**COURSE PLAN**

|  |  |
| --- | --- |
| Target | 50% (marks) |
| Level-1 | 40% (population) |
| Level-2 | 50% (population) |
| Level-3 | 60% (population) |

1. **Method of Evaluation**

|  |  |
| --- | --- |
| **UG** | **PG** |
| Quizzes/Tests, Assignments (30%) | Quizzes/Tests, Assignments, seminar (50%) |
| Mid Examination (20%) | End semester (50%) |
| End examination (50%) |  |

1. **Passing Criteria**

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| --- | --- | --- |
| **Scale** | **PG** | **UG** |
| **Out of 10 point scale** | SGPA – “6.00” in each semester  CGPA – “6.00”  Min. Individual Course Grade  –  “C”  Course Grade  Point –  “4.0” | SGPA – “5.0” in each semester  CGPA – “5.0”  Min. Individual Course Grade  –  “C”  Course Grade  Point –  “4.0” |

\*for PG, passing marks are 40/100 in a paper

\*for UG, passing marks are 35/100 in a paper

1. **Pedagogy**

• Presentation,

• flipped classroom session,

• think-pair and share,

• youtube videos as a startup

1. **References:**

|  |  |  |  |
| --- | --- | --- | --- |
| Text Books | Web resources | Journals | Reference books |
| Mobile Application Development using iOS (IBM ICE Publication) | <https://www.tutorialspoint.com/ios/index.htm>  <https://www.raywenderlich.com/ios>  <https://intellipaat.com/blog/tutorial/ios-tutorial/> |  | • Mobile Application Development using iOS (IBM ICE Publication) |

**GUIDELINES TO STUDY THE SUBJECT**

**Instructions to Students:**

1. Go through the 'Syllabus' in the Black Board section of the web-site(https://learn.upes.ac.in) in order to find out the Reading List.
2. Get your schedule and try to pace your studies as close to the timeline as possible.
3. Get your on-line lecture notes (Content, videos) at Lecture Notes section.  These are our lecture notes. Make sure you use them during this course.
4. Check your blackboard regularly
5. Go through study material
6. Check mails and announcements on blackboard
7. Keep updated with the posts, assignments and examinations which shall be conducted on the blackboard
8. Be regular, so that you do not suffer in any way
9. C**ell Phones and other Electronic Communication Devices:** Cell phones and other electronic communication devices (such as Blackberries/Laptops) are not permitted in classes during Tests or the Mid/Final Examination. Such devices MUST be turned off in the class room.
10. **E-Mail and online learning tool:** Each student in the class should have an e-mail id and a pass word to access the LMS system regularly. Regularly, important information – Date of conducting class tests, guest lectures, via online learning tool. The best way to arrange meetings with us or ask specific questions is by email and prior appointment. All the assignments preferably should be uploaded on online learning tool. Various research papers/reference material will be mailed/uploaded on online learning platform time to time.
11. **Attendance:** Students are required to have minimum attendance of 75% in each subject. Students with less than said percentage shall NOT be allowed to appear in the end semester examination.

This much should be enough to get you organized and on your way to having a great semester! If you need us for anything, send your feedback through e-mail [to](mailto:abc@ddn.upes.ac.in) your concerned faculty. Please use an appropriate subject line to indicate your message details.

There will no doubt be many more activities in the coming weeks. So, to keep up to date with all the latest developments, please keep visiting this website regularly.

**RELATED OUTCOMES**

1. **The expected outcomes of the Program are:**

|  |  |
| --- | --- |
| PO1 | Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems. |
| PO2 | Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences. |
| PO3 | Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations. |
| PO4 | Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions. |
| PO5 | Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations. |
| PO6 | The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice. |
| PO7 | Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development. |
| PO8 | Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice. |
| PO9 | Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings. |
| PO10 | Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions. |
| PO11 | Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one’s own work, as a member and leader in a team, to manage projects and in multidisciplinary environments. |
| PO12 | Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. |

1. **The expected outcomes of the Specific Program are: (upto3)**

|  |  |
| --- | --- |
| PSO1 | Perform system and application programming using computer system concepts, concepts of Data Structures, algorithm development, problem solving and optimizing techniques. |
| PSO2 | Apply software development and project management methodologies using concepts of front-end and back-end development and emerging technologies and platforms. |
| PSO3 | Able to design , develop and deploy Mobile Applications(Apps) and Protocols for Ubiquitous Computing |

1. **The expected outcomes of the Course are: (minimum 3 and maximum 6)**

|  |  |
| --- | --- |
| CO 1 | describe the usage and implementation of xcode5 |
| CO 2 | classify Memory management and categories |
| CO 3 | demonstrate the application patterns and architecture of IOS |
| CO 4 | analyze the view, navigation and touch taps of IOS |
| CO 5 | evaluate the performance and power optimization of IOS |

1. **Co-Relationship Matrix**

Indicate the relationships by1- Slight (low) 2- Moderate (Medium) 3-Substantial (high)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Program**  **Outcomes**  **Course Outcomes** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO1110** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| CO1 | 2 | 3 | 3 |  | 3 | 3 |  |  | 1 |  |  | 2 | 3 | 2 |
| CO2 | 2 | 2 | 3 |  | 2 | 2 |  |  | 1 |  |  | 2 | 2 | 3 |
| CO3 | 1 | 1 | 2 |  | 3 | 2 |  |  | 2 |  |  | 3 | 2 | 2 |
| CO4 | 1 | 1 | 2 |  | 3 | 1 |  |  | 1 |  |  | 2 | 2 | 1 |
| CO5 | 2 | 3 | 3 |  | 3 | 2 |  |  | 1 |  |  | 2 | 2 | 3 |
| **Etc.** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Average** | 2 | 2 | 3 |  | 3 | 2 |  |  | 1 |  |  | 2 | 2 | 2 |

1. **Course outcomes assessment plan:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **components**  **Course Outcomes** | **Assignment** | **Test/Quiz** | **Mid Semester** | **End Semester** | **Any other** |
| **CO 1** | **□** | **□** | **□** | **□** | **□** |
| **CO 2** | **□** | **□** | **□** | **□** | **□** |
| **CO 3** | **□** | **□** | **□** | **□** | **□** |
| **CO 4** | **□** | **□** | **□** | **□** | **□** |
| **CO 5** | **□** | **□** | **□** | **□** | **□** |
|  |  |  |  |  |  |

**BROAD PLAN OF COURSE COVERAGE**

**Course Activities:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S. No.** | **Description** | **Planned** | | | **Remarks** |
| **From** | **To** | **No. of Sessions** |
| **1.** | INTRODUCTION, XCODE 5 | 7 Jan 2020 | 18 Jan 2020 | 6 |  |
| **2.** | C FOR EXPERIENCED PROGRAMMERS , APPLICATION PATTERNS AND ARCHITECTURE, VIEWS AND WINDOWS, STORYBOARDS | 20 Jan 2020 | 7 Feb 2020 | 8 | Test 1 |
| **3.** | TABLE VIEWS , NAVIGATION BASED APPLICATIONS, UIPICKERVIEW AND UIDATEPICKER, DIRECTORIES AND FILES | 10 Feb 2020 | 28 Feb 2020 | 8 | Quiz 1 |
| **4.** | WORKING WITH DATA, MULTITOUCH, TAPS, AND GESTURES, DRAWING , MULTITASKING, NOTIFICATIONS, CORE LOCATION FRAMEWORK, CONCURRENCY | 2 March 2020 | 27 March 2020 | 8 | Test 2 |
| **5.** | NETWORKING, TARGETING MULTIPLE DEVICES, LOCALIZATION, PERFORMANCE AND POWER OPTIMIZATION | 30 March 2020 | 20 April 2020 | 6 | Quiz 2 |

Sessions: Total No. of Instructional periods available for the course

**SESSION PLAN**

**UNIT-I**

|  |  |  |
| --- | --- | --- |
| **Lecture No.** | **Topics to be Covered** | **CO Mapped** |
| 1 | iPhone and iPad Device Anatomy, iOS Architecture and SDK Frameworks | CO1 |
| 2 | iOS and SDK Version Compatibility, Apple iOS Developer Program Tour of the IDE, Templates | CO1 |
| 3 | Projects, and Workspaces, Creating a New Project, LLVM and LLDB, Debug Gauges | CO1 |
| 4 | Asset Management, XCTest Testing Framework | CO1 |
| 5 | Continuous Integration and Bots | CO2 |
| 6 | Automatic Configuration | CO2 |
|  |  |  |

**SESSION PLAN**

**UNIT-II**

|  |  |  |
| --- | --- | --- |
| **Lecture No.** | **Topics to be Covered** | **CO Mapped** |
| 1 | Classes, Objects, and Methods, Declared Properties, Memory Management | CO1 |
| 2 | Automatic Reference Counting (ARC), Categories and Extensions | CO2 |
| 3 | Formal and Informal Protocols, Blocks | CO2 |
| 4 | Model View Controller (MVC), IBOutlets and IBActions, Subclassing and Delegation | CO2 |
| 5 | The View Hierarchy, Containers, Controls, Text and Web Views | CO2 |
| 6 | Navigation View and Tab Bars, Alert Views and Action Sheets, Controlling Rotation Behavior | CO2,CO3 |
| 7 | View Autosizing, Autolayout. Adding Scenes, Segues | CO2,CO3 |
| 8 | Transitions, Using in a Tab Bar Application | CO3 |

**SESSION PLAN**

**UNIT-III**

|  |  |  |
| --- | --- | --- |
| **Lecture No.** | **Topics to be Covered** | **CO Mapped** |
| 1 | Static and Dynamic Table Views | CO3 |
| 2 | Delegates and Data Sources, Table View Styles, Custom Cells | CO3 |
| 3 | Adding the Root View Controller, Creating the Navigation Controller | CO3 |
| 4 | Controlling the Stack Navigation Programmatically Designing the UI, Coding for the Data Picker | CO3, CO4 |
| 5 | Hiding the Keyboard, Memory Management NSFileManager, NSFileHandle, and NSData | CO3, CO4 |
| 6 | Hiding the Keyboard, Memory Management NSFileManager, NSFileHandle, and NSData | CO3 |
| 7 | Working with Files, Reading and Writing from a File | CO3 |
| 8 | iCloud, Key-Value Data, Archiving | CO3 |

**SESSION PLAN**

**UNIT-IV**

|  |  |  |
| --- | --- | --- |
| **Lecture No.** | **Topics to be Covered** | **CO Mapped** |
| 1 | SQLite Integration, Using SQLite Directly, Overview of Core Data | CO4 |
| 2 | Managed Objects, Persistent Store Coordinator, Entity Descriptions | CO4 |
| 3 | Retrieving and Modifying Data. The Responder Chain, Touch Notification Methods,  Enabling Multitouch on the View | CO4, CO5 |
| 4 | Gesture Motions, Gesture Recognizers Core Graphics and Quartz 2D,  Lines, Paths, and Shapes, Animation | CO4, CO5 |
| 5 | Core Animation Blocks, Animation Curves, Transformations | CO4 |
| 6 | Application States, Background Execution, Background App Refresh in iOS 7,  State Restoration Local Notifications, Push Notifications Location Accuracy | CO4, CO5 |
| 7 | Obtaining Location Information, Calculating Distances,  MapKit Framework and MKMapView. Grand Central Dispatch (GCD), | CO4 |
| 8 | Serial and Concurrent Queues, Main Dispatch Queue, Completion Blocks,  Operation Queues | CO5 |

**SESSION PLAN**

**UNIT-V**

|  |  |  |
| --- | --- | --- |
| **Lecture No.** | **Topics to be Covered** | **CO Mapped** |
| 1 | Reachability, Synchronous Downloads, Asynchronous Downloads | CO4 |
| 2 | Handling Timeouts, Sending HTTP GET and POST Requests, Parsing JSON, Parsing XML | CO4, CO5 |
| 3 | Air Drop iPhone vs. iPad, Universal Apps, Multiple SDK Support,  Detecting Device Capabilities, Supporting iOS 6 and iOS 7 | CO4, CO5 |
| 4 | Resources, Language and Region, NSLocale, Text,  Dates, Numbers Measuring Performance | CO4, CO5 |
| 5 | Instruments, Responsiveness | CO3, CO5 |
| 6 | Memory Usage, Spikes, and Leaks, Networking and Power | CO5 |
|  |  |  |