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Description generated with very high confidenceCOURSE PLAN**

|  |  |  |  |
| --- | --- | --- | --- |
| **Department :** | **Information and Communication Technology** | | |
| **Course Name & code :** | **Object Oriented Programming** | | **ICT 2155** |
| **Semester & branch :** | **III** | **Computer and Communication Engineering** | |
| **Name of the faculty :** | **Dr. Manjula Sheno K** | | |
| |  |  |  |  | | --- | --- | --- | --- | | **L** | **T** | **P** | **C** | | **3** | **1** | **0** | **4** |   **No of contact hours/week:** | | | |

**COURSE OUTCOMES (COS)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **At the end of this course, the student should be able to:** | | |  | | --- | | **No. of**  **Contact**  **Hours** | | |  | | --- | | **Marks** | | **Program Outcomes (POs)** | **PSO** | **BL (Recommended)** |
| **CO1** | Develop simple applications using JAVA primitives (data types, operators, arrays, variables) | 10 | 20 | 1,2,3,4,5,6,7,8,9,11 | 1,2,3 | 3 |
| **CO2** | Design object oriented concepts using JAVA | 12 | 24 | 1,2,3,4,5,6,7,8,9,11 | 1,2,3 | 3,4 |
| **CO3** | Use inbuilt library packages of JAVA | 13 | 30 | 1,2,3,4,5,6,7,8,9,11 | 1,2,3 | 3,4 |
| **CO4** | Develop java applications using object oriented concepts | 8 | 16 | 1,2,3,4,5,6,7,8,9,11 | 1,2,3 | 3,4 |
| **CO5** | Write simple concurrent programs using threads | 5 | 10 | 1,2,3,4,5,6,7,8,9,11 | 1,2,3 | 3,4 |
|  | **Total** |  |  |  |  |  |

\*\*\* **COURSE LEARNING OUTCOMES (CLOS)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **At the end of this course, the student should be able to:** | | |  | | --- | | **No. of Contact Hours** | | |  | | --- | | **Marks** | | **Program Outcomes(POs)** | **Learning Outcomes (LOs)** | **BL (Recommended)** |
| **CLO1** | Develop simple applications using JAVA primitives (data types, operators, arrays, variables) | 10 | 20 | 1,2,3,4,5,6,7,8,9,11 | 1 | 3 |
| **CLO2** | Design object oriented concepts using JAVA | 12 | 24 | 1,2,3,4,5,6,7,8,9,11 | 2,3 | 3,4 |
| **CLO3** | Use inbuilt library packages of JAVA | 13 | 30 | 1,2,3,4,5,6,7,8,9,11 | 3,4,5,6 | 3,4 |
| **CLO4** | Develop java applications using object oriented concepts | 8 | 16 | 1,2,3,4,5,6,7,8,9,11 | 1,2,3,4,5,6 | 3,4 |
| **CLO5** | Write simple concurrent programs using threads | 5 | 10 | 1,2,3,4,5,6,7,8,9,11 | 5,6 | 3,4 |
|  | **Total** |  |  |  |  |  |

**\*\*\* Applicable to programs applied for IET accreditation only.**

**Assessment Plan**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***IN – SEMESTER ASSESSMENTS*** | | | | | | | | | |
| **S. No.** | **Assessment Mode** | | **Assessment Method** | **Time Duration** | **Marks** | **Weightage** | **Typology of Questions (Recommended)** | **Schedule** | **\*\*Topics Covered** |
| 1 | **MISAC** | **1** | **In-semester Exam 1** | **60 Mins** | **15** | **Objective:** 5M  10 MCQs × ½ = 5 marks  **Descriptive:** 10 M  (2 Questions of 2 marks +2 Questions of 3 marks) | Bloom’s taxonomy (B) level of the question should be L3 and above. | September 24 – 30, 2022 |  |
| **2** | **Quiz** | **15 Mins** | **5** | 10 MCQs × ½ = 5 | Bloom’s taxonomy (BT) level of the question should be L3 and above. | October 10-14 2022 |  |
| **3** | **Surprise Assignment** | **20 Mins** | **5** | 1 Question × 5M = 5 marks  (Minimum 5 questions to be given) | Bloom’s taxonomy (BT) level of the question should be L3 and above. | October 3-8 |  |
| **4** | **In-semester Exam 2** | **60 Mins** | **15** | **Objective:** 5M  10 MCQs × ½ = 5 marks  **Descriptive:** 10 M  (2 Questions of 2 marks +2 Questions of 3 marks) | Bloom’s taxonomy (BT) level of the question should be L3 and above. | November 9-15  2022 |  |
|  |  |  |  |  |  |  |  |  |  |
| 2 | **FISAC** | **1** | **\*\*\*** | **\*\*\*** | **5** | **\*\*\*** | Bloom’s taxonomy (BT) level of the question should be L3 and above. | October 26-29 2022 |  |
| **2** | **\*\*\*** | **\*\*\*** | **5** | **\*\*\*** | Bloom’s taxonomy (BT) level of the question should be L3 and above. | November 21-26  2022 |  |
| ***END – SEMESTER ASSESSMENT*** | | | | | | | | | |
| 1 | **Regular/Make–Up Exam** | | | 180 Mins | 50 | Answer all 5 full questions of 10 marks each. Each question can have 3 parts of 2/3/4/5/6 marks. | Bloom’s taxonomy (BT) level of the question should be L3 and above. | 17th week of the semester | Comprehensive examination covering full syllabus. |

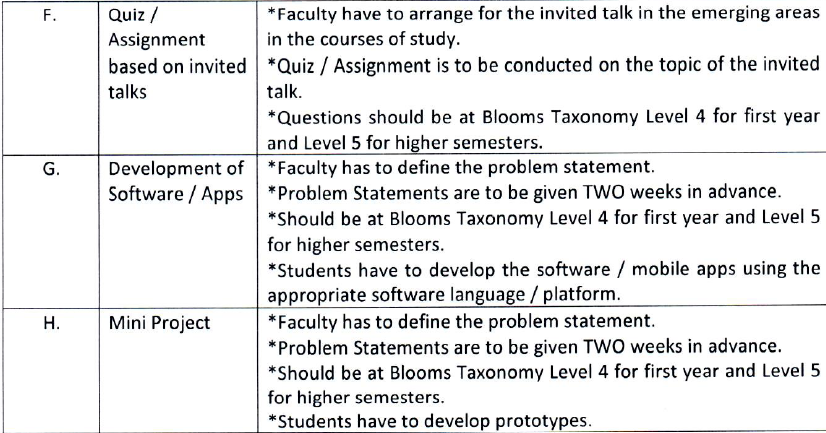
***\*\* Individual faculty will be entering the topics***

***\*\*\* Individual faculty must identify the assessment method from table 3 and fill in the details.***

***NOTE: Information provided in the table is as per the In-semester assessment plan and schedule of V and VII semester B. Tech provided from Academic Section.***

**Flexible In-semester Assessment Component (FISAC):**

1. The FISAC 1 & FISAC 2 may be any of the types given in Table 1. However, tne two components should be of different type.
2. The type of assessment should be informed to the students well in advance.
3. Syllabus for the last component of In-semester Assessment (ISAC) i.e. FISAC 2 should cover the topics mentioned for self-study if any / topics which are not covered till MISAC 4: In-Semester Exam 2.

**Table 1: Flexible In-semester Assessment Component (FISAC)**

**LESSON PLAN**

|  |  |  |  |
| --- | --- | --- | --- |
| **L No** | **TOPICS** | |  | | --- | | **Course Outcome Addressed** | |
| 1 | Two paradigms, OOP ,OOP principles | CO2 |
| 2 | Java buzzwords such as security, portability etc, the byte code, An overview of Java | CO2 |
| 3 | Simple types, integers, floating point types, characters, Booleans. Variables - declaring variable, dynamic initialization, the scope and life time of variables. | CO1 |
| 4 | Simple java programs based on concepts discussed in lecture1 to lecture 3(T) | CO1 |
| 5 | Type conversion and casting, arrays-one dimensional arrays and multi-dimensional arrays | CO1 |
| 6 | Operators and control statements : Arithmetic operators, bitwise operators | CO1 |
| 7 | Relational operators, Logical operators, ternary operators, assignment operators, Operator precedence, Control statements - if, switch, break, continue | CO1 |
| 8 | Simple java programs based on concepts discussed in lecture 4 to lecture 6 | CO1 |
| 9 | While, do-while, for nested loops with examples | CO1 |
| 10 | Class fundamentals, declaring objects, assigning object references variables. | CO4 |
| 11 | Introducing methods, constructors, Overloading method, Using objects as parameters, argument passing, returning objects | CO2 |
| 12 | Simple java programs based on concepts discussed in lecture 7 to lecture 9 | CO2 |
| 13 | Using objects argument passing, returning objects, Recursion, Use of static and final key word | CO2 |
| 14 | Nested and inner class, Using command line arguments, Inheritance basics. | CO2 |
| 15 | Inheritance - using super, Wrapper classes, Creating multilevel, hierarchy ,Constructors call | CO2 |
| 16 | Simple java programs based on concepts discussed in lecture 10 to lecture 12 | CO2 |
| 17 | Method overriding, Dynamic method dispatch, using abstract classes, Using final inheritance | CO2 |
| 18 | Packages, defining a package, using of CLASSPATH, Package example. | CO4 |
| 19 | Access protection, Importing packages, Interfaces - defining an interface, implementing interfaces | CO2 |
| 20 | Simple java programs based on concepts discussed in lecture 13 to lecture 15 | CO2 |
| 21 | Applying interfaces, Variables in interface | CO2 |
| 22 | Extending interfaces. | CO4 |
| 23 | The list interface, Array list class, Vector | CO3 |
| 24 | Simple java programs based on concepts discussed in lecture 16 to lecture 18 | CO3 |
| 25 | String handling : String constructors, string length | CO1 |
| 26 | Special operations, character extraction. | CO4 |
| 27 | String comparison, searching strings,modifying a string , string buffer | CO1 |
| 28 | Simple java programs based on concepts discussed in lecture 19 to lecture 21 | CO1 |
| 29 | Exception **handling : Fundamentals, Exception types, uncaught exception** | CO3 |
| 30 | Using try and catch, multiple catch clauses | CO3 |
| 31 | Nested try statements, Throw, throws-examples | CO3 |
| 32 | Simple java programs based on concepts discussed in lecture 22 to lecture 24 | CO4 |
| 33 | Java's built in exception classes | CO3 |
| 34 | Creating exception subclasses, using exception-examples | CO4 |
| 35 | Multi threaded Programming : The Java thread model, thread priorities, Thread class and runnable interface, The main thread, creating a thread | CO5 |
| 36 | Simple java programs based on concepts discussed in lecture 25 to lecture 27 | CO4 |
| 37 | Creating a multiple threads, Using is Alive() and join() Synchronization | CO5 |
| 38 | Suspending, Resuming and Stopping threads | CO5 |
| 39 | Inter thread communication. | CO5 |
| 40 | Simple java programs based on concepts discussed in lecture 28 to lecture30 | CO5 |
| 41 | Input/Output : Java I/O classes and interfaces, File - directories ,Using filename filter, The stream classes, the byte streams | CO3 |
| 42 | Input stream, output stream, file input stream, file output stream, BufferedReader, BufferedWriter | CO3 |
| 43 | Random access files, The character streams - Reader, Writer, FileReader, FileWriter | CO3 |
| 44 | Simple java programs based on concepts discussed in lecture 31 to lecture 33 | CO3 |
| 45 | Serialization, serialiable , Object Output, Object Output Stream, Object Input, Object Input Stream. | CO4 |
| 46 | Swing fundamentals, writing swing application, swing library | CO3 |
| 47 | Layouts and controls, introduction to event handling | CO3 |
| 48 | Simple java programs based on concepts discussed in lecture 34 to lecture 36 | CO3 |

**Course Articulation Matrix**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO 9** | **PO 10** | **PO 11** | **PO 12** | **PSO1** | **PSO2** | **PSO3** |
| **CO1** | 3 | 3 | 3 | 2 | 3 | 3 | 1 | 1 | 2 | 0 | 1 | 0 | 3 | 3 | 1 |
| **CO2** | 3 | 3 | 3 | 2 | 3 | 3 | 1 | 1 | 2 | 0 | 1 | 0 | 3 | 3 | 2 |
| **CO3** | 3 | 3 | 3 | 1 | 3 | 3 | 1 | 1 | 2 | 0 | 1 | 0 | 3 | 3 | 3 |
| **CO4** | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 2 | 0 | 1 | 0 | 3 | 3 | 3 |
| **CO5** | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 2 | 0 | 1 | 0 | 3 | 3 | 3 |
| **Articulation Level** | **3** | **3** | **3** | **2.2** | **3** | **3** | **1** | **1** | **2** | **0** | **1** | **0** | **3** | **3** | **2.4** |

**FACULTY MEMBERS TEACHING THE COURSE (IF MULTIPLE SECTIONS EXIST):**

|  |  |  |  |
| --- | --- | --- | --- |
| **FACULTY** | **SECTION** | **FACULTY** | **SECTION** |
| **Anuradha Rao** | **A** |  |  |
| **Dr. Chandrakala C.B.** | **B** |  |  |
| **Dr. Raghavendra Achar** | **C** |  |  |

**References:**

**Submitted by:**

**(Signature of the faculty)**

**Date:**

**Approved by:**

**(Signature of HOD)**