

COMPUTER APPLICATION

SHREE GURU GOBIND SINGH JI GOVERNMENT COLLEGE PAONTA SAHIB, H.P.

TEACHING PLAN

BCA I Sem

SUBJECT: MATHEMATICS-I BCA0101

UNIT	TOPIC/DETAILS	MONTH	METHOD OF TEACHING
I	Set theory, Relations, quadratic equations, sequence & series, binomial theorems, determinants, matrices.	AUGUST	PPT/LECTURES/VIDEOS
II	Rectangular co-ordinates, length of a line segment, section ratio, area of a triangle, equations of a straight line circles.	SEPTEMBER	PPT/LECTURES/VIDEOS
III	Trigonometric functions, trigonometrical ratios of negative and associated angles, trigonometrical ratios of compound angles, multiple and sub multiple angles, Heights and distances.	OCTOBER	PPT/LECTURES/VIDEOS
IV	Functions, limits and continuity, Derivative of functions, Maxima & Minima, Indefinite integrals and definite integrals.	NOVEMBER	PPT/LECTURES/VIDEOS

NOTE: ASSIGNMENTS, CLASS TESTS AND MID TERM WILL BE TAKEN DURING THE SESSION.

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TEACHING PLAN

BCA I Sem

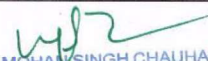
SUBJECT: APPLIED ENGLISH BCA0102

UNIT	TOPIC/DETAILS	MONTH	METHOD OF TEACHING
I	Comprehension : One unseen passages of 250-300 words in length with a variety of comprehension questions including 05 marks for word attack skills such as word formation and inferring meaning, finding opposites etc. The passage can be a factual passage (e.g., instruction, description, report etc.) or a literary passage (e.g., extract from fiction, drama, poetry, essay or biography), or a discursive passage involving opinion, (argumentative, persuasive or interpretative text).	AUGUST	PPT/LECTURES/VIDEOS
II	Vocabulary: Change the Number, Change the Gender, Words commonly misspelt, Antonyms, Synonyms, Fill up using correct determinant.	SEPTEMBER	PPT/LECTURES/VIDEOS
III	Filling up the correct form types of the tense in the sentence: present/ past /future tense with simple/continuous/perfect/ perfect continuous forms, Reordering word groups in the sentence to make a meaningful sentence, Writing meaning of given word and using in the sentence. Conversion among various types of sentences: affirmative, interrogative sentences, negation, exclamations.	OCTOBER	PPT/LECTURES/VIDEOS
IV	Composition: Composition on a given topic/title based on any current social, environment, health issues. Formal Letter Writing (invitation, accepting/rejecting an invitation, apology, welcome, thanking complements),	NOVEMBER	PPT/LECTURES/VIDEOS

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TEACHING PLAN

BCA I Sem

SUBJECT: COMPUTER FUNDAMENTALS BCA0103

UNIT	TOPIC/DETAILS	MONTH	METHOD OF TEACHING
I	Introduction: Characteristics of Computers, Evolution of computers, Capabilities and limitations of computers, Generations of computers, Types of computers (micro, mini, main frame, supercomputers), Block diagram of computer. Basic components of a computer system: Input unit, output unit, Arithmetic logic Unit, Control unit, central processing unit, Instruction set, registers, processor speed, type of processors.	AUGUST	PPT/LECTURES/VIDEOS
II	Memory: main memory organization, main memory capacity, RAM, ROM, EPROM, PROM, cache memory, PCs specifications. Secondary Storage Devices- Magnetic Tape, Magnetic Disks: Internal Hard Disk, External Hard Drives, Floppy Disks, Optical Disks- CD, VCD, CD-R, CD-RW, DVD, Solid State Storage: Flash Memory, USB Drives.	SEPTEMBER	PPT/LECTURES/VIDEOS
III	Input devices: Keyboard, Pointing Devices: mouse, Touch Screens, Joystick, Electronic pen, Trackball, Scanning Devices- Optical Scanners, OCR, OMR, Bar Code Readers, MICR, Digitizer, Electronic card reader, Image Capturing Devices- Digital Cameras. Output devices- Monitors: CRT, LCD/TFT, Printers- Dot matrix, Inkjet, Laser, Plotters- Drum, Flatbed, Screen image projector.	OCTOBER	PPT/LECTURES/VIDEOS
IV	Computer Software: Software and its Need, Types of software: System software, Application software, System software: operating system, utility program, programming languages, assemblers, compilers and interpreter, introduction to operation system for PCs- DOS, windows, linux, file allocation table (FAT & FAT32), files & directory structure and its naming rules, programming languages: machine, assembly, high level, 4GL, their merits and demerits, application software and its types - word processing, spreadsheet, presentation graphics	NOVEMBER	PPT/LECTURES/VIDEOS

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TEACHING PLAN

BCA I Sem

SUBJECT: C PROGRAMMING BCA0104

UNIT	TOPIC/DETAILS	MONTH	METHOD OF TEACHING
I	Introductory Concepts: Types of programming languages, Introduction to C, some simple C programs, Desirable program characteristics. C Fundamentals: C character Set, Identifiers and keywords, data types, constants, variables and arrays, Declarations, expressions, statements, Symbolic constants.	AUGUST	PPT/LECTURES/VIDEOS
II	Operators and expressions: Arithmetic operators, unary operator, Relational and logical operators, assignment operators, conditional operators, Library Functions. Data Input and Output: Preliminaries, single character input, single character output, Entering input data, writing output data, the gets() and puts() function.	SEPTEMBER	PPT/LECTURES/VIDEOS
III	Control Statements: Preliminaries, Branching, Looping, Nested control statements, switch statement, break statement, The continue statement, The goto statement, The comma operator. Arrays: Defining an array, processing an array, passing arrays to functions, Multidimensional arrays, Arrays and strings.	OCTOBER	PPT/LECTURES/VIDEOS
IV	Functions: A brief overview, Defining a function, accessing a function, function prototypes, passing arguments to a function, recursion. Pointers: Fundamentals, Pointer declarations, Passing pointers to the functions, pointers and one dimensional array, dynamic memory allocation, Operations on pointers, arrays of pointers.	NOVEMBER	PPT/LECTURES/VIDEOS

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TEACHING PLAN			
BCA I Sem			
SUBJECT:OFFICE AUTOMATION TOOLS BCA0105			
UNIT	TOPIC/DETAILS	MONTH	METHOD OF TEACHING
I	DOS commands: (internal (DIR, DATE, TIME, CLS, CD, RD, MD, PATH, TYPE, DEL, ECHO, COPY, REN, PROMPT, VOL, VER), external (ATTRIB, CHKDSK, DISKCOPY, DISKCOMP, XCOPY, TREE, DELTREE, DOSKEY, FORMAT, FIND, SORT, FDISK, MORE, SYS)), Concept of files & directories, Wild card characters, Redirection operators. Windows 2007: Definition, Benefits, Features & uses of Windows 2007, Control panel, Accessories, Task bar, My computer uses, Recycle bin.	AUGUST	PPT/LECTURES/VIDEOS
II	Common Office - 2007: Elements, Introduction to Office 2007, Customizing the Office Environment, Managing Files in Office, Text Tools, Drawing and Graphics Tools. Word Processing: Definition, Benefits, Features & uses of Word 2007, Menus, Toolbars, Cursor control keys, Short cut keys, Hot keys, Editing Text, Document Formatting, Reusable formatting with Styles and Templates, File handling (opening, creating, saving, printing, editing), Formatting text, Find and replace, Tables and Columns, Advanced Page Layout in Word, Automating Information with Fields, Managing Long Documents, Spell check, Thesaurus, File protection, Mail Merge, Labels, and Envelopes, Macros.	SEPTEMBER	PPT/LECTURES/VIDEOS
III	Spreadsheets: Definition, Benefits, Features & Uses of MS Excel 2007, Menus, Toolbars, Worksheets, Formatting Worksheets and Restricting Data, Calculating with Formulas and Functions, Ranges, Auto fill, Data (sort, filter, validation, subtotal), Viewing and Manipulating Data with charts and PivotTables, Print, Goal seek, Scenario, Macros, Creating Excel Databases.	OCTOBER	PPT/LECTURES/VIDEOS
IV	Presentations: Definition, Benefits, Features & Uses of PowerPoint, Menus, Toolbars, Creating and Editing Slides, Adding graphics, Multimedia, and Special Effects to Slides, Insert (picture, slide, text), Master slide, Views, Animation, Action buttons, Macros.	NOVEMBER	PPT/LECTURES/VIDEOS



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TEACHING PLAN

BCA II Sem


SUBJECT: MATHEMATICS-II BCA0201

UNIT	TOPIC/DETAILS	MONTH	METHOD OF TEACHING
I	Rolle's Theorem, Lagrange's Mean Value Theorem, Cauchy's Mean Value Theorem, their geometrical significance and applications. Successive differentiation and Leibnitz Theorem.	AUGUST	PPT/LECTURES/VIDEOS
II	Number system: division algorithm, greatest common divisor, Least common multiple, congruence relation, Integer arithmetic, Modular arithmetic.	SEPTEMBER	PPT/LECTURES/VIDEOS
III	Group: definition of Group, Groups of numbers, groups of residues, groups of matrices, Groups of functions, Groups of subsets of a set, Properties of Groups, characterization of Groups, cyclic Groups.	OCTOBER	PPT/LECTURES/VIDEOS
IV	Ring: commutative ring, ring with unity, Ring of Polynomials, ring of functions, Elementary properties of ring, Fields.	NOVEMBER	PPT/LECTURES/VIDEOS

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TEACHING PLAN

BCA II Sem

SUBJECT: COMMUNICATIVE ENGLISH BCA0202

UNIT	TOPIC/DETAILS	MONTH	METHOD OF TEACHING
I	Vocabulary: Fill up using correct form of verb, Usage of the adverb, adjective etc, Write Antonym of the given word and use both the given word and its antonym in the single sentence clarifying meaning and usage, Give different meanings to Synonyms and use them in sentences, Give meaning and make sentences using idioms.	AUGUST	PPT/LECTURES/VIDEOS
II	Grammar: Conversion among various types of the tenses in the sentence: present/ past /future tense with simple/continuous/perfect forms, Conversion between Direct/Indirect speech, Conversion between active/passive voice, Conversion among various types of sentences: affirmative, interrogative sentences, negation, exclamations	AUGUST	PPT/LECTURES/VIDEOS
III	Skills in Writing: letters, official/business correspondence. CV's, Tech. Reports/types, Precis, comprehension, Paragraph writing (200 word) on current topics, writing notices, agenda, circulars.	SEPTEMBER	PPT/LECTURES/VIDEOS
IV	Secretarial Skills: Effective communication, listening and feedback skills, telephone handling, Attending meeting, preparing of agenda, writing of minutes, summaries. Handling problem situations. Control of voice and proper use of phonetics.	OCTOBER	PPT/LECTURES/VIDEOS
V	Presentation and Discussion Skills: Types of communication. Barriers to Communication. Effective use of kinesics, Planning interviews and making presentations. Taking initiatives, especially in group discussions, overcoming nervousness, making audience analyses and establishing leadership.	NOVEMBER	PPT/LECTURES/VIDEOS

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TEACHING PLAN

BCA II Sem

SUBJECT: DIGITAL ELECTRONICS BCA0203

UNIT	TOPIC/DETAILS	MONTH	METHOD OF TEACHING
I	Fundamentals of semiconductor physics: Energy bands in solids, pn junction diode depletion region, forward and reverse bias, diode as switch; Bipolar Junction Transistor, transistor configurations, bipolar junction transistor (CE configuration) as switch, Saturated and non-saturated logic, Integrated Circuits, characteristics of digital logic families: TTL, ECL, CMO	AUGUST	PPT/LECTURES/VIDEOS
II	Logic gates: AND, OR, NOT Gates and their Truth Tables, NOR, NAND & XOR gates, Boolean algebra, Basic Boolean Law's, Demorgan's theorem, Boolean function and their truth tables.	SEPTEMBER	PPT/LECTURES/VIDEOS
III	MAP simplification: Minimization techniques, K-Map, Sum of Product & Product of Sum, Venn diagram. Combinational circuit.	OCTOBER	PPT/LECTURES/VIDEOS
IV	Sequential circuits: Half adder & Full adder, BCD adder, Full Subtractor, Flip-flops-RS, D, JK, T & Master-Slave flip-flops, Shift registers, Multiplexer, Encoder, Decoder.	NOVEMBER	PPT/LECTURES/VIDEOS

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TEACHING PLAN
BCA II Sem
SUBJECT: DATA STRUCTURES BA0204

UNIT	TOPIC/DETAILS	MONTH	METHOD OF TEACHING
I	<p>Preliminaries: Concept & notation, common operation on data structures, algorithm complexity, time-space trade off between algorithm, physical & logical representation of different data structures.</p> <p>Arrays: Arrays defined, representing arrays in memory, Various operation (traversal, insertion, deletion), Multidimensional arrays, Sequential allocation, Address calculation.</p>	AUGUST	PPT/LECTURES/VIDEOS
II	<p>Linked List: Definition, type (linear, circular, doubly linked, inverted), representing linked lists in memory, advantages of using linked list over arrays, various operations on Linked list (traversal, insertion, deletion).</p>	SEPTEMBER	PPT/LECTURES/VIDEOS
III	<p>Stacks: Definition & concepts of stack structure, Implementation of stacks, Operation on stacks (push & pop), Application of stacks (converting arithmetic expression from infix notation to polish and their subsequent evaluation), quick sort technique to sort an array, recursion).</p> <p>Queue: Definition & concept of queues, implementation of queue, operation on queues (insert & delete), circular queue.</p>	OCTOBER	PPT/LECTURES/VIDEOS
IV	<p>Trees Structures: Tree, Binary Trees, Tree Traversal Algorithms (Pre-Order, In-Order, Post-Order), Threaded Trees, Binary Search Trees. Sorting & Searching: Selection sort, Bubble sort, Merge sort, Radix sort, Quick sort, Sequential search, Linear search and their complexity.</p>	NOVEMBER	PPT/LECTURES/VIDEOS

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TEACHING PLAN

BCA II Sem


SUBJECT: DATA BASE MANAGEMENT SYSTEM BA0205

UNIT	TOPIC/DETAILS	MONTH	METHOD OF TEACHING
I	Introduction To Database Concepts: Data Modeling for a Database, Fields, Records and Files, Abstraction and Data Integration, Database Architecture, Users, Structure of DBMS, Advantages and Disadvantages of DBMS. Data Models: Entity, Attribute, Relationship, Data Model Classifications, File based, Traditional, Semantic, Entity-Relationship Model.	AUGUST	PPT/LECTURES/VIDEOS
II	File Organization: Operation on files, Sequential Files, Index-Sequential Files, Types of Indexes, Implicit, limit, multilevel, Direct Files, Indexing using B-Tree Structure. Relational Model: Relational Database, Relational Algebra, Relational Calculus.	SEPTEMBER	PPT/LECTURES/VIDEOS
III	Relational Database Design: Relational Scheme and Relational Design, Functional Dependency, Normal forms (First, Second, Third, Boyce Code), Decomposition and dependency preservation, Multi-valued dependency.	OCTOBER	PPT/LECTURES/VIDEOS
IV	Ms Access: Tables (Creation/Design structure, Data Entry), Primary keys, Foreign Keys Master-Detail Table, Query (Select, Make-Table, Update, Append, Delete) Form (Modal, Modeless), Relationships Report (Creation of a simple report from a table and from a query).	NOVEMBER	PPT/LECTURES/VIDEOS

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TEACHING PLAN

BCA III Sem

SUBJECT:Mathematics-III BCA0301

UNIT	TOPIC/DETAILS	MONTH	METHOD OF TEACHING
1	Order, degree, solution and formation of a differential equation. Standard techniques of solving linear differential equations with constant coefficients, Cauchy's and Legendres.	AUGUST	PPT/LECTURES/VIDEOS
2	Complex numbers and their representation in a plane. Argand diagram, algebra of complex numbers, modulus and arguments of a complex number, square root of a complex number and cube roots of unity, triangle inequality, De-Moivre's theorem, roots of complex numbers.	SEPTEMBER	PPT/LECTURES/VIDEOS
3	Primes, Primarily testing, Factorization, Chinese Remainder Theorem, Quadratic congruence, Exponentiation and Algorithm	OCTOBER	PPT/LECTURES/VIDEOS
4	Finite fields, $GF(p)$ fields, $GF(p^n)$ fields, Polynomials and their operations over $GF(2)$ and $GF(2^n)$	NOVEMBER	PPT/LECTURES/VIDEOS

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TEACHING PLAN

BCA III Sem

SUBJECT: Business Practice and Management BCA0302

UNIT	TOPIC/DETAILS	MONTH	METHOD OF TEACHING
1	Concepts of Business: Commerce and Industry, Business Environment, Macro and Micro Environment, Business System, Forms of Business Organization.	AUGUST	PPT/LECTURES/VIDEOS
2	Management: Meaning, definition and importance, Management concept, functions, Principles of management and Management Process.	SEPTEMBER	PPT/LECTURES/VIDEOS
3	Planning: concepts and its types, Decision making concept, Management by objectives (M.B.O.), Motivation Concepts and theories, Leadership Concepts and styles.	OCTOBER	PPT/LECTURES/VIDEOS
4	Organizing: Concepts, Nature and Significance, Authority and responsibility, Centralization and Decentralization, Communication Nature, Process and types of communication networks, Managerial control concepts and Process, Techniques of control.	NOVEMBER	PPT/LECTURES/VIDEOS

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TEACHING PLAN

BCA III Sem

SUBJECT: Computer Organization BCA0303

UNIT	TOPIC/DETAILS	MONTH	METHOD OF TEACHING
1	Data representation: number systems, decimal to binary, octal and hexadecimal conversion and vice versa, binary coded decimal numbers, hamming code for error detection, alphanumeric codes, arithmetic operations, binary addition and subtraction, addition/subtraction of numbers in 1's and 2's complement notation for binary numbers and 9's and 10's complement notation for decimal numbers, binary multiplication and division, BCD arithmetic, floating point addition and subtraction.	AUGUST	PPT/LECTURES/VIDEOS
2	Register Transfer Language: Register transfer, Bus and Memory transfer (three-stage bus buffers, memory transfer), arithmetic micro-operations (Binary Adder, Binary-adder-Subtractor, binary incrementer, arithmetic circuit), Logic micro-operation (list of logic micro-operations, hardware implementation), shift micro-operations (hardware implementation), arithmetic logic shift unit.	SEPTEMBER	PPT/LECTURES/VIDEOS
3	Instruction codes: (stored program organization, indirect address), computer registers (common bus register), computer instructions (instruction set completeness), timing and control, instruction cycle (fetch and decode, types of instruction, register-reference instructions), Micro programmed control, control memory, addressing sequencing (conditional branching, mapping of instructions, subroutine)	OCTOBER	PPT/LECTURES/VIDEOS
4	Central Processing Unit: Introduction, general register organization (control word, examples of micro-operations), stack organization (register stack, memory stack, reverse polish notation, evaluation of arithmetic expressions), instruction formats (three-address instructions, two address instructions, one-address instructions), addressing modes, data transfer and manipulation (data transfer instructions, data manipulation instructions, arithmetic instructions, logical and bit manipulation instructions, shift instructions), Program control (status bit conditions, conditional branch instructions, program interrupt, types of interrupt).	NOVEMBER	PPT/LECTURES/VIDEOS


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TEACHING PLAN


BCA III Sem

SUBJECT: Object Oriented Programming with C++ BCA0304

UNIT	TOPIC/DETAILS	MONTH	METHOD OF TEACHING
1	Object oriented programming: Need for OOP, object oriented approach, characteristics of OOP language- objects, classes, Inheritance, Reusability, Polymorphism, overloading advantage of OOP, relationship between C and C++. Programming Basic: Basic program construction, output using cout, preprocessor directive, comments, integer variables, character variables, input with cin, Type bool, setw Manipulator, type float, type conversion, arithmetic operators, relational operators, logical operators.	AUGUST	PPT/LECTURES/VIDEOS
2	Loops and decision control statements: loop- for, while, do, decision-if, if-else, switch, conditional operator, other control statements- break, continue, goto. Structures and functions: structures, Accessing structure members, structure within a structure, Enumerated Data type, simple functions, passing arguments to functions, Returning values from functions, reference arguments, overloaded functions, storage classes, scope resolution operator.	SEPTEMBER	PPT/LECTURES/VIDEOS
3	Objects and classes: A simple class, classes and objects, specifying a class, using a class, C++ objects as physical objects, C++ objects as data types, Constructors, objects as function arguments, returning objects from functions. Arrays: Array fundamental defining array, array elements, Accessing array elements, Initializing arrays, multidimensional arrays, passing arrays to functions, array of objects, strings-string variables, Avoiding Buffer overflow, string constants, array of strings string as class members, Standard C++ string Class.	OCTOBER	PPT/LECTURES/VIDEOS
4	Operator overloading: Overloading unary operators- the operator keyword, operator arguments, operator return values nameless temporary objects, limitation of increment operators, overloading Binary operators, data conversion, Pitfalls of operator overloading and conversion. Inheritance: Derived class and base class, specifying the derived class, accessing base class, members, derived class constructors, overriding member functions, class hierarchies, public and private Inheritance, levels of inheritance, multiple inheritance, Ambiguity in Multiple Inheritance, Aggregation- Classes Within Classes.	NOVEMBER	PPT/LECTURES/VIDEOS

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TEACHING PLAN

BCA III Sem

SUBJECT: Desktop Publishing and Designing BCA0305

UNIT	TOPIC/DETAILS	MONTH	METHOD OF TEACHING
1	D.T.P For Publications: Introductions to Printing , Types of Printing, Offset Printing, Working of offset Printing, Transparent Printout, Negative & Positives for Plate were making, Use of Desk Top Publishing in Publications, Importance of D.T.P in Publication, Advantage of D.T.P in Publication, Mixing of graphics & Image in a single page production, Laser printers Use, Types, Advantage of laser printer in publication.	AUGUST	PPT/LECTURES/VIDEOS
2	Page Layout: Different page format / Layouts, News paper page format, Page orientations, Columns & Gutters, Printing in reduced sizes. Page Maker: Introductions To Page Maker Icon and help, Tool Box, Styles, Menus etc., Different screen Views, Importing text/Pictures, Auto Flow, Columns, Master Pages and Stories, Story Editor, Menu Commands and shortcut commands, Spell check, Find & Replace, Import Export etc., Fonts, Points Sizes, Spacing etc., Installing Printers, Scaling (Percentages), Printer setup.	SEPTEMBER	PPT/LECTURES/VIDEOS
3	Use Of D.T.P: Use of D.T.P. in Advertisements, Books & Magazines, News Paper, Table Editor. Adobe Photoshop: Introduction to Photoshop & Flash, Documents, Various Graphic Files	OCTOBER	PPT/LECTURES/VIDEOS
4	Extensions Vector Image and Raster Images, Various Colour Modes and Models. Introduction to Screen and Work Area, Photoshop Tools & Palettes, Use of Layers & Filters Working with Images.	NOVEMBER	PPT/LECTURES/VIDEOS

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TEACHING PLAN
BCA IV Sem

SUBJECT: Personnel Management BCA0401

UNIT	TOPIC/DETAILS	MONTH	METHOD OF TEACHING
1	Introduction to Personnel Management : Nature, Scope, functions and significance, Personnel Policies, classification and organization of Personnel Department.	AUGUST	PPT/LECTURES/VIDEOS
2	Human Resource Planning: Meaning, objectives and importance of HRM, Job Analysis and Design, Recruitment, selection, Terms of Employment, Induction and Briefing, Orientation and Placement.	SEPTEMBER	PPT/LECTURES/VIDEOS
3	Human resources Development: Training and Development and Promotion and incentives, retirement benefits.	OCTOBER	PPT/LECTURES/VIDEOS
4	Performance Appraisal and Job Evaluation, Employee remuneration and various incentive plans.	NOVEMBER	PPT/LECTURES/VIDEOS

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TEACHING PLAN
BCA IV Sem
SUBJECT: Accounting BCA0402

UNIT	TOPIC/DETAILS	MONTH	METHOD OF TEACHING
1	Accounting : Meaning, Definition and objects of Accounting, Accounting Principles, Accounting concepts and Conventions, Principle of Double Entry System, Journal Entry, Ledger, Cash Book and Subsidiary books, Trial Balance and rectification of errors.	AUGUST	PPT/LECTURES/VIDEOS
2	Final Account: Manufacturing Account, Trading Account, Profit and Loss Account and Balance Sheet.	SEPTEMBER	PPT/LECTURES/VIDEOS
3	Cost Accounting: Nature and scope of Cost Accounting, Cost Concept and classification, Cost Sheet, Marginal Costing (BEP and Cost Volume Profit analysis).	OCTOBER	PPT/LECTURES/VIDEOS
4	Management Accounting: Meaning, importance and Scope of Management Accounting Brief introduction to the tools of financial statements, Analysis (Ratio, Fund Flow and Cash Flow Analysis).	NOVEMBER	PPT/LECTURES/VIDEOS

NOTE: ASSIGNMENTS, CLASS TESTS AND MID TERM WILL BE TAKEN DURING THE SESSION

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TEACHING PLAN
BCA IV Sem**

SUBJECT: System Analysis and Design BCA0403

UNIT	TOPIC/DETAILS	MONTH	METHOD OF TEACHING
1	Overview of System Analysis and Design: Business System concepts, System development life cycle, Project Selection, Feasibility Analysis, Design, Limitation, testing and evaluation. Initial Investigation: Sources of Requests, User / Analyst interaction, Qualities of a System Analyst.	AUGUST	PPT/LECTURES/VIDEOS
2	Feasibility studies: Technical, Operational, Behavioral and economic feasibilities, cost and benefit analysis.	SEPTEMBER	PPT/LECTURES/VIDEOS
3	System requirement specification and analysis: Fact finding techniques, Data Flow Diagrams, Data Dictionaries, process organization and interaction, Decision Analysis, Decision Trees and Tables. Top down and bottom up variance, Audit trails.	OCTOBER	PPT/LECTURES/VIDEOS
4	Detail Design: Modularization, module specification, file design, system development involving databases. System control and quality assurance: Design objectives reliability and maintenance, software design and documentation tools, unit and integration testing, testing practice and plans, system control.	NOVEMBER	PPT/LECTURES/VIDEOS

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TEACHING PLAN

BCA IV Sem

SUBJECT: Internet Technology & Web Page Design BCA0404

UNIT	TOPIC/DETAILS	MONTH	METHOD OF TEACHING
1	Internet: Evolution of Internet, Internet Application, Network requirements, Bandwidth, Internet features (Electronic Mail, Newsgroups, FTP Archive, Real Time Activity, Video, Audio, Search Engine).	AUGUST	PPT/LECTURES/VIDEOS
2	World Wide Web: Definition, WWW Browsers, WWW Servers, Dial-Up SLIP, PPP Access, Dedicated line, ISDN.TCP/IP Connectivity- DNS Servers, Domain Names Registration process, IP addressing, Routing with TCP/IP Basics	SEPTEMBER	PPT/LECTURES/VIDEOS
3	HTML: Text formatting, Data, Tables, Table layout, Images, HTML Interactivity, URLs, HTTP, NNTP, Hyperlinks, Menus & Image Maps, HTML Form, Embedded objects in HTML, Web Typography, Approaching Web Typography, Graphics and Type, Families and Faces, Type forms, Color and Type, Adding Graphics, Adding Graphics with the Image Element, Using images as links, Creating Image Maps, Working with Image Files, Layout Technology, Standard HTML Formatting, Tables, Frames,	OCTOBER	PPT/LECTURES/VIDEOS
4	CSS: Formatting your site with Cascading Style Sheets, Seeing Style Sheets in Action, Understanding CSSI's Advantages and Limitations, Making HTML and CSSI's, Making HTML and CSSI work together, Learning How CSSI Works, Using CSSI Properties. XML, XML Language, SMGL, Linking in XML.	NOVEMBER	PPT/LECTURES/VIDEOS

NOTE: ASSIGNMENTS, CLASS TESTS AND MID TERM WILL BE TAKEN DURING THE SESSION.

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TEACHING PLAN

BCA IV Sem

SUBJECT: Programming in Visual Basic BCA0405

UNIT	TOPIC/DETAILS	MONTH	METHOD OF TEACHING
1	<p>Introduction to Visual Studio: Features of Visual basic, Visual Basic applications, compile, run, Difference between Visual Basic and .NET languages.</p> <p>Open, close existing project, possible menu variations, use the Form Designer, Code Editor, Solution Explorer, work with Visual Studio's windows.</p> <p>Design a form: Add controls to a form, Set properties, common properties for forms and controls, add navigation features, property settings, use Document Outline view, name and save files of a project, Design and property settings for the form, Refer to properties, methods, events, Add code to a form, create an event handler for the default event of a form or control, code with a readable style, code comments, detect and correct syntax errors.</p> <p>Use the toolbar buttons, collapse or expand code, print source code, code snippets, Smart Compile Auto Correction feature, My feature and debug a project.</p>	AUGUST	PPT/LECTURES/VIDEOS
2	<p>Work with numeric and string data: Work with the built-in value types- Declare and initialize variables, declare and initialize constants, code arithmetic expressions, code assignment statements, work with the order of precedence, use casting, change the type semantics, work with strings, declare and initialize a string, join and append strings.</p> <p>Data types, use Visual Basic functions to convert data types, use methods to convert data types, formatting functions, use methods to convert numbers to formatted strings.</p> <p>Code control structures: Code Boolean expressions, relational operators, logical operators, conditional statements, If statements, Select Case statements, loops. For loops. Do loops. use Exit and Continue statements, Debugging techniques for programs with loops.</p>	SEPTEMBER	PPT/LECTURES/VIDEOS
3	<p>Code procedures and event handlers: Code and call procedures- Sub procedures, call Sub procedures, pass arguments by reference and by value, code and call Function procedures, work with events, start an event handler for any event, handle multiple events with one event handler, use the Code Editor to start an event handler, add and remove event writing.</p> <p>The Function procedure, event handlers, Message box</p> <p>Handle exceptions and validate data: introduction to data validation and exception handling, use the IsNumeric function, display a dialog box for error messages, exception handling works, Use structured exception handling, catch an exception, properties and methods of an exception, throw an exception, application with exception handling.</p> <p>Validate data: Validate a single entry, use generic procedures to validate an entry, validate multiple entries, application with data validation, dialog boxes, code, Difference between Validating event and masked text box.</p>	OCTOBER	PPT/LECTURES/VIDEOS
4	<p>Arrays and collections: one-dimensional arrays, create an array, assign values to the elements of an array, use For loops to work with arrays, use For Each loops to work with arrays, work with rectangular arrays, create a rectangular array, assign values to a rectangular array, work with rectangular arrays, create a jagged array, assign values to a jagged array, work with jagged arrays, use the Array class, refer to and copy arrays, code procedures that work with arrays, Work with list, sorted list, queues, stacks, array list.</p> <p>Dates and strings: create a DateTime value, get the current date & time, format DateTime values, perform operations on dates and times, work with strings, procedures for validating user entries, Format numbers, dates, and times, Format numbers.</p> <p>Types of controls, combo boxes, list boxes, check boxes, radio buttons, group boxes, use Tab Order view to set the tab order.</p> <p>MultiForm projects: Add a form to a project, rename a form, change the startup form for a project, display a form as a dialog box, pass data between a form and a custom dialog box, Use the MessageBox0 Display a dialog box and get the user response, use the FormClosing event.</p> <p>Debug an application: set the debugging options, break mode, use the Edit Continue feature, breakpoints, debugging windows, Locals window to monitor variables, use the Autos window to monitor variables, Watch windows to monitor expressions, Call Stack window to monitor called procedures, Output window to get build or debugging information.</p>	NOVEMBER	PPT/LECTURES/VIDEOS


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TEACHING PLAN

BCA V Sem

SUBJECT: OPERATING SYSTEM BCA0501

UNIT	TOPIC/DETAILS	MONTH	METHOD OF TEACHING
1	Operating System Concepts: Operating System Classification- Simple Monitor, Multi Programming, Time Sharing, Real Time Systems, Multiprocessor Systems, Batch Processing, Simple User, Multi User, Operating System Functions And Characteristics.	AUGUST	PPT/LECTURES/VIDEOS
2	Processor Management: Process Overview, Process States, Process State Transitions, Process Control Block, Operations On Processes, Suspend And Resume, Interrupt Processing, Scheduling Algorithms, Multiple Processor Scheduling. Deadlock: Deadlock Problem, Deadlock, Deadlock Characterization, Necessary Conditions, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection, Recovery From Deadlock.	SEPTEMBER	PPT/LECTURES/VIDEOS
3	Memory Management: Partition, Paging, Segmentation, Types Of Memory Management Scheme , Bare Machine, Resident Monitor, Swapping, Multiple Partition, Virtual Memory, Demand Paging.	OCTOBER	PPT/LECTURES/VIDEOS
4	File Management: File Types, Operation On Files, File Support, Access Methods, Sequential Access, Direct Access, Index, Allocation Method (Free Space Management, Contiguous, Linked, Indexed), Directory System Single-Level, Two-Level, Tree- Structured, File Protection.	NOVEMBER	PPT/LECTURES/VIDEOS

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TEACHING PLAN

BCA V Sem

SUBJECT: e-Commerce BCA0502

UNIT	TOPIC/DETAILS	MONTH	METHOD OF TEACHING
1	e-Commerce: Definition, Framework, Architecture, benefits and Impact of e-Commerce, The Anatomy of e-Commerce application, e-Commerce Consumer applications, e-Commerce Organization Application, e-commerce in India, Prospects of e-Commerce.	AUGUST	PPT/LECTURES/VIDEOS
2	Consumer oriented E-Commerce: Consumer oriented applications, mercantile Process Models, consumer's perspective, Merchant's perspective. Advertising and marketing on the Internet: The new age information based marketing, Advertising on the Internet Active or push based advertising models, Passive or pull based advertising models. Guidelines for Internet advertising. Online marketing process.	SEPTEMBER	PPT/LECTURES/VIDEOS
3	Types of Electronic Payment System: Digital token based electronic payment systems, smart cards and electronic payment systems, credit card based electronic payment systems, Risk and electronic payment systems. Electronic data Interchange and its applications in business.	OCTOBER	PPT/LECTURES/VIDEOS
4	Securing the Business on Internet: security Policy, Procedures and Practices, transaction security, CRM, what is e-CRM, it's applications, The e-CRM marketing in India, Major Trends, Global Scenario for e-CRM, CRM utility in India.	NOVEMBER	PPT/LECTURES/VIDEOS

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TEACHING PLAN

BCA V Sem

SUBJECT: MANAGEMENT INFORMATION SYSTEM BCA0503

UNIT	TOPIC/DETAILS	MONTH	METHOD OF TEACHING
1	Management Information System: Definition, Meaning and Role of Management Information System Introduction, Definition, System's Approach, Pitfalls in Management Information Systems. Development of Organizational Theory: Management & Organizational Behaviour, Management, Information & System Approach.	AUGUST	PPT/LECTURES/VIDEOS
2	Data Processing: Operation of Manual Information System, Components of Computer System, Conversion of Manual to Computer Based Systems, Data Bank Concept, Types of Computer Based Applications. Information System for Decision Making: Evolution of Information System, Decision Making & Management Information System.	SEPTEMBER	PPT/LECTURES/VIDEOS
3	Strategic & Project Planning for Management Information System: Business Planning, Management Information System Responses, Management Information System Planning General & Details. Conceptual System Design: Define Problem, Set System Objective, Establish System Constraints, Determine Information Needs & Sources, Develop Alternative Conceptual Design & Documentation, Prepare the Design Report.	OCTOBER	PPT/LECTURES/VIDEOS
4	Detailed System Design: Aim, Project Management, Define Subsystem, Input, Output & Process Design, System Testing, Software & Hardware selection, Documentation of Detailed Design.	NOVEMBER	PPT/LECTURES/VIDEOS

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TEACHING PLAN

BCA V Sem

SUBJECT: ASP.Net Technologies BCA0504

UNIT	TOPIC/DETAILS	MONTH	METHOD OF TEACHING
1	Introducing .NET: Microsoft web development, Move from workstation to distributed computing, Internet factor, importance of .net platform OS neutral environment, device independence, wide language support, internet based component services. .NET framework: Common language runtime(CLR), code management and execution, security support, error handling and garbage collection,.net framework class libraries System classes, data and XML classes, windows form and drawing classes, web classes. Features of .NET framework: ASP.NET web forms and web services Web page authoring & server controls, ASP.NET infrastructure.	AUGUST	PPT/LECTURES/VIDEOS
2	VB.NET : Introduction, statement, lines, comments, operators, procedures, variables implicit, explicit, constants, parameters, arrays, branching, looping, objects, classes, inheritance, accessibility of inherited properties and methods, overriding methods. System class, working with numbers, manipulating strings, DateTime arithmetic, converting values, formatting values, managing arrays. Namespace and assemblies, Relating namespaces and DLL assemblies, creating assemblies, importing assemblies, using imported assemblies, compiling with imported namespace.	SEPTEMBER	PPT/LECTURES/VIDEOS
3	ASP.NET Web Forms: Web forms code model, In-page vs. Code behind format, web form object life cycle, handling client side events on the server, web form event handling, define and respond web form control events, AutoPostBack property, automatic state management with web forms. HTML sever control: definition, RunAt sever attribute, HTML control class, General controls-Anchor, image, form, division, span, Table control, Input Control. Web server Control: Web Control class, General control-Hyperlink, link button, image, label, Panel, Form Controls, Table controls.	OCTOBER	PPT/LECTURES/VIDEOS
4	Web form List Control: Simple List controls, Template List controls. Validation Controls: Definition, properties and methods of validation controls, validation controls RequiredFieldValidator, CompareValidator, RangeValidator, RegularExpressionValidator, CustomValidator, ValidationSummary. User Controls: Definition, Markup Only User Control, Custom properties, handling events and loading user controls dynamically.	NOVEMBER	PPT/LECTURES/VIDEOS

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TEACHING PLAN
BCA V Sem

SUBJECT: Computer Oriented Statistical Methods BCA0505

UNIT	TOPIC/DETAILS	MONTH	METHOD OF TEACHING
1	Frequency distribution, Histogram, Frequency Polygram, Arithmetic Mean, Median, mode, geometric Mean, Harmonic Mean, Dispersion, Measures of Dispersion, Coefficients of Dispersion.	AUGUST	PPT/LECTURES/VIDEOS
2	Probability, Addition and multiplication Theorems of Probability, Conditional Probability, Independent events Pointwise independent events.	SEPTEMBER	PPT/LECTURES/VIDEOS
3	Mathematical expectation, Expected value of function of a random variable, Properties of expectation, Properties of variance, Covariance.	OCTOBER	PPT/LECTURES/VIDEOS
4	Correlation, Karl Pearson's Coefficient of correlation calculation of the correlation, coefficient for a biovariate frequency distribution, rank correlation.	NOVEMBER	PPT/LECTURES/VIDEOS

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TEACHING PLAN

BCA VI Sem

SUBJECT: Computer Networks BCA0601

UNIT	TOPIC/DETAILS	MONTH	METHOD OF TEACHING
1	Introduction to Communication Network: Computer Networks, (Need, uses, and Advantages of Computer Network), Network Models (Peer-to-Peer Network, Server-based Network, Client-Server Network), Network components, Network Topology (Star, Ring, Bus, Mesh, Tree, Hybrid, Advantage and Disadvantage of each types.), Types of Networks (LAN, MAN, WAN), Internet (Brief History, Internet Today, Protocol and Standard).	AUGUST	PPT/LECTURES/VIDEOS
2	Error Detection and Correction: Types of errors (Single-bit Error, Burst Error), Error Detection (Redundancy, Parity check, CRC, Checksum), Error correction (FEC, Hamming code, Burst error corrections) Data Communication Channel and Media, Conductive Media (Twisted-pair cable, Coaxial cable), Fiber optics (Characteristic of light, Types of Fiber optics), Wireless Transmission, (Microwaves, Infrared, Radio waves).	SEPTEMBER	PPT/LECTURES/VIDEOS
3	OSI Reference Model: OSI Model, OSI Physical Layer Concepts, DLL, Network Layer, TL, SL, PL and AL Concepts. Internet model / TCP/IP Model and Protocols, Modem, DSL, Cable Modem, ISDN, Real world network (Ethernet, Ethernet operation, frame format, Ethernet characteristic, cabling and components) Token Ring and Token Bus networking Technology. Network Connectivity, Repeater, Hub-(Active, Passive and Intelligent), Bridge (Local, Remote and wireless), Routers (Static and Dynamic), switches and types of switches, Brouter and Gateways.	OCTOBER	PPT/LECTURES/VIDEOS
4	TCP/IP Protocol: Protocol Suite, Internet Architecture Board, TCP/IP Protocol (TCP, UDP, IP, ARP), concept of Physical Addressing, and logical Addressing, Different Classes of IP addressing, Special IP Addressing, Classful Addressing, Sub netting, Super netting, Classless addressing, TCP/IP Service Protocol (FTP, SMTP, TELNET, DNS).	NOVEMBER	PPT/LECTURES/VIDEOS

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TEACHING PLAN

BCA VI Sem

SUBJECT: NUMERICAL METHODS *BCA0602*

UNIT	TOPIC/DETAILS	MONTH	METHOD OF TEACHING
1	Representation of numbers: Decimal to Binary conversion, Floating point representation of numbers, Integer and real/floating point arithmetic, different types of errors, error in the approximation of a function, error in series approximation.	AUGUST	PPT/LECTURES/VIDEOS
2	Solution of algebraic and transcendental equation using Bisection method, Regula-Falsi method, Newton-Raphson method. Solution of simultaneous linear equations using Gauss Elimination method, Gauss-Jordon method, Jacobi's iterative method, Gauss-Seidel iterative method.	SEPTEMBER	PPT/LECTURES/VIDEOS
3	Interpolation, Finite difference and operators, Newton Forward, Newton Backward, Games forward, Games backward.	OCTOBER	PPT/LECTURES/VIDEOS
4	Numerical differentiation: Differentiating a Graphical function, Differentiating a Tabulated function- Equal and Un-equal intervals, Numerical integration, Newton-Cotes formula, Trapezoidal rule, Simpson's 1/3 rd and 3/8 th rule, Weddle's rule.	NOVEMBER	PPT/LECTURES/VIDEOS

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TEACHING PLAN
BCA VI Sem**


SUBJECT: Multimedia Technology BCA0603

UNIT	TOPIC/DETAILS	MONTH	METHOD OF TEACHING
1	Introduction to Multimedia : Needs and areas of use, Development platforms for multimedia, Identifying Multimedia elements Text, Images, Sound, Animation and Video, Making simple Multimedia with PowerPoint. Concepts of plain & formatted text, RTF & HTML texts, Object Linking and Embedding concept.	AUGUST	PPT/LECTURES/VIDEOS
2	Sound: Sound and its Attributes, Mono V/S Stereo Sound, Sound Channels, Sound and its Effect In Multimedia, Analog V/S Digital Sound, Overview Of Various Sound File Formats On PC WAV, MP3.	SEPTEMBER	PPT/LECTURES/VIDEOS
3	Graphics: Importance of Graphics in Multimedia, Vector and Raster Graphics, Image Capturing Methods Scanner, Digital Camera Etc. Various Attributes of Images Size, Color, Depth, Resolution etc, Various Image File Format BMP, DIB, EPS, PIC, and TIF Format Their Features and imitations, Basics of animation, Software Tools for animation.	OCTOBER	PPT/LECTURES/VIDEOS
4	Video: Basics of Video Analog and Digital Video, How to use video on PC. Introduction to graphics accelerator cards, Brief note on various video standards NTSC, HDTV, Introduction to video capturing Media & instrument Videodisk. Virtual Reality Terminology Head Mounts Display (HMD), Boom, Cave, Input Devices and Sensual Technology	NOVEMBER	PPT/LECTURES/VIDEOS

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TEACHING PLAN

BCA VI Sem

SUBJECT: COMPUTER GRAPHICS BCA0604

UNIT	TOPIC/DETAILS	MONTH	METHOD OF TEACHING
1	Introduction: Definition Of Computer Graphics And Its Applications, Video Display Devices, Raster Scan Displays, Random Scan Displays, Color CRT Monitors, Direct View Storage Tubes, Flat Panel Displays. Input Devices: Keyboard, Mouse, Trackball and Spaceball, Joysticks, Digitizers, Image Scanners, Touch Panels, Light Pens, Voice Systems.	AUGUST	PPT/LECTURES/VIDEOS
2	Output Primitives: Line Drawing Algorithms (DDA, Bresenhaus's), Circle Generating Algorithm(Midpoint Circle Drawing Algorithm), Ellipse Generating Algorithm, Midpoint Ellipse Generating Algorithm, Character Generation.	SEPTEMBER	PPT/LECTURES/VIDEOS
3	2D Transformations: Translation, Rotation, Scaling, Reflection, Shear, Composite Transformation Translation, Rotations, Scaling. Two Dimensional Viewing: Window-To-Viewport Coordinate Transformation	OCTOBER	PPT/LECTURES/VIDEOS
4	Clipping: Introduction, Clipping Operations, Point Clipping, Line Clipping(Cohen-Sutherland Line Clipping, Liang-Barsky Line Clipping, Nicholl-Lee-Nicholl Line Clipping), Polygon Clipping(Sutherland- Hodgeman Polygon Clipping, Weiler-Atherton Polygon Clipping), Curve Clipping, Text Clipping.	NOVEMBER	PPT/LECTURES/VIDEOS

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TEACHING PLAN

BCA VI Sem

SUBJECT: SOFTWARE ENGINEERING BCA0605

UNIT	TOPIC/DETAILS	MONTH	METHOD OF TEACHING
1	Software engineering: Evolving Role of Software, Software Engineering, Changing nature of Software, Software Myths, Terminologies, Role of management in software development Software Process and desired Characteristics, Software Life Cycle Models: Build & Fix Model, Water Fall Model, Incremental Process Model, Evolutionary Process Models, Unified Process, Comparison of Models, Other Software Processes, Selection of a Model.	AUGUST	PPT/LECTURES/VIDEOS
2	Software Requirements Analysis & Specifications: Requirements Engineering, Types of Requirements, Feasibility Studies, Requirements Elicitation, Requirements Analysis Documentation, Validation and Management. Software Architecture: Its Role, Views, Component & Connector View and its architecture style, Architecture Vs Design, Deployment View & Performance Analysis, Documentation, Evaluation.	SEPTEMBER	PPT/LECTURES/VIDEOS
3	Function Oriented Design: Design principles, Module level Concepts, Notation & Specification, Structured Design Methodology, Verification Object Oriented Design: OO Analysis & Design, OO Concepts, Design Concepts, UML - Class Diagram, Sequence & Collaboration Diagram, Other diagrams & Capabilities, Design Methodology, Dynamic and Functional Modeling, Internal Classes & Operations.	OCTOBER	PPT/LECTURES/VIDEOS
4	Detailed Design: PDL, Logic/Algorithm Design, State Modeling of Classes, Verification: Design Walkthroughs, Critical Design Review, Consistency Checkers. Coding: Programming Principles & Guidelines, Coding Process, Refactoring, Verification.	NOVEMBER	PPT/LECTURES/VIDEOS

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