5TH SEMESTER BSc. ITM(H)			
	SUB CODE		SUB NAME
MAJOR	CORE-I	PAPER-11	Web Technology
	CORE-I	PAPER-12	Software Engineering
	CORE-I	PAPER-13	Digital Marketing
MINOR	CORE-II	PAPER-3	Real Analysis-I
SEC	PAPER-2		
VAC	PAPER-3		

Semester-V

Core XI **Web Technology**

Course objectives:

On completion of this course, a student will be familiar with client server architecture and able to develop a web application using web technologies. Students will gain the skills and project-based experience needed for entry into web application and development careers. Students are able to develop a dynamic webpage by the use of java script.

Course Outcome: On completion of this course, students will be able to

- Analyze a web page and identify its elements and attributes.
- Create web pages using HTML and Cascading Style Sheets.
- Build dynamic web pages using JavaScript (Client - s i d e programming).
- Work with PHP application (Server-side Programming) for any database operation.

Unit-I:

Web Essentials: Clients, Servers and Communication: The Internet –Basic Internet protocols– The WWW, HTTP request message –response message, web client's webservers –case study. Introduction to HTML: HTML, HTML domains, basic structure of an HTML document–creating an HTML document, mark up tags, heading, paragraphs, line breaks, HTML tags. Elements of HTML, working with text, lists, tables and frames, working with hyperlink, images and multimedia, forms and controls.
Outcome: Students will be able to explain client and server-side communication and able to design web applications

Unit-II:

Introduction to cascading style sheets: Concepts of CSS, creating style sheet, CSS properties, CSS styling (background, text format, controlling fonts), working with the block elements and objects. Working who lists and tables, CSS ID and class. Box model (introduction,

border properties, padding properties, margin properties), CSS colour, groping, Dimensions, display, positioning, floating, align, pseudo class, Navigation bar, image sprites

Outcome: Students will be able to design web pages using CSS and BOX model

Unit-III:

Java scripts: Client-side scripting, what is java script, simple java script, variables, functions, conditions, loops and repetitions. Java scripts and objects, java script own objects, the DOM andweb browser environment, forms and validations. DHTML: Combining HTML, CSS, java scripts, events and buttons, controlling your browser.

Outcome: Students will be able to integrate java script in a web page and check for validation (Client-side programming)

Unit-IV:

PHP: Starting to script on server side, PHP basics, variables, data types, operators, expressions, constants, decisions and loop making decisions. Strings – creating, accessing strings, searching, replacing and formatting strings. Arrays: Creation, accessing array, multidimensional arrays, PHP with Database.

Outcome: Students will be able to explain server-side scripting and their applicability

Text Book:

- ✓ *Web Technologies–Black Book–Dream Tech Press*
- ✓ *Matt Doyle, BeginningPHP5.3(wrox -Willey publishing)*
- ✓ *John Duckett, Beginning HTML, XHTML, CSS and Javascript.*

Reference Book:

- ✓ *HTML, XHTML and CSS Bible,5ed, Willey India-Steven M. Schafer.*

Core XI- Project Work

Web Technology Lab

- Acquaintance with elements, tags and basic structure of HTML files.
- Practicing basic and advanced text for formatting.
- Practice use of image, video and sound in HTML documents.
- Designing of webpages- Document layout, list, tables.
- Practicing Hyperlink of webpages, working with frames.
- Working with forms and controls.
- Acquaintance with creating style sheet, CSS properties and styling.
- Working with background, text, font, list properties.

- Working with HTML elements box properties in CSS.
- Develop simple calculator for addition, subtraction, multiplication and division operation using java script.
- Create HTML page with java script which takes integer number as a input and tells whether the number is odd or even.
- Create HTML page that contains form with fields name, Email, mobile number, gender, favorite colour and button; now write a java script code to validate each entry. Also writea code to combine and display the information in text box when button is clicked.
- Write a PHP program to check if number is prime or not.
- Write a PHP program to print first ten Fibonacci numbers.
- Create a MySQL database and connect with PHP.
- Write PHP script for storing and retrieving user information from MySQL table.
- Write a HTML page which takes Name, Address, Email and Mobile number from user(register PHP).
- Store this data in MySQL database.
- Next page displays all user in HTML table using PHP (display .PHP).
- Using HTML, CSS, Java script, PHP, MySQL, design an authentication module of awebpage.

Core XII **Software Engineering**

Course Objectives:

Basic knowledge and understanding of the analysis and design of complex systems. To apply software engineering principles and techniques. Ability to develop, maintain and evaluate large-scale software systems. To provide the idea of decomposing the given problem into Analysis, Design, Implementation, Testing and Maintenance phases. To provide an idea of using various process models in the software industry according to given circumstances. To gain the knowledge of how Analysis, Design, Implementation, Testing and Maintenance processes are conducted in a software project. To perform independent research and analysis. Ability to work as an effective member or leader of software engineering teams.

Course Outcome: On completion of this course, the students will be able to

- Understand of software process models such as waterfall and evolutionary model is required.
- Understand the problem statement and able to describe the Requirement analysis, creating a data model, use cases, computing function point, effort, architectural design and path testing of a software project.
- Learn about Software requirements and SRS documents.
- Understand project management's responsibilities, which includes planning, scheduling, risk management, and so on.
- Explain the differences between data models, object models, context models, and behavioral models.
- Familiar with implementation difficulties like modularity and coding standards.
- Gain knowledge of verification and validation methods, such as static analysis and reviews.
- Know about different software testing methodologies such as unit and integrated testing etc.
- Describe how to measure software and how to avoid software risks.

Unit-I:

Introduction: Evolution of Software to an Engineering Discipline, software development projects, Software Lifecycle Models: Waterfall Model and its Extensions, Rapid Application Development (RAD), Agile Development Models, Spiral Model.
Outcome: Students will be able to understand fundamental principles of Software engineering discipline & get an idea of various life cycle models used in software development.

Unit-II:
Software Project Management: Software Project Management Complexities, Responsibilities of a Software Project Manager, Project Planning, Metrics for Project Size Estimation,

Project Estimation Techniques, Empirical Estimation Techniques, COCOMO, Halstead's Software Science, Staffing Level Estimation, Scheduling, Organization and Team Structures, Staffing, Risk Management, Software Configuration Management.
Outcome: Students will get a brief idea of various project management activities & will understand various cost estimation techniques, organization team structure and management of staff & risk handling.

Unit-III:

Requirement Analysis and Specification: Requirements Gathering and Analysis, Software Requirement Specifications, Formal System Specification Axiomatic Specification, Algebraic Specification, Executable Specification and 4GL.Software Design: Design Process, Characterize a Good Software Design, Cohesion and Coupling, Layered Arrangements of Modules, Approaches to Software Design (Function Oriented & Object-Oriented).
Outcome: Students will get knowledge of various requirement analysis techniques and design process during software development work.

Unit-IV:

Coding and Testing: Coding: Code Review, Software Documentation, Testing, Unit Testing, Black Box and White Box Testing, Debugging, Program Analysis Tools, Integration Testing, System Testing, Software Maintenance.
Outcome: The students will understand of coding and testing process & will able to learn maintenance in software development projects.

Text Book:

- ✓ *Fundamental of Software Engineering, Rajib Mall, Fifth Edition, PHI Publication, India.*

Reference Books:

- ✓ *Software Engineering– IanSommerville,10/Ed, Pearson.*
- ✓ *Software Engineering Concepts and Practice – Ugrasen Suman, Cengage Learning IndiaPvt, Ltd.*

Core XII- Project Work

Software Engineering

Guidelines for Project

Project is an assignment to strengthen the understanding of fundamentals through effective application of theoretical concept. The objective of the project course is to help the student

develop ability to apply multidisciplinary concepts, tools and techniques to implement software engineering. The project may be from any one of your areas related to the concerned subject.

Project report: The Project Report must have the following:

- Cover Page – must have the name and roll no. of the student and the name & designation of theguide along with the title of the Project.
- Acknowledgement, declaration, Certificate of originality signed by the guide with date
- Detailed tables & figures of contents with page nos.
- All pages of the Project Report must be numbered as reflected in Index of Chapters

Sample Projects:

- *Criminal Record Management: Implement a criminal record management system for jailers, police officer sand CBI officers.*
- *Route Information: Online information about the bus routes and their frequency and fares*
- *Car Pooling: To maintain a web-based intranet application that enables the corporate employees within an organization to avail the facility of carpooling effectively.*
- *Patient Appointment and Prescription Management System*
- *Organized Retail Shopping Management Software*
- *Online Hotel Reservation Service System*
- *Examination and Result computation system*
- *Automatic Internal Assessment System*
- *Parking Allocation System*
- *Wholesale Management System*

Core XIII **Digital Marketing**

Course Objective:

The key aim of this course is to understand the concepts of marketing management, to learn about the marketing process for different types of products and services, to understand the tools used by marketing managers in decision situations and to understand the marketing environment.

Course Outcomes: On completion of this course, the students will be able to

- Demonstrate strong conceptual knowledge in the functional area ofmarketing management.
- Demonstrate effective understanding of relevant functional areas ofmarketing management and its application.
- Demonstrate analytical skills in identification and resolution of problemspertaining to marketing management.
- Understand the 'Marketing mix' elements and the strategies and principles underlying the modern marketing practices.
- Explore for themselves the role of a marketing manager and theboundaries of marketing

Unit-I:

Marketing: Objectives of Marketing, Marketing vs Selling, Marketing Environment, Consumer Behaviour, Consumer Buying Process, Factors influencing consumer decision making, **Product:** Product concept, Product classification, New Product Development, Product lifecycle, Product mix.
Outcome: The students will be able to identify core concepts of marketing and the role of marketing in business and society. able to analyse the impact of different environmental factors, factors affecting consumer buying behavior, and different strategies related to product and its application.

Unit-II:

Price: Objective of pricing, Factors Influencing Product Pricing, Pricing policies. Distribution: Channel of Distribution- Meaning and Importance, Types of Distribution Channel. **Promotion:** Meaning, Importance of Promotion, Types of Promotion, Factors affectingpromotion mix decisions.
Outcome: The students will be able to develop marketing strategies based on price, place and promotion objectives. Develop analytical skills in identification and resolution of problems pertaining to price, place and promotion mix.

Unit-III:

Fundamentals of Digital marketing & Its Significance, Traditional marketing Vs Digital Marketing, Evolution of Digital Marketing, Digital Marketing Landscape. Fundamentals of Social Media Marketing & its significance, Facebook Marketing-Different types of Ad formats, LinkedIn Marketing- LinkedIn Strategy, Twitter Marketing- Twitter usage, Twitter Ads, Twitter ad campaigns.
Outcome: The students will be able to use the digital platform in the optimal way to formulate possible solutions to marketing problems faced by several firms and also able to Identify and utilize various tools through social media.

Unit-IV:

Digital Advertising, Different Digital Advertisement, Performance of Digital Advertising: -Process & players, Display Advertising Media, Digital metrics. **YouTube Advertising:** - YouTube Channels, YouTube Ads, Type of Videos, Buying Models, Targeting & optimization, Designing & monitoring Video Campaigns, Display campaigns
Outcome: The students will be able to explain the key digital marketing activities needed for competitive success and also Leverage digital strategies to gain competitive advantage for business and career. Able to initiate marketing strategies through the use of Social Media Platform like Face book, Twitter, YouTube & LinkedIn etc.

Text Books:

- ✓ *Marketing Management in Indian Context, Sontakki, KP*
- ✓ *Marketing Management, Karunakaran,*
- ✓ *Digital Marketing –Kamat and Kamat-Himalaya*
- ✓ *Digital Marketing, S.Gupta, McGraw-Hill*

Reference Books:

- ✓ *Marketing Management, Kotler, Keler, Koshi, Jha, Pearson*

Core XIII- Project Work

Digital Management

Guidelines for the Project:

Project is an assignment to strengthen the understanding of fundamentals through effective application of theoretical concept. The objective of the project course is to help the student develop ability to apply multidisciplinary concepts, tools and techniques to solve organizational problems. The project may be from any one of your areas related to the concerned subject.

Project report: The Project Report must have the following.

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designation of theguide along with the title of the Project.

- Acknowledgement, declaration, Certificate of originality signed by the guide with date
- Detailed tables & figures of contents with page nos.
- All pages of the Project Report must be numbered as reflected in Index of Chapters

Index of Chapters:

- Chapter-I: Introduction & Review of literatures
- Chapter-II: Research Methodology
- Chapter-III: Conceptual & Theoretical Descriptions
- Chapter-IV: Data Analysis & Interpretations
- Chapter-V: Conclusion, Findings, suggestions & Scope for further research.
- Chapter-VI: References, Annexures, etc.