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Department of Computer Engineering	
Special Topics I (66464)	
Total Credits	**3**
major elective	
Prerequisites	-

Course Contents

This course teaches the principles of mobile computing. It introduces the students to the major mobile operating architectures and platforms: iOS, Androidand Windows 8.The students will learn to program applications targeting one of the previous platforms as astepping stone for application development in the mobile platform of their choice. Topics covered include:working with the MVC design pattern, handling views, events, notifications, interfacing with the mobile device sensors, persistence, application lifecycle, packaging &deployment. In addition, the students will be introduced to mobile game development as an example of a popular mobile application area.

	Intended Learning Outcomes (ILO's)	Student Outcomes (SO's)	Contribution
1	Learn the fundamentals of mobile computing andunderstand the resources and constraints of modernmobile architectures and the various factors and trade-offs involved and how they are reflected on the programmingprocess.	C	20 %
2	Study the major mobile computing platforms and the architecture of mobile applications.	A	20 %
3	Develop mobile programstargeting the majormobile platforms (e.g. iOS, Android and Windows Mobile) and utilizing the main resources of such platforms: MVC, views, events, notifications, persistence/storage andmobile sensors.	K	60 %

Textbook and/ or Refrences

iOS Programming: The Big Nerd Ranch Guide, 3rd Edition. Joe Conway, Aaron Hillegass.

Assessment Criteria	Percent (%)
Mid. Term Exam	40 %
Homeworks	20 %
Final Exam	40 %

Course Plan

Week	Topic
1-2	1. Mobile Platforms 1.1 Mobile Devices 1.2Mobile Operating Systems 1.3Mobile Applications
3-7	2. Objective-C 2.1 Introduction 2.2 From C to Objective-C 2.3 Object-Oriented Features, Inheritance and Dynamism 2.4 Protocols and Categories 2.5 Objective-C Data Types and Collections 2.6 Memory Management
8-9	3. Application Architecture 3.1 Packages 3.2 Manifests 3.3 Events 3.4 Application Life Cycle 3.5 MVC
9	First Exam
10-13	4.Working with Views 4.1 Basic Views 4.2 Multiple MVCs 4.3 Gestures 4.4 Advanced Views (Web, Image andTable Views)
14	5.Persistence &Storage 5.1 Basic Storage (Property Lists &File system) 5.2 Advanced Storage (Databases)
14	Second Exam

15	6. Sensors and Notifications 6.1 Location Services 6.2 Movement Sensors 6.3 Alerts/Notifications
16	7. Mobile Game Development 7.1 Game Internal Structure 7.2 Game Design 7.3 Game Loop 7.4 Animation 7.5 Game Engines (2D &3D)
16	Final Exam