
iOS Development

Ict-Applications & Programming

Course Number: MAD9137	Co-Requisites: N/A	Pre-Requisites: MAD9021
Applicable Program(s): 1515X01FWO - Mobile App. Des. & Dev	AAL: 3	Core/Elective: Core
Prepared by:	Justin Bennett, Instructor	
Approved by:	Sandra Brancatelli, Chair, ICT - Applications & Programming	
Approval Date:	Wednesday, July 24, 2019	
Approved for Academic Year:	2019-2020	
Normative Hours:	70.00	

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.

Relationship to Vocational Learning Outcomes

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

1515X01FWO - Mobile App. Des. & Dev

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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,) |

Relationship to 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)

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 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 visual tools (Storyboard) and through code.

3.) Produce applications for iPhone and iPad targeting iOS version 12

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 Apple libraries including CoreLocation Manager, UIKit, MapKit and UserDefaults to add features and functionality to applications.

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

Explain the fundamentals of the Model-View-Controller pattern and how it is applied in developing 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 delegation is and why it's used.

Learning Resources

Online written and video tutorials

Lynda.com videos

YouTube video tutorials

Classroom lectures

GitHub hosted course material

Program Assistants to answer questions during lab time

Learning Activities

In-class exercises, assignments and discussions

Group projects

Online quizzes

Online conferences and discussion groups

Classroom lectures

Video tutorials

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, CLR 2, CLR 4, EES 7

Assignment(s) (25%)

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

Project(s) (55%)

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

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: Not Applicable

Course Related Information

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

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 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