



Department of Applied Information Technology

The Volgenau School of Information Technology & Engineering

IT 315 Mobile Development

Course Description

Introduces students to Mobile Development on the iOS and Android Platform. Provides overview of mobile platforms and devices including evaluation, uses, design and development of applications.

Prerequisites

IT 206 and IT 213 or permission of instructor;

Note: Students must own a Mac laptop and bring it to each class to do the in-class projects. **Alternatively you can purchase an account at macincloud.com and access OSx remotely.**

This requirement will be **strictly enforced**. Any student who does not meet the prerequisite requirement will be dropped from the course by the Instructor at the start of the semester and the student will be responsible for any consequences of being dropped.

Rational

The iPhone and other smart phones have changed the way consumers and businesses store and access information and corporate applications. Enterprise software development must now consider mobile users as part of the overall architecture and use cases. The Apple platform is the leading development environment with the largest market share for mobile applications (as of date this is written). Other platforms including Android and Blackberry also provide toolsets for developing applications.

Course Outcomes

On successful completion of this course, students will:

- Understand the fundamentals of Swift
- Develop native iPhone applications using XCode
- Understand key differences between the development environments and marketplace of the leading mobile devices.

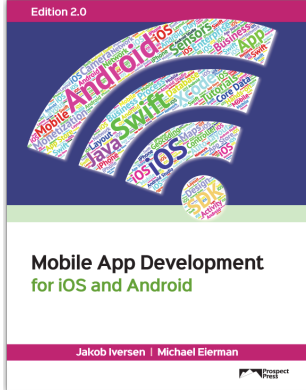
Supported Student Outcomes at the Program level

- (b) An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution
- (c) An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs
- (i) An ability to use current techniques, skills, and tools necessary for computing practice

Major Topics

- iOS Application Development with SWIFT
- XCode
- Single-View applications
- Master-Detail applications
- Table-Views
- Images, sound, animation
- Receiving and formatting JSON data
- Access to location services, camera, database

Textbook

 <p>Mobile App Development for iOS and Android</p> <p>Jakob Iversen Michael Eierman</p>	<p>Mobile App Development for iOS and Android</p> <p>Edition 2.0</p> <p>Jakob Iversen, Michael Eierman,</p> <p>Ordering Information</p> <p>http://prospectpressvt.com/titles/iversen-mobile-app-development/</p> <p>eTextbook</p> <p>eTextbooks will be available from Redshelf.com and Vital Source in early August 2017. Student Price: \$47.00 ISBN: 978-1-943153-27-5</p> <p>Paperback</p> <p>Paperbacks are available from Redshelf.com, CreateSpace, and Amazon Student Price: \$66.00 ISBN: 978-1-943153-28-2 338 pages</p>
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Equipment

Note: Students must own a Mac laptop and bring it to each class to do the in-class projects. **Alternatively you can purchase an account at macincloud.com and access OSx remotely.** Students will need xCode 6, or above, development environment to write iOS 8 code.

Faculty

Name: **Don Almeida**
Email Address: dalmeida@gmu.edu
Office Hours: **By appointment**
Phone: **Will give out cell phone number in class.**

Teaching Assistant

TBA

Administrative support

Prince William campus

Cindy WoodforkBull Run Hall, Suite 102

Phone: 703-993-8461

Fairfax campus

Tara SaricaThe Engineering Building, Room 5400

Phone: 703-993-3565

Grading

Grades will be awarded in accordance with the Mason Grading System for undergraduate students.

See <http://www.gmu.edu/catalog/apolicies/> under Grading System for more information.

The grading scale for this course is:

97 – 100%	A+	Passing
93 – 96%	A	Passing
90 – 92%	A-	Passing
87 – 89%	B+	Passing
83 – 86%	B	Passing
80 – 82%	B-	Passing
77 – 79%	C+	Passing
73 – 76%	C	Passing
70 – 72%	C-	Passing*
60 – 69%	D	Passing*
0 – 59%	F	Failing

* Grades of "C-" and "D" are considered passing grades for undergraduate courses. However, a minimum grade of "C" is required in the BSIT program for any course that is a prerequisite for one or more other courses. This course is a prerequisite for several courses in BSIT Concentrations – see <http://www.gmu.edu/catalog/courses/it.html> for more information on those courses.

Projects

Total	100%
Project I	30%
Project II	40%

Three Quizzes	30%
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Classroom Projects I and II: Students will complete two projects in class during this course. Classroom projects will show understanding of objectives learnt during class. An example of a project in class could be building an iOS application that randomly generates quotes. These Project will not be graded.

Home Projects I and II: Students will be given parallel projects to further reinforce classroom learning and some stretch goals (some external reading / research maybe needed). An example of this project could be to build an app that randomly generates a name of a restaurant to go for dinner. (With image of the restaurant and some sound). No other homework will be given.

Quizzes: Quizzes will be graded. There are three quizzes spread across the semester.

Late projects may not be accepted – if accepted, a penalty may be applied. Final grades will be posted to PatriotWeb, which is the only vehicle for students to obtain those grades.

A student with a "hold" on his/her PatriotWeb account will be unable to access final grades until the hold has been removed by the Registrar.

In-class exercises

There will be two case studies that will be completed during class hours. Students will have to follow the Instructor as they work on small increments of that case study during lecture hours. Concepts learnt / practiced during these class hours can be applied to assigned projects.

Homework

Accept project work and related reading from the textbook no other homework will be given.

Schedule

The reading assignment shown for each lecture is to be completed prior to that lecture.

This schedule is subject to revision before and throughout the course.

Registered students should see the [Blackboard Learning System](#) *for the latest class schedule.*

Lecture	Content	Dates
1	Introductions and syllabus overview. Discuss impact of mobile development / applications in todays world.	01/22/2018
2	Introduction iOS Development / Android Development. Use of development tools like XCode. Swift fundamentals.	01/29/2018
3	Swift fundamentals continued.	02/05/2018
4	10 Point Quiz + UI Controls (Labels and Buttons).	02/12/2018
5	Deeper look into Application Design Patterns (Model-View Controller (MVC)). Implement MVC using Swift.	02/19/2018
6	Implement arrays and properties in Swift.	02/26/2018
7	Beautify apps using Images, animation, and sound. Implement event consumption.	03/05/2018
8	No class on Monday (Spring Break) .	03/12/2018
9	Build apps using Master-Detail templates.	03/19/2018
10	Homework project I due (30% of grade, In class presentation)	03/26/2018
11	10 point quiz + Master-Detail templates continued.	04/02/2018
12	Receive data from external JSON source and build iOS client app.	04/09/2018
13	Parse, consume data from the Web / device database.	04/16/2018
14	Connect and load external web pages /content from within apps. Use of device location services.	04/23/2018
15	10 point quiz + HTML/CSS/JQuery Mobile- Building web pages. Use of device camera and photos.	04/30/2018
16	Homework project II due (40% of grade, In class presentation)	05/07/2018
17	(Reserved for snow days, inclement weather)	05/14/2018

Important Dates

Dates for adding, dropping the course, etc. are available via: <http://registrar.gmu.edu>.

Religious Holidays

A list of religious holidays is available on the [University Life Calendar page](#). Any student whose religious observance conflicts with a scheduled course activity must contact the instructor at least 2 weeks in advance of the conflict date in order to make alternative arrangements.

Attendance Policy

Students are expected to attend each class, to complete any required preparatory work and to participate actively in lectures, discussions and exercises. As members of the academic community, all students are expected to contribute regardless of their proficiency with the subject matter.

Students are expected to make prior arrangements with Instructor if they know in advance that they will miss any class and to consult with the Instructor as soon as possible if they miss any class without prior notice. Students who anticipate absences are discouraged from taking the class.

Departmental policy requires students to take exams at the scheduled time and place, unless there are truly compelling circumstances supported by appropriate documentation. Except in such circumstances, failure to attend a scheduled exam will result in a score of zero (0) for that exam, in accordance with [Mason policy on final exams](#). Students should not make travel plans or other discretionary arrangements that conflict with scheduled classes and/or exams. If the University is closed due to weather or other unforeseen conditions, final exams may be rescheduled. Contact the instructor in advance if you have a serious problem that prevents you from meeting course requirements.

Classroom conduct

Students are expected to conduct themselves in a manner that is conducive to learning, as directed by the Instructor. Any student who negatively impacts the opportunity for other students to learn will be warned – if disruptive behavior continues, the student will be asked to leave the classroom.

Electronic devices are potential distractions in the classroom environment. Cell phones, pagers and other handheld devices must be turned off or set to "silent" mode and not used while class is in session. Laptop computers and similar devices may be used only if such use is directly related to the classroom activity in progress – for some activities the Instructor may require that such devices not be used in order to maximize student engagement.

Communications

Registered students will be given access to a section of [the Blackboard Learning System](#) for this course. Blackboard will be used as the primary mechanism (outside of lectures) to disseminate course

information, including announcements, lecture slides, homework and other assignments, and scores for homework and exams.

Communication with the Instructor on issues relating to the individual student should be conducted using GMU email, via telephone, or in person - **not** in the public forums on Blackboard. Email is the preferred method. Federal privacy law and GMU policy require that any communication with a student related in any way to a student's status be conducted using secure GMU systems – if you use email to communicate with the Instructor you **MUST** send messages from your GMU email account.

Lecture slides are complements to the lecture process, not substitutes for it - access to lecture slides will be provided in Blackboard as a courtesy to students provided acceptable attendance is maintained.

All course materials (lecture slides, assignment specifications, *etc*) are published on Blackboard. This allows users of most computing platforms to view and print these files. Microsoft® Word (or a compatible word processing application) is required for preparing assignments – it is available on computers in the Mason open labs.

Privacy

Instructors respect and protect the privacy of information related to individual students.

As described above, issues relating to an individual student will be discussed via email, telephone or in person. Instructors will not discuss issues relating to an individual student with other students (or anyone without a need to know) without prior permission of the student.

Assessable work other than final exams will be returned to individual students directly by the Instructor (or by a faculty or staff member or a Teaching Assistant designated by the Instructor, or via another secure method). Under no circumstances will a student's graded work be returned to another student. Faculty and staff will take care to protect the privacy of each student's scores and grades.

Disability Accommodations

[The Office of Disability Services \(ODS\)](#) works with disabled students to arrange for appropriate accommodations to ensure equal access to university services. Any student with a disability of any kind is strongly encouraged to register with ODS as soon as possible and take advantage of the services offered.

Accommodations for disabled students **must** be made in advance – ODS cannot assist students retroactively, and at least one week's notice is required for special accommodations related to exams. Any student who needs accommodation should contact the Instructor during the first week of the semester so the sufficient time is allowed to make arrangements.

Honor Code

All members of the Mason community are expected to uphold the principles of scholarly ethics. Similarly, graduating students are bound by the ethical requirements of the professional communities they join. The ethics requirements for some of the communities relevant to Applied IT graduates are available via the following links:

- [ACM Code of Ethics and Professional Conduct](#)
- [IEEE Code of Ethics](#)
- [EC-Council Code of Ethics](#)

On admission to Mason, students agree to comply with the requirements of the [Honor Code](#) at George Mason University. Student members of the George Mason University community pledge not to **cheat**, **plagiarize**, **steal**, and/or **lie** in matters related to academic work. The Honor Code will be strictly enforced in this course.

Any use of the words or ideas of another person(s), without explicit attribution that clearly identifies the material used and its source in an appropriate manner, is **plagiarism** and will not be tolerated. The Instructor reserves the right to use manual and/or automated means (including such services as [Turnitin.com](#)) to detect plagiarism in any work submitted by students for this course, and to direct Teaching Assistants and/or other faculty and/or staff members to do likewise in support of this course.

WARNING! This course has a zero tolerance policy for violations of the Honor Code. There are no second chances. Offenses carry the following minimum recommended sanctions:

Level 1 Offenses, such as cheating on an assignment (working together when not allowed)

1st Offense: 0 on the assignment, one letter grade (10%) reduction in the final grade, and the academic integrity seminar

2nd Offense: F in the course, and one semester academic suspension

3rd Offense: F in the course and expulsion from the University

Level 2 Offenses, such as cheating on an exam, posting to a website for a partial or completed solution to an assignment (chegg.com, homeworkmarket.com, rentacoder.com, etc.)

1st Offense: F in the course and the academic integrity seminar

2nd Offense: F in the course, and one year academic suspension

3rd Offense: F in the course and expulsion from the University

For this course, the following requirements are specified:

- All assessable work is to be prepared by the individual student, unless the Instructor explicitly directs otherwise.

- All work must be newly created by the individual student for this course for this semester. Any usage of work developed for another course, or for this course in a prior semester, is strictly prohibited without prior approval from the instructor.