AISSMS

INSTITUTE OF INFORMATION TECHNOLOGY
(I.O.I.T)

ADDING VALUE TO ENGINEERING

An Autonomous Institute Affiliated to Savitribai Phule Pune University
Approved by AICTE, New Delhi and Recognised by Govt. of Maharashtra
Accredited by NAAC with "A+" Grade | NBA - 5 UG Programmes

ACADEMIC COURSE STRUCTURE
as per NEP

COMPUTER ENGINEERING

Minor Course Structure and Syllabus

B.TECH 4 YEAR UG COURSE
(Applicable for the batches admitted from 2022-2023)

AISSMS INSTITUTE OF INFORMATIONTECHNOLOGY
Kennedy Road, Near RTO,
Pune – 411 001, Maharashtra State, India
Email: principal@aissmsioit.org,
Website:https://www.aissmsioit.org

CHAIRMAN
BOS-COMPUTER ENGINEERING
AISSMS IOIT (AUTONOMOUS),
PUNE-1.

Institute Vision & Mission

Vision

To be recognized amongst top 10 private engineering colleges in Maharashtra by the year 2026 by rendering value added education through academic excellence, research, entrepreneurial attitude and global exposure.

Mission

- To enable placement of 150 plus students in the 7 lacs plus category & ensure 100% placement of all final year students
- To connect with 10 plus international universities, professional bodies, and organizations to provide global exposure students
- To create conducive environment for career growth, prosperity, and happiness of 100% staff.
- To be amongst top 5 private colleges in Pune in terms of admission cut off.

Department Vision & Mission

Vision

To be known for imparting quality education in computer engineering to serve the changing needs of global industry.

Mission

- To create an environment that fosters technical and professional growth to make graduates globally competent.
- To develop industry ready professionals, researchers, and entrepreneurs to solve real world problems and societal issues.

Program Educational Objectives (PEOs)

Graduate will:

- **PEO1**: Work productively as successful computer professionals / entrepreneurs / researchers in global industry.
- **PEO2**: Adapt latest technological skills to face challenges of the modern computing industry.
- **PEO3**: Work in finance, healthcare, security and banking sectors as a team member or a leader with ethical values

AISSMS Institute of Information Technology, Pune

CHAIRMAN
BOS-COMPUTER ENGINEERING
AISSMS IOIT (AUTONOMOUS),
PUNE-1.

Program Outcomes (POs)

1. Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems. **[Engineering knowledge]**

2. Identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences. **[Problem analysis]**

3. 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. **[Design/development of solutions]**

4. 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. **[Conduct investigations of complex problems]**

5. 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. **[Modern tool usage]**

6. 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. **[The engineer and society]**

7. Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development. **[Environment and sustainability]**

8. Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice. **[Ethics]**

9. Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings. **[Individual and team work]**

10. 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. **[Communication]**

11. 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. **[Project management and finance]**

12. 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. **[Life-long learning]**

Program Specific Outcomes (PSOs)

Graduates will be able to

- **PSO1**: Problem Solving and Programming Skills: apply knowledge of procedural or object oriented programming to solve computing problems
- **PSO2:** Professional Skills: design and develop software systems using front end and back end technologies by following standard software engineering principles
- **PSO3:** Professional Skills: analyze the algorithms and implement optimized solutions in the domain of machine learning, natural language processing, security, cloud computing and Internet of Things.

AISSMS Institute of Information Technology, Pune

CHAIRMAN
BOS-COMPUTER ENGINEERING
AISSMS IOIT (AUTONOMOUS),
PUNE-1.

Minor Course: Computer Engineering

Sr. No.	Courses Code	Courses Name	Semester	Hours per week			Credit	Examination Scheme					Total
				Lecture	Tutorial	Practical		ISE	ESE	TW	PR	OR	
1	COMNR301	Object Oriented Programming	III	3	-	-	3	-	75*	-	-	-	75
2	COMNR302	Object Oriented Programming Laboratory	III	-	-	2	1	-	-	25	-	-	25
3	COMNR401	Software Engineering and Modeling	IV	3	-	-	3	-	75*	-	-	-	75
4	COMNR402	Software Engineering and Modeling Laboratory	IV	-	-	2	1	-	-	25	-	-	25
5	COMNR501	Database Management System	V	3	-	-	3	-	75*	-	-	-	75
6	COMNR502	Database Management System Laboratory	V	-	-	2	1	-	-	25	-	-	25
7	COMNR601	Web Technology	VI	3	-	-	3	-	75*	-	-	-	75
8	COMNR602	Web Technology Laboratory	VI	-	-	2	1	-	-	25	-	-	25
Total Credits for Minor Courses				12		08	16	-	300	100	-	-	400

*   **End Semester Examination (ESE)** based on subjective/ MCQ questions.

CHAIRMAN
BOS-COMPUTER ENGINEERING
AISSMS IOIT (AUTONOMOUS),
PUNE-1.

Second Year Other Branches(2023-24 Course)
Object Oriented Programming – Minor Course

Course Code:	COPMNR301	Credit	3
Contact Hours:	3 Hrs/week (L)	Type of Course:	Lecture
Examination Scheme	Term Work 25 Marks	End-sem. Examination 75Marks	

Pre-requisites: PPS

Course assessment methods/tools:

Sr. No.	Course assessment methods/tools	External/ Internal	Marks
1.	End-sem. Examination	external	75

Course Objectives: The student will have ability to:	
1	To develop programming skills of students, using object oriented programming concepts
2	To learn the syntax and semantics of the C++ programming language.
3	To develop simple applications using characteristics of OOP

Course Outcomes : Students will be able to	
COPMNR 301.1	Apply basic concepts of C++ to develop small C++ programs.
COPMNR 301.2	Apply and develop object-oriented solutions using Inheritance concept
COPMNR 301.3	Use of polymorphism to implement C++ programs
COPMNR 301.4	Identify and Select Appropriate Template for complex application development

Topics covered:

UNIT I: FUNDAMENTAL CONCEPTS OF OOPS (8 hrs.)

Introduction to Programming: Program Concept, Characteristics of Programming, Stages in Program Development.
Introduction to C++ Programming –Basic Concepts of Object Oriented Programming, Basic Program Structure In C++, Variables and Assignments, Operators in C++.

UNIT II: INTRODUCTION TO C++ FUNCTIONS (6 hrs.)

Statements: Input and Output statements, Selection and Repetition Statements. Functions: - Local Variable. Functions with Default Arguments, Call-By-Value, and Call-By-Reference Parameters

CHAIRMAN
BOS–COMPUTER ENGINEERING
AISSMS IOIT (AUTONOMOUS),
PUNE–1.

UNIT III: INTRODUCTION TO C++ ARRAY	**(5 hrs.)**

Introduction to Arrays: Declaration and Referring Arrays, Arrays in Memory, Initializing Arrays, Single dimensional Arrays and Multidimensional Arrays.

Strings: Declaration and Initialization. Reading and Writing Strings, Standard String Library Functions.

UNIT IV: POLYMORPHISM & INHERITANCE	**(6 hrs.)**

C++ Polymorphism – Types- Compile time polymorphism Run time polymorphism

C++ Inheritance – Types of Inheritance – Single, multiple, multilevel, hybrid Inheritance.

UNIT V:INTRODUCTION TO C++ TEMPLATES	**(5 hrs.)**

Definition – Template, Advantages of C++ Template

Types of Template – function template, class template

Syllabus contents required for competitive exams (GATE, UPSC, MPSC etc.): Unit 1, 2

Text Books:
1. Roger s pressman, "software engineering: a practitioners approach", McGraw Hill,ISBN-0-07-337597-7
2. Ian Sommerville, "Software Engineering"l, Addison and Wesley, ISBN 0-13-703515-2

Reference Books:
1. Carlo Ghezzi, "Fundamentals of Software Engineering", PHI, ISBN-10: 0133056996
2. Rajib Mall, "Fundamentals of Software Engineering", PHI, ISBN-13: 978-8120348981
3. Pankaj Jalote, "An Integrated Approach to Software Engineering", Springer, ISBN 13:9788173192715.
4. S K Chang, "Handbook of Software Engineering and Knowledge Engineering", WorldScientific, Vol I, II, ISBN: 978-981-02-4973-1
5. Tom Halt, "Handbook of Software Engineering", Clanye International ISBN-10: 1632402939
6. Brahma Dathan, Sarnath Ramnath, "Object-Oriented Analysis, Design, and Implementation", Universities Press

CHAIRMAN
BOS–COMPUTER ENGINEERING
AISSMS IOIT (AUTONOMOUS),
PUNE-1.

Second Year Other Branches (2022 Course) Object Oriented Programming Laboratory – Minor Course			
Course Code	COMNR302	Credits	1
Contact Hrs.	2 Hrs./Week (PR)	Type of Course	Practical
Examination Scheme	Term Work (25Marks)		

Pre-requisites: Programming and Problem Solving-I, II

Course assessment methods/tools:

Sr. No.	Course assessment methods/tools	External/ Internal	Marks
2.	Term Work	Internal	25

Course Objectives The student will have ability to:	
1	To explore programming skills of students, using object oriented programming concepts
2	To learn the syntax and semantics of the C++ programming language
3	To use the object-oriented paradigm in program development.

| Course Outcomes : Students will be able to	
COMNR 302.1	Implement a basic C++ programs using the concepts like class, objects and various C++ functions.
COMNR 302.2	Apply the concept of inheritance and polymorphism to develop a program.
COMNR 302.3	Develop a program using C++ Template

Lab List
1. Write a C++ program implement simple Arithmetic Calculator
2. Write a C++ program to perform following operations on an Array
    1. Display ODD Indexed Nos.

CHAIRMAN
BOS-COMPUTER ENGINEERING
AISSMS IOIT (AUTONOMOUS),
PUNE-1.

2. Calculate Sum array elements
3. Calculate Average of Array Elements
4. Add or Delete the no. from an array

3. Write a CPP to create class Student with appropriate member variable and member functions and make use of following
   a. Constructors
   b. Destructors

4. Define a class to represent a bank account which includes the following members as:

Data members:

a. Name of the depositor

b. Account Number

c. Withdrawal amount

d. Balance amount in the account Member Functions:

e. To assign initial values

f. To deposit an amount

g. To withdraw an amount after checking the balance

h. To display name and balance.

   Implement the program by using above features of OOP in C++.

5. Write a CPP to implement following inheritances using example
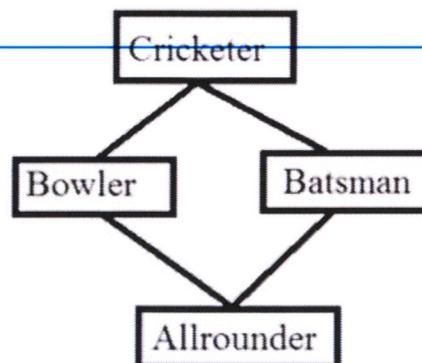
6. Write a C++ Program for to display array con
7. tents of different data types

> Ex: int a[] = {1,2,3,4,5}
> char b[]={'a','b','c','d'}
> float c[]= {1.1,2.2,3.3,4.4}
> string s = {"AAA","BBB","CCC","DDD"}

Second Year Other Braches (2022 Course)
Software Engineering and Modeling – Minor Course

Course Code:	COMNR401	Credit		3
Contact Hours:	3 Hrs/week (L)	Type of Course:		Lecture
Examination Scheme	Term Work --	End-sem. Examination 75 Marks		

Pre-requisites: PPS
Course assessment methods/tools:

Sr. No.	Course assessment methods/tools	External/ Internal	Marks
1.	End-sem. Examination	external	75

Course Objectives: The student will have ability to:

1	Get the knowledge of basic software engineering methods and practices.
2	Define software requirements and requirement engineering.
3	Apply approaches for various design and their principle.

Course Outcomes : Students will be able to

COPMNR 401.1	Compare various software process models and identify where these models are applicable.
COPMNR 401.2	Prepare software requirement specifications for any software.
COPMNR 401.3	Design software systems using UML
4 COPMN 401.4	Analyze software metrics and apply the concepts of software estimation models

Topics covered:

UNIT I: INTRODUCTION TO SOFTWARE ENGINEERING   (6 hrs.)
Nature of Software: Software Engineering, Software Process, Process models- Waterfall model, Incremental models, Evolutionary Models, Spiral Model, V-model.

UNIT II: SOFTWARE REQUIREMENTS ANALYSIS   (6 hrs.)
Functional and Non-functional Requirements: Requirement Sources and Elicitation Techniques, Analysis Modeling for Function-oriented and Object-oriented Software Development, System and Software Requirement Specifications in IEEE Format.

CHAIRMAN
BOS–COMPUTER ENGINEERING
AISSMS IOIT (AUTONOMOUS),
PUNE–1.

UNIT III: DESIGN ENGINEERING	(6 hrs.)
The Software Design Process: Design Concepts and Principles, **Architectural Design:** Design Decisions, Views, Patterns, and Application Architectures. **Modeling Component level Design:** Component, Designing class-based components, Conducting Component-Level Design.	
UNIT IV: SOFTWARE MODELING	**(6 hrs.)**
Software Modeling: What is Modeling, Importance of Modeling, Purpose of Modeling, Three models: 1.Class Model 2.State model 3. Interaction Model **Introduction to the UML Language:** Structural diagrams: Class diagram, Object diagram, Component diagram, Deployment diagram.	
UNIT V: SOFTWARE METRICS	**(6 hrs.)**
Software Metrics: Introduction to Software Metrics, Size-oriented metrics and function point metrics. Effort and cost estimation techniques -LOC-based and Function-point based measures.	
Syllabus contents required for competitive exams (GATE, UPSC, MPSC etc.): Unit 1	

Text Books:
1. Roger's pressman, "software engineering: a practitioners approach", McGraw Hill,ISBN-0-07-337597-7
2. Ian Sommerville, "Software Engineering"‖, Addison and Wesley, ISBN 0-13-703515-2

Reference Books:
1. Carlo Ghezzi, "Fundamentals of Software Engineering", PHI, ISBN-10: 0133056996
2. Rajib Mall, "Fundamentals of Software Engineering", PHI, ISBN-13: 978-8120348981
3. Pankaj Jalote, "An Integrated Approach to Software Engineering", Springer, ISBN 13:9788173192715.
4. S K Chang, "Handbook of Software Engineering and Knowledge Engineering", WorldScientific, Vol I, II, ISBN: 978-981-02-4973-1
5. Tom Halt, "Handbook of Software Engineering", Clanye International ISBN-10: 1632402939
6. Brahma Dathan, Sarnath Ramnath, "Object-Oriented Analysis, Design, and Implementation", Universities Press

CHAIRMAN
BOS–COMPUTER ENGINEERING
AISSMS IOIT (AUTONOMOUS).
PUNE-1.

Second Year Other Branches (2022 Course)
Software Engineering and Modeling Laboratory

Course Code	COMNR402	Credits	1
Contact Hrs.	2 Hrs./Week (PR)	Type of Course	Practical
Examination Scheme	TermWork (25Marks)		

Pre-requisites: Programming and Problem Solving-I, II

Course assessment methods/tools:

Sr. No.	Course assessment methods/tools	External/ Internal	Marks
2.	TermWork	Internal	25

Course Objectives The student will have ability to:

1	Apply approaches for various design and their principle.
2	Learn basic software engineering methods and practices.
3	Develop significant teamwork and project based experience

Course Outcomes : Students will be able to

COMNR 402.1	Compare various software process models and identify where these models are applicable.
COMNR 402.2	Prepare software requirement specifications for any software.
COMNR 402.3	Design software systems using UML

CHAIRMAN
BOS-COMPUTER ENGINEERING
JISSMS IOIT (AUTONOMOUS),
PUNE-1.

Sr.N0.	Activity based Assignments:
1	Identify a software system and apply suitable process model.
2	Write Software requirement specification for the identified software system.
3	Represent Architectural, Component level and User Interface Design for the identified software system.
4	Draw UML-Class Diagrams for the identified software system.
5	Draw UML-Object Diagram and Component Diagram for the identified software system
6	Students should be divided into sub-groups of 3to 4 students. The group of students completes the following tasks: Apply all software Engineering concepts and prepare documentation for the mini project.

CHAIRMAN
BOS–COMPUTER ENGINEERING
AISSMS IOIT (AUTONOMOUS),
PUNE-1.

Third Year Computer Engineering (2022 Course)
Database Management System (Minor Course)

Course Code	COMNR 501	Credits		3
Contact Hours.	3 Hrs./Week (L)	Type of Course		Lecture
Examination Scheme	In Semester (TH):	End Semester (TH): 75		

Pre-requisites: Knowledge of data structures, object oriented programming.

Course assessment methods/tools:

Sr. No.	Course assessment methods/tools	External/ Internal	Marks
1.	End Semester Examination	External	75

Course Objectives :Students will be able to	
1	Understand the concept of database and its applicability.
2	Understand ER diagrams.
3	Understand the principles and techniques of database normalization.
4	Write SQL Query for Efficient Data Retrieval and Manipulation in Relational Databases.
5	Write PL/SQL Query for Efficient Data Retrieval and Manipulation in Relational Databases

Course Outcomes : Students will be able to	
COMNR 501.1	Analyze the requirements of the applications and identify the data to be maintained in databases.
COMNR 501.2	Draw ER diagram
COMNR 501.3	Apply normalization techniques to real-world database design challenges, improving overall database quality and usability.
COMNR 501.4	Execute SQL queries.
COMNR 501.5	Execute Pl/SQL Block.

CHAIRMAN
BOS-COMPUTER ENGINEERING
AISSMS IOIT (AUTONOMOUS),
PUNE-1.

Topics covered:	
UNIT I :Fundamentals of Database Management System	**(06 Hours)**
Introduction to databases and their significance in modern applications, Advantages and limitations of using a DBMS,Components of a DBMS: Data, Schema, Metadata, etc. Database architecture: ACID properties,Transaction management.	
UNIT II:Entity Relationship Model	**(06 Hours)**
Database modelling:ER Diagram, understanding entity,attributes in Detail,Exploring Relationship. Cardinality and Binary Relationship. Participation Constraints.	
UNIT III: Database Normalization	**(06 Hours)**
Understanding data anomalies and the importance of normalization,Functional dependencies and keys,First Normal Form (1NF), Second Normal Form (2NF), Third Normal Form (3NF).	
UNIT IV: Structured Query Language	**(06 Hours)**
Introduction to SQL, SELECT statements, filtering data, sorting data, and SQL functions.Joins, subqueries, aggregation (e.g., SUM, AVG), and data modification operations (INSERT, UPDATE, DELETE).	
UNIT V: PL/SQL	**(06 Hours)**
Basics of PL/SQL, variables, data types, and conditional control structures. Working with explicit cursors, cursor FOR loops, and parameterized cursors. Handling errors and exceptions, user-defined exceptions, and error logging. Stored Procedures and Functions, Triggers.	
Syllabus contents required for competitive exams (GATE) Unit 2,3,4	
Text books 1. "Database System Concepts" by Silberschatz, Korth, Sudarshan, 7th Edition, McGraw Hill Publication.	
Reference Books: 1. "Fundamentals of Database Systems" by Elmsari, Navathe, 7th Edition, Pearso Education (2008).	
MOOC/ Video Lectures available at: NPTEL Lecture Link: https://archive.nptel.ac.in/courses/106/105/106105175/	

CHAIRMAN
BOS–COMPUTER ENGINEERING
AISSMS IOIT (AUTONOMOUS),
PUNE-1.

Third Year Computer Engineering (2022 Course)
Database Management System Laboratory (Minor Course)

Course Code	COMNR 502	Credits		1
Contact Hours.	2 Hrs./Week (L)	Type of Course		Practical
Examination Scheme	In Semester (TH): --	End Semester (TH): --		Term Work 25 Marks

Pre-requisites: Data structures, object oriented programming.

Course assessment methods/tools:

Sr. No.	Course assessment methods/tools	External/ Internal	Marks
1.	Term work	Internal	25

Course Objectives: Students will be able to	
1	Write SQL Query for Efficient Data Retrieval and Manipulation in Relational Databases.
2	Write PL/SQL Query for Efficient Data Retrieval and Manipulation in Relational Databases

Course Outcomes : Students will be able to	
COMNR 502.1	execute SQL queries
COMNR 502.2	execute Pl/SQL queries

Topics covered: Suggested list of Assignments
1. Basic SELECT Queries: Retrieve all records from a specific table. Select distinct values from a column. Retrieve specific columns from a table, filter data using the WHERE clause, sort data in ascending and descending order.
2. Aggregation and Grouping: Calculate the total sum of a numeric column, calculate the average of a numeric column, count the number of records in a table, Group data by a specific column and apply aggregate functions.
3. Joins: Perform an INNER JOIN between two tables, perform a LEFT JOIN (or LEFT OUTER JOIN) between two tables, perform a RIGHT JOIN (or RIGHT OUTER JOIN) between two tables, perform a FULL OUTER JOIN between two tables.
4. Stored Procedures: Create a simple stored procedure to retrieve data from a table, create a stored procedure that accepts parameters for filtering data.

CHAIRMAN
BOS-COMPUTER ENGINEERING
AISSMS IOIT (AUTONOMOUS),
PUNE-1.

5. Functions: Create a function that calculates and returns a result. Create a function that accepts input parameters and returns a computed result.
6. Triggers: Create a trigger that automatically updates a timestamp when a specific table is modified. Create a trigger that enforces data integrity constraints.
7. Cursors: Declare and use explicit cursors to retrieve and process data. Implement cursor FOR LOOPs for data processing.

THIRD Year Computer Engineering(2023Course) Web Technology (Minor Course)			
Course Code	COMNR601	Credits	3
Contact Hours.	3 Hrs./Week (L)	Type of Course	Lecture
Examination Scheme	In Semester(TH):	End Semester(TH): 75 Marks	

Pre-requisites:

Courseassessmentmethods/tools:

Sr.No.	Course assessment methods/tools	External/ Internal	Marks
1.	End Semester Examination	External	75

Course Objectives

1	To design web pages using HTML,CSS
2	To use the Client side technologies in web development
3	To use the Server side technologies in web development

Course Outcomes: Students will be able to

CO601.1	Implement and analyze behavior of web pages using HTML & CSS
CO601.2	Identify the engineering structural design of XML tree
CO601.3	Apply the client side technologies for web development.
CO601.4	Apply the server side technologies for web development

Topics Covered:

UNIT I : Web Fundamentals (6 Hours)
Introduction to Internet, WWW, Web Browsers, Web Servers, URL, Multipurpose Internet Mail Extensions, Web Architecture, web standards, domain name & registration process, web hosting

UNIT II : Introduction to HTML Mark-up language (6 Hours)
HTML: Introduction, History, , HTML elements, basic syntax, headings, paragraphs. HTML: colors and fonts, links, frames, lists, tables, images and forms

UNIT III : CSS (6 Hours)
Need for CSS, introduction to CSS, basic syntax and structure, using CSS, background images, colors and properties, manipulating texts, using fonts, borders and boxes, margins, padding lists, positioning using CSS, CSS2

UNIT IV: XML (6 Hours)
XML: XML introduction, XML declaration, elements, attributes, XML Namespaces, DTD: type internal DTD, external DTD, XSLT, XPATH, XQUERY

CHAIRMAN
BOS–COMPUTER ENGINEERING
AISSMS IOIT (AUTONOMOUS),
PUNE-1.

UNIT V : Client Side Technologies: JavaScript	**(6 Hours)**

JavaScript: Introduction to JavaScript, basic syntax, variables and data types, statements operators, literals, functions, objects, arrays, built in objects, Introduction to Java Server Pages Basic JSP, JSP and Servlets, running JSP applications

UNIT VI: Server Side Technologies: PHP	**(6 Hours)**

PHP: Starting to script on server side, JDBC Architecture(2-tier and 3-tier), PHP Arrays, function and forms, Basic command with PHP examples, Connection to server, database operations.

Textbooks

- Jeffrey C.Jackson, "Web Technologies: A Computer Science Perspective", Second Edition, Pearson Education, 2007, ISBN 978-0131856035
- Robert W. Sebesta," Programming the World Wide Web", 4th Edition, Pearson education,2008

Reference Books:

- Marty Hall, Larry Brown, "Core Web Programming", Second Edition, Pearson Education, 2001, ISBN 978-0130897930.
- H.M. Deitel, P.J. Deitel and A.B. Goldberg, "Internet & World Wide Web How To Program", Third Edition, Pearson Education, 2006, ISBN 978-0131752429.
- Chris Bates, "Web Programming Building Internet Applications", 3rd Edition, Wiley India, 2006.
- Xue Bai et al, "The web Warrior Guide to Web Programming", Thomson, 2003

MOOC/ Video Lectures available at:

1. https://www.youtube.com/watch?v=Oh93xiKv

CHAIRMAN
BOS-COMPUTER ENGINEERING
AISSMS IOIT (AUTONOMOUS),
PUNE-1.

Third Year Computer Engineering(2023Course)
Web Technology Lab (Minor Course)

Course Code	COMNR602	Credits 1	
Contact Hours.	2 Hrs./Week (PR)	Type of Course	Term Work
Examination Scheme		Term work= 25 Marls	

Pre-requisites:
Courseassessmentmethods/tools:

Sr.No.	Course assessment methods /tools	Internal	Marks
1.	Term Work	Internal	25

Course Objectives

1	To use client side and server side web technologies.
2	To design and develop web applications using front end technologies and backend databases

Course Outcomes: Students will be able to

CO602.1	Explain the importance of website planning and website design issues
CO602.2	Apply the client side and server side technologies for web application development
CO602.3	Create three tier web based applications

List of Experiments

- Case study: Before coding of the website, planning is important, students should visit different websites (Min. 5) for the different client projects and note down the evaluation results for these websites, either good website or bad website in following format: Sr. No. Website URL Purpose of Website Things liked in the website Things disliked in the website Overall evaluation of the website (Good/Bad)

Sr. No	Website URL	Purpose of Website	Things liked in the website	Things disliked in the website	Overall evaluation of the website (Good/Bad)

- Write program to create html page containing table, list, hyperlink between two web pages, marquee tag , image in the page
- Design the XML document to store the information of the employees of any business organization and demonstrate the use of: a) DTD b) XML Schema And display the content in (e.g., tabular format) by using CSS/XSL
- Implement Java Script validation such as mobile no, email id, compulsory fields, numeric validations, string validations, prompt/alerts for invalid values etc.

CHAIRMAN
BOS–COMPUTER ENGINEERING
AiSSMS IOIT (AUTONOMOUS),
PUNE-1.

- Implement the program demonstrating the use of JSP. e.g., Create a database table employee info (employee_id, employee_name , designation, branch, city) using database like Oracle/MySQL etc. and display (use SQL select query) the table content using JSP

- Mini Project: Design and implement a dynamic web application for any business functionality by using web development technologies that you have learnt in the above given assignments

CHAIRMAN
BOS-COMPUTER ENGINEERING
AISSMS IOIT (AUTONOMOUS)
PUNE-1.