

<b>YEAR - I</b>	<b>INTRODUCTION TO INFORMATION TECHNOLOGY</b>	<b>18PIT12</b>
<b>SEMESTER - I</b>		<b>HRS/WK - 5</b>
<b>CORE - 2</b>		<b>CREDIT - 4</b>

**Objective:**

To make the students to acquire the basic knowledge about Information technology.

**Course Outcomes (CO's):**

At the end of the Course the students should be able to exhibit

**CO1: Knowledge pertaining to basics of Computers**

**CO2: Proficiency in Computer Software and OS**

**CO3: Knowledge pertaining to Network Communication**

**CO4: Knowledge pertaining to Network Applications.**

**CO5: Expertise in Latest IT trends.**

SEMESTER I	COURSE CODE: 18PIT12					COURSE TITLE :INTRODUCTION TO INFORMATION TECHNOLOGY					HOURS:5	CREDITS:4
COURSE OUTCOMES	PROGRAMME OUTCOMES(PO)					PROGRAMME SPECIFIC OUTCOMES(PSO)					MEAN SCORE OF CO'S	
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5		
CO1	5	5	5	5	5	5	5	4	4	4	4.70	
CO2	4	4	4	4	4	4	4	4	4	4	4	
CO3	4	4	4	4	4	4	4	4	4	4	4	
CO4	4	4	4	4	4	4	4	4	4	4	4	
CO5	4	4	4	4	4	4	4	4	4	4	4	
Mean Overall Score											4.1	

**Result: The score of this course is 4.1 (Very High)**

Association	1%-20%	21%-40%	41%-60%	61%-80%	81%-100%
Scale	1	2	3	4	5
Interval	0<=rating<=1	1.1<=rating<=2	2.1<=rating<=3	3.1<=rating<=4	4.1<=rating<=5
Rating	Very Poor	Poor	Moderate	High	Very High

This Course is having **VERY HIGH** association with Programme Outcomes and Programme Specific Outcomes.

**UNIT – I** **[15 Hrs]**

**Introduction to Computers:** Computer system concepts - characteristics of computer-generations and types of computer - components of computer system - Booting process-classification of digital computer system - organization of computers - Input and Output devices - Storage devices.

**UNIT – II** **[15 Hrs]**

**Computer Software:** System software - application software – firmware. **Programming languages classification:** machine language - assembly language and high-level language. **Evolution of programming languages:** first generation - second generation - third generation and fourth generation languages. **Language translator:** Compiler - Interpreter and Assembler. **Operating System:** Definition – Job - Objective and evolution of operating system - Types of operating systems.

**UNIT - III** **[15 Hrs]**

**Network Communication:** Definition – Criteria - advantages and limitations of computer networking - Communication process - Communication types - Types of computer network - Network topology - LAN and other network related protocols - OSI model - TCP/IP model - Networking Components.

**UNIT - IV** **[15 Hrs]**

**Network Applications:** Introduction about Internet - Internet basics - Internet protocols - Internet addressing - Browser –WWW - E-mail – telnet – ftp – application - benefits and limitation of internet - electronic conferencing - teleconferencing.

**UNIT – V** **[15 Hrs]**

**Latest IT Trends:** E-Commerce - M-Commerce - Artificial Intelligence - Computational Intelligence - Geographic Information System (GIS) - Data Mining. **Role of IT in different Areas :** Education, Industry, Banking, Marketing, Public Services and others.

**TEXT BOOK:**

1. V. Rajaraman, Computer Fundamentals, PHI.

**REFERENCE BOOKS:**

1. Dennis P. Curtin, Kim foley, KunalSen and Cathleen Morin, Information Technology - The Breaking Wave, Tata-McGraw Hill Publications, 2005.
2. Leon and Leon, Fundamentals of IT, Leon Tec World.
3. Alexis Lean and Mathews Leon, Fundamentals of Information Technology, Vikas Publication House, Delhi.
4. Cyganski, Information Technology - inside and outside, Pearson Publication.
5. ITL ESL , Introduction to computer Science, Pearson Education.

<b>YEAR – I</b>	<b>WEB TECHNOLOGIES</b>	<b>NEW CODE</b>
<b>SEMESTER - I</b>		<b>HRS/WK - 5</b>
<b>CORE - 3</b>		<b>CREDIT - 4</b>

**Objective:**

To inculcate knowledge of web technological concepts and functioning of Internet.

**Course Outcomes(CO's):**

At the end of the Course the students should be able to exhibit

**CO1: Knowledge pertaining to HTML Fundamentals**

**CO2: Designing capabilities using CSS**

**CO3: Modular Programming using Scripts.**

**CO4: Web Site Development using ASP.Net.**

**CO5: Web Site Development with database support using ADO.Net.**

SEMESTER I	COURSE CODE: <b>NEW CODE</b>					COURSE TITLE :WEB TECHNOLOGIES					HOURS:5	CREDITS:4
COURSE OUTCOMES	PROGRAMME OUTCOMES(PO)					PROGRAMME SPECIFIC OUTCOMES(PSO)					MEAN SCORE OF CO'S	
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5		
CO1	5	5	5	5	5	5	5	5	5	5	5	
CO2	5	5	5	5	5	5	5	5	5	5	5	
CO3	4	4	4	4	4	5	5	5	5	5	4.5	
CO4	4	4	4	4	4	5	5	5	5	5	4.5	
CO5	4	4	4	4	4	5	5	5	5	5	4.5	
Mean Overall Score											4.7	

**Result: The score of this course is 4.7 (Very High)**

Association	1%-20%	21%-40%	41%-60%	61%-80%	81%-100%
Scale	1	2	3	4	5
Interval	0<=rating<=1	1.1<=rating<=2	2.1<=rating<=3	3.1<=rating<=4	4.1<=rating<=5
Rating	Very Poor	Poor	Moderate	High	Very High

This Course is having **VERY HIGH** association with Programme Outcomes and Programme Specific Outcomes.

## **UNIT - I**

**[15 Hrs]**

**Introduction to HTML:** What is HTML -HTML Documents - Basic structure of an HTML document -Creating an HTML document -Mark up Tags -Heading-Paragraphs - Line Breaks - Working with Text - Working with Lists, Tables and Frames -Working with Hyperlinks, Images and Multimedia -Working with Forms and controls.

## **UNIT - II**

**[15 Hrs]**

**CSS:** Introduction to CSS-CSS properties: Controlling text- text formatting- text pseudo code classes- selectors, links: background- lists- tables- outlines- positioning and layout with CSS, design issues: typography - navigation- tables – forms.

## **UNIT – III**

**[15 Hrs]**

**Java Script:** Java script basics- Placement of Java script file -Variables-Data Types-Operators- Control flow, Loops-Functions-Document Object Model (DOM)-Form validations.

## **UNIT – IV**

**[15 Hrs]**

**ASP.NET:** Introduction-Basic controls: Button-Text boxes - Check boxes and Radio Buttons- List-Hyperlink-Image-Validation controls-Master Page-Navigation controls-AdRotator control.

## **UNIT – V**

**[15 Hrs]**

**ADO.NET:** Architecture of ADO.NET-Connection Class-Command Class-Data Reader class. Working with Grid Control-Working with Crystal Report Viewer control.

## **TEXT BOOKS:**

1. Jon Duckett, Beginning HTML, XHTML, CSS and JavaScript, Wiley Publishing Inc.
2. Harvey M. Deitel, Paul J. Deitel, C# Programmers, Second Edition, Pearson Education.

## **REFERENCE BOOKS:**

1. E. Balaguruswamy, Programming with C#, Second Edition, Tata McGraw Hill Publications.
2. Laura Lemay, Rafe Colburn, Jennifer Kyrnin, Mastering HTML, CSS & Javascript, Web Publishing.
3. Matthew Macdonald, ASP.NET: The Complete Reference Paperback.

<b>YEAR - I</b>	<b>MANAGEMENT INFORMATION SYSTEMS</b>	<b>EPIT14B</b>
<b>SEMESTER - I</b>		<b>HRS/WK - 5</b>
<b>ELECTIVE - I(2)</b>		<b>CREDIT - 5</b>

**Objective:**

To understand the concepts of Management Information Systems and their Applications.

**Course Outcomes (CO's):**

**At the end of the Course the students should be able to exhibit**

**CO1: Basic Knowledge pertaining to Information Systems**

**CO2: Knowledge pertaining to Business Operations.**

**CO3: Managing ability pertaining to Information Technology.**

**CO4: Knowledge pertaining to ERP.**

**CO5: Implementing ability of ERP package.**

SEMESTER I	COURSE CODE: EPIT14B					COURSE TITLE :MANAGEMENT INFORMATION SYSTEMS					HOURS: 5	CREDITS: 5
COURSE OUTCOMES	PROGRAMME OUTCOMES(PO)					PROGRAMME SPECIFIC OUTCOMES(PSO)					MEAN SCORE OF CO'S	
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5		
CO1	4	4	4	4	3	3	3	3	5	4	3.70	
CO2	4	4	4	4	4	3	3	3	5	3	3.70	
CO3	3	3	4	4	4	3	3	3	4	3	3.40	
CO4	3	3	4	4	4	3	3	3	4	3	3.40	
CO5	3	3	4	4	3	3	3	3	4	4	3.40	
Mean Overall Score											3.5	

**Result: The score of this course is 3.5 (High)**

Association	1%-20%	21%-40%	41%-60%	61%-80%	81%-100%
Scale	1	2	3	4	5
Interval	0<=rating<=1	1.1<=rating<=2	2.1<=rating<=3	3.1<=rating<=4	4.1<=rating<=5
Rating	Very Poor	Poor	Moderate	High	Very High

This Course is having **HIGH** association with Programme Outcomes and Programme Specific Outcomes.

## **UNIT - I**

**[15 Hrs]**

**Introduction to information systems (IS):** why study IS- why business need information technology (IT) – fundamentals of IS concepts – overview of IS – solving business problems with IS – developing IS solutions.

## **UNIT - II**

**[15 Hrs]**

**Information systems for business operations:** Business IS – marketing, manufacturing, human resource, accounting and financial information systems – transaction processing system – management information and decision support systems.

## **UNIT - III**

**[15 Hrs]**

**Managing information technology:** Managing information resource and technologies – global IT management – planning and implementing business change with IT.

## **UNIT - IV**

**[15 Hrs]**

**Enterprise Resource Planning (ERP):** an overview – benefits of ERP – ERP and related technologies – business process reengineering – data warehousing – data mining – online analytical processing – supply chain management.

## **UNIT – V**

**[15 Hrs]**

**ERP implementation:** ERP implementation life cycle – implementation methodology – hidden cost – organizing the implementation – vendors, consultants and users contracts with vendors, consultants and employees project management and monitoring – ERP present and future – turbo change the ERP systems – enterprise integration applications – ERP and E-commerce – ERP and Internet.

## **TEXT BOOK:**

1. James A O'Brien, Management Information Systems for managing IT in the Internetnetworked Enterprise, 4<sup>th</sup> Edition, Tata McGraw Hill, New Delhi, 1999.

**REFERENCE BOOKS:**

1. Alexis Leon, ERP Demystified, McGraw Hill Education.
2. W. S. Jawadekar, Management Information Systems: A Global Digital Enterprise Perspective, McGraw Hill Education.

<b>YEAR - I</b>	<b>OBJECT ORIENTED ANALYSIS AND DESIGN</b>	<b>EPIT14C</b>
<b>SEMESTER - I</b>		<b>HRS/WK - 5</b>
<b>ELECTIVE - I(3)</b>		<b>CREDIT - 5</b>

**Objective:**

The student should be made to learn the basics of Object Oriented analysis and design skills.

**Course Outcomes (CO's):**

**At the end of the Course the students should be able to exhibit**

**CO1: Learn the UML analysis and design diagrams.**

**CO2: Learn to map design to code, Compare and contrast various testing techniques.**

**CO3: Apply appropriate object model and design patterns.**

**CO4: Create object code from design Patterns**

**CO5: At the end of the course, the student should be able to: Design and implement projects using OO concepts.**

SEMESTER I	COURSE CODE: EPIT14C					COURSE TITLE :OBJECT ORIENTED ANALYSIS AND DESIGN					HOURS:5	CREDITS:5
COURSE OUTCOMES	PROGRAMME OUTCOMES(PO)					PROGRAMME SPECIFIC OUTCOMES(PSO)					MEAN SCORE OF CO'S	
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5		
CO1	5	5	5	5	5	5	5	5	5	5	5	
CO2	5	5	5	5	5	5	5	5	5	5	5	
CO3	4	4	4	4	4	5	5	5	5	5	4.5	
CO4	4	4	4	4	4	5	5	5	5	5	4.5	
CO5	4	4	4	4	4	5	5	5	5	5	4.5	
Mean Overall Score											4.7	

**Result: The score of this course is 4.7 (Very High)**

Association	1%-20%	21%-40%	41%-60%	61%-80%	81%-100%
Scale	1	2	3	4	5
Interval	0<=rating<=1	1.1<=rating<=2	2.1<=rating<=3	3.1<=rating<=4	4.1<=rating<=5
Rating	Very Poor	Poor	Moderate	High	Very High

This Course is having **VERY HIGH** association with Programme Outcomes and Programme Specific Outcomes.



## **UNIT - I**

**[15 Hrs]**

**UML DIAGRAMS** :Introduction to OOAD – Role of Analysis and Design in Software Development – Meaning of Object Orientation – Overview of Various OOAD Methodologies – Unified Process – UML diagrams Goals of UML – Use Case – Actors and Use Cases – Use Case Relationships – Class Diagrams– Interaction Diagrams – State Diagrams – Activity Diagrams – Package, component and Deployment Diagrams.

## **UNIT - II**

**[15 Hrs]**

**OBJECT MODEL AND DESIGN PATTERNS** :The Object Model – The Evolution of the Object Model – Foundations of the Object Model – Elements of the Object Model – Applying the Object Model.GRASP: Designing objects with responsibilities – Creator – Information expert – Low Coupling – High Cohesion – Controller – Design Patterns – creational – factory method – structural – Bridge – Adapter – behavioral – Strategy – observer.

## **UNIT - III**

**[15 Hrs]**

**APPLYING DESIGN PATTERNS** : The Nature of an Object – Relationships among Objects – The Nature of a Class – Relationships among Classes – The Interplay of Classes and Objects – On Building Quality Classes and Objects –System sequence diagrams – Relationship between sequence diagrams and use cases diagrams –Notations: The Unified Modeling Language – Package Diagrams – Component Diagrams – Deployment Diagrams – Activity Diagrams – Logical architecture refinement – UML class diagrams – UML interaction diagrams – Applying GoF design patterns.

## **UNIT - IV**

**[15 Hrs]**

**CLASSIFICATION, CODING AND TESTING** :Classification: The importance of proper classification – Identifying classes and objects – Key abstractions and Mechanisms – Mapping design to code – Testing: Issues in OO Testing – Class Testing – OO Integration Testing – GUI Testing – OO System Testing.

## **UNIT - V**

**[15 Hrs]**

**CASE STUDY** :Case study – the Next Gen POS system, Inception –Use case Modeling – Relating Use cases – include, extend and generalization – Elaboration – Domain Models –

Finding conceptual classes and description classes – Associations – Attributes – Domain model refinement – Finding conceptual class Hierarchies – Aggregation and Composition.

### **TEXT BOOKS:**

1. Craig Larman, "Applying UML and Patterns: An Introduction to Object–Oriented Analysis and Design and Iterative Development", Third Edition, Pearson Education, 2005.
2. Mahesh P. Matha, "Object – Oriented Analysis and Design Using UML" , PHI Learning Private Limited, New Delhi, 2008.
3. Grady Booch Robert A. Maksimchuk Michael W. Engle Bobbi J. Young, Ph.D. Jim Conallen Kelli A. Houston "Object–Oriented Analysis and Design with Applications" Third Edition, Pearson Education, Inc., April 2007.

### **REFERENCE BOOKS:**

1. Simon Bennett, Steve Mc Robb and Ray Farmer, "Object Oriented Systems Analysis and Design Using UML", Fourth Edition, Mc–Graw Hill Education, 2010.
2. Erich Gamma, and Richard Helm, Ralph Johnson, John Vlissides, "Design patterns: Elements of Reusable Object–Oriented Software", Addison–Wesley, 1995.
3. Martin Fowler, "UML Distilled: A Brief Guide to the Standard Object Modeling Language", Third edition, Addison Wesley, 2003.
4. Paul C. Jorgensen, "Software Testing:– A Craftsman"s Approach", Third Edition, Auerbach Publications, Taylor and Francis Group, 2008.

<b>YEAR – I</b>	<b>SOFTWARE TESTING</b> (Students admitted from year 2022-2023)	<b>PIT23A</b>
<b>SEMESTER - II</b>		<b>HRS/WK – 5</b>
<b>CORE - 6</b>		<b>CREDIT – 4</b>

**Objective:**

To understand the Concepts of Software Testing and to introduce various Testing Strategies and Testing Tools.

**Course Outcomes (CO's):**

At the end of the Course the students should possess

**CO1: Proficiency in Principles of Testing.**

**CO2: Proficiency in Different Testing Techniques.**

**CO3: Knowledge pertaining to Specialized Testing.**

**CO4: Application developing skills using Proper Test Plan and Reporting.**

**CO5: Implementing ability using Software Tools.**

SEMESTER II	COURSE CODE: PIT23A					COURSE TITLE :SOFTWARE TESTING					HOURS:5	CREDITS:4
COURSE OUTCOMES	PROGRAMME OUTCOMES(PO)					PROGRAMME SPECIFIC OUTCOMES(PSO)					MEAN SCORE OF CO'S	
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5		
CO1	4	4	4	4	4	4	4	4	4	4	4	
CO2	4	4	4	4	4	4	4	4	4	4	4	
CO3	3	3	3	3	3	3	3	3	3	3	3	
CO4	3	3	3	3	3	3	3	3	3	3	3	
CO5	3	3	3	3	3	3	3	3	3	3	3	
Mean Overall Score											3.4	

**Result: The score of this course is 3.4 (High)**

Association	1%-20%	21%-40%	41%-60%	61%-80%	81%-100%
Scale	1	2	3	4	5
Interval	0<=rating<=1	1.1<=rating<=2	2.1<=rating<=3	3.1<=rating<=4	4.1<=rating<=5
Rating	Very Poor	Poor	Moderate	High	Very High

This Course is having **HIGH** association with Programme Outcomes and Programme Specific Outcomes.

**UNIT-I:** [15Hrs]

**Introduction:** Principles of Testing - Software Development Life Cycle Models: Phases of Software Project - Quality, Quality Assurance and Quality Control – Testing, Verification and Validation - Process Model to represent different Phases – Life Cycle Models: Waterfall Model, Prototyping and Rapid Application Development Models, Spiral or Iterative Model, The V-Model, Modified V- Model.

**UNIT-II:** [15Hrs]

**Types of Testing** - White Box Testing: Static Testing ,Structural Testing - Black Box testing: Need for Black Box Testing, Black Box Testing Techniques - Integration Testing: Types of Integration Testing, Defect Bash - System and Acceptance Testing: Need for System Testing, Functional System Testing, Non- Functional Testing.

**UNIT-III:** [15Hrs]

**Specialized Testing:** Performance Testing: Factors Governing Performance Testing, Methodology for Performance Testing, Tools for Performance Testing, Process for Performance Testing – Regression Testing: Types of Regression Testing, Need for Regression Testing, Regression Testing Methodologies - Testing of Object Oriented Systems: Primer on Object Oriented Software, Differences in OO Testing.

**UNIT-IV:** [15Hrs]

**Test Planning and Reporting:** Test Planning, Test Management, Test Process, Test Reporting, Best Practices.

**UNIT-V:** [15Hrs]

**Software Tools:** Software Test Automation: Skills needed for Automation, What to Automate and Scope for Automation, Design and Architecture for Automation, Selecting a Test Tool - Test Metrics and Measurements: Types of Metrics: Project Metrics, Progress Metrics, Productivity Metrics.

**TEXT BOOK:**

1. Srinivasan Desikan, Gopalasamy Ramesh, Software Testing, Pearson Education 2006.

**REFERENCE BOOKS:**

1. Louis Tamres, Introducing Software Testing, First Edition, Addison Wesley Publications.
2. Ron Patton, Software Testing, Sams Publishing.