DR. D Y PATIL VIDYAPEETH

PUNE – 411018

CENTRE FOR ONLINE LEARNING

PIMPRI, PUNE

SYLLABUS FOR

MASTER OF BUSINESS ADMINISTRATION (M.B.A)

Academic Year 2025

Dr. D. Y. Patil Vidyapeeth, Pune
(Deemed to be University)
(Re-accredited by NAAC with a CGPA of 3.64 on a four-point scale at 'A++' Grade)
(An ISO 9001: 2015 Certified University)
Centre for Online Learning

Semester-III Information and Technology Management Specialization

Semester	3	Course Credits	4	Specialization	Information and Technology Management
Course Code	OMBI-301			Type	Specialization Course
Course Title	Fundamentals of Information Technology (FIT)				

Course Description:

This course provides a basic grounding and fluency in the basic information technology (IT) skills necessary for information professionals. It introduces students to and provides practical exercises on several areas of information technology including the personal computer (PC) and PC applications (PC hardware & software), networking, web page design, and website development/maintenance including JavaScript, databases, spreadsheets, and information security.

Course Objectives:

1) To have a basic understanding of the basic concepts and terminology of information technology and be able to definethem;

2) To have a basic understanding of personal computers and theiroperations;

3) To have acquired the basic skills and be able to use the main personal computer applications;

4) To have acquired the basic web design and developmentskills;

5) To have an increased ability to learn and explore new information technologieswith confidence;and

6) To be able to identify issues related to informationsecurity.

Course Outline:

Unit 1: Introduction to Computer Systems: Computer definition, Characteristics of Computers, Computer Generations, First Generation Computers, Second Generation Computer,Third Generation Computers, Fourth Generation Computers, Fifth Generation Computers, Types of Computers, Classification Based on Size, Classification Based on Technology, Digital Block Diagram, Function of Each Unit of BlockDiagram.

Unit 2: Input & Output Devices: Introduction to Input Devices, Keyboard, Pointing Devices, Mouse, Joystick, Source Data Entry Devices (Scanning Devices), Optical Scanners, Bar Code readers, MICR, Digital Camera, OMR, Magnetic Strip Reader. Output devices, Monitors– Cathode Ray Tube, LCD, TFT LCD, LED, Printers: Impact Printer/Non-Impact Printer Character, Line, Page, Ink Jet Printer, Laser

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Printer**,** Plotters**,** Audio Output Device– Speakers, Headphones.

Unit 3: Primary & Secondary Storage Devices: Primary Storages (Types of Main Memory.) Storage Devices**,** Punch Card**,** Magnetic Tape**,** Magnetic Disk**,** Hard Disk**,** Floppy Disc**,** Optical Memories, CD**,** WORM**,** DVD**,** Pen Drive.

Unit 4: Electronic Data and Coding System: Conversion of One Number System to Another, Coding Systems: BCD, EBCDIC, and ASCII.

Unit 5: Types of Software: Software Evolution**,** Evolution of Software Design Paradigm**,** Types of Software**,** System Software**,** Programming Software**,** Application Software**,** Utility Software, Open Source Software.

Unit 6: Computer Language: High Level Language, Low Level Language, Editor, Assembler, Compiler & Interpreter.

Unit 7: Introductions to Operating System: Operating System Services**,** History.

Unit 8: Operating Systems Services Part I: Process Scheduling**,** CPU Scheduling Algorithms.

Unit 9: Operating Systems Services Part II: File Management.

Unit 10: Computer Networking: Types of Networks**,** Data Communication System**,** Network Topologies.

Unit 11: Computer Networking Models: Networking Devices**,** Introduction to Network Models**,** OSI Model, TCPIP Model.

Unit 12: Internet Basics: Internet & Its Software Components.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO301.1	**Remember**	Familiarize with the basic concepts of Information Technology.
CO301.2	**Understand**	Learn the basic operations of using a personal computer.
CO301.3	**Analyse**	Skills to use computer applications.
CO301.4	**Apply**	Acquire web designing and development skills.

Suggested Reading:

1. P. K. Sinha, Computer Fundamental (BPBPublication)

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2. V. Rajaraman, Computer Fundamental (PHI Publication)

3. D. P. Sharma, Fundamentals of Computer, IT & Programming with "C"(CBC Publication)

4. Alexix Leon, Mathews Leon, Introduction to Computers, LeonPress

5. E Balagurusamy, Fundamentals of Computers, TataMcGraw-Hill

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Semester	3	Course Credits	4	Specialization	Information and Technology Management
Course Code	OMBI-302			Type	Specialization Course
Course Title	C Programming (C. Pro)				

Course Description:

C is a general purpose, procedural, imperative computer programming language developed in 1972 by Dennis M. Ritchie at the Bell Telephone Laboratories to develop the UNIX operating system. C is the most widely used computer language. It keeps fluctuating at number one scale of popularity along with Java programming language, which is also equally popular and most widely used among modern softwareprogrammers.

Course Objectives:

1) To familiarize the trainee with the basic concepts of computer programming and developertools;

2) To present the syntax and semantics of the "C" language as well as data types offered by the language;and

3) To allow the trainee to write their own programs using standard languageinfrastructure regardless of the hardware or softwareplatform.

Course Outline:

Unit 1: Introduction to C: Design Methods, Top-Down Design, Bottom-Up Approach, Modular Approach, Programming Languages, Low-Level Languages, Machine Level Language, Assembly Language, High-Level Languages, Brief History of C, Importance of C, Features and Characteristics of C, Structure of a C Program, Executing CProgram.

Unit 2: Building Blocks Of C: C Character Set, Alphabets, Digits, Special Characters, C Tokens, Keywords and Identifiers, Constants, Numeric, Integer, Floating Point, Character Constants, String Constants, Symbolic Constants, Enumeration, Backslash Characters/Escape Sequences, Data Types, Variables, Declaration of Variables, Initialization of Variables, Operators, Arithmetic, Relational, Logical, Bitwise, Assignment, Conditional, Comma Operator, Size of Operator, Type of Conversion, Implicit Type of Conversions, Explicit Type of Conversions, Precedence and Associability of Operators.

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Unit 3: Input Output Operations: Types of I/O, Formatted functions, Formatted Input, Formatted Output, Unformatted Functions.

Unit 4: Control Statements: Selection Statements, if….else statement, Nested if ….else statement, Iterative Statements, while loop, do…..while loop, for loop, Nesting of loops, Infinite loops, Jump Statements, go to and label, break, continue, switch…case statement, Some Additional Problems.

Unit 5: Functions: Why functions?,Library Functions, User Defined Functions, Function Declaration, Function Definition, Function Call, Return Statement, Function Arguments, Types of Functions, Functions With No Arguments and No Return Value, Function With No Arguments and A Return Value, Function With Arguments and No Return Value, Function With Arguments and Return Value, Local Variables, Global Variables, Static Variables, Recursion, Advantages and Disadvantages ofFunctions.

Unit 6: Arrays: One Dimensional Array (1-D Array), Declaration, Initializations, Accessing the Elements, Processing of Elements, Two Dimensional Array, Declaration, Initializations, Accessing and Processing the Elements, 1-D Array and Functions, Passing Individual Elements of 1-D Array to a Function, Passing Entire Array to A Function, Passing 2-D Array to Functions.

Unit 7: Pointers: Basics of Pointer, Address Operator, Declaration of Pointer Variable, Initializing Pointer Variable, Dereferencing Pointer Variable, Pointer Arithmetic, Pointers and 1- D Array, Pointers and Multidimensional Array, Pointers and Functions, Dynamic Memory Allocation.

Unit 8: Strings: Initializing String, String Manipulation Functions, Passing Strings to Functions, Array of Strings (Two-Dimensional Array of Characters), Accessing or Array of String: Initialization of Array of String.

Unit 9: Storage Classes and Scope: Block Scope, File Scope, Storage Classes, Automatic Storage, External Storage, Static Storage, Register Storage.

Unit 10: Structure and Union: Defining a Structure, Creating Structure Variable, Accessing Member of Structure, Initialization of Structure, Array of Structure, Initializing Array of Structure, Structure Within Structure (Nested Structure), Processing a Structure, Structures and Pointers, Passing Structure to Functions, Union and Its Importance, Difference Between Structure&Union.

Unit 11: The C Pre-Processor: Macros- Definition, Macros With Arguments, Nesting Of Macros, #undef, File Inclusion Directives, Conditional Compilation, #if and #endif, #else and #elif, #ifdef and #ifndef.

Unit 12: File Handling: Opening and Closing a Data File, Library Functions for reading/writing from/to a file, Unformatted I/O functions, Character I/O functions, Integer I/O functions, Record I/O functions,

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String I/O functions, Formatted I/O functions, fprintf( ):, fscanf( ), Creating Data Files, End of File (EOF), Random Access to File, fseek( ), rewind( ), ftell( ), Difference Between Text and Binary Mode, Command Line Arguments.

Unit 13: Graphics in C: Text Mode Graphics Functions, Graphics Mode, Initialization, Closing Graphics Mode, Some Graphics Mode Graphic Functions.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO302.1	**Remember**	Familiarize with the basic concepts of computer programming.
CO302.2	**Understand**	Understand data types offered by the language.
CO302.3	**Analyse**	Differentiate hardware and software through programming.

Suggested Reading:

1. Programming with C Author: E.Balagurusamy
2. Let us C Author: YashwantKanetkar
3. C in Depth, Srivastawa and Srivastawa,BPB.
4. The C Programming Language, Kernighan and Ritchie,PHI.

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Semester	3	Course Credits	4	Specialization	Information and Technology Management
Course Code	OMBI-303			Type	Specialization Course
Course Title	DBMS & Oracle (DBMS)				

Course Description:

This course engages students to analyse complex business scenarios and create a data model- a conceptual representation of an organization's information. Participants implement their database design by creating a physical database using SQL. Basic SQL syntax and the rules for constructing valid SQL statements are reviewed. This course culminates with a project that challenges students to design, implement, and demonstrate a database solution for a business or organization.

Course Objectives:

1) Distinguish between data and information andknowledge;
2) Distinguish between file processing system andDBMS;
3) Describe DBMS and its advantages anddisadvantages;
4) Describe database users including data baseadministrator;
5) Describe data models, schemas and instances and data languages;and
6) Describe DBMS Architecture & DataIndependence.

Course Outline:

Unit 1: Basic Concepts: Database and Need for DBMS**,** Characteristics of DBMS**,** Database Users**,** 3-tier Architecture of DBMS (Its Advantages over 2-tier)**,** Views of Data-Schemas and Instances**,** Data Independence.

Unit 2: Modeling Techniques: Different Types of Models**,** Introduction to ERD, Entities, Relationships**,** Representation of Entities, Attributes, Relationship Attributes, Relationship Set**,** Generalization, Aggregation**,** Structure of Relational Database and Types of Keys**,** Expressing M:N Relation.

Unit 3: Relational Model & Relational Database Design: Codd's Rules**,** Relational Data Model &Relational Algebra**,** Relational Model Concept**,** Relational Model Constraints**,** Relational Algebra.

Unit 4: Normalization: Database Design– ER to Relational**,** Functional Dependencies**,** Normalization**,** Normal Forms Based on Primary Keys**,** Loss Less Joins and Dependency Preserving Decomposition.

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Unit 5: Transaction: Concept of Transaction, ACID properties, States of Transaction, Implementation of Atomicity & Durability.

Unit 6: Concurrency Control: Concurrency Control, Locking Techniques, Time Stamp Based Protocols, Granularity of Data Items, Deadlock.

ORACLE

Unit 7: Introduction To Oracle Architecture: Memory Structures and Processes, User and Server Processes, Database Structures.

Unit 8: Queries: Select with all Options, Operators, Arithmetic, Comparison, Logical (in, between, like, all, %, _, any, exists, is null, and, or, not, Distinct), Clauses.

Unit 9: SQL Functions: Date: Sys_date, next_day, Add_months, last_day, months_between; Numeric : Round, trunc, abs, ceil, cos, exp, floor; Character: Initcap, lower, upper, ltrim, rtrim, translate, length, lpad, rpad, replace; Conversion: to_char, to_date, to_number; Miscellaneous : Uid, User, nvl, vsize, decode, rownum; Group Function: avg, max, min, sum, count, with Group by and Having Clause.

Unit 10: Joins: Simple Join, Equi Join, Non Equi Join, Self Join, Outer Join.

Unit 11: Set Operators: Operators (Union, Union All, Intersect, Minus.)

Unit 12: Sub-Queries: Sub Queries and Correlated Query.

Unit 13: Statements: DML Statements (Insert, Update, Delete with where clause), TCL (Commit, Rollback, Savepoint), Locks in Oracle, DDL Statements.

Unit 14: Table: Create, Alter, Drop, Truncate, Rename, Constraints (Primary key, Foreign Key, Unique Key, Check, Default, Not Null, On Delete, Cascade), Column Level and Table Level Constraints, Oracle Objects, Views, Sequences, Synonyms, Index (Define, Alter and Drop)

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO303.1	**Remember**	Learn data languages through data model, schemas, and instances.
CO303.2	**Understand**	Grab the knowledge of data and information.
CO303.3	**Analyse**	Differentiate file processing system and DBMS.

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CO303.4	**Apply**	Impart knowledge of data base administrator.

Suggested Reading:

1. Database Systems Concepts – byKorth

2. An introduction to Database systems-by C.J.Date

3. Fundamentals of Database Systems-by Navathe

4. Oracle Core: Essential Internals for DBAs and Developers by JonathanLewis.

5. Oracle Database 11g Release 2 Performance Tuning Tips & Techniques (Oracle Press)by RichardNiemiec.

6. Understanding ORACLE Perry J. & Later J., BPBPub.

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Semester	3	Course Credits	4	Specialization	Information and Technology Management
Course Code	OMBI-304			Type	Specialization Course
Course Title	Web Designing and Content Management (WDCM)				

Course Description:

This course will introduce students to a variety of methods for creating websites. They will learn the basic HTML, and basic CSS or Cascading Style sheets. In addition, this course provides information on how to work with graphics and dynamic web content and upload their sites to the web. The primary application used will be Adobe Muse.

Course Objectives:

1) Express knowledge of a variety of ways that web sites may bedeveloped;

2) Continue to demonstrate a progressive knowledge of Adobe Photoshop in regard to image development. Demonstrate an ability to perform several functions of this application. Have knowledge of what it takes to create an art suitable for web publication;

3) Understand how to use HTML and CSS for basic web development. Know how to work the HTML and CSS within Dreamweaver and create pages with the use ofNotepad;

4) Understand a variety of web sites that are available and what makes each of them unique; and

5) Understand Adobe MUSE for webdevelopment.

Course Outline:

Unit 1: Internet and Web Technology: Computer Network Basics, Packet Switching and TCP/IP, The Web, Basic Internet Tools, The Domain Name System, Cloud Computing, Web Apps.

Unit 2: Web &Hyper Text Markup Language (HTML): Web Architecture, Web Server, Types of Web Sites, Web Development Life Cycle, What is a Web Browser?, HTML Introduction, Document Structure, Basic Tags of HTML, Creating First Web Page, Meta tags, Validating your HTML, Accessibility.

Unit 3: HTML: Formatting of Text, Links, Lists, HTML Images, and Tables.

Unit 4: HTML: Frames, Image Map, Forms.

Unit 5: Cascading Style Sheets: Three Ways to Insert CSS, About DOCTYPEs, Creating a CSS File, A Word about Fonts, Classes, A Better CSS Editor, ID-Based Styles, Styling Backgrounds, Styling Text, Styling Links, Styling Tables.

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Unit 6: JavaScript: JavaScript Output, JavaScript Statements, JavaScript Variables, JavaScript Data Types, JavaScript Objects, JavaScript Operators, Conditional Statements, Loop Statements, Functions.

Unit 7: Introduction to PHP: Installing PHP, Testing PHP, Creating Your First Script, Embedding PHP within HTML, Comments, Variables, Data Types, Operators and Expressions, Constants.

Unit 8: PHP: Conditional Statements, Ternary Operator, Loop Statements, Activity, Strings, Arrays, Functions.

Unit 9: MySQL: Relational Databases, Setting Up MySQL, Connecting to MySQL from PHP, Handling Errors.

Unit 10: Introduction to Content Management System: Essentials of A CMS, CMS Features and Functions, Types of CMS, Open Source CMS, Commercial CMS, CMS and Usability.

Unit 11: Building Websites Using Joomla: Installation, Working with Joomla!, How to Create Joomla Articles, How to Link Articles in the Joomla Menu, How to Manage Article Categories, Joomla Component Page.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO304.1	**Remember**	Learn the ways to develop websites.
CO304.2	**Understand**	Understand the usage of creating pages with notepad.
CO304.3	**Analyse**	Grab knowledge to create art suitable for web publication.
CO304.4	**Create**	Develop unique website through understanding subject.

Suggested Reading:

1. Database Systems Concepts – byKorth
2. Programming with C Author: E.Balagurusamy
3. D. P. Sharma, Fundamentals of Computer, IT & Programming with "C"(CBC Publication).
4. V. Rajaraman, Fundamentals of Computers, PHI Publication.
5. Alexix Leon, Mathews Leon, Introduction to Computers, LeonPress.
6. E Balagurusamy, Fundamentals of Computers, TataMcGraw-Hill

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Semester	3	Course Credits	4	Specialization	Information and Technology Management
Course Code	OMBI-305			Type	Specialization Course
Course Title	Software Engineering (SE)				

Course Description:

There are several areas to focus on within software engineering, such as design, development, testing, maintenance, and management. The course is designed to present software engineering concepts and principles in parallel with the software development life cycle.

Course Objectives:

1) Be successful professionals in the field with solid fundamental knowledge of software engineering;

2) Utilize and exhibit strong communication and interpersonal skills, as well as professional and ethical principles when functioning as members and leaders of multi-disciplinary teams;and

3) Apply their foundations in software engineering to adapt to readily changing environments using the appropriate theory, principles, andprocesses.

Course Outline:

Unit 1: Introduction to Software Engineering: System Definition, What is Software? Software Applications, Software Standards, Software Engineering, Software Process and Software Product, Software Development Life Cycle, Software Process Models.

Unit 2: Software Requirement Specification (SRS): Requirement Analysis, Feasibility Study, Requirements Elicitation and Analysis, Fact Fining Techniques, Requirement Process, Software Requirement Specification, Characteristics of SRS, SRS Intended Users.

Unit 3: System Analysis and Design Approach: System Analysis Need, Role of System Analyst, Analysis Tools and Techniques, Design Approach.

Unit 4: Software Design Engineering: Design Model, Software Architecture, and Component Level Design.

Unit 5: User Interface Design: The elements of good design interface, The Golden Rules, Interface Design Activities, Design Issues, Design Evolution, Human Computer Interface (HCI), Norman's Research.

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Unit 6: Software Quality Assurance: Quality Concept, The Quality Movement, SQA Activities, Software Reviews, Formal Technical Reviews, Software Reliability, The ISO 9000 Quality Standards, The SQAPlan.

Unit 7: Software Testing: Testing Objectives, Testing Principles, Testing and Quality, V Model, V Model vs. Traditional Model, Verification & Validation, Static Testing & Dynamic Testing, Software Inspection.

Unit 8: Documentation: Process and Product Documentation, Document Quality, Document Preparation.

Unit 9: Software Maintenance: Software Evolution, Software Maintenance, Maintenance Cost, Legacy System, Software Re-engineering, Reverse Engineering, Forward Engineering.

Unit: 10 Object Oriented Analysis & Design: What is SAD?, What is OOAD?, Object- Oriented Programming Concepts: A Primer, What is Notation?, UML Diagrams.

Unit 11: CASE Tools: What are CASE Tools?,Categories of CASE Tools, Need of CASE Tools, CASE Benefits, Types of CASE Tools.

Unit 12: Current Trends in Software Engineering: Web Engineering, Quality Attributes, Web Process, AgileProcesses.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO305.1	**Remember**	Learn the fundamental knowledge of software engineering.
CO305.2	**Analyse**	Utilize interpersonal skills
CO305.3	**Evaluate**	Adopt appropriate theory, principles, and processes for changing technologies.

Suggested Reading:

1. Software Engineering, 5th Edition, Roger S. Pressman,Ph.D.
2. Software Engineering, 9th Edition, IanSommerville
3. Software Engineering, 6th Edition, 2001, Ian Sommerville; PearsonEducation.

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Semester	3	Course Credits	4	Specialization	Information and Technology Management
Course Code	OMBI-306			Type	Specialization Course
Course Title	Enterprise Resource Planning (ERP)				

Course Description:

This course will explore the concepts, principles, and the state-of-the-art methods in successfully integrating Enterprise Resource Planning (ERP) systems into extant enterprise architectures. It will help both functional area and IT managers understand the respective role of users, enterprise architects, developers, and managers in the selection, preparation, implementation, and management of large and complex enterprise applications.

Course Objectives:

1) Understand and gain an insight into the process views of organizations and tools and techniques used to model both as is and to bemodels;

2) Apply the process modeling techniques in one or more modeling environments;and

3) Know and be able to apply key technical terminology in enterprise information systems as they apply in different ERP products and developmentmethods.

Course Outline:

Unit 1: Enterprise Resource Planning: ERP Systems, Evolution of ERP Systems, Need & Benefits of ERP Systems, Basic ERP Concepts, Challenges of ERP, Drawbacks of ERP Systems, ERP Scenario in Indian Market, ERP Architecture and TechnicalAspects.

Unit 2: ERP and Technology: ERP and Related Technology, Business Intelligence, E- Commerce and E-Business, Business Process Reengineering, Data Warehousing and Data Mining, On-line Analytical Processing (OLAP), Product Life Cycle Management, Supply Chain Management (SCM), Customer Relationship Management.

Unit 3 ERP Need Analysis: Justifying ERP Investments (ROI), Need for Business Case for ERP, Feasibility Study, Strategic Plan and Analysis.

Unit 4: Pre-Implementation – Getting Ready: Requirements Definition, Engagement with Consultants, Vendors and Employees, Dealing with Employee Resistance, Alternatives for ERP Acquisition, and Importance of Vendor Selection.

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Unit 5: ERP Implementation: Implementation Methodologies, Implementation Challenges, ERP Life Cycle Management, Training and Education.

Unit 6: ERP Project Management: ERP Project Scope Management, ERP Project Management, ERP Project Organization & Team, Critical Success and Failure Factors of an ERP Implementation.

Unit 7: Post ERP Implementation: Concept of Post Implementation Review, Post-Installation Review Process, Post-Implementation Review Process, Organizational Change Management, Change Management Activities During ERP Life Cycle, Impact of ERP Systems on the Organization, Post Implementation Support, Maintenance of ERP Systems, Security of ERP Systems.

Unit 8: ERP Business Module: Finance, Manufacturing (Production), Human Resources, Plant Maintenance, Materials Management, Quality Management, Marketing, Sales, Distribution and Services.

Unit 9: Some Popular ERP Packages: SAP AG, Oracle, PeopleSoft, JD Edwards, SSA Global, Lawson Software.

Unit 10: Emerging Trends and Future of ERP: Emerging Trends and Technology, Models of ERP Deployment, Future of ERP.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO306.1	**Remember**	Learn the tools and techniques for ERP models.
CO306.2	**Understand**	Learn and understand the technical terminology.
CO306.3	**Apply**	Apply the different ERP products and development methods.
CO306.4	**Analyse**	Analyse modelling techniques to implement in environment.

Suggested Reading:

1. Make the Choice Between Bolt On and Middleware Solutions – Glazer.J
2. Enterprise Resource Planning- Monk Ellen F. and WagnerBret
3. Enterprise Systems for Management-Motiwalla, Luvai F., ThompsonJeff.

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Semester-IV Information and Technology (IT) Specialization

Semester	4	Course Credits	4	Specialization	Information Technology Management
Course Code	OMBI-401			Type	Specialization Course
Course Title	Software Project Management (SPM)				

Course Description:

This course will provide you with a working knowledge of creating projects using MS Project. It will also give you an idea about how to create project plans, create tasks and organize them, setup work resources and assigntasks.

Course Objectives:

1) Define the scope of software projectmanagement.

2) Distinguish software and other types of project development and various stages of a software project and role management;and

3) Problems and concerns of software projectmanagement.

Course Outline:

Unit 1: Software Project Management Framework: Project Attributes, Project Constraints, Features of Projects, Project Management Function, Defining Software Project Management, Umbrella Activities under Software Project Management, The Role of the Software Project Manager, Project Management Life Cycle, Project Closure.

Unit 2: Software Risk Management: Risk Management Process, Risk Management Planning, Common Sources of Risk for Information Technology Projects, Risk Management, Create a Risk Management Plan.

Unit 3: Software Cost Estimation Technique: Project Cost Management, Basic Principles of Cost Management, Resources Planning, Cost Estimating, Parametric Models, Cost Budgeting, Functional Point Analysis, Delphi Cost Model.

Unit 4: Software Time Estimation Technique: Organizing Information Before You Build a Timeline, Work Break Down Structure, Schedule Development.

Unit 5: Software Testing and Maintenance: Testing Principles, Verification & Validation, Testing Strategy, Level of Testing, Software Maintenance.

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Unit 6: Software Configuration Management and Quality Assurance: Configuration Management, Configuration Management Plan, Software Quality Assurance, Software Quality Assurance Activities.

Unit 7: Software Quality Management: Quality Planning, Quality Assurance, Quality Control, Modern Quality Management, Improving Information Technology Project Quality, Maturity Models.

Unit 8: Team Management: Characteristics of Performance Management, An Effective Performance Management Process, Team Structure, Group Behavior, Stages of Group Development, Group Behavior Model, Intergroup Dynamics and Behavior, Team and Team working, Decision Making, Managing Customer Expectation.

Unit 9: Role of User in Project: Defining User Types, What is the Role of the End-User in IT Projects?, The Changing Role of the User in the Development of Application Software, Software Implementation, Implementation.

Unit 10: Communication Management: The Importance of Project Communications Management, Communications Planning, Information Distribution, Understanding Human and Individual Communications Needs, Performance Reporting, Suggestions for Improving Project Communications.

Unit 11: Software Release Management: Release Management Process Overview, Release Building, Acceptance Testing, Release Preparation.

Unit 12: Project Procurement Management: Procure Management Process, Tools and Techniques for Procurement Planning: Outputs from Procurement Planning, Requesting Seller Responses (Solicitation), Source selection, Contract Administration, Using Software to Assist in Project Procurement Management.

Unit 13: Implementation Management: Implementation Process, Deploy, Approaches of Project Implementation, Evaluating Project Success.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO401.1	**Remember**	Learn the scope of software management.
CO401.2	**Understand**	Easily learn the types of project development.
CO401.3	**Apply**	Differentiate problems and manage solutions.
CO401.4	**Analyse**	Learn the basic concepts of software project management.

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Suggested Reading:

1. Release Management Process by Fermi NationalLaboratory

2. Schwalbe 2006, Information Technology Project Management,4th Edition, Thomoson Course Technology

3. Project Management Institution, 2004 Project Management Body ofKnowledge

4. Ian Summerville Software Engineering, 6th edition Pearson Education Asia,2001.

5. Ivan Jacobson, Grady Booch, James Rum Baugh: The Unified Software Development Process– Pearson Education 2007. M.A. Parthasarathy: PracticalSoftware

6. Estimation, Pearson Education,2007.

7. Steve MC Connell: Software Estimation, Demystifying the Black Art, MicrosoftPress, 2006.

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Semester	4	**Course Credits**	4	**Specialization**	Information Technology Management
Course Code	OMBI-402			**Type**	Specialization Course
Course Title	Emerging Trends in Information and Technology (ETIT)				

Course Description:

The Latest Trend of Information Technologies is:Cloud Computing, Internet of Things (IoT), Big Data, Cyber Security, Context-Rich Systems, Increased Automation, continued mobile pervasiveness, Web-Scale IT, 3D printing. By learning the course students will able to understand the various terms related to informationtechnology.

Course Objectives:

1) To make students aware of the changes in technologies, applications and Systems around us.
2) To use the current trends and technologies as per thedemand.
3) Students will be able to understand the day-to-day growth;and
4) One can perform as per the newtrends.

Course Outline:

Unit 1: E–Commerce: Overview of E-Commerce, Models of E-Commerce, Scope of E- Commerce, Advantages and Disadvantages of E-commerce, Creation of E-Commerce Sites, BPR & E-Commerce, Ethics &E-Commerce.

Unit 2: M-Commerce: Overview of Mobile-Commerce attributes of M-Commerce, Drivers of M-Commerce, M-Commerce Security Issues, and Separating Mobile Commerce from Electronic Commerce, Applications of M-Commerce.

Unit 3: Customer Relationship Management: Marketing Management, Marketing Strategy, Service Management, Business Process Outsourcing, and Business Continuity Plan.

Unit 4: E-Banking: What is E-Banking? Advantages of E-Banking, Securities in E-Banking, Electronic Payment System, Services Provided in E-Banking, Electronic Clearing System.

Unit 5: E- Logistics: What is E-Logistics, Logistics & Supplier Chain Management, Warehousing Management, Transportation/Distribution Management.

Unit 6: E-Learning: Features of e-Learning (Advantages), e- Learning Models, Different Types of

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Learning, e-Learning Tools and Technologies**,** Standards for e-Learning.

Unit 7: GIS: What is GIS?, Nature of Geographic Data**,** Spatial Objects & Data Models, Getting Map on Computers, GIS Standards &Standardization Process of GIS Development**,** Implementation and Deployment Phases.

Unit 8: Knowledge Management: Components and Type of Knowledge**,** Knowledge Management**,** Cycle &Knowledge Management Architecture**,** Knowledge Management Tools**,** Knowledge Management Approaches.

Unit 9: E- Governance and E- Agriculture: Challenges to E–Governance, Strategies and Tactics for Implementation of E–Governance

Unit 10: Biometric Technologies: RFID**,** Retina Scanning**,** Facial Reorganization**,** Fingerprint scanning**,** Hand geometry, DNA (Working principles) Application Area.

Unit 11: Enterprise Content Management: Process**,** Types of Content.

Unit 12: Social Networking: Types of Social Networking Sites, Niche Advantages of Social Networking Sites, Drawbacks of Social Networking Sites, *Social* Networking Sites for Business, Security Issues with Social Networking Sites

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO402.1	**Remember**	Learn the laws and regulation of information technology
CO402.2	**Understand**	Learn changes in technology and applications.
CO402.3	**Apply**	Able to use current trends and technology.
CO402.4	**Analyse**	Exhibit the level of growth.
CO402.5	**Create**	Perform the task as per the latest trends.

Suggested Reading:

1. Multimedia Communications: Applications, Networks, Protocols and Standards, Fred Halsall, Addison WesleyPublications.

2. Multimedia Communications: Protocols and Applications, Franklin F Kuo, J.Joaquin Garcia, Wolf Gang Effelsberg, Prentice HallPublications

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3. E-Commerce: Implementing Global Marketing Strategies by Bohdan O.Szuprowicz.

4. Electronic Commerce: Opportunities and Challenges by Syed Mahbubur Rahman, MaheshRaisinghani

5. J. Schiller, "Mobile Communications", Addison Wesley,1999

6. D. Johnson, D Maltz, "Protocols for Adaptive Wireless and Mobile Networking", IEEE Personal Communication, 3(1), February 1996

7. R. Caceres, L. Iftode, "Improving the Performance of Reliable Transport Protocols in Mobile Computing Environments", IEEE J. Selected Areas of Communications, June1995