

FIT4039
Android and iOS development

Unit Guide

Semester 1, 2014

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FIT4039 Android and iOS development - Semester 1, 2014

This unit focuses on the design, construction and deployment of mobile applications, with particular focus on Android and iOS platforms. Areas such as mobile data management and networking, MVC design patterns, and mobile GUI design considerations will be explored. The unit will emphasise hands-on, practical experience with actual devices and emulators. Research topics and ideas will also be covered for post-graduate students.

Mode of Delivery

Caulfield (Day)

Workload Requirements

Minimum total expected workload equals 12 hours per week comprising:

(a.) Contact hours for on-campus students:

- Two hours of lectures
- One 2-hour laboratory

(b.) Additional requirements (all students):

- A minimum of 8 hours independent study per week for completing lab and project work, private study and revision.

Unit Relationships

Prohibitions

CSE3211, [FIT3027](#)

Chief Examiner

Ms Janet Fraser

Campus Lecturer

Caulfield

Matthew Kairys

Consultation hours: Email for appointment

Elliott Wilson

Consultation hours: Email for appointment

Tutors

Caulfield

Matthew Kairys

Consultation hours: Email for appointment.

Elliott Wilson

Consultation hours: Email for appointment.

Your feedback to Us

Monash is committed to excellence in education and regularly seeks feedback from students, employers and staff. One of the key formal ways students have to provide feedback is through the Student Evaluation of Teaching and Units (SETU) survey. The University's student evaluation policy requires that every unit is evaluated each year. Students are strongly encouraged to complete the surveys. The feedback is anonymous and provides the Faculty with evidence of aspects that students are satisfied and areas for improvement.

For more information on Monash's educational strategy, see:

www.monash.edu.au/about/monash-directions/ and on student evaluations, see:
www.policy.monash.edu/policy-bank/academic/education/quality/student-evaluation-policy.html

Previous Student Evaluations of this Unit

In response to the last SETU of this unit, the following changes have been made:

- Materials have been updated to cover latest Android and iOS platform developments.
- Weekly topics structure has been modified slightly to have a greater emphasis on building mobile interfaces.
- Examination component has been removed in favour for a more practical mobile application being developed and assessed.

Student feedback has highlighted the following strength(s) in this unit:

- Many students appreciated the demonstrations performed in the lectures so a greater number of these will be made available.

If you wish to view how previous students rated this unit, please go to
<https://emuapps.monash.edu.au/unitevaluations/index.jsp>

Academic Overview

Learning Outcomes

At the completion of this unit, students will:

- recall the history of mobile platforms and the development of software for those platforms;
- describe the MVC design pattern and explain the importance of this design pattern in mobile applications development;
- critically analyse and distinguish between the design considerations for mobile application interface development and traditional interfaces;
- analyse and implement the use of graphic and audio components in the development of mobile applications;
- investigate, design, construct and publish applications for mobile platforms with particular focus on Android and iOS.

Unit Schedule

Week	Activities	Assessment
0		No formal assessment or activities are undertaken in week 0
1	Android and iOS Programming Fundamentals	
2	MVC Architecture and Mobile Interface Design	
3	Mobile Interface Controls	
4	Mobile Data Management	Assignment 1 due Friday 28th March 2014
5	Web Networking	
6	Phone and Tablet Application Design	Assignment 2 due Friday 11th April 2014
7	Mobile Sensors and Location Awareness	
8	Audio and Visual Processing	
9	Platform-specific Features	
10	3D Graphics with OpenGL ES	
11	Accessibility and Localisation	
12	Publishing Mobile Applications	
	SWOT VAC	No formal assessment is undertaken in SWOT VAC; Assignment 3 due Friday 20th June 2014 (Week 15)
	Examination period	LINK to Assessment Policy: http://policy.monash.edu.au/policy-bank/academic/education/assessment/assessment-in-coursework-policy.html

*Unit Schedule details will be maintained and communicated to you via your learning system.

Teaching Approach

- **Lecture and tutorials or problem classes**

The aim of the lectures is to introduce one or more concepts in a way, and at a pace, that is adequate for students to learn, not to provide students with everything there is to know about those concepts. In this sense, the lecture notes provide a first step towards learning those concepts, a first step that will be complemented by tutes and/or pracs, consultation hours and personal reading and working time.

- **Laboratory-based classes**

The aim of the prac is to increase the knowledge of students on a particular area covered by the associated unit. In pracs this is achieved by each student (or group of students) practicing on their own the concepts already learned previously.

Assessment Summary

In-semester assessment: 100%

Assessment Task

Value

Due Date

Unit Schedule

A1: Mobile Application Design Specification	20%	Friday 28th March 2014
A2: Android and iOS Portfolio Exercises	30%	Friday 11th April 2014
A3: Android / iOS Mobile Application	50%	Friday 20th June 2014 (Week 15)

Assessment Requirements

Assessment Policy

Faculty Policy - Unit Assessment Hurdles

(<http://intranet.monash.edu.au/infotech/resources/staff/edgov/policies/assessment-examinations/assessment-hurdles>)

Academic Integrity - Please see resources and tutorials at

<http://www.monash.edu/library/skills/resources/tutorials/academic-integrity/>

Assessment Tasks

Participation

- **Assessment task 1**

Title:

A1: Mobile Application Design Specification

Description:

The objective of this assessment is to enable students to design innovative applications on both Android and iOS by taking into consideration the interface requirements and functionality available on both platforms. Students will be required to submit a specification outlining the type of application they wish to build, a breakdown of the application requirements, interface storyboards and a project timeline. Specific details regarding this specification will be made available on Moodle.

Postgraduate students will also need to include a competitor analysis section in their specification by researching similar applications that currently exist on the market and analysing their strengths and weaknesses. This analysis should be used to support design decisions made on the final application design.

Weighting:

20%

Criteria for assessment:

- ◆ This is an individual assignment and is to be entirely your own work.
- ◆ The assignment will be marked against criteria of correctness and clarity.
- ◆ Further detailed assessment criteria will be available with the assignment specification.

Due date:

Friday 28th March 2014

Remarks:

Students will need to negotiate with their tutor during their assigned lab session regarding what type of application they would like to develop for the semester and if it is appropriate for the marking criteria.

Late assignment submissions will be penalised by 5% for each day late and may be submitted up to a maximum of 7 days late. Submissions beyond this deadline may not be accepted without prior consultation.

• **Assessment task 2**

Title:

A2: Android and iOS Portfolio Exercises

Description:

The objective of this assessment is to enable students to gain the fundamental skills and knowledge in building mobile applications with a critical focus on native Android and iOS development. Students will be required to submit a portfolio of weekly exercises for both Android and iOS platforms for Weeks 2 to 6. Specific details regarding each portfolio exercise will be clearly outlined in the laboratory notes accessible via Moodle.

Weighting:

30%

Criteria for assessment:

- ◆ This is an individual assignment and is to be entirely your own work.
- ◆ The assignment will be marked against criteria of correctness and clarity.
- ◆ Further detailed assessment criteria will be available with the assignment specification.

Due date:

Friday 11th April 2014

Remarks:

Students will be provided feedback based on their performance in this assignment to determine their current progress in Android and iOS application development. Suggestions for where potential improvements could be made for the remainder of the semester will also be provided.

Late assignment submissions will be penalised by 5% for each day late and may be submitted up to a maximum of 7 days late. Submissions beyond this deadline may not be accepted without prior consultation.

• **Assessment task 3**

Title:

A3: Android / iOS Mobile Application

Description:

The objective of this assessment is to enable students to build a functionally complete mobile application by selecting either Android or iOS to showcase and demonstrate their knowledge gained during the semester. Students will be required to submit an application based upon their design specification. Specific details regarding this application will be made available on Moodle and discussed during the lectures.

Postgraduate students will also need to incorporate and demonstrate unit testing in their Android or iOS project to ensure that the application has been made to an industry standard.

Weighting:

50%

Criteria for assessment:

- ◆ This is an individual assignment and is to be entirely your own work.
- ◆ The assignment will be marked against criteria of correctness and clarity.
- ◆ Further detailed assessment criteria will be available with the assignment specification.

Due date:

Friday 20th June 2014 (Week 15)

Remarks:

Late assignment submissions will be penalised by 5% for each day late and may be submitted up to a maximum of 7 days late. Submissions beyond this deadline may not be accepted without prior consultation.

Learning resources

Monash Library Unit Reading List (if applicable to the unit)

<http://readinglists.lib.monash.edu/index.html>

Faculty of Information Technology [Style Guide](#)

Feedback to you

Examination/other end-of-semester assessment feedback may take the form of feedback classes, provision of sample answers or other group feedback after official results have been published. Please check with your lecturer on the feedback provided and take advantage of this prior to requesting individual consultations with staff. If your unit has an examination, you may request to view your examination script booklet, see

<http://intranet.monash.edu.au/infotech/resources/students/procedures/request-to-view-exam-scripts.html>

Types of feedback you can expect to receive in this unit are:

- Informal feedback on progress in labs/tutes
- Graded assignments with comments
- Interviews
- Solutions to tutes, labs and assignments

Extensions and penalties

Submission must be made by the due date otherwise penalties will be enforced.

You must negotiate any extensions formally with your campus unit leader via the in-semester special consideration process: <http://www.monash.edu.au/exams/special-consideration.html>

Returning assignments

Students can expect assignments to be returned within two weeks of the submission date or after receipt, whichever is later.

Assignment submission

It is a University requirement

<http://www.policy.monash.edu/policy-bank/academic/education/conduct/student-academic-integrity-managing-pla>

for students to submit an assignment coversheet for each assessment item. Faculty Assignment coversheets can be found at <http://www.infotech.monash.edu.au/resources/student/forms/>. Please check with your Lecturer on the submission method for your assignment coversheet (e.g. attach a file to the online assignment submission, hand-in a hard copy, or use an online quiz). Please note that it is your responsibility to retain copies of your assessments.

Online submission

If Electronic Submission has been approved for your unit, please submit your work via the learning system for this unit, which you can access via links in the my.monash portal.

Required Resources

Please check with your lecturer before purchasing any Required Resources. Limited copies of prescribed texts are available for you to borrow in the library, and prescribed software is available in student labs.

- IntelliJ IDEA 13 Community edition with Android 4.4 SDK (Windows / Mac / Linux)
- Xcode 5.0 or later (Mac)

Technological Requirements

Students should routinely check Moodle to access class materials and check for the latest announcements. You are permitted to use your own laptop in the lab in addition to using any Android or iOS phone / tablet device if you wish to test your software rather than run it in an emulated environment.

Other Information

Policies

Monash has educational policies, procedures and guidelines, which are designed to ensure that staff and students are aware of the University's academic standards, and to provide advice on how they might uphold them. You can find Monash's Education Policies at:

www.policy.monash.edu.au/policy-bank/academic/education/index.html

Key educational policies include:

- Student Academic Integrity Policy and Student Academic Integrity: Managing Plagiarism and Collusion Procedures ;
<http://www.policy.monash.edu/policy-bank/academic/education/conduct/student-academic-integrity-policy.h>
- Assessment in Coursework Programs;
<http://www.policy.monash.edu/policy-bank/academic/education/assessment/assessment-in-coursework-po>
- Special Consideration;
<http://www.policy.monash.edu/policy-bank/academic/education/assessment/special-consideration-policy.ht>
- Grading Scale;
<http://www.policy.monash.edu/policy-bank/academic/education/assessment/grading-scale-policy.html>
- Discipline: Student Policy;
<http://www.policy.monash.edu/policy-bank/academic/education/conduct/student-discipline-policy.html>
- Academic Calendar and Semesters; <http://www.monash.edu.au/students/dates/>
- Orientation and Transition; <http://intranet.monash.edu.au/infotech/resources/students/orientation/>
- Academic and Administrative Complaints and Grievances Policy;
<http://www.policy.monash.edu/policy-bank/academic/education/management/complaints-grievance-policy.h>

Faculty resources and policies

Important student resources including Faculty policies are located at

<http://intranet.monash.edu.au/infotech/resources/students/>

Graduate Attributes Policy

<http://www.policy.monash.edu/policy-bank/academic/education/management/monash-graduate-attributes-policy.h>

Student Charter

www.opq.monash.edu.au/ep/student-charter/monash-university-student-charter.html

Student services

The University provides many different kinds of support services for you. Contact your tutor if you need advice and see the range of services available at <http://www.monash.edu.au/students>. For Malaysia see <http://www.monash.edu.my/Student-services>, and for South Africa see <http://www.monash.ac.za/current/>.

Monash University Library

The Monash University Library provides a range of services, resources and programs that enable you to save time and be more effective in your learning and research. Go to www.lib.monash.edu.au or the library tab in my.monash portal for more information. At Malaysia, visit the Library and Learning Commons at <http://www.lib.monash.edu.my/>. At South Africa visit <http://www.lib.monash.ac.za/>.

Disability Liaison Unit

Students who have a disability or medical condition are welcome to contact the Disability Liaison Unit to discuss academic support services. Disability Liaison Officers (DLOs) visit all Victorian campuses on a regular basis.

- Website: <http://www.monash.edu/equity-diversity/disability/index.html>
- Telephone: 03 9905 5704 to book an appointment with a DLO; or contact the Student Advisor, Student Community Services at 03 55146018 at Malaysia
- Email: dlu@monash.edu
- Drop In: Equity and Diversity Centre, Level 1, Building 55, Clayton Campus, or Student Community Services Department, Level 2, Building 2, Monash University, Malaysia Campus

Other

Online references will be advised throughout the semester.