**K L Deemed to be University**
**Department of Artificial Intelligence and Data Science -- KLVZA**
**Course Handout**
**2022-2023, Even Sem**

| | |
|---|---|
| Course Title | :Enterprise Software Development |
| Course Code | :21AD2204 |
| L-T-P-S Structure | : 2-0-2-2 |
| Pre-requisite | : |
| Credits | : 3.5 |
| Course Coordinator | :NICHENAMETLA RAJESH |
| Team of Instructors | : |
| Teaching Associates | : |

**Syllabus :**Course Handout and Introduction to ESD Introduction to HTML and Forms Working with CSS, embedding JavaSript into HTML J2EE Multi-Tire Architecture The brief overview of JDBC process JDBC/ODBC connection pool,Statement objects ResultSet, Transaction Process, MetaData. Simple Java Servlet, Anatomy of Java Servlet Reading data from client HTTP request headers, HTTP response Header Cookies, Session Tracking Introduction to JSP, JSP Tags Request strings User sessions, Cookies Introduction to object relational mapping in hibernate Hibernate architecture Hibernate query language Hibernate criteria query language A complete Hibernate application Inheritance mapping. Introduction to springs, IOC container Dependency injection Constructor injection with dependent object Collection and map Setter injection with dependent object, auto wiring, Spring with hibernate Spring MVC

**Text Books :**1. J2EE: The complete reference by James Keogh, publisher: McGraw-hill Osborne Media,1st Edition, 2002. 2. Spring In Practice by Willie Wheeler with Joshua White, publisher: Manning, shelterIsland 3. Beginning Hibernate for Hibernate 5 by Joseph B.Ottinger, Jeff Liwood, Dave Minter, publisher:Apress, 4th Edition

**Reference Books :**1. An Introduction to Network Programming with Java by Jan Graba, Publisher:Springer, 2nd edition, 2006. 2. Beginning Java EE 6 platform with Glass Fish 3 From Novice toProfessional by Antonio Goncalves, 2009, Apress Publisher

**Web Links :**https://www.linkedin.com/learning-login/share?account=89447330&forceAccount=true&redirect=https%3A%2F%2Fwww%2Elinkedin%2Ecom%2Flearning%2Fpaths%2Fkl-university-enterprise-software-development-21ad2204%3FshareId=d713c373-7a23-4996-b226-1b3770f72da7

**Course Rationale :**TO DEVELOP WEB BASED APPLICATIONS, ENSURE STUDENTS KNOW, UNDERSTAND, AND APPLY CLIENT SIDE AND SERVER SIDE TECHNOLOGIES.

**Course Objectives :**The majority of the web applications utilizing various kinds of client side and server side advancements. Consequently it is fundamental for each software engineering related understudy should go through these innovations. This course Endeavor Programming Improvement is to cause the understudy to comprehend and apply the advances like html, xml, jdbc, servlet, jsp, and Hibernate, Springs. Every one of the applicable advances will be shown utilizing devices like eclipse, Tomcat. The understudies will likewise foster a web application in the Lab and skill part.

**COURSE OUTCOMES (COs):**

| CO NO | Course Outcome (CO) | PO/PSO | Blooms Taxonomy Level (BTL) |
|---|---|---|---|
| CO1 | Understand the basic concepts of HTML. Apply JDBC API and callable statements to build Enterprise Java applications. | PO1,PSO1 | 2 |
| CO2 | Implement enterprise application using servlets and JSP | PSO1,PO3 | 3 |
| CO3 | Implement enterprise application using Hibernate framework | PO3,PSO1 | 3 |
| CO4 | Implement enterprise application using Spring framework | PO3 | 3 |
| CO5 | Develop the programs for enterprise application development | PO1,PO3 | 3 |
| CO6 | Create sample projects using enterprise software development tools | PO3,PSO1 | 4 |

**COURSE OUTCOME INDICATORS (COIs)::**

| Outcome No. | Highest BTL | COI-1 | COI-2 | COI-3 | COI-4 |
|---|---|---|---|---|---|
| CO1 | 2 | **Btl-2** Remember the basic | **Btl-2** Understand the database | | |

| | | | | | |
|---|---|---|---|---|---|
| | | concepts like HTML, CSS to develop front end | design required to develop Enterprise application | | |
| CO2 | 3 | **Btl-1** Remember the basics of servlets and JSP | **Btl-2** Understand the procedure to apply Servlets and JSP to Enterprise application | **Btl-3** Apply the concepts likeservlets and JSP indevelopment process ofenterprise applications | |
| CO3 | 3 | **Btl-1** Remember the basic use of Hibernates | **Btl-2** Understand the process of Hibernates | **Btl-3** Apply the Hibernates to develop enterprise application | |
| CO4 | 3 | **Btl-1** Remember the basic concept of Spring, springMVC | **Btl-2** Understand the procedure to deploy springs on enterprise applications | **Btl-3** Apply spring, spring MVC on enterprise application | |
| CO5 | 3 | | | **Btl-3** Apply the knowledge of HTML, JDBC,Hibernates and springs to develop web based application | |
| CO6 | 4 | | | | **Btl-4** Analyze all enterprise software development tools to Create web based applications |

**PROGRAM OUTCOMES & PROGRAM SPECIFIC OUTCOMES (POs/PSOs)**

| Po No. | Program Outcome |
|---|---|
| PO1 | Engineering Knowledge:Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems. |
| 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 analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences |
| PO2 | Problem Analysis: Identify, formulate, review research literature, and analyse 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 |
| 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 for complex problems that cannot be solved by straightforward application of knowledge, theories and techniques applicable to the engineering discipline. |
| 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 for complex problems that cannot be solved by straightforward application of knowledge, theories and techniques applicable to the engineering discipline. |
| PO5 | Modern Tool Usage:Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations. |
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| 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. |
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| | |
|---|---|
| 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 |
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| PO8 | Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice |
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| PO9 | Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings. |
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| 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 |
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| 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. |
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| PO12 | Life-long Learning: Recognize the need for, and have the preparation and ability to engage in independent and lifelong learning in the broadest context of technological change. |
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| PSO1 | An ability to design and develop Artificial Intelligence technology into innovative products for solving real world problems |
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| PSO2 | An ability to design and develop Data Science methods for analyzing massive datasets to extract insights by applying AI as a tool. |
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**Lecture Course DELIVERY Plan:**

| Sess.No. | CO | COI | Topic | Book No[CH No][Page No] | Teaching-Learning Methods | EvaluationComponents |
|---|---|---|---|---|---|---|
| 1 | CO1 | COI-1 | Introduction to ESD | 1 | Chalk,LTC,PPT,Talk | ALM,End Semester Exam,Hackathon,Home Assignment,Lab Weekly exercise,SEM-EXAM1 |
| 2 | CO1 | COI-1 | Introduction to HTML and Forms | 1 | Chalk,LTC,PPT,Talk | ALM,End Semester Exam,Hackathon,Home Assignment,Lab Weekly exercise,SEM-EXAM1 |
| 3 | CO1 | COI-1 | Working with CSS, embedding JavaSript into HTML | 1 | Chalk,LTC,PPT,Talk | ALM,End Semester Exam,Hackathon,Home Assignment,Lab Weekly exercise,SEM-EXAM1 |
| 4 | CO1 | COI-2 | J2EE Multi-Tire Architecture | 1 | Chalk,LTC,PPT,Talk | ALM,End Semester Exam,Hackathon,Home Assignment,Lab Weekly exercise,SEM-EXAM1 |

| Sess.No. | CO | COI | Topic | Book No[CH No][Page No] | Teaching-Learning Methods | EvaluationComponents |
|---|---|---|---|---|---|---|
| 5 | CO1 | COI-2 | The brief overview of JDBC process | 1 | Chalk,LTC,PPT,Talk | ALM,End Semester Exam,Hackathon,Home Assignment,Lab Weekly exercise,SEM-EXAM1 |
| 6 | CO1 | COI-2 | JDBC/ODBC connection pool,Statement objects | 1 | Chalk,LTC,PPT,Talk | ALM,End Semester Exam,Hackathon,Home Assignment,Lab Weekly exercise,SEM-EXAM1 |
| 7 | CO1 | COI-2 | ResultSet, Transaction Process, MetaData. | 1 | Chalk,LTC,PPT,Talk | ALM,End Semester Exam,Hackathon,Home Assignment,Lab Weekly exercise,SEM-EXAM1 |
| 8 | CO2 | COI-1 | Simple Java Servlet, Anatomy of Java Servlet | 1 | Chalk,LTC,PPT,Talk | ALM,End Semester Exam,Hackathon,Home Assignment,Lab Weekly exercise,SEM-EXAM1 |
| 9 | CO2 | COI-1 | Reading data from client | 1 | Chalk,LTC,PPT,Talk | ALM,End Semester Exam,Hackathon,Home Assignment,Lab Weekly exercise,SEM-EXAM1 |
| 10 | CO2 | COI-2 | HTTP request headers, HTTP response Header | 1 | Chalk,LTC,PPT,Talk | ALM,End Semester Exam,Hackathon,Home Assignment,Lab Weekly exercise,SEM-EXAM1 |
| 11 | CO2 | COI-2 | Cookies, Session Tracking | 1 | Chalk,LTC,PPT,Talk | ALM,End Semester Exam,Hackathon,Home Assignment,Lab Weekly exercise,SEM-EXAM1 |
| 12 | CO2 | COI-3 | Introduction to JSP, JSP Tags | 1 | Chalk,LTC,PPT,Talk | ALM,End Semester Exam,Hackathon,Home Assignment,Lab Weekly exercise,SEM-EXAM1 |
| 13 | CO2 | COI-3 | Request strings | 1 | Chalk,LTC,PPT,Talk | ALM,End Semester Exam,Hackathon,Home Assignment,Lab Weekly exercise,SEM-EXAM1 |
| 14 | CO2 | COI-3 | User sessions, Cookies | 1 | Chalk,LTC,PPT,Talk | ALM,End Semester Exam,Hackathon,Home Assignment,Lab Weekly exercise,SEM-EXAM1 |
| 15 | CO3 | COI-1 | Introduction to object relational mapping in hibernate | 3 | Chalk,LTC,PPT,Talk | ALM,End Semester Exam,Hackathon,Home Assignment,Lab Weekly exercise,SEM-EXAM2 |
| 16 | CO3 | COI-1 | Hibernate architecture | 3 | Chalk,LTC,PPT,Talk | ALM,End Semester Exam,Hackathon,Home Assignment,Lab Weekly exercise,SEM-EXAM2 |

| Sess.No. | CO | COI | Topic | Book No[CH No][Page No] | Teaching-Learning Methods | EvaluationComponents |
|---|---|---|---|---|---|---|
| 17 | CO3 | COI-2 | Hibernate query language | 3 | Chalk,LTC,PPT,Talk | ALM,End Semester Exam,Hackathon,Home Assignment,Lab Weekly exercise,SEM-EXAM2 |
| 18 | CO3 | COI-2 | Hibernate criteria query language | 3 | Chalk,LTC,PPT,Talk | ALM,End Semester Exam,Hackathon,Home Assignment,Lab Weekly exercise,SEM-EXAM2 |
| 19 | CO3 | COI-3 | A complete Hibernate application | 3 | Chalk,LTC,PPT,Talk | ALM,End Semester Exam,Hackathon,Home Assignment,Lab Weekly exercise,SEM-EXAM2 |
| 20 | CO3 | COI-3 | Inheritance mapping. | 3 | Chalk,LTC,PPT,Talk | ALM,End Semester Exam,Hackathon,Home Assignment,Lab Weekly exercise,SEM-EXAM2 |
| 21 | CO4 | COI-1 | Introduction to springs, IOC container | 2 | Chalk,LTC,PPT,Talk | ALM,End Semester Exam,Hackathon,Home Assignment,Lab Weekly exercise,SEM-EXAM2 |
| 22 | CO4 | COI-1 | Dependency injection | 2 | Chalk,LTC,PPT,Talk | ALM,End Semester Exam,Hackathon,Home Assignment,Lab Weekly exercise,SEM-EXAM2 |
| 23 | CO4 | COI-2 | Constructor injection with dependent object | 2 | Chalk,LTC,PPT,Talk | ALM,End Semester Exam,Hackathon,Home Assignment,Lab Weekly exercise,SEM-EXAM2 |
| 24 | CO4 | COI-2 | Collection and map | 2 | Chalk,LTC,PPT,Talk | ALM,End Semester Exam,Hackathon,Home Assignment,Lab Weekly exercise,SEM-EXAM2 |
| 25 | CO4 | COI-2 | Setter injection with dependent object, auto wiring, | 2 | Chalk,LTC,PPT,Talk | ALM,End Semester Exam,Hackathon,Home Assignment,Lab Weekly exercise,SEM-EXAM2 |
| 26 | CO4 | COI-3 | Spring with hibernate | 2 | Chalk,LTC,PPT,Talk | ALM,End Semester Exam,Hackathon,Home Assignment,Lab Weekly exercise,SEM-EXAM2 |
| 27 | CO4 | COI-3 | Spring MVC | 2 | Chalk,LTC,PPT,Talk | ALM,End Semester Exam,Hackathon,Home Assignment,Lab Weekly exercise,SEM-EXAM2 |

**Lecture Session wise Teaching – Learning Plan**

**SESSION NUMBER** : 1

**Session Outcome: 1** Introduction to ESD

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 5 | Attendance | 1 | Talk | --- NOT APPLICABLE --- |
| 20 | Importance of ESD | 2 | Talk | --- NOT APPLICABLE --- |
| 20 | Introduction to ESD | 2 | PPT | --- NOT APPLICABLE --- |
| 5 | summary | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 2

**Session Outcome: 1** Introduction to HTML and Forms

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 5 | Attendance | 1 | PPT | --- NOT APPLICABLE --- |
| 20 | Introduction to HTML | 2 | PPT | --- NOT APPLICABLE --- |
| 20 | Introduction Forms | 2 | PPT | --- NOT APPLICABLE --- |
| 5 | summary | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 3

**Session Outcome: 1** Working with CSS, embedding JavaSript into HTML

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 5 | Attendance | 1 | Talk | --- NOT APPLICABLE --- |
| 20 | Working with CSS | 2 | PPT | --- NOT APPLICABLE --- |
| 20 | embedding Java Sript into HTML | 2 | PPT | --- NOT APPLICABLE --- |
| 5 | summary | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 4

**Session Outcome: 1** J2EE Multi-Tire Architecture

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| 5 | Attendance | 1 | Talk | --- NOT APPLICABLE --- |
| 20 | J2EE Multi-Tire Architecture | 2 | Talk | Quiz/Test Questions |
| 20 | J2EE Multi-Tire Architecture continued | 2 | PPT | --- NOT APPLICABLE --- |
| 5 | summary | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 5

**Session Outcome: 1** The brief overview of JDBC process

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 5 | Attendance | 1 | Talk | --- NOT APPLICABLE --- |
| 20 | The brief overview of JDBC process | 2 | LTC | --- NOT APPLICABLE --- |
| 20 | JDBC syntaxes | 2 | LTC | --- NOT APPLICABLE --- |
| 5 | summary | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 6

**Session Outcome: 1** JDBC/ODBC connection pool,Statement objects

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 5 | Attendance | 1 | Talk | --- NOT APPLICABLE --- |
| 20 | JDBC/ODBC connection pool | 2 | PPT | --- NOT APPLICABLE --- |
| 20 | Statement objects | 2 | PPT | --- NOT APPLICABLE --- |
| 5 | summary | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 7

**Session Outcome: 1** ResultSet, Transaction Process, MetaData.

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 5 | Attendance | 1 | Talk | --- NOT APPLICABLE --- |
| 20 | ResultSet, Transaction Process | 2 | LTC | Video synthesis |

| | | | | |
|---|---|---|---|---|
| 20 | MetaData. | 2 | Talk | --- NOT APPLICABLE --- |
| 5 | summary | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 8

**Session Outcome: 2** Simple Java Servlet, Anatomy of Java Servlet

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 5 | Attendance | 1 | Talk | --- NOT APPLICABLE --- |
| 20 | Simple Java Servlet | 2 | PPT | --- NOT APPLICABLE --- |
| 20 | Anatomy of Java Servlets | 3 | PPT | --- NOT APPLICABLE --- |
| 5 | summary | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 9

**Session Outcome: 2** Reading data from client

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 5 | Attendance | 1 | Talk | --- NOT APPLICABLE --- |
| 20 | Reading data from client | 2 | PPT | --- NOT APPLICABLE --- |
| 20 | Reading data from client continued | 2 | LTC | --- NOT APPLICABLE --- |
| 5 | summary | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 10

**Session Outcome: 2** HTTP request headers, HTTP response Header

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 5 | Attendance | 1 | Talk | --- NOT APPLICABLE --- |
| 20 | HTTP request headers | 2 | PPT | Quiz/Test Questions |
| 20 | HTTP response Header | 2 | PPT | --- NOT APPLICABLE --- |

| | | | | |
|---|---|---|---|---|
| 5 | summary | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 11

**Session Outcome: 2** Cookies, Session Tracking

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 5 | Attendance | 1 | Talk | --- NOT APPLICABLE --- |
| 20 | Cookies | 2 | PPT | --- NOT APPLICABLE --- |
| 20 | Session Tracking | 2 | PPT | --- NOT APPLICABLE --- |
| 5 | summary | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 12

**Session Outcome: 2** Introduction to JSP, JSP Tags

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 5 | Attendance | 1 | Talk | --- NOT APPLICABLE --- |
| 20 | Introduction to JSP | 2 | PPT | --- NOT APPLICABLE --- |
| 20 | JSP Tags | 2 | PPT | --- NOT APPLICABLE --- |
| 5 | summary | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 13

**Session Outcome: 2** Request strings

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 5 | Attendance | 1 | Talk | --- NOT APPLICABLE --- |
| 20 | Request strings | 2 | PPT | --- NOT APPLICABLE --- |
| 20 | Working with Request strings | 2 | PPT | --- NOT APPLICABLE --- |
| 5 | summary | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 14

**Session Outcome: 2** User sessions, Cookies

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 5 | Attendance | 1 | Talk | --- NOT APPLICABLE --- |
| 20 | User sessions | 2 | PPT | --- NOT APPLICABLE --- |
| 20 | Cookies | 2 | LTC | --- NOT APPLICABLE --- |
| 5 | summary | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 15

**Session Outcome: 3** Introduction to object relational mapping in hibernate

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 5 | Attendance | 1 | Talk | --- NOT APPLICABLE --- |
| 20 | Introduction to hibernate | 2 | PPT | --- NOT APPLICABLE --- |
| 20 | Introduction to object relational mapping in hibernate | 2 | PPT | --- NOT APPLICABLE --- |
| 5 | summary | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 16

**Session Outcome: 3** Hibernate architecture

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 5 | Attendance | 1 | Talk | --- NOT APPLICABLE --- |
| 20 | Hibernate architecture | 2 | PPT | --- NOT APPLICABLE --- |
| 20 | Hibernate architecture continued | 2 | PPT | --- NOT APPLICABLE --- |
| 5 | summary | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 17

**Session Outcome: 3** Hibernate query language

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 5 | Attendance | 1 | Talk | --- NOT APPLICABLE --- |
| 20 | Hibernate query language | 2 | PPT | --- NOT APPLICABLE --- |
| 20 | Hibernate query language | 2 | PPT | --- NOT APPLICABLE --- |
| 5 | summary | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 18

**Session Outcome: 3** Hibernate criteria query language

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 5 | Attendance | 1 | Talk | --- NOT APPLICABLE --- |
| 20 | Hibernate criteria query language | 2 | Talk | Quiz/Test Questions |
| 20 | Working with Hibernate criteria query language | 3 | PPT | --- NOT APPLICABLE --- |
| 5 | summary | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 19

**Session Outcome: 3** A complete Hibernate application

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 5 | Attendance | 1 | Talk | --- NOT APPLICABLE --- |
| 20 | Procedure to develop complete Hibernate application | 2 | PPT | --- NOT APPLICABLE --- |
| 20 | A complete Hibernate application | 3 | LTC | --- NOT APPLICABLE --- |
| 5 | summary | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 20

**Session Outcome: 3** Inheritance mapping.

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| 5 | Attendance | 1 | Talk | --- NOT APPLICABLE --- |
| 20 | Inheritance mapping. | 2 | PPT | --- NOT APPLICABLE --- |
| 20 | Implement Inheritance mapping. | 3 | LTC | --- NOT APPLICABLE --- |
| 5 | summary | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 21

**Session Outcome: 4** Introduction to springs, IOC container

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 5 | Attendance | 1 | Talk | --- NOT APPLICABLE --- |
| 20 | Introduction to springs | 2 | PPT | --- NOT APPLICABLE --- |
| 20 | IOC container | 2 | PPT | --- NOT APPLICABLE --- |
| 5 | summary | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 22

**Session Outcome: 4** Dependency injection

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 5 | Attendance | 1 | Talk | --- NOT APPLICABLE --- |
| 20 | Dependency injection | 2 | PPT | --- NOT APPLICABLE --- |
| 20 | Implementing Dependency injection | 3 | LTC | --- NOT APPLICABLE --- |
| 5 | summary | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 23

**Session Outcome: 4** Constructor injection with dependent object

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 5 | Attendance | 1 | Talk | --- NOT APPLICABLE --- |

| | | | | |
|---|---|---|---|---|
| 20 | Constructor injection with dependent object | 2 | PPT | Quiz/Test Questions |
| 20 | Implementing Constructor injection with dependent object | 3 | LTC | --- NOT APPLICABLE --- |
| 5 | summary | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 24

**Session Outcome: 4** Introduction to Collection and map

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 5 | Attendance | 1 | Talk | --- NOT APPLICABLE --- |
| 20 | Introduction to Collections | 2 | PPT | --- NOT APPLICABLE --- |
| 20 | Introduction to Maps | 2 | PPT | --- NOT APPLICABLE --- |
| 5 | summary | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 25

**Session Outcome: 4** Setter injection with dependent object, auto wiring,

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 5 | Attendance | 1 | Talk | --- NOT APPLICABLE --- |
| 20 | Setter injection with dependent object | 2 | PPT | --- NOT APPLICABLE --- |
| 20 | auto wiring | 3 | PPT | --- NOT APPLICABLE --- |
| 5 | summary | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 26

**Session Outcome: 4** Spring with hibernate

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 5 | Attendance | 1 | Talk | --- NOT APPLICABLE --- |
| 20 | Spring with hibernate | 2 | PPT | --- NOT APPLICABLE --- |

| | | | | |
|---|---|---|---|---|
| 20 | Implementation of Spring with hibernate | 3 | LTC | --- NOT APPLICABLE --- |
| 5 | summary | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 27

**Session Outcome: 4** Spring MVC

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 5 | Attendance | 1 | Talk | --- NOT APPLICABLE --- |
| 20 | Spring MVC | 2 | PPT | --- NOT APPLICABLE --- |
| 20 | Implementing Spring MVC | 4 | LTC | --- NOT APPLICABLE --- |
| 5 | summary | 1 | Talk | --- NOT APPLICABLE --- |

**Tutorial Course DELIVERY Plan:** NO Delivery Plan Exists

**Tutorial Session wise Teaching – Learning Plan**

No Session Plans Exists

**Practical Course DELIVERY Plan:**

| Tutorial Session no | Topics | CO-Mapping |
|---|---|---|
| 1 | Design a HTML form with various options and apply validation on required form elements(Use Form attributes, Form elements, Input Attributes) | CO5 |
| 2 | Design AI&DS department web page by using all HTML and CSS features | CO5 |
| 3 | Write a Java Program to connect to database using JDBC | CO5 |
| 4 | Programs on JDBC | CO5 |
| 5 | Programs on Basic Servlet concept | CO5 |
| 6 | Programs on Servlets concept | CO5 |
| 7 | Programs on Java Server Pages | CO5 |
| 8 | Programs on Hibernate | CO5 |
| 9 | Programs on HQL, HCQL | CO5 |
| 10 | Programs on Inheritance Mapping | CO5 |
| 11 | Programs on Spring framework | CO5 |

| Tutorial Session no | Topics | CO-Mapping |
|---|---|---|
| 12 | Programs on Spring MVC | CO5 |

**Practical Session wise Teaching – Learning Plan**

**SESSION NUMBER** : 1

**Session Outcome: 5** Design a HTML form with various options and apply validation on required form elements(Use Form attributes, Form elements, Input Attributes)

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 10 | Attendance, Explanation of task | 1 | Talk | --- NOT APPLICABLE --- |
| 40 | Design a HTML form with various options and apply validation on required form elements(Use Form attributes, Formelements, Input Attributes) | 3 | LTC | --- NOT APPLICABLE --- |
| 40 | Design second Application using above concepts | 3 | LTC | --- NOT APPLICABLE --- |
| 10 | Conclusion and Evaluation | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 2

**Session Outcome: 5** Design AI&DS department web page by using all HTML and CSS features

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 10 | Attendance, Explanation of task | 1 | Talk | --- NOT APPLICABLE --- |
| 40 | Design AI&DS department web page by using all HTML and CSS features | 3 | PPT | --- NOT APPLICABLE --- |
| 40 | Design AI&DS department web page by using all HTML and CSS features | 3 | PPT | --- NOT APPLICABLE --- |
| 10 | Conclusion and Evaluation | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 3

**Session Outcome: 5** Write a Java Program to connect to database using JDBC

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 10 | Attendance, Review of previous topic | 1 | Talk | --- NOT APPLICABLE --- |
| 40 | Write a Java Program to connect to database using JDBC | 3 | PPT | --- NOT APPLICABLE --- |

| | | | | |
|---|---|---|---|---|
| 40 | Write a Java Program to connect to database using JDBC | 3 | PPT | --- NOT APPLICABLE --- |
| 10 | Conclusion and Evaluation | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 4

**Session Outcome: 5** Programs on JDBC

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 10 | Attendance, Explanation of task | 1 | Talk | --- NOT APPLICABLE --- |
| 40 | Programs on JDBC | 3 | PPT | --- NOT APPLICABLE --- |
| 40 | More Programs on JDBC | 3 | PPT | --- NOT APPLICABLE --- |
| 10 | Conclusion and Evaluation | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 5

**Session Outcome: 5** Programs on Basic Servlet concept

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 10 | Attendance, Explanation of task | 1 | Talk | --- NOT APPLICABLE --- |
| 40 | Programs on Basic Servlet concept | 3 | PPT | --- NOT APPLICABLE --- |
| 40 | Servlet concept implementation | 3 | PPT | --- NOT APPLICABLE --- |
| 10 | Next Lab Experiment overview | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 6

**Session Outcome: 5** Programs on Servlets concept

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 10 | Attendance, Review of previous topic | 1 | Talk | --- NOT APPLICABLE --- |
| 40 | Programs on Servlets concept | 3 | LTC | --- NOT APPLICABLE --- |
| 40 | Servlets concept on real world applications | 3 | LTC | --- NOT APPLICABLE --- |

| | | | | |
|---|---|---|---|---|
| 10 | Next Lab Experiment overview | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 7

**Session Outcome: 5** Programs on Java Server Pages

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 10 | Attendance, Explanation of task | 1 | Talk | --- NOT APPLICABLE --- |
| 40 | Programs on Java Server Pages | 3 | LTC | --- NOT APPLICABLE --- |
| 40 | Applications of Java Server Page | 3 | LTC | --- NOT APPLICABLE --- |
| 10 | Conclusion and Evaluation | 1 | LTC | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 8

**Session Outcome: 5** Programs on Hibernate

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 10 | Attendance, Explanation of task | 1 | Talk | --- NOT APPLICABLE --- |
| 40 | Procedure to implement Hibernate | 3 | LTC | --- NOT APPLICABLE --- |
| 40 | Programs on Hibernate | 3 | LTC | --- NOT APPLICABLE --- |
| 10 | Conclusion and Evaluation | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 9

**Session Outcome: 5** Programs on HQL, HCQL

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 10 | Attendance, Explanation of task | 1 | Talk | --- NOT APPLICABLE --- |
| 40 | Programs on HQL | 3 | LTC | --- NOT APPLICABLE --- |
| 40 | Programs on HCQL | 3 | LTC | --- NOT APPLICABLE --- |
| 10 | Conclusion and Evaluation | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 10

**Session Outcome: 5** Programs on Inheritance Mapping

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 10 | Attendance, Explanation of task | 1 | Talk | --- NOT APPLICABLE --- |
| 40 | Programs on Inheritance Mapping | 3 | LTC | --- NOT APPLICABLE --- |
| 40 | Programs on Inheritance Mapping continued | 3 | LTC | --- NOT APPLICABLE --- |
| 10 | Next Lab Experiment overview | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 11

**Session Outcome: 5** Programs on Spring framework

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 10 | Attendance, Explanation of task | 2 | Talk | --- NOT APPLICABLE --- |
| 40 | Introduction to Spring framework | 3 | LTC | --- NOT APPLICABLE --- |
| 40 | Programs on Spring framework | 3 | LTC | --- NOT APPLICABLE --- |
| 10 | Conclusion and Evaluation | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 12

**Session Outcome: 5** Programs on Spring MVC

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 10 | Attendance, Explanation of task | 1 | Talk | --- NOT APPLICABLE --- |
| 40 | Introdusing Spring MVC | 3 | LTC | --- NOT APPLICABLE --- |
| 40 | Programs on Spring MVC | 3 | LTC | --- NOT APPLICABLE --- |
| 10 | Conclusion and Evaluation | 1 | Talk | --- NOT APPLICABLE --- |

**Skilling Course DELIVERY Plan:**

| Skilling session no | Topics/Experiments | CO-Mapping |
|---|---|---|
| 1 | Create the User Interface of the welcome screen. Create a simple Sign-Up page. Create the login page. | CO6 |
| 2 | Perform validations of on your Login form and registration forms. | CO6 |
| 3 | Create the tables required and connect to a database to fetch data dynamically. | CO6 |
| 4 | Identify the modules for the project. | CO6 |
| 5 | Prototype demonstration for your project. | CO6 |
| 6 | Create the business logic for individual modules. | CO6 |
| 7 | Perform integration of modules in your project. | CO6 |
| 8 | Creating the test cases for your project. | CO6 |
| 9 | Integrate the screens and test them thoroughly. | CO6 |
| 10 | Prepare project documentation. | CO6 |
| 11 | Prepare poster presentation | CO6 |
| 12 | END SEM PROJECT EVALUATION | CO6 |

**Skilling Session wise Teaching – Learning Plan**

**SESSION NUMBER** : 1

**Session Outcome: 6** Create the User Interface of the welcome screen. Create a simple Sign-Up page. Create the login page.

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 10 | Attendance, Explanation of task | 1 | Talk | --- NOT APPLICABLE --- |
| 40 | Create the User Interface of the welcome screen. Create a simple Sign-Up page. Create the login page. | 3 | LTC | --- NOT APPLICABLE --- |
| 40 | Create the User Interface of the welcome screen. Create a simple Sign-Up page. Create the login page. | 3 | LTC | --- NOT APPLICABLE --- |
| 10 | Next Lab Experiment overview | 2 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 2

**Session Outcome: 6** Perform validations of on your Login form and registration forms.

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 10 | Attendance, Explanation of task | 1 | Talk | --- NOT APPLICABLE --- |

| | | | | |
|---|---|---|---|---|
| 40 | Perform validations of on your Login form and registration forms. | 3 | LTC | --- NOT APPLICABLE --- |
| 40 | Perform validations of on your Login form and registration forms. | 3 | LTC | --- NOT APPLICABLE --- |
| 10 | Conclusion and Evaluation | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 3

**Session Outcome: 6** Create the tables required and connect to a database to fetch data dynamically.

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 10 | Attendance, Explanation of task | 1 | Talk | --- NOT APPLICABLE --- |
| 40 | Create the tables required and connect to a database to fetch datadynamically. | 3 | LTC | --- NOT APPLICABLE --- |
| 40 | Create the tables required and connect to a database to fetch data dynamically. | 3 | LTC | --- NOT APPLICABLE --- |
| 10 | Conclusion and Evaluation | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 4

**Session Outcome: 6** Identify the modules for the project.

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 10 | Attendance, Explanation of task | 1 | Talk | --- NOT APPLICABLE --- |
| 40 | Identify the modules for the project. | 4 | LTC | --- NOT APPLICABLE --- |
| 40 | Identify the modules for the project. | 4 | LTC | --- NOT APPLICABLE --- |
| 10 | Conclusion and Evaluation | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 5

**Session Outcome: 6** Prototype demonstration for your project.

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 10 | Attendance, Explanation of task | 1 | Talk | --- NOT APPLICABLE --- |
| 40 | Prototype demonstration for your project. | 4 | LTC | --- NOT APPLICABLE --- |

| | | | | |
|---|---|---|---|---|
| 40 | Prototype demonstration for your project. | 4 | LTC | --- NOT APPLICABLE --- |
| 10 | Conclusion and Evaluation | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 6

**Session Outcome: 6** Create the business logic for individual modules.

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 10 | Attendance, Explanation of task | 1 | Talk | --- NOT APPLICABLE --- |
| 40 | Create the business logic for individual modules. | 4 | LTC | --- NOT APPLICABLE --- |
| 40 | Create the business logic for individual modules. | 4 | LTC | --- NOT APPLICABLE --- |
| 10 | Conclusion and Evaluation | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 7

**Session Outcome: 6** Perform integration of modules in your project.

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 10 | Attendance, Explanation of task | 1 | Talk | --- NOT APPLICABLE --- |
| 40 | Perform integration of modules in your project. | 4 | LTC | --- NOT APPLICABLE --- |
| 40 | Perform integration of modules in your project. | 4 | LTC | --- NOT APPLICABLE --- |
| 10 | Conclusion and Evaluation | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 8

**Session Outcome: 6** Creating the test cases for your project.

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 10 | Attendance, Explanation of task | 1 | Talk | --- NOT APPLICABLE --- |
| 40 | Creating the test cases for your project. | 4 | LTC | --- NOT APPLICABLE --- |
| 40 | Creating the test cases for your project. | 4 | LTC | --- NOT APPLICABLE --- |

| | | | | |
|---|---|---|---|---|
| 10 | Conclusion and Evaluation | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 9

**Session Outcome: 6** Integrate the screens and test them thoroughly.

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 10 | Attendance, Explanation of task | 1 | Talk | --- NOT APPLICABLE --- |
| 40 | Integrate the screens and test them thoroughly. | 4 | LTC | --- NOT APPLICABLE --- |
| 40 | Integrate the screens and test them thoroughly. | 4 | LTC | --- NOT APPLICABLE --- |
| 10 | Conclusion and Evaluation | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 10

**Session Outcome: 6** Prepare project documentation.

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 10 | Attendance, Explanation of task | 1 | Talk | --- NOT APPLICABLE --- |
| 40 | Prepare project documentation. | 4 | LTC | --- NOT APPLICABLE --- |
| 40 | Prepare project documentation. | 4 | LTC | --- NOT APPLICABLE --- |
| 10 | Conclusion and Evaluation | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 11

**Session Outcome: 6** Prepare poster presentation

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 10 | Attendance, Explanation of task | 1 | Talk | --- NOT APPLICABLE --- |
| 40 | Prepare poster presentation | 4 | LTC | --- NOT APPLICABLE --- |
| 40 | Prepare poster presentation | 4 | LTC | --- NOT APPLICABLE --- |
| 10 | Conclusion and Evaluation | 1 | Talk | --- NOT APPLICABLE --- |

**SESSION NUMBER** : 12

**Session Outcome: 6** END SEM PROJECT EVALUATION

| Time(min) | Topic | BTL | Teaching-Learning Methods | Active Learning Methods |
|---|---|---|---|---|
| 10 | Attendance, Explanation of task | 1 | Talk | --- NOT APPLICABLE --- |
| 40 | END SEM PROJECT EVALUATION | 4 | LTC | --- NOT APPLICABLE --- |
| 40 | END SEM PROJECT EVALUATION | 4 | LTC | --- NOT APPLICABLE --- |
| 10 | Conclusion and Evaluation | 1 | Talk | --- NOT APPLICABLE --- |

**WEEKLY HOMEWORK ASSIGNMENTS/ PROBLEM SETS/OPEN ENDEDED PROBLEM-SOLVING EXERCISES etc:**

| Week | Assignment Type | Assignment No | Topic | Details | co |
|---|---|---|---|---|---|

**COURSE TIME TABLE:**

| | Hour | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| Day | Component | | | | | | | | | |
| **Mon** | Theory | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Tutorial | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Lab | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Skilling | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Tue** | Theory | --- | --- | --- | --- | V-S3 | --- | --- | --- | --- |
| | Tutorial | --- | --- | --- | --- | -- | --- | --- | --- | --- |
| | Lab | --- | --- | --- | --- | -- | --- | --- | --- | --- |
| | Skilling | --- | --- | --- | --- | -- | --- | --- | --- | --- |
| **Wed** | Theory | --- | --- | -- | -- | --- | --- | --- | --- | --- |
| | Tutorial | --- | --- | -- | -- | --- | --- | --- | --- | --- |
| | Lab | --- | --- | -- | -- | --- | --- | --- | --- | --- |
| | Skilling | --- | --- | V-S1,V-S1,V-S1,V-S2,V-S2,V-S2 | V-S1,V-S1,V-S1,V-S2,V-S2,V-S2 | --- | --- | --- | --- | --- |
| **Thu** | Theory | --- | --- | -- | -- | --- | --- | --- | V-S1 | V-S2 |
| | Tutorial | --- | --- | -- | -- | --- | --- | --- | -- | -- |
| | Lab | --- | --- | V-S3,V-S3,V-S3 | V-S3,V-S3,V-S3 | --- | --- | --- | -- | -- |
| | Skilling | --- | --- | -- | -- | --- | --- | --- | -- | -- |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Fri** | Theory | --- | --- | -- | -- | --- | --- | --- | --- | V-S2 |
| | Tutorial | --- | --- | -- | -- | --- | --- | --- | --- | -- |
| | Lab | --- | --- | V-S1,V-S1,V-S1,V-S2,V-S2,V-S2 | V-S1,V-S1,V-S1,V-S2,V-S2,V-S2 | --- | --- | --- | --- | -- |
| | Skilling | --- | --- | -- | -- | --- | --- | --- | --- | -- |
| **Sat** | Theory | --- | --- | --- | --- | --- | V-S1 | --- | -- | -- |
| | Tutorial | --- | --- | --- | --- | --- | -- | --- | -- | -- |
| | Lab | --- | --- | --- | --- | --- | -- | --- | -- | -- |
| | Skilling | --- | --- | --- | --- | --- | -- | --- | V-S3,V-S3,V-S3 | V-S3,V-S3,V-S3 |
| **Sun** | Theory | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Tutorial | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Lab | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Skilling | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**REMEDIAL CLASSES:**

Supplement course handout, which may perhaps include special lectures and discussions that would be planned, and schedule notified according

**SELF-LEARNING:**

Assignments to promote self-learning, survey of contents from multiple sources.

| S.no | Topics | CO | ALM | References/MOOCS |
|---|---|---|---|---|

**DELIVERY DETAILS OF CONTENT BEYOND SYLLABUS:**

Content beyond syllabus covered (if any) should be delivered to all students that would be planned, and schedule notified accordingly.

| S.no | Advanced Topics, Additional Reading, Research papers and any | CO | ALM | References/MOOCS |
|---|---|---|---|---|

**EVALUATION PLAN:**

| Evaluation Type | Evaluation Component | Weightage/Marks | | Assessment Dates | Duration (Hours) | CO1 | CO2 | CO3 | CO4 | CO5 | CO6 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **End Semester Summative Evaluation Total= 40 %** | **Skill Sem-End Exam** | Weightage | 8 | | 90 | | | | | | 8 |
| | | Max Marks | 50 | | | | | | | | 50 |
| | **End Semester Exam** | Weightage | 24 | | 180 | 6 | 6 | 6 | 6 | | |
| | | Max Marks | 100 | | | 25 | 25 | 25 | 25 | | |
| | **Lab End Semester Exam** | Weightage | 8 | | 90 | | | | | 8 | |
| | | Max Marks | 50 | | | | | | | 50 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **In Semester Formative Evaluation Total= 24 %** | **Skilling Continuous Evaluation** | Weightage | 5 | | 60 | | | | | | 5 |
| | | Max Marks | 50 | | | | | | | | 50 |
| | **Hackathon** | Weightage | 5 | | 240 | 1.25 | 1.25 | 1.25 | 1.25 | | |
| | | Max Marks | 100 | | | 25 | 25 | 25 | 25 | | |
| | **ALM** | Weightage | 4 | | 60 | 1 | 1 | 1 | 1 | | |
| | | Max Marks | 100 | | | 25 | 25 | 25 | 25 | | |
| | **Lab Weekly exercise** | Weightage | 5 | | 60 | | | | | 5 | |
| | | Max Marks | 50 | | | | | | | 50 | |
| | **Home Assignment and Textbook** | Weightage | 5 | | 60 | 1.25 | 1.25 | 1.25 | 1.25 | | |
| | | Max Marks | 100 | | | 25 | 25 | 25 | 25 | | |
| **In Semester Summative Evaluation Total= 36 %** | **Semester in Exam-I** | Weightage | 12 | | 90 | 6 | 6 | | | | |
| | | Max Marks | 50 | | | 25 | 25 | | | | |
| | **Semester in Exam-II** | Weightage | 12 | | 90 | | | 6 | 6 | | |
| | | Max Marks | 50 | | | | | 25 | 25 | | |
| | **Lab In Semester Exam** | Weightage | 6 | | 60 | | | | | 6 | |
| | | Max Marks | 50 | | | | | | | 50 | |
| | **Skill In-Sem Exam** | Weightage | 6 | | 60 | | | | | | 6 |
| | | Max Marks | 50 | | | | | | | | 50 |

**ATTENDANCE POLICY:**

Every student is expected to be responsible for regularity of his/her attendance in class rooms and laboratories, to appear in scheduled tests and examinations and fulfill all other tasks assigned to him/her in every course
In every course, student has to maintain a minimum of 85% attendance to be eligible for appearing in Semester end examination of the course, for cases of medical issues and other unavoidable circumstances the students will be condoned if their attendance is between 75% to 85% in every course, subjected to submission of medical certificates, medical case file and other needful documental proof to the concerned departments

**DETENTION POLICY :**

In any course, a student has to maintain a minimum of 85% attendance and In-Semester Examinations to be eligible for appearing to the Semester End Examination, failing to fulfill these conditions will deem such student to have been detained in that course.

**PLAGIARISM POLICY :**

Supplement course handout, which may perhaps include special lectures and discussions

**COURSE TEAM MEMBERS, CHAMBER CONSULTATION HOURS AND CHAMBER VENUE DETAILS:**

Supplement course handout, which may perhaps include special lectures and discussions

| Name of Faculty | Delivery Component of Faculty | Sections of Faculty | Chamber Consultation Day (s) | Chamber Consultation Timings for each day | Chamber Consultation Room No: | Signature of Course faculty: |
|---|---|---|---|---|---|---|
| S N LAKSHMI MALLUVALASA | L | 2-MA | - | - | - | - |
| S N LAKSHMI MALLUVALASA | P | 2-A | - | - | - | - |
| S N LAKSHMI MALLUVALASA | S | 2-A | - | - | - | - |
| NICHENAMETLA RAJESH | L | 3-MA,1-MA | - | - | - | - |
| NICHENAMETLA RAJESH | P | 1-A,3-A | - | - | - | - |
| NICHENAMETLA RAJESH | S | 3-A,1-A | - | - | - | - |
| PRAVEENA MANDAPATI | P | 3-B | - | - | - | - |

| | | | | | | |
|---|---|---|---|---|---|---|
| PRAVEENA MANDAPATI | S | 3-C | - | - | - | - |
| Vivek Kumar | P | 3-C,2-C | - | - | - | - |
| ELANGOVAN GURUVA REDDY | P | 2-B | - | - | - | - |
| K.R.R Rao | P | 1-C | - | - | - | - |
| K.R.R Rao | S | 2-C | - | - | - | - |
| Ashwin M | P | 1-B | - | - | - | - |
| Ashwin M | S | 1-C | - | - | - | - |
| Ramesh Babu Vijayarangam | S | 2-B | - | - | - | - |
| SUNITHA PACHALA | S | 3-B,1-B | - | - | - | - |

**GENERAL INSTRUCTIONS**

Students should come prepared for classes and carry the text book(s) or material(s) as prescribed by the Course Faculty to the class.

**NOTICES**

Most of the notices are available on the LMS platform.

All notices will be communicated through the institution email.

All notices concerning the course will be displayed on the respective Notice Boards.

**Signature of COURSE COORDINATOR**

(NICHENAMETLA RAJESH)

**Signature of Department Prof. Incharge Academics & Vetting Team Member**

Department Of AI&DS

**HEAD OF DEPARTMENT:**

**Approval from: DEAN-ACADEMICS**
(Sign with Office Seal) [object HTMLDivElement]