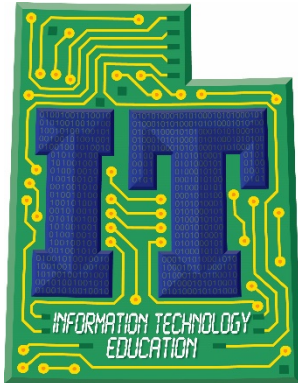


# STRANDS AND STANDARDS

## MOBILE DEVELOPMENT FUNDAMENTALS



### Course Description

This course is designed to teach skills to develop apps for phones, tablets, and other devices that run on a variety of operating system. Students will learn core mobile development skills. Before taking this course, students should have solid foundational knowledge of the following topics: C#, Visual Studio, .NET, HTML5, SQLite, CSS, Javascript, ASP.NET MVC, Swift, and other phone operating system tools.

<b>Intended Grade Level</b>	9-12
Units of Credit	0.5
Core Code	35.02.00.00.048
Concurrent Enrollment Core Code	N/A
Recommended Prerequisite	Computer Programming, I, Computer Science Principles, Web Development, HTML5
Skill Certification Test Number	850
Test Weight	0.5
<b>License Type</b>	CTE and/or Secondary Education 6-12
<b>Required Endorsement(s)</b>	
Endorsement 1	Web Development, or
Endorsement 2	Computer Programming (Historic), or
Endorsement 3	Computer Science Level 1, or
Endorsement 4	Computer Science Level 2

## STRAND 1

### Introduction to mobile devices

#### Standard 1

History of mobile technologies

- Describe how mobile technologies came to be
- Describe the current major mobile platforms
- Describe the effects upcoming mobile platforms may have on mobile technologies

#### Standard 2

Understand physical capabilities of the mobile device

- Identify the different device sensors
- Describe and define the camera capture
- Identify different built-in hardware
- Identify Motion API

#### Standard 3

Plan for physical interactions with the mobile device.

- Describe and define the differences among devices
- Describe and define features, APIs, number of touchpoints, and networking
- Account for screen size/real estate when planning layout

## STRAND 2

### Design and development methodologies

#### Standard 1

Implement project management: Student will be able to implement project management methodologies to streamline workflow.

- Create and analog or digital prototype version of their app
- Work in a team
- Utilize project management skills
- Develop a concept with considerations for plan, cost, and time
- Develop a design document detailing the problem the app solves and its core competencies

#### Standard 2

Creation

- Create appropriate art and text
- Develop audio for the application
- Write and comment code appropriately
- Create application animations

## STRAND 3

### Develop mobile applications

#### Standard 1

Develop programming skills

- Begin to think like a programmer
- Understand why your app uses its language(s) for development
- Learn the basic tools necessary for programming
- Variables
- Methods
- Control structures
- Data structures
- User input
- Object-oriented programming (OOP);
- Build and run an application

#### Standard 2

Code for mobile applications

- Evaluate code
- Identify code errors
- Identify code to use to meet requirements
- Distinguish among programming languages and programs (e.g. C#, Objective-C, Java, Javascript, HTML5, CSS, Swift, etc.)

#### Standard 3

Manage the application lifecycle

- Preserve application state information and handle activate/deactivate functions
- Create a responsive application with feedback in response to user actions

#### Standard 4

Understand mobile device APIs

- Understand mapping/geolocation APIs, forms, and media APIs
- Describe and define manipulation events (user input)

#### Standard 5

Understand mobile device controls

- Use phone controls
- Arrange content appropriately
- Display collections of items
- Build custom controls
- Describe and define notification types and uses
- Use tasks and choosers to enhance application functionality

## Standard 6

Build the user interface

- Create layout with appropriate design principles
- Design with system theme, accent color
- Design appropriate screen orientation options
- Design graphic layering (transparency, borders, resizing)
- Design the user experience to be clean, focused, and using UI standards and guidelines
- Integrate images and media in an application

## STRAND 4

**Design for deployment**

### Standard 1

Understand how to publish for mobile devices

- Describe and define marketplace submission rules;
- Describe and define mobile design concepts (for example, metro, button sizing, spacing).

### Standard 2

Use the principles of user interface design

- Design and Organize the User Interface.
- Design should make simple common tasks easy.
- Options and materials for tasks visible without distracting the user
- Design should provide methods for feedback examples actions, changes of state or conditions, errors, in language familiar to users
- Design should be flexible and tolerant accounting for user mistakes.
- Design should maintain consistency reducing the need for users to rethink and remember.

### Standard 3

Work with developer tools

- Use an appropriate IDE
- Create the deployment package and deploy the application (optional, suggested for more advanced students)
- Configure a test environment
- Test and debug mobile applications

## STRAND 5

**Students will be familiar with careers in mobile technologies and application development**

### Standard 1

Students will develop career awareness related to working in mobile apps

# MOBILE DEVELOPMENT FUNDAMENTALS

- Identify personal interests and abilities related to mobile applications, such as:
- Identify personal creative talents
- Identify organizational and leadership skills
- Identify special interest areas
- Investigate career opportunities, trends, and requirements related to mobile application jobs
- Survey educational opportunities (e.g. non-traditional) to determine programs, degrees and training availability to improve job prospects
- Develop employability competencies/characteristics: responsibility, dependability, ethics, respect, and cooperation
- Achieve high standards of personal performance with a positive work ethic and attitude

## Standard 2

### Industry Guides

- Teachers will invite, encourage, entice, and otherwise bribe individuals who work in mobile application technologies to come and interact with students

## Performance Skills

Students will be able to properly identify the subtle differences of an app developed on different system platforms.

## Work Place Skills

Communication, Problem Solving, Teamwork, Critical Thinking, Dependability, Accountability

## Skill Certificate Test Points by Strand

Test Name	Test #	Number of Test Points by Standard						Total Points	Total Questions
		1	2	3	4	5	6		
Mobile Development Fundamentals	850	3	6	12	11	3		38	35