Online video tutorials
- Magazine articles
- Online wikis and articles
- Tutorials
- Classroom lectures
- Online Learning Management System
- Online course material hosted through GitHub.

Learning Activities

This course includes a variety of learning activities.

- Hands-on exercises, assignments and projects
- Online quizzes
- In-class discussions
- Online tutorials
- Classroom lectures
- Video tutorials
- Assistance from Faculty and Program Assistants

Evaluation/Earning Credit

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

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

Validates Outcomes: CLR 1, EES 5

In-class Work (20%)

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

Hybrid Assignment(s) (25%)

Validates Outcomes: CLR 5, EES 5, EES 10

Assignment(s) (35%)

Validates Outcomes: CLR 2, CLR 3, CLR 4, CLR 5, 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
- Performance Test
- 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

Please refer to the Course Section Information (CSI) / weekly schedule for specific course-related information as provided by your professor.

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 Mobile Devices in Class

With the proliferation of small, personal mobile 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 Mobile 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