

Mobile Development Fundamentals

Exam Information	Description
Exam number 850 Items 35 National Career Cluster Digital Technology Certification available Yes	The Mobile Development Fundamentals industry certification exam assesses skills for developing apps for phones, tablets, and other devices that run on a variety of operating systems. Learners demonstrate their ability to design, build, and test mobile applications across different platforms.

Exam Blueprint and Performance Skills

Standard	Percentage of exam score
1. Introduction to Mobile Devices	8%
2. Design & Development Methodologies	16%
3. Applications	34%
4. Design for Deployment	34%
5. Careers*	8%

*Includes performance skill evaluation

Standard 1 - Introduction to Mobile Devices (8% of exam score)

Introduction to mobile devices

Objective 1 History of mobile technologies.

1. Describe how mobile technologies came to be
2. Describe the current major mobile platforms
3. Describe the effects upcoming mobile platforms may have on mobile technologies

Objective 2 Understand physical capabilities of the mobile device.

1. Identify the different device sensors
2. Describe and define the camera capture
3. Identify different built-in hardware

Objective 3 Plan for physical interactions with the mobile device.

1. Describe and define the differences among devices
2. Describe and define features, APIs, number of touchpoints, and networking
3. Identify ways to save energy
4. Account for screen size/real estate when planning layout

Standard 2 - Design & Development Methodologies (16%)

Design and development methodologies

Objective 1 Implement project management: Candidates will be able to implement project management methodologies to streamline workflow.

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

Objective 2 Creation

1. Create appropriate art and text
2. Develop audio for the application
3. Write and comment code appropriately
4. Create application animations

Standard 3 - Applications (34%)

Develop mobile applications

Objective 1 Develop programming skills.

1. Begin to think like a programmer
2. Understand why your app uses its language(s) for development
3. Learn the basic tools necessary for programming
4. Variables
5. Methods
6. Control structures
7. Data structures
8. User input
9. Object-oriented programming (OOP);
10. Build and run an application

Objective 2 Code for mobile applications.

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

Objective 3 Manage the application lifecycle.

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

Objective 4 Understand mobile device APIs.

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

Objective 5 Understand mobile device controls.

1. Use phone controls
2. Arrange content appropriately
3. Display collections of items
4. Build custom controls
5. Describe and define notification types and uses
6. Use tasks and choosers to enhance application functionality

Objective 6 Build the user interface.

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

Standard 4 - Design for Deployment (34%)

Design for deployment

Objective 1 Understand how to publish for mobile devices.

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

Objective 2 Use the principles of user interface design.

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

Objective 3 Work with developer tools.

1. Use an appropriate IDE
2. Create the deployment package and deploy the application (optional, suggested for more advanced candidates)
3. Configure a test environment
4. Test and debug mobile applications

Standard 5 - Careers (8%)

Candidates will be familiar with careers in mobile technologies and application development.

Objective 1 Candidates will develop career awareness related to working in mobile apps.

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

Objective 2 Industry Guides

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

Optional: Standard performance evaluations on the final page of this document

Performance Skills Evaluation

Exam name: Mobile Development Fundamentals

Candidate Name: _____

Performance assessments may be completed and evaluated any time before the certification is issued. The following performance skills can be used in connection with the associated standards and exam. The evaluator will function as the subject matter expert to determine if the candidate meets the skills requirements with a Yes/No for passing.

Standard 5 - Applications of Non-Destructive Testing

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

Pass:

Evaluator Name:

Date:
