



## Intro to Mobile Development 5-6 Syllabus

### Course Goals

#### 1 Developing Mobile Applications

Students become acquainted with the structure and components of mobile applications through the MIT App Inventor Designer interface. They learn to design simple applications, which can then be put onto Android devices.

#### 2 Introduction to Programming

Students learn about basic concepts and structures of programming using the MIT App Inventor Software. Using this drag-and-drop software, they learn how to use code to connect the assorted components of their user interface.

### Course Topics

#### 1 Mobile App Components

Students learn to use components such as textboxes, spinners, canvases, sprites, and sliders in mobile applications. They combine these components to create the user interfaces for their applications.

#### 2 Variables and Lists

Students learn to use variables and lists of variables to store data, which they use to change how their application responds to a user.

#### 3 Conditional Statements

Students learn how to make their apps respond and react to a variety of different inputs using conditional statements.

#### 4 Gestures

Students learn to incorporate user input into their applications to change its functionality. They use various gestures, such as swiping the screen or dragging their finger, in order to create different results.

#### 5 Graphics in Mobile Applications

Students practice creating applications using images and sprites in order to make basic games. They learn to draw shapes and make sprites move around the screen both automatically and in response to their input.

#### 6 Procedures

Students practice expanding the functionality of the MIT App Inventor software by defining their own procedures. They use these procedures to simplify programming repeated sections of code in their applications.

#### 7 Multi-Screen Applications

Students learn about the challenges of passing data between different screens in an application. They create new options in their existing applications and pass the data between two screens to give the user ways to customize the application.

### Course Schedule

#### Day 1

##### Introduction

Students are introduced to each other and to the course.

### **App Inventor**

Students learn how to program with App Inventor.

### **Introductory Programming**

Students create simple applications to get used to the software.

## **Day 2**

### **Day 2 Review**

Students review content from the previous day to prepare for upcoming assignments.

### **Matching Game**

Students create a matching memory game using variables and lists.

## **Day 3**

### **Day 3 Review**

Students review content from the previous day to prepare for upcoming assignments.

### **Clocks**

Students learn how to create clocks and add them to the matching game they created.

### **Mini-Paint**

Students create a simplified version of Microsoft Paint.

## **Day 4**

### **Day 4 Review**

Students review content from the previous day to prepare for upcoming assignments.

## **Day 5**

### **Dodgeball Modifications**

Students modify their dodgeball games to include more sophisticated elements.

## **Day 6**

### **Whack-a-Mole**

Students program a whack-a-mole game largely on their own.

## **Day 7**

### **Whack-a-Mole**

Students program a whack-a-mole game largely on their own.

### **High Scores**

Students learn how to add high score and username functionalities to their games.

## **Day 8**

### **Catch Up**

Students complete the projects they have worked on and review concepts in preparation for the final project.

### **Final Project Introduction**

Students select a final project to work on for the remainder of the session.

## **Day 9**

### **Final Project**

Students work on their final project

## **Day 10**

### **Final Project**

Students work on their final project

### **Save Work**

Students save the work they have completed throughout the course to play at home.

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