

MAD9132

Android Application Development

Course Outline

2020-2021

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

COVID-19 Notice

Due to COVID-19 this course may be offered via remote delivery in 2020-21. Your course may have changes that are not reflected in the Course Outline. Please see the Course Section Information document for updated information about your course. If you have questions please contact your professor.

Course Description

Students learn to develop mobile applications for the Android mobile platform. Students use the Android application programming interface (API) and Android software development kit (SDK) for hands-on development of deployable mobile applications. Designing to conserve battery life on mobile devices is emphasized.

Vocational Learning Outcomes

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

1515X01FWO - Mobile App. Des. & Dev

VLO 3	Create effective user interfaces that leverage evolving mobile device capabilities. (T, A, CP)
VLO 6	Design and develop device-specific, native applications. (T, A, CP)
VLO 7	Research and apply various software development kits (SDKs), frameworks and toolkits. (T, A, CP)
VLO 8	Integrate database and server-side technologies to provide complete mobile development solutions. (T, A, CP)

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 5	Use a variety of thinking skills to anticipate and solve problems. (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 Android applications (apps) using the Kotlin programming language and the Android development kit (ADK).
- Learn to use IDE's (integrated development environment) for writing, running, and debugging Android and Kotlin apps.

◦ Develop Kotlin OOP and functional apps.

◦ Develop Android single-activity apps.

◦ Use Android Studio to develop multi-activity apps.

◦ Design a graphical user interface (GUI), using the Android Studio designer

- Edit the properties of GUI components.
- Explore the different ways Android can notify the end user. Notification stratgies, for example using Dialogs and messages.

2.) Apply various object-oriented (OO) design patterns.

- Demonstrate the practical application of OOP design
- Select and use appropriate classes, as provided by either the Java development kit (JDK), Kotlin and/or Android software development kit (SDK).
- Describe the philosophy of OOP design.
- Write Kotlin files and class definitions as required.

3.) Develop Android apps that interact with a cloud-based RESTful API service.

- Access JSON data from a Restful API server.
- Access binary data from a Restful API server.
- Use asynchronous tasks to perform network operations outside the GUI thread, and maintain application responsiveness.

4.) Deploy Android applications.

- Build Android apps and execute them on an Andorid Virtual Device (AVD).
- Build and deploy Android apps and execute them on physical Android devices
- Create, edit, and delete Android virtual devices (AVDs).

Learning Resources

UIKEYINPUTDOWNARROWRequired:

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:

Java Platform (JDK)

- <http://www.oracle.com/technetwork/java/javase/downloads/index.html>

Android Studio

- <http://developer.android.com/tools/studio/index.html>

IntelliJ IDEA

- <https://www.jetbrains.com/idea/>

SDK Tools

- <http://developer.android.com/sdk/index.html>

Learning Activities

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

Evaluation / Earning Credit

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

Lab Activity(ies) (10%)

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

Assignment(s) (40%)

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

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

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

Final Practical Assessment (20%)

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

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
- Challenge Exam
- 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 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

Algonquin College is committed to the highest standards of academic integrity, and expects students to adhere to these standards as part of the learning process. 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. The College's Policies AA18: Academic Dishonesty and Discipline and AA20: Plagiarism seeks to ensure that all students understand their rights and responsibilities in upholding the values of academic integrity.

In some courses, online proctoring may be used. Additional information can be found at <https://www.algonquincollege.com/studentsupportservices/student-learning-kit/preparing-to-learn-online/>

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

Technology Requirements – New for 2020-21

As Algonquin College continues to respond to public health guidelines, many courses will be offered through remote delivery. As such, students will be 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.

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/>*