**COURSE PLAN**

**Course Learning Objective:**

To develop application in Java programming language for any business, scientific and engineering domain on each of the following outcomes as a separate exercise or a single system

**Course outcomes:** At the end of this laboratory course, students will be able to:

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| **COs** | **Description of course outcomes** | **Mapping to Program Outcomes at different levels** | | |
| **Substantial**  **(3)** | **Moderate (2)** | **Low**  **(1)** |
| **CO-1** | **Write** a simple Java program using core language features, programming standards and quality expectations for a given problem specification. | 2,3 | 14,15 | 1 |
| **CO-2** | **Use** event modeling architecture to write Java programs for a given problem specification. | 3,4 | 2 | 1,15 |
| **CO-3** | **Use** Exceptions to write Java programs for a given problem specification. | 3,4 | 2 | 1,15 |
| **CO-4** | **Use** thread architecture to write Java programs for a given problem specification. | 3,4 | 2 | 1,15 |
| **CO-5** | **Use** stream classes to write Java programs for a given problem specification. | 3,4 | 2 | 1,15 |
| **CO-6** | **Build** appropriate graphical user interface and applications for a given problem specification. | 3,14 | 2,5 | 1,4 |
| **CO-7** | **Use** appropriate driver classes to connect back end databases and perform database operations required as per problem specification. | - | 5,14 | 13 |
| **CO-8** | **Write** Java programs to explore networking capabilities and **build** applications. | 3,14 | 2,15 | 1,4 |
| **CO-9** | **Write** Java programs to explore language capabilities for building web applications. | 3,14 | 2,15 | 1,4 |
| **CO-10** | **Write** Test-cases/Scripts to **verify** the correctness of the program. | 15 | - | 1,2 |

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| **POs** | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| **COs** | 1 | 2 | 3 | 2.1 | 2 | - | - | - | - | - | - | - | - | 2.6 | 1.6 | - |

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| **Course Teacher:**  **Indira R. Umarji**  **(Both A and B divisions)** | **Course Code: 15UCSC601** | **4-0-0-0 : 4** | **52 Hrs** | **6th Semester,**  **A & B div** | **16-1-2018**  **to**  **12-05-2018** |

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| **Activity/ Lesson** | **W**  **1** | **W**  **2** | **W**  **3** | **W**  **4** | **W**  **5** | **W**  **6** | **W**  **7** | **W**  **8** | **W**  **9** | **W**  **10** | **W**  **11** | **W**  **12** | **W**  **13** | **W**  **14** | **W**  **15** | **W**  **16** | **W**  **17** | **W**  **18** | **W19–W22** |
| **UNIT-I Core Java**  **CH-1: Basic OOP + Streams** | **3** | **-** | **-** | **-** | **-** | **IA 1 Week** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **Revision** | **-** | **Lab Exam & Semester End Exams Week** |
| **UNIT-I**  **CH-1:Streams** | **-** | **3** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |
| **UNIT-I**  **CH-3: Threads & Exceptions** | **-** | **-** | **4** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |
| **UNIT-I**  **CH-1,4:Streams, Applets** | **-** | **-** | **-** | **4** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |
| **UNIT-I**  **CH-6:Generics & Utility classes** | **-** | **-** | **-** | **-** | **4** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |
| **UNIT-II**  **CH-1:DataBase Programming** | **-** | **-** | **-** | **-** | **-** | **-** | **4** | **2** | **-** | **-** | **-** | **IA 2 Week** | **-** | **-** | **-** | **-** | **-** |
| **UNIT-II**  **CH-2:Java Networking** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **2** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |
| **UNIT-II**  **CH-3:RMI** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **4** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |
| **UNIT-II**  **CH-3,4:RMI + Ajax** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **2** | **-** | **-** | **-** | **-** | **-** | **-** |
| **UNIT-II**  **CH-4,5:Ajax+ JavaScript** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **1** | **1** | **-** | **-** | **-** | **-** | **-** | **IA 3 Week** |
| **UNIT-II**  **CH-5: JavaScript** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **2** | - | **-** | **-** | **-** | **-** |
| **UNIT-II**  **CH-4,5:Servlets** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **4** | **3** | **2** | **-** |
| **UNIT-II**  **CH-4,5:JSP** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **2** | **3** |

**Note:**

1. Number in the **‘cell’** indicates the number of hours/class used in that week to cover that chapter; **‘W’** indicates week number of the semester.
2. Final grade (absolute) is calculated based on Semester End Examination (SEE) marks (100 marks reduced to 50) + Continuous Internal Evaluation (CIE) marks (50).
3. CIE marks (50) is based on sum of the best two Internal Assessment (IAs) (40 Marks) plus Course Teacher’s Assessment (CTA) marks (10 marks).
4. CTA (10 Marks): 4 Assignments carries 2 marks each + 2 marks for Presentation / Attendance can be taken in count.
5. 85 % attendance is mandatory.

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| **IA** | **Topics** | **No. Of Hours** |
| IA-I | Core Java Basics CH: Exceptions, Threads, Event Handling, Applets, Streams, Generics, Collections Framework, Utility Classes | 20 Hrs |
| IA-II | Advanced Java Part-I & II: Database Programming, Network Programming, RMI and Introduction to Ajax | 18 Hrs |
| IA-III | Advanced Java Part-II: Ajax Continued part, JavaScript, Servlets and JSP | 14 Hrs |

**Portion for Internal Assessments (IA):**

**Action Plan based on observation taken from previous Attainment of Outcomes:**

Programming assignment as part of the CTA and Course assignments are planned to enhance the following abilities:

1. Analysis of a given problem scenario.
2. Implementation / Programming capabilities based on fundamental object oriented concepts.
3. An assignment focuses on Basic & advanced Java to help students in campus placement.

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| **Activity** | **Date of conduction** | **Description** | **Mode of Conduction** | **Marks** |
| **1** | **24th Jan to 31st Jan, 2018** | **Assignment I: Comparative study of Java and Python; Java and C++** | **Written assignment** | **2 Marks** |
| **2** | **19th Mar to 31st Mar, 2018** | **Presentation:**  **JavaScript / Core Java** | **PPT presentation / Video learning Material creation** | **2 Marks** |
| **3** | **5th Mar to 10th Mar, 2018** | **Assignment-II :**  **Advanced features of Java 8 (Advantages)**  **Implementation of any of the feature showing its advantage is more preferred.** | **Self learning** | **3 Marks** |
| **4** | **9th April to 16th April, 2018** | **Assignment-III:**  **Development of Web applications using JavaScript + Ajax OR Ajax + JSP/Servlets**  **Define an application well in advance.** | **Self learning** | **3 Marks** |

**Learning Resources:**

1. Herbert Schildt - Java - The Complete Reference 7/E, Tata McGraw Hill, 2007.
2. Stephanie Bodoff et al- The J2EE Tutorial, 2nd edition, Pearson Education, 2004.
3. Professional AJAX – Nicholas C Zakas et al, Wrox, 2007.

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