



MAD9137

iOS Development

Course Outline

2022-2023

Pre-requisite(s)	MAD9021
Co-requisite(s)	N/A
Prepared by	Tony Davidson
Approved by	Dan Pihlainen, Chair, Media Studies
Normative hours	70.00
Grading system	A+ Through F
Experiential Learning	No

Applicable Program	Level	Core/Elective
1515X01FWO - Mobile App. Des. & Dev	3	Core

Course Description

Students use the Swift language within the standard Mac OSX development environment to create native applications for the iPhone and iPad. Working together in teams, students build and test applications. User interface requirements and building for a better user experience is stressed.

Vocational Learning Outcomes

This course provides the opportunity for you to achieve the following outcomes:

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VLO 3 Create effective user interfaces that leverage evolving mobile device capabilities. (T, A)

VLO 6 Design and develop device-specific, native applications. (T, A)

VLO 7 Research and apply various software development kits (SDKs), frameworks and toolkits. (T, A)

VLO 8 Integrate database and server-side technologies to provide complete mobile development solutions. (T, A)

Assessment Levels —T: Taught A: Assessed CP: Culminating Performance

Essential Employability Skills

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

EES 3 Execute mathematical operations accurately. (T, A)

EES 4 Apply a systematic approach to solve problems. (T, A)

EES 7 Analyze, evaluate and apply relevant information from a variety of sources. (T, A)

Assessment Levels —T: Taught A: Assessed CP: Culminating Performance

Course Learning Requirements / Embedded Knowledge and Skills

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

1. Develop, compile and test code using the Swift programming language in the Xcode development environment.

- Explain the features and advantages of using the Swift programming language to build applications
- Explore Swift programming fundamentals including flow control, operator, variables, functions, classes and data structures.
- Use the Xcode development environment to create and manage projects, simulate devices and debug applications.
- Use playgrounds in Xcode to become familiar with Swift and iOS fundamentals.
- Perform application deployments to simulated and physical devices.

2. Design iOS user interfaces with SwiftUI leveraging best practices and recommended guidelines.

- Utilize the Apple human interface guidelines to produce consistent user experiences.
- Implement responsive interface layouts and elements that adapt to various screen resolutions, orientation and sizes.
- Identify the core interface elements available for use in iOS. Configure user interface element properties (colour, size, border etc) to reflect style choices.

- Add functionality to interface elements programmatically to respond to user interactions.
- Create and modify user interfaces using SwiftUI.

3. Produce applications for iPhone and iPad targeting iOS version 14

- Explain the main features and differences between various iOS devices.
- Show an understanding of how to use Apple's integrated development environment (Xcode) to create iOS applications.
- Construct applications which make use of iOS specific development fundamentals in Xcode.
- Use libraries to add features and functionality to iOS applications.

4. Apply various development techniques and design patterns in the creation of iOS applications.

- Communicate with REST APIs to request data and consume JSON data in responses.
- Convert JSON formatted data to Swift data types for consumption within an application.
- Explain what application lifecycle is and why it's used.

Learning Resources

Required:

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>.

Other Resources:

Class notes, video, web-based resources

Required Software:

macOS Big Sur (or higher)

Apple Xcode

Learning Activities

- online lectures
- online software demonstrations
- laboratory work
- reading assignments
- research of course-related material

- assignments
- projects
- quizzes
- group work

Pre-defined Evaluation / Earning Credit

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

Quiz(zes)/Test(s) (30%)

Validates Outcomes: CLR 1, CLR 2, CLR 4, EES 7

Assignment(s) (50%)

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

Project(s) (20%)

Validates Outcomes: CLR 1, CLR 2, CLR 3, CLR 4, EES 3, EES 4, EES 7

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 outlined course learning requirements. Evidence of learning achievement for PLAR candidates includes:

- Portfolio
- Performance Test
- Project/Assignment

Other Information

Students are required to respect the confidentiality of employer, client and/or patient information, interactions, and practices that occur either on Algonquin College premises, or at an affiliated clinical/field/co-op placement site. Concerns regarding clients, patients, and/or employer practices are to be brought to the attention of the program coordinator, or designated field/clinical/co-op placement supervisor so that they may be resolved collaboratively. Such concerns are not to

be raised publically either verbally, in writing, or in electronic forums. These matters are to be addressed through established program communication pathways.

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 website 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

Algonquin College's policies have been developed to ensure the health, safety and security of all students, faculty and staff, and the proper and fair operation of the College as an academic institution and employer. Please refer to the Algonquin College Policies website for the most current policy information available at <http://www.algonquincollege.com/policies/>.

Students are especially encouraged to be aware of the following College expectations

Academic Integrity

Algonquin College is committed to the highest standards of academic integrity, and students are expected to uphold these standards as part of the learning process. Any academic work submitted by a student is expected to be their own work, unless designated otherwise and all sources must be attributed. All students should be familiar with the Algonquin College policy [AA48: Academic Integrity](#) which outlines student's roles and responsibilities and what represents academic dishonesty. In some courses, online proctoring may be used to prevent academic dishonesty. Additional information can be found at [Academic Integrity - Student Survival Guide - Subject Guides at Algonquin College \(libguides.com\)](#) and via [Academic Integrity Student Resources](#). Students with any questions about the course expectations regarding academic integrity are encouraged to speak to their professor and the College's academic integrity team at acaio@algonquincollege.com

Centre for Accessible Learning

Students with visible and/or non-visible disabilities are encouraged to register with the [Centre for Accessible Learning \(CAL\)](#) in order to be eligible for appropriate learning supports and/or accommodations. Students are strongly encouraged to make an appointment with the Centre for Accessible Learning as early as possible when starting a program. Once your needs are identified, a Letter of Accommodation (LOA) will be issued which you can share with your professors. If you are a returning student, please ensure that professors are given a copy of your LOA each semester.

College Email

Students at Algonquin College are provided with a college email 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 activities. Your network credentials can be found in the [ACSIS portal](#) and you are expected to check your Algonquin email regularly and to use it to send and receive college-related email. Support is available through the college Information Technology Service (ITS) at: <https://www.algonquincollege.com/its/>

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 consult Algonquin College Policy [AA21: Deferred Evaluation](#).

Student Course Feedback

Algonquin College's invites students 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 unless authorized by your professor can be disruptive and disrespectful to others. During examinations, the use of such devices is generally prohibited unless authorized by your professor. Otherwise use is considered academic dishonesty in the form of cheating. For further details consult Algonquin College Policy [AA32: Use of Mobile Devices in Class](#).

Technology Requirements

Students are required to have access to a computer and to the internet. There may also be additional technology-related resources required to participate in a course that are not included in the course materials fee, such as headphones, webcams, specialized software, etc. Details on these requirements can be found in the Course Section Information of the course outline for each course available on Brightspace.

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.

Safe Harbour

In the event of an unexpected major event (pandemic, etc.), your course may have changes that are not reflected in the Course Outline. Should this happen, the Course Section Information document will have updated information about your course.