



**COWLEY COLLEGE
& Area Vocational Technical School**

COURSE PROCEDURE FOR

**IOS APP DEVELOPMENT 1
CIS1767 3 Credit Hours**

Student Level:

This course is open to students on the college level in either the Freshman or Sophomore year.

Catalog Description:

CIS1767 – IOS APP DEVELOPMENT 1 (3 hrs)

This course will prepare students to code apps for the iOS operating system. The topics will include learning the Swift programming language, views, view hierarchy, text input, delegation, view controllers, programmatic views, localization, animations, debugging, UITableView, and UITableViewCell.

Prerequisites:

None.

Co-requisites:

None

Controlling Purpose:

This course is designed to prepare students to code apps on the iOS operating system. These concepts provide a foundation for further courses in iOS app development as well as creating simple apps for use in industry.

Learner Outcomes:

Upon completion of the course, the student will be able to code apps using the Swift programming language including the following topics: views, view hierarchy, text input, delegation, view controllers, programmatic views, localization, animations, debugging, UITableView, and UITableViewCell.

Units Outcomes and Clock Hours of Instruction for Core Curriculum:

The following outline defines the minimum core content not including the final examination period. Instructors may add other material as time allows.

Evaluation Key:

A = All major and minor goals have been achieved and the achievement level is considerably above the minimum required for doing more advanced work in the same

- field.
- B = All major goals have been achieved, but the student has failed to achieve some of the less important goals. However, the student has progressed to the point where the goals of work at the next level can be easily achieved.
- C = All major goals have been achieved, but many of the minor goals have not been achieved. In this grade range, the minimum level of proficiency represents a person who has achieved the major goals to the minimum amount of preparation necessary for taking more advanced work in the same field, but without any major handicap of inadequacy in his background.
- D = A few of the major goals have been achieved, but the student's achievement is so limited that he is not well prepared to work at a more advanced level in the same field.
- F = Failing, will be computed in GPA and hours attempted.
- N = No instruction or training in this area.

| UNIT 1: iOS App Development Environment | | | | | | |
|--|---|---|---|---|---|--|
| Outcomes: Demonstrate knowledge of the features of the interactive development environment in iOS as well as describe the iOS architecture | | | | | | |
| A | B | C | D | F | N | Specific Competencies |
| | | | | | | Demonstrate the ability to: |
| | | | | | | Create an Xcode project |
| | | | | | | Implement the Model-View-Controller |
| | | | | | | Use the Interface Builder |
| | | | | | | Build the interface including creating view objects, configuring view objects, use of the Auto Layout, and running the simulator |
| | | | | | | Create the model layer |
| | | | | | | Build and run an application on the iPhone simulator |
| | | | | | | Develop a "Hello World" Android application |

| UNIT 2: The Swift Language | | | | | | |
|---|---|---|---|---|---|--|
| Outcomes: Demonstrate the knowledge necessary to write simple code using the Swift language including types, standard types, loops, strings, enumerations, and the switch statement | | | | | | |
| A | B | C | D | F | N | Specific Competencies |
| | | | | | | Demonstrate the ability to: |
| | | | | | | Describe types in Swift |
| | | | | | | Use standard types |
| | | | | | | Discuss the optional state of Swift types |
| | | | | | | Write apps that use the loop structures and string interpolation |

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|--|--|--|--|--|--|----------------------------------|
| | | | | | | Define enumerations |
| | | | | | | Use a switch statement in an app |

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|---|---|---|---|---|---|--|
| UNIT 3: Views and the View Hierarchy | | | | | | |
| Outcomes: Describe how to create apps implementing different views to enhance the user interface including the Auto Layout System | | | | | | |
| A | B | C | D | F | N | Specific Competencies |
| | | | | | | Demonstrate the ability to: |
| | | | | | | Describe the view hierarchy |
| | | | | | | Code apps that control the views and frames despite varying screen sizes |
| | | | | | | Customize the properties of UI elements |
| | | | | | | Use the Auto Layout System including the alignment rectangle, layout attributes, constraints, and content size |

| | | | | | | |
|--|---|---|---|---|---|---|
| UNIT 4: Text Input and Delegation | | | | | | |
| Outcomes: Describe how to create an user interface using different views in an Android app | | | | | | |
| A | B | C | D | F | N | Specific Competencies |
| | | | | | | Demonstrate the ability to: |
| | | | | | | Implement text editing including keyboard attributes, text field changes, and dismissing the keyboard |
| | | | | | | Use number formatters |
| | | | | | | Code apps that use delegation including protocols |

| | | | | | | |
|---|---|---|---|---|---|---------------------------------|
| UNIT 5: View Controllers | | | | | | |
| Outcomes: Describe the techniques of using view controllers to have different screens appear including the proper management of the views in an app | | | | | | |
| A | B | C | D | F | N | Specific Competencies |
| | | | | | | Demonstrate the ability to: |
| | | | | | | Describe the view controller |
| | | | | | | Set the initial view controller |
| | | | | | | Use the UITabBarController |
| | | | | | | Load and cause to appear views |
| | | | | | | Interact with view controllers |

UNIT 6: Programmatic Views

Outcomes: Explain how to control the views or screens of an app using the Swift language

| A | B | C | D | F | N | Specific Competencies |
|---|---|---|---|---|---|---|
| | | | | | | Demonstrate the ability to: |
| | | | | | | Create a view programmatically |
| | | | | | | Implement programmatic constraints including anchors, constraints, layout guides, margins, and explicit constraints |
| | | | | | | Use programmatic controls |

UNIT 7: Localization

Outcomes: Explain how to use localization to detect the user's location and change settings to match that location including time, metric, and currency

| A | B | C | D | F | N | Specific Competencies |
|---|---|---|---|---|---|--|
| | | | | | | Demonstrate the ability to: |
| | | | | | | Use internationalization in an app including formatters, base internationalization, and preparation for localization |
| | | | | | | Implement localization in an app |

UNIT 8: Controlling Animation

Outcomes: Explain how to code apps to properly display animations

| A | B | C | D | F | N | Specific Competencies |
|---|---|---|---|---|---|--|
| | | | | | | Demonstrate the ability to: |
| | | | | | | Implement basic animations |
| | | | | | | Control animations using time controls and constraints |
| | | | | | | Use timing functions |

UNIT 9: Debugging

Outcomes: Explain how to debug an app using the XCode Debugger: LLDB

| A | B | C | D | F | N | Specific Competencies |
|---|---|---|---|---|---|---|
| | | | | | | Demonstrate the ability to: |
| | | | | | | Describe basic debugging techniques including console messages and visual debugging without the aid of the debugger |
| | | | | | | Use the XCode Debugger: LLDB |

UNIT 10: UITableView and UITableViewController

Outcomes: Explain how to write apps that present table information on a screen including options to control the look

| A | B | C | D | F | N | Specific Competencies |
|---|---|---|---|---|---|---|
| | | | | | | Demonstrate the ability to: |
| | | | | | | Use the UITableViewController |
| | | | | | | Create a class for table data |
| | | | | | | Implement the UITableView's data source |
| | | | | | | Control data in the UITableViewCells |
| | | | | | | Use content insets |

UNIT 11: Editing UITableView

Outcomes: Explain how to use the UITableView to edit, add, delete, and move rows of data in a table

| A | B | C | D | F | N | Specific Competencies |
|---|---|---|---|---|---|-----------------------------|
| | | | | | | Demonstrate the ability to: |
| | | | | | | Set edit mode |
| | | | | | | Add rows |
| | | | | | | Delete rows |
| | | | | | | Move rows |
| | | | | | | Display user alerts |
| | | | | | | Discuss design patterns |

UNIT 12: Subclassing UITableViewCell

Outcomes: Explain how to work with ItemCells within the class UITableViewCell

| A | B | C | D | F | N | Specific Competencies |
|---|---|---|---|---|---|---------------------------------------|
| | | | | | | Demonstrate the ability to: |
| | | | | | | Create an ItemCell |
| | | | | | | Expose the properties of ItemCell |
| | | | | | | Use an ItemCell |
| | | | | | | Implement dynamic cell heights |
| | | | | | | Discuss the purposes of dynamic types |

Projects Required:

Varies, refer to syllabus.

Textbook:

Contact Bookstore for current textbook.

Materials/Equipment Required:

None

Attendance Policy:

Students should adhere to the attendance policy outlined by the instructor in the course syllabus.

Grading Policy:

The grading policy will be outlined by the instructor in the course syllabus.

Maximum class size:

Based on classroom occupancy

Course Time Frame:

The U.S. Department of Education, Higher Learning Commission and the Kansas Board of Regents define credit hour and have specific regulations that the college must follow when developing, teaching and assessing the educational aspects of the college. A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally-established equivalency that reasonably approximates not less than one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work for approximately fifteen weeks for one semester hour of credit or an equivalent amount of work over a different amount of time. The number of semester hours of credit allowed for each distance education or blended hybrid courses shall be assigned by the college based on the amount of time needed to achieve the same course outcomes in a purely face-to-face format.

Refer to the following policies:

[402.00 Academic Code of Conduct](#)

[263.00 Student Appeal of Course Grades](#)

[403.00 Student Code of Conduct](#)

Disability Services Program:

Cowley College, in recognition of state and federal laws, will accommodate a student with a documented disability. If a student has a disability which may impact work in this class and which requires accommodations, contact the Disability Services Coordinator.