SARDAR PATEL UNIVERSITY
Programme – MSC
(Under Choice Based Credit Scheme)
Semester – II
Syllabus with effect from: 2017-18

MSC- Information Technology

Modern MIS Techniques

COURSE NO: PS02CINT21

(Total Marks: 100)

COURSE CONTENT:

Unit 1: Introduction

- MIS: Importance of MIS, Evolution of MIS, Computers and MIS
- Logical foundations of MIS, Typical MIS
- Information and managerial effectiveness
- Business information systems
- Business functions and information needs of business
- Pitfalls in MIS System

Unit 2: Information Systems Environment

- Systems theory
- Classic view of organization
- Transitional views
- Modern organization theory
- Major organizational considerations
- Managerial roles
- Decision making models
- Role of information systems in decision
- The impact of computer science on organization, on individual
- Classification of information systems

Unit 3: Information systems and Managerial process

- Types of information systems –TPS,OAS,DSS,EIS,ES
- Managerial decision making,
- Decision making environment
- Planning and Security for IT infrastructure
- Portfolio approach and identifying its proposals
- Evaluating IT investments and information systems

Unit 4: Enterprise Information Systems

- Electronic Commerce and Electronic Business

- Information Systems to support Business functions – Enterprise Resource Planning (ERP), Enterprise Information Portal (EIP), Customer Relationship Management (CRM), Supply Chain Management (SCM)
- Decision Support Systems (DSS), Group DSS
- Executive Support in Enterprise

Reference Books:

1. Muneesh kumar: Business Information Systems - Vikas Publishing
2. E Turban: Management Information Systems and Decision Support Systems – TMH
3. Sadagopan: Management Information Systems- Narosa Publications
4. Lucas: The analysis design and implementation of information Systems – TMH
5. Warboys Brian, Business Information Systems: a Process Approach. Tata McGrawHill, 2001
6. Efrain Turban Jaye: Decision support systems and Intelligent systems Aronson Fifth edition PHI
7. Murdick, Ross and Clagget: Information System for Modern Management – PHI

Software Engineering

COURSE NO: PS02CINT22

(Total Marks: 100)

COURSE CONTENT:

Unit - 1 Introduction to Software Engineering

- Software Process and process models
- Characteristics of Software Process
- Software development process models
  - Waterfall model, Prototyping, Iterative

Unit – 2 S/W Requirement Specification and Project Management

- Need of Software Requirement
- Types of Requirements
- Requirement Engineering Process
- Software Requirement Specifications
- Characteristics of SRS Documentation
- Organization of SRS
- Project and Project Management
- Role of Project Manager
- Project Management Process
- Effort and Schedule Estimation – COCOMO Model
- Risk Management

Unit – 3 Software Design

- Overview of Functional Design
- Design Principles
- Module level Concepts
- OO Analysis and Design
- UML Overview
  - Class Diagram, Activity Diagram, Sequence and Collaboration Diagram, State Chart Diagram, Use Case Diagram
  - Generalization, Specialization, Relationship

Unit – 4 Software Testing & Maintenance

- Coding Process – Incremental Coding Process, TDD
- Common Coding Error
- Error, Fault and Failure
- Verification and Validation
- Testing Methods – Unit testing, Integration testing, System testing, Acceptance testing, White box testing, Black box testing, Regression testing
- Overview of Testing Tools
- Types of S/W maintenance
- Software Re-engineering

Reference Books:

1. An Integrated approach to Software Engineering – By Pankaj Jalote (3rd Edition), Narosa Publication
2. Software Engineering – By Sageeta Sabharwal, New Age Int. Publication
3. Software Engineering – A Practioners Approach – By Roger. Pressman (5th Edition), MGH Int. Publication

Visual Programming

COURSE NO: PS02CINT23

(Total Marks: 100)

COURSE CONTENT:

Unit-1: Introduction to .Net Technologies

- Overview, Architecture, Features of .NET ,
- Meta data, CLR, Managed and unmanaged code
- CTS, CLS, .NET base classes, JIT Compiler
- Introduction to Visual Studio .NET IDE
- An Overview of .Net Assembly, Understanding Private and Shared assembly,
- Working with assemblies and the GAC
- Console Application, Windows Application, Web Applications
- Event-driven programming, event-handlers, and the .NET library of classes
- Introduction to WPF and its basic applications

Unit- 2: Fundamentals of C# .Net

- An introduction to C# syntax, content, and structure
- Introduction to datatypes: predefined data types, reference type and value type, casting-implicit and explicit, Boxing and unboxing
- Explaining control structures: (Using the if statement, using the if-else statement. Using the switch case statement, using the for statement, using the while statement, using the dowhile statement, using the break statement, using the continue statement, using the return statement, using the goto statement)
- Using Exception Handling : (Using the try Block, using the catch block, using the finally block, using the throw statement)
- Enums and Collections, Arrays (Single-Dimensional Array, multidimensional arrays jagged Arrays)
- Preprocessor Directives, Classes, Structures, Properties as a smart fields.
- Fundamentals of OOPs
- OOPs concepts, Inheritance, Polymorphism, Interfaces, Events and Delegates: (single cast, multicast)

Unit-3: Windows Forms Controls

- Windows Forms Designer, Toolbox, Controls, Events, Properties, Anchor and Dock properties
- General Controls: (Button, Label, LinkLabel, TextBox, MaskedTextBox, RadioButton, CheckBox, RichTextBox, ListBox, CheckedListBox, ComboBox, ListView, StatusBar, TabControl, ImageList)
- Containers: (Group box, panel, split container, tab control)
- Menu and Tools Bars
- Menu strip, context menu strip, status strip, tool strip
- Dialogs: (Color dialog, folder browser dialog, font dialog, open file dialog, save file Dialog)
- Create MDI Forms application, Validate user input in a windows forms application

Unit 4: **ADO .Net**

- Database Access for .Net
- Introduction to ADO.Net Architecture
- Architecture of ADO. NET

- Data providers in ADO.NET
- Connection
- Command
- DataReader
- DataAdapter
- DataSet
- DataTable
- DataView
- DataColumn
- DataRow
- DataRelation
- DataReader
- DataGridView Control
- Understanding connected layer of ADO.NET and disconnected layer of ADO.NET
- Introduction to LINQ

Basic Text & Reference Books:

- Beginning/Professional C# with .Net 3.0 - Wrox Publication
- Beginning C#, Marco Bellinaso, Ollie Cornes, David Espinosa, Zach Greenvoss, Jacob Hammer Pedersen, Christian Nagel, Jon D Reid, Matthew Reynolds, Morgan Skinner, Karli Watson, Eric White, Wrox publication.
- MSDN library.

COURSE NO: PS02CINT24

Web Programming

(Total Marks: 100)

COURSE CONTENT:

Unit - 1 Introduction to HTML, DHTML & JavaScript

- HTML Fundamentals: HTML as a Markup Language with structure,
- HTML Tags and Attributes
- DHTML Fundamentals: Introduction, Applications, CSS and its types, properties and attributes, class
- Introduction to JavaScript: Introduction, Syntax, DOM, Comparing client side and server side scripting,
- Methods to implementing JavaScript, Built-In Functions, Dialogue Boxes
- Events, Methods and Validations in JavaScript

Unit – 2 Open Source and PHP Programming

- Introduction to Open Source
- Advantages and Capabilities of Open Source
- Introduction to Apache
- Introduction to PHP: Features, Adding PHP to HTML
- Control Statements and Looping
- User Defined Function. Function Scope
- Arrays
- Strings and its functions

Unit – 3 Working with PHP and MySQL

- Forms: Information Passing , Validations
- Regular Expression
- Introduction to MySQL: Features, Merits and Demerits, Data Types
- MySQL Functions
- Connecting PHP to MySQL
- Error handling, Multiple Database Connections
- Introduction to Sessions and Cookies

Unit - 4 Introduction to PHP Framework

- Introduction to CodeIgniter
- Features and Objectives, Applications Flowcharts
- Concept of MVC
- Overview of Libraries
- Database Handling

Reference Books:

1. Ivan Baryons: "Web Enabled Commercial Applications Development using HTML, DHTML, Javascript, PHP"
2. Steve Suehring Tim Converse Joyce Park:PHP6 and MySQL Bible - Wiley Publication
3. Thomas Myer: Professional CodeIgniter – Wrox Publication
4. Internet reference for the relevant topics

5. COURSE NO: PS02CINT25

(Total Marks: 100)

COURSE CONTENT:

Practical based on Paper No: PS02CINT23 and Paper No: PS02CINT24

E-COMMERCE & M-COMMERCE

COURSE NO: PS02EINT21

(Total Marks: 100)

COURSE CONTENT:

Unit 1 : Electronic Commerce
Introduction : Overview,Definitions,E-Business Overview
Advantages of E-Commerce(Organization,Customer,Society),Limitation of E-Commerce(Technical & Nontechnical)
Security Threat of E-Commerce, Framework of E-Commerce, Future Scope of E-Commerce
Electronic Commerce Perspective: Communication Perspective, Business process Perspective, Service Perspective, Learning Perspective,Collobrative Perspective, Community Perspective, Commercial Perspective

Unit 2: Business Models: Model Based On Transaction Party-B2B,B2C,C2B,C2C and E-Governance
E-Marketing: Challenges of Traditional Marketing, Internet Marketing, Advertisement and Display on the Internet , Introduction to Supply Chain Management
Payment Mechanism: Payment through card system: Credit Card, Debit Card, Charge Card, E – Wallet ,E – Cash
Electronic Data Interchange(EDI):Meaning, Benefits, Concepts, Application ,EDI Model

Unit 3: Introduction to M-Commerce-I
Introduction and Definition-Commerce Terminology, Attribute and Benefits of M-Commerce, Drivers of M-Commerce-Commerce Value Chain,
Application of M-Commerce: M-Commerce services today & tomorrow

Unit 4: Introduction to M-Commerce-II
Mobile Computing Infrastructure: Hardware,Software,Mobile Networks, Security Issue, Voice System for M-Commerce , Mobile Financial application, Mobile Banking, Wireless Electronic Payment System,Micropayments,Wireless Wallets, Bill Payment

Main Text Book:
1. Electronic Commerce: A managerial Perspective 4th edition,Efraim Turban,Jae Lee, David King,H Michael Chung(Pearson Education)

Reference Books:
1. E-Commerce, M. M. Oka, EPH
2. M-Commerce-Technologies, services & Business Models – Norman Sadesh
3. E-Commerce: Business , Technology, Society Kenneth C Laudon,Carol Guercio Traver(Pearson Education)

Trends in Information & Communication Technology (ICT)

COURSE NO: PS02EINT22

(Total Marks: 100)

COURSE CONTENT:

1. **Trends in Operating System**
   - Comparison of different operating systems including real-time systems
   - Popular features
   - New trends

2. **Trends in Hardware and Software Technology**
   - Hardware selection
   - Trends in hardware technology
   - New industrial requirements
   - New development tools
   - New technologies
   - New software applications

3. **Trends in Networking and Security**
   - New protocols
   - New communication technologies
   - New Security Mechanisms
   - New Security Algorithms

4. **Trends in Data Storage and Processing**
   - Data Warehousing
   - Data Mining and application domains
   - Introduction to Big Data
   - Introduction to Cloud Computing

MAIN REFERENCE BOOKS:

1. Alex Berson, Stephen Smith &Kurt Thearling, ”Building Data Mining Applications for CRM”, TMH, 2000.
2. Andrew Tanenbaum, ”Computer Networks”,PHI, Fourth Edition, 2003.
3. Douglas E. Comer, “Computer Network and Internets”, Pearson Education Asia, Second Edition, 2000.
4. Ian H. Witten & Eibe Frank, ”Data Mining –Practical Machine Learning Tools and Techniques”, Second Edition, ELSEVIER, 2005.
5. ICT Magazines on Current Topics
6. Tananbaum, “Distributed Operating Systems”, PHI, 1995.
7. Online material

BOOKS FOR ADDITIONAL READING:

1. Solig Willium : Cryptography and Network Security, Prentice-Hall of India, 2000.
2. Behrouz Forouzan, Introduction to Data Communication & Networking, Tata McGraw Hill, 1999.