SARDAR PATEL UNIVERSITY
Programme & Subject: B.Sc. (CA & IT) – M.Sc. (CA & IT) Dual Degree
Semester: VI
Syllabus with Effect from: June - 2018

Paper Code: PS06CIIT01		**Total Credit: 3**
Title of Paper: Software Engineering - II		
Unit	**Description in Detail**	**Weightage (%)**
I	**Object Oriented Concepts and principles** Concepts: Classes & Objects, Relationship among objects, Inheritance and Polymorphism, Design Concept, Design Notation and Specification Design Methodology (Dynamic Modeling, Functional Modeling, Defining internal classes and operations, optimize and package. Design Concepts , Design Model	25%
II	**Component Level Design** Views of component Designing Class-Based Components Conducting Component -Level Design Component Based Development	25%
III	**User Interface Design** Golden Rules of User Interface Design User Interface Analysis and Design Interface Analysis Interface Design Steps WebApp Interface Design	25%
IV	**Software Testing Strategies** Strategic Approach to Software Testing Test Strategies for Conventional Software Test Strategies for Object Oriented Software Test Strategies for WebApps; System Testing White-Box Testing (Basis Path Testing , Control Structure Testing); Black-Box Testing (Graph-Based Testing Methods, Equivalence Partitioning) Overview Object Oriented Application Testing , Testing OOA and OOD Models , Object Oriented Testing Strategies	25%

Basic Text & Reference Books:

Software Engineering a practitioner's approach by Roger S. Pressman, Tata McGraw-Hill, Seventh Edition

An Integrated Approach to Software Engineering by Pankaj Jalote ,Narosa Publishing House, Second Edition,1997

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Paper Code: PS06CIIT02		**Total Credit: 3**
Title of Paper: E - Commerce		
Unit	**Description in Detail**	**Weightage (%)**
I	**Intranet and Extranet** Architecture of Internet,Intranet,Extranet Charactristics of internet,Intranet and extranet Application of Intranet Application of extranet	25%
II	**Introduction To E-Commerce** Definition, communication perspective, business process perspective, service perspective framework of EC Classification of EC Applications: electronic market, inter organizational system, customer services Classification by nature of transaction : B2B, B2C, C2C, C2B, Non business EC, Intra-business EC Benefits to organizations, consumers, and society Limitations of EC, future of EC	25%
III	**E-Commerce Business Models and Electronic Marketplaces** Introduction, eight key ingredients of a business model, major B2C and B2B business models, Introduction to M-Commerce. Marketspace components, types of electronic markets (electronic storefronts, electronic malls, types of stores and malls) Portals and their types, role of intermediaries in E-markets, E-market success factors, competitive factors, impact of E-Market on organizations (marketing, HR, manufacturing, finance and accounting)	25%
IV	**Customer Relationship Management (CRM) and Electronics Payment system** CRM : meaning, types of CRM, benefits and limitations of CRM, issues in CRM implementation, classifications of CRM applications, one-to-one marketing (personalization, collaborative filtering, customer loyalty, trust) Security schemes Electronic credit card system on Internet Electronic fund Transfer and Debit card on internet Smart card system	25%

Basic Text & Reference Books:

Electronic Commerce : A managerial Perspective Efraim Turban, Jae Lee, David King, H Michael Chung (Pearson Education.)

E-Commerce – Business, Technology, Society Kenneth C Laudon, Carol Guercio Traver (Pearson Education)

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Syllabus with Effect from: June - 2018

Paper Code: PS06CIIT03		**Total Credit: 3**
Title of Paper: Computer Graphics		
Unit	**Description in Detail**	**Weightage (%)**
I	**Introduction of Computer Graphics** A survey of major applications of Computer Graphics Overview of different video display Devices: CRT, Raster scan and Random Scan , Color Monitors, DVST, Flat Panels Input Devices: Keyboard, mouse, Trackball, Spaceball, Joystick, Data Glove, Digitizers, Image Scanner, Touch Panel, Light pen & Voice system, Introduction to coordinate representation, Graphics functions, Software Standards	25%
II	**Output Primitives and their attributes** Output Primitives: Points, Lines, Circles Line Drawing Algorithms (without program): Digital Differential Analyzer (DDA) and Bresenham. Circle generating algorithm(without program): Midpoint Circle Algorithm Filled area primitives Inside – Outside tests: Odd even rule & Non-zero winding number rule Boundary- fill algorithm (with procedure) Flood-Fill Algorithm (with procedure), Character generation, Attributes of output primitives	25%
III	**Two – dimensional Geometric Transformations, Viewing & Clipping** 2-D geometric Transformations : Translation, Rotation, Scaling, Reflection & Shear (with example) Viewing Pipeline, Window-to-Viewport transformation Introduction to clipping Point Clipping Line clipping (without program) Cohen Sutherland line clipping algorithm Polygon Clipping(without program) Text clipping	25%
IV	**Usage of a 2D Animation Package** Timeline Window, Stage , Layers, Key Frame, Frames and Toolbox	25%

	Types of Symbols Types of Animation – Frame By Frame and Tween (Motion and Shape) Onion Skinning Import and Export images Publish settings, Alpha Effect, Using Color properties (Brightness ,Tint), Masking (Using Filled shape, Text) , Motion guide and Introduction to Action scripting Play & Stop, GetURL	

Basic Text & Reference Books:

Computer Graphics by Donald Hearn & M. Pauline Baker, PHI, 1995
Macromedia Flash MX 2004 in 24 hours by Robert Renihardt and Snow Dowd FLASH MX – Manual

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Syllabus with Effect from: June - 2018

Paper Code: PS06CIIT04		**Total Credit: 3**
Title of Paper: Linux & Shell Programming		
Unit	**Description in Detail**	**Weightage (%)**
I	**Introduction to Linux – I** Introduction to Linux System & History Features of Linux Advantages and disadvantages of Linux Introduction to File System Memory Management	30%
II	**Introduction to Linux– II** Basic Commands: login, logout, date, man, pwd, who, whoami, dir, ls, cd mkdir, rmdir. Use of Wild card characters introduction to vi editor. Introduction to environment variable like HOME, PATH, PS1. Types of FAP, use of chmod command. Basic commands like cp, mv, rm, rev, file redirection. cut, paste, find sort commands with example.	
III	**Shell Scripting** Introduction to shell script: execution of it, shell script variable expr, test commands Control structure: if, if..else, case structure Iteration: while, for construct, break, continue, exit commands Examples	
IV	**Advance Shell Scripting**. Using advanced features of the shell Input/ Output Redirection The grep filter More utility programs The sed filter	

Basic Text & Reference Books:

Das S.: Your UNIX – The Ultimate Guide, Tata McGraw-Hill, 2001. (fourth edition)

Kernighan B. W. and Pike R. : The Unix Programming Environment, Prentice-Hall of India, 2003

Prata S. : Advanced Unix – A Programmer's Guide, BPB Publications, 1986.

UNIX shell programming By Yashwant Kanetkar

Nemeth E., Hein T., Snyder G.: Linux Administration Handbook, 2nd edition, Pearson Education/ PH PTR, 2007

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Syllabus with Effect from: June - 2018

Paper Code: PS06CIIT05		**Total Credit: 6**
Title of Paper: Practical - VI & Project		
Unit	**Description in Detail**	**Weightage (%)**
	Practical Based on PS06CIIT04	30%
	Project	70%

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Semester: VI

Syllabus with Effect from: June - 2018

Paper Code: PS06EIIT01		**Total Credit: 2**
Title of Paper: Enterprise Resource Planning		
Unit	**Description in Detail**	**Weightage (%)**
I	**Introduction to ERP** Enterprise: introduction, business modeling, integrated data model, integrated management information. Enterprise Resource Planning (ERP) : introduction, history. Basic concepts of ERP. Risks (All types risks in brief)	25%
II	**ERP & Related Technologies** Benefits of ERP.[just an overview] Business Process Reengineering (BPR). Data warehousing, data mining and Online Analytical Processing (OLAP). Product Life Cycle Management (PLM), Supply Chain Management (SCM), Customer Relationship Management (CRM).	25%
III	**ERP – Selection and Implementation** ERP Package Selection **ERP Implementation Life Cycle.** Introduction Objective Phases of implementation Why do ERP Implementation Fail?	25%
IV	**ERP –Operation, Maintenance & Evaluation** Operation of the ERP system ERP Maintenance Phase Measuring performance of ERP Functional modules of ERP software.	25%

Basic Text & Reference Books:

Alexis Leon: Enterprise Resource Planning, Tata McGraw-Hill, New Delhi 2nd editions.

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Syllabus with Effect from: June - 2018

Paper Code: PS06EIIT02		**Total Credit: 2**
Title of Paper: Introduction to Simulation		
Unit	**Description in Detail**	**Weightage (%)**
I	**Introduction to simulation** Introduction Continuous and discrete system System simulation When to use simulation Phase of simulation study Advantages of simulation Limitations of Simulation Technique Areas of application	25%
II	**System Models** Concept of a system System Environment System Modeling Types of Models Static Physical Model Dynamic Physical Model Static Mathematical Model Dynamic Mathematical Model Principles Used in Modeling	25%
III	**System Study** Subsystems A Corporate model Environments Segment Production Segment Management Segment The Full Corporate Model System Analysis System Design System Postulation	25%
IV	**System Simulation** The Technique of Simulation Monte Carlo Method Types of system Simulation NCT for continues Model NCT for discrete Model	25%

	Distributed Lag Models Cobweb Models Progress of system simulation	

Basic Text & Reference Books:

D.s.hira..system simulation by s.Chand and company Ltd

Geoffrey Gordon.System simulation 2nd Edition by PHI

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Semester: VI

Syllabus with Effect from: June - 2018

Paper Code: PS06FIIT01		**Total Credit: 4**
Title of Paper: Software Project Management		
Unit	**Description in Detail**	**Weightage (%)**
I	**Software Project Management,Proposal and Contacts.** Process-Based Approach for Project Execution. Capability Maturity Model and their level. Assessment Method. Processes (Background, Process Architecture and Documentation, SEPG and Software Process, Improvement Planning, Senior Management Involvement, Process Life Cycle, Project Management process). Customer and Vendor Interaction. Proposal, Contract.	25%
II	**Requirement Specification ,Project Tailoring and Process Capability**. Requirement Analysis and Specification. Requirement Change Management. Traceability Management Development Process. Process Tailoring. Software Metrics and Process Management. Process Database, Process Capability Baseline.	25%
III	**Quality , Risk and Configuration Management** Quality Management (Software Quality and Defects, Procedural Approach, Quantitative Approach). Quantitative Quality Management Planning. Introduction to Risk Management. Risk Assessment, Risk Control. Concepts in Configuration Management. Configuration management process, Document Control.	25%
IV	**Review Process, Project Monitoring, Audits and Closure.** Review Process. Data collection. Monitoring and control. Data Collection. Project Tracking, Audit Process. Audit Analysis, Project Closure Analysis. Archiving.	25%

Basic Text & Reference Books:

CMM in Practice Processes for Executing Software Projects by Pankaj Jalote.