Teaching Plan for the Year 2020-2021

Department	INFORMATION TECHNOLOGY
Class	FYBSCIT
Course	Introduction to Information Technology
Semester	I
Teacher / Professor	Gauravi Desai
Division	A & B

Month	Week	Unit/Topic
September	1	Generations of Computers, Types of Computers,
	2	Organization, Memory and its types.
	3	system. Functions of operating system. Memory Management,
	4	Software? Types of Software's.
	5	Network Topologies, Transmission media: Guided media, Unguided
October	1	(WWW), Website, Types of website
	2	Application of E-commerce, Types of Ecommerce. Advantages and
	3	Information, What is Database? What is RDBMS? Applications of
	4	Introduction to RDBMS tool (MS ACCESS).
	5	& Characteristics, Components of MIS, Pyramid of MIS. Role of MIS.
November	1	Using Tools, Mail-merge and Print, Review, setup.
	2	Charts Rename and Copy of Worksheets, Using Tools, Printing
	3	Office 365 Software Engineering: Define Software Engineering,
	4	Spoofing Key Loggers, Identity Theft, Call & SMS forging, e-mail

HEAD
Department
of
Information Technology

PRINCIPAL
Kandivli Education Society's
B. K. Shroff College of Arts &
M. H. Shroff College of Commerce
Bhulabhai Desai Road,
Kandivli (West), Mumbai-67

Teaching Plan for the Year 2020-2021

Department	INFORMATION TECHNOLOGY
Class	FYBSCIT
Course	Digital Electronics
Semester	I
Teacher / Professor	Ms. Mrunali Sawant
Division	A & B

Month	Week	Unit/Topic
September	1	Number System: Analog and Digital Signal, Number System -binary
	2	Codes: weighted codes: binary coded decimal, non-weighted codes:
	3	Binary Arithmetic:Binary addition, Binary subtraction, Subtraction
	4	Boolean Algebra and Logic Gates: Introduction, Logic (AND OR
	5	Exclusive OR and Exclusive NOR gates, Universal Logic gates,
October	1	Minterm, Maxterm and Karnaugh Maps: Introduction, minterms and sum of minterm form, maxterm and Product of maxterm form, Reduction technique using Karnaugh maps – 2/3/4/5/6 variable K-maps, Grouping of variables in K-maps, K-maps for product of sum form, minimize Boolean expression using K-map and obtain K-map from Boolean expression, Quine Mc Cluskey Method
	2	Combinational Circuits: Introduction to combinational circuit,
	3	Arithmetic circuits: Introduction to arithmetic circuit, Adder, BCD
	4	Multiplexer and Demultiplexer: Design of Multiplexer, Design of
	5	Multiplexer and Demultiplexer tree, applications of Multiplexer and
November	1	Race-around condition, Master–slave flip flop, T flip flop, D flip-fop,
	2	Registers: Registers, types of register, Applications of shift registers,
	3	Counters: Counters and its types, Counter Design, Presettable
	4	Synchronous and Asynchronous remedial lecture and practice

HEAD
Department
of
Information Technology

PRINCIPAL
Kandivli Education Society's
B. K. Shroff College of Arts &
M. H. Shroff College of Commerce
Bhulabhai Desai Road,
Kandivli (West), Mumbai-67

Teaching Plan for the Year 2020-2021

Department	INFORMATION TECHNOLOGY
Class	FYBSCIT
Course	Introduction to Programming
Semester	I
Teacher / Professor	Ms. Riddhi Shah
Division	A & B

Month	Week	Unit/Topic
September	1	Introduction: Types of Programming languages, History. Simple program logic, program development cycle,
	2	Fundamentals of C: Sentinel value to end a program, programming and user environments, evolution of
	3	Compilation and Execution of a Program, Character Set, identifiers and keywords, data types, constants, variables, declarations, expressions, statements, Variable definition, symbolic constants. Remedial and Doubt Solving.
	4	Data Input and Output: What is input and output? What is data? Single character input and output, entering input data, scanf() function, printf*(), gets() and puts() function.
	5	Operators and Expressions: Arithmetic operators, unary operators, relational and logical operators, assignment
October	1	Conditional Statements and Loops:If Statement, If-Else Statement, Loops: While Loop, Do While, For
	2	Functions: defining a function, Why Use Functions, function prototypes, return type, passing arguments to a
	3	Arrays: Definition, Initialization of arrays: compile time and runtime initialization, passing arrays to functions,
	4	Preprocessors: #define and #include, Directives and Macros. Pointers: An Introduction to Pointers.
	5	Declaring and initializing pointer, NULL pointer, void pointer, pointer to pointer, pointer arithmetic, pointer and
November	1	Structures and Unions: Structure Variables, Initialization, Nested Structure, Structures and Arrays: Arrays of
	2	Structures Containing Arrays, Unions, difference between Structures and unions. File Handling: Concept of file,
	3	Difference between Append and Write Mode.
	4	Remedial and Doubt Solving.

HEAD
Department
of
Information Technology

PRINCIPAL
Kandivli Education Society's
B. K. Shroff College of Arts &
M. H. Shroff College of Commerce
Bhulabhai Desai Road,
Kandivli (West), Mumbai-67

Teaching Plan for the Year 2020-2021

Department	INFORMATION TECHNOLOGY
Class	FYBSCIT
Course	Discrete Mathematics
Semester	I
Teacher / Professor	Dr. Sanjay Kumar Mishra
Division	A and B

Month	Week	Unit/Topic
September	1	**Sets:** Sets, Set Operations, Functions, Sequences and
	2	**Mathematical logic:** Applications of Propositional Logic,
	3	Proof Methods
	4	**Divisibility:** Divisibility and Modular Arithmetic, Integer Representations and Algorithms, Primes and Greatest Common Divisors, Solving Congruence's
	5	Applications of Congruence's, inCryptography **Mathematical Induction and recurrence relation:** Mathematical Induction, Strong Induction and Well-Ordering, Recursive Definitions
October	1	Recursive Algorithms, Program Correctness, Applications of Recurrence Relations, Solving Linear Recurrence Relations
	2	**Basics of order pairs and relation:** Relations and Their Properties, n-array Relations and Their Applications, Representing Relations
	3	on relation, and closure properties
	4	**Function:** Functions, types of functions and Their Properties ,
	5	**Graphs:** Graphs and Graph Models, Graph Terminology and Special Types of Graphs, Representing Graphs and Graph Isomorphism, Connectivity, Euler and Hamilton Paths, Shortest-Path Problems
November	1	**Trees:** Introduction to Trees, Applications of Trees, Tree
	2	**Counting:** The Basics of Counting, Permutations and

HEAD
Department
of
Information Technology

PRINCIPAL
Kandivli Education Society's
B. K. Shroff College of Arts &
M. H. Shroff College of Commerce
Bhulabhai Desai Road,
Kandivli (West), Mumbai-67

	3	**Probability:** An Introduction to Discrete and continuous Probability, Binomial Coefficients and Identities, Expected Value and Variance, Probability Theory, Bayes' Theorem
	4	Revision

HEAD
Department
of
Information Technology

PRINCIPAL
Kandivli Education Society's
B. K. Shroff College of Arts &
M. H. Shroff College of Commerce
Bhulabhai Desai Road,
Kandivli (West), Mumbai-67

Teaching Plan for the Year 2020-2021

Department	INFORMATION TECHNOLOGY
Class	FYBSCIT
Course	Communication Skills
Semester	I
Teacher / Professor	Ms. Vidhi Rajora
Division	A & B

Month	Week	Unit/Topic
September	1	Understanding Communication: The Seven Cs of Effective
	2	Understanding Communication: Nature and Scope of
	3	Cross – cultural communication, Technology – enabled Business
	4	Writing Skill: Writing Business Messages and Documents: Rules for
	5	Business Correspondence: Job Application, Resume, Enquiry,
October	1	Investigative reports, Listening and Speaking Skills: Listening Skills:
	2	Types of listening, Barriers to listening, cultivating good listening
	3	Activities: Listening to videos, news, speeches, etc Speaking Skills:
	4	Speaking Skills: Meetings, Conferences, Group Discussion
	5	Public Speaking: Researching the topic, presentation, qualities of an
November	1	Presentation Skills: Understanding the stages of preparing
	2	Techniques of good presentation, Planning stage: Research,
	3	Delivering presentation: Executing stage: chunking theory, creating
	4	performance. Body language during presentation.

HEAD
Department
of
Information Technology

PRINCIPAL
Kandivli Education Society's
B. K. Shroff College of Arts &
M. H. Shroff College of Commerce
Bhulabhai Desai Road,
Kandivli (West), Mumbai-67

Teaching Plan for the Year 2020-2021

Department	INFORMATION TECHNOLOGY
Class	FYBSCIT
Course	Foundation Course
Semester	I
Teacher / Professor	Ms. Ashlesha Maurya
Division	A & B

Month	Week	Unit/Topic
September	1	Overview of Indian Society and Concept of Disparity:Understand the multi-cultural
	2	urban and tribal characteristics
	3	Explore the disparities arising out of gender -Reasons and
	4	Casteism, Communalism, Regionalism and Linguistic
	5	The Indian Constitution and Political Processes:Philosophy of the Constitution as set
October	1	The structure of the Constitution, Fundamental Duties of the Indian Citizen
	2	Basic features of the Constitution, Fundamental Rights stated in the Constitution, Local
	3	India post LPG Era: Liberalization, Privatization, and Globalization- Concept & Impact
	4	Industries & Service Sectors, Growth of IT and Communication and its Impact
	5	Increase in farmers' Suicides (reasons and measures to stop).
November	1	Personal and Social Wellness: Relationship between Food, Nutrition and Health, Impact of Lifestyle on Health
	2	Causes of stress and conflict in individuals and society, Aggression and violence as
	3	Types of conflicts and conflict resolution strategy, Agents of
	4	Revision and Doubt Solving

HEAD
Department
of
Information Technology

PRINCIPAL
Kandivli Education Society's
B. K. Shroff College of Arts &
M. H. Shroff College of Commerce
Bhulabhai Desai Road,
Kandivli (West), Mumbai-67

Teaching Plan for the Year 2020-2021

Department	INFORMATION TECHNOLOGY
Class	SYBSCIT
Course	Data Structure
Semester	III
Teacher / Profes	Devang Thakker
Division	A & B

Month	Week	Unit/Topic
July	4	Introduction to Data Structures & Algorithms Introduction of Data structures, Abstract Data Types,
	5	Performance Analysis: Space Complexity, Time Complexity, Asymptotic Notations (Big O, Omega, Theta),
August	1	Performance measurement, Divide and Conquer, Back Tracking Method, Dynamic programming
	2	Sorting and searching algorithms Bubble sort, Insertion sort, Radix Sort, Quick sort,
	3	Merge sort, Heap sort, Selection sort, shell Sort, Linear Search, Sequential search, Binary search
	4	Hashing Different Hashing Techniques, Address calculation Techniques, Common hashing functions
	5	Collision resolution techniques: Linear probe, Quadratic probe, Key offset. Rehashing, Double hashing, Link list addressing.
September	1	Link List Types of Linked List: Singly, Doubly and Circular Linked list Definition, Operations (Insert, delete, traverse,
	2	Applications of Linked List: Polynomial Addition and Subtraction.
	3	Linear Data Structures Stack Definition, Operations, Implementation of Stacks (Array and Linked list) and
	4	Queue: Definition, Operations, Implementation of simple queue (Array and Linked list) and applications of queue-BFS
	5	Types of queues: Circular, Double ended, Priority, Implementation using linked list
October	1	Tree Definition and concepts, General Tree- Definition, Insertion and Deletion into general tree, Binary Tree-
	2	Reconstruction of a binary tree from traversal, Conversion of general tree into binary tree, Huffman tree,
	3	Expression tree, Binary threaded three Binary Search Tree- Definition, Operation, Implementation
	4	AVL tree- Definition, AVL tree rotation with examples, Heaps- Definition, Operations (insertion, delete, build)
	5	M way Tree¬ Introduction, B tree-definition and examples and B*
November	1	Graphs Definition, Types, Operations, Representation, Networks, Traversals of graph,
	2 & 3	Minimum spanning tree, Kruskal's Algorithm, Prim's Algorithm, Warshall's Algorithm, Shortest path algorithm-

HEAD
Department
of
Information Technology

PRINCIPAL
Kandivli Education Society's
B. K. Shroff College of Arts &
M. H. Shroff College of Commerce
Bhulabhai Desai Road,
Kandivli (West), Mumbai-67

Teaching Plan for the Year 2020-2021

Department	INFORMATION TECHNOLOGY
Class	SYBSCIT
Course	Core Java
Semester	III
Teacher / Profes	Prashant Chaubey
Division	A & B

Month	Week	Unit/Topic
July	4	Features of Object-oriented Programming, History of Java, Features of Java, JVM Architecture,Differences between C++ and Java, Data types, variable, expressions, operators, control structures, arrays
	5	Classes, Instance variables, Methods, Constructors, Access Specifiers, Abstract Classes and Wrapper Classes
August	1	Autoboxing and Unboxing, Inheritance, Polymorphism, Method Overriding, Use of Static, final, super and this keyword, Garbage collection and finalize method, string and mutable string, Inner Classes
	2	Package concept, creating user defined package, Access control protection, defining interface, Implementing interface
	3	Generics - Generic Class, Creating Generic Classes, Generic Methods, Bounded Type
	4	Collections- Collections and Generics, Collection Classes-Links, Vector, Linked Lists, Maps, HashMap, Wildcards
	5	Lambda Expressions - Lambda Type Inference, Lambda Parameters, Lambda Function Body, Returning a Value From a Lambda Expression, Lambdas as Objects
September	1	Exception handling fundamentals, Exception types, Exception as objects, Exception hierarchy, Exception Keywords - Try, catch, finally, throw, throws, Creating User defined Exceptions, Assertion, Annotations
	2	Java thread model, Life Cycle of Thread, Working with Thread class and the Runnable interface, Thread priorities, ThreadGroup class, Inter thread communication, Synchronization
	3	Input streams and Output streams, FileInputStream and FileOutputStream, Binary and Character streams,
	4	Buffered Reader/ Writer, Object serialization and Deserialization
	5	JDBC architecture, Types of drivers, Java.sql package, Establishing connectivity and working with connection interface
October	1	Working with statement interface, Working with PreparedStatement interface
	2	Working with ResultSet interface, Working with ResultSetMetaData interface
	3	Applet class, Applet API hierarchy, Life cycle of Applet, Delegation Event Model
	4	Event handling mechanisms, AWT components, AWT Component
	5	class, Inner class
November	1	Revision
	2 & 3	Revision

HEAD
Department
of
Information Technology

PRINCIPAL
Kandivli Education Society's
B. K. Shroff College of Arts &
M. H. Shroff College of Commerce
Bhulabhai Desai Road,
Kandivli (West), Mumbai-67.

Teaching Plan for the Year 2020-2021

Department	INFORMATION TECHNOLOGY
Class	SYBSCIT
Course	Python Programming
Semester	III
Teacher / Profes	Riddhi Shah
Division	A & B

Month	Week	Unit/Topic
July	4	Introduction to PYTHON, Spyder IDE, Jupyter Notebook.
	5	Literals, Variables and Identifiers
August	1	Operators, Expressions and Data Types.
	2	Fundamental Concepts: What is Control Structure? Boolean Expression (Conditions)
	3	Selection Control, Iterative Control. Remedial and Doubt Solving.
	4	Lists, Tuples, Dictionary.
	5	Set, Program Routine, User-Defined Function.
September	1	Parameter in Function, Default argument.Keyword Arguments, Variable Scope.
	2	Recursive Function, Iteration vs Recursion. Modeuls.
	3	Top-Down Design, Python Modules.
	4	Working with Text file, String Processing.
	5	Remedial and Doubt Solving.
October	1	Exception Handling.
	2	Features of object-oriented programming, Class, Encapsulation.
	3	Inheritance, Polymorphism.
	4	Object-oriented Design using UML.
	5	Python Regular Expressions. Remedial and Doubt Solving
November	1	Python with MySQL.
	2 & 3	Python with MongoDB, Python JSON. Remedial and Doubt Solving.

HEAD
Department
of
Information Technology

PRINCIPAL
Kandivli Education Society's
B. K. Shroff College of Arts &
M. H. Shroff College of Commerce
Bhulabhai Desai Road,
Kandivli (West), Mumbai-67.

Teaching Plan for the Year 2020-2021

Department	INFORMATION TECHNOLOGY	
Class	SYBSCIT	
Course	Microprocessor Architecture	
Semester	III	
Teacher / Profes	Dr. Vishesh Shrivastava	
Division	A & B	
Month	**Week**	**Unit/Topic**
July	4	**Basics of Microprocessor:** Introduction to Microprocessor, Evolution of Microprocessor, Microprocessor Architecture and its operations,
	5	Microprocessor systems with bus organization, Memory, Buses, Input/Output devices, ALU, Timing and Control Unit, registers,. Various Computer Languages
August	1	**Microprocessor 8085:** Architecture of 8085 microprocessor, Pin Diagram of 8085,
	2	8085 Programming Model 8085 BUS organization and 8085 registers Microprocessor operations
	3	Instruction Cycle, Machine Cycles, T-States, Memory Interfacing
	4	**Programming using 8085:** Assembly Language Programming Basics, 8085 Instruction Set, Instructions classifications, Addressing Modes, Instruction And Data Formats,
	5	Writing, Assembling & Executing a Program, Debugging The Programs, 8085 Programming: programs for addition, subtraction, multiplication, division and block transfer, block exchange, masking, ascending and descending order.
September	1	**Programming Techniques With Additional Instructions:** Writing 8085 assembly language programs with decision, making and looping using data transfer, arithmetic, logical and branch instructions.
	2	Stack & Subroutines, Developing Counters and Time Delay Routines, Code Conversion, BCD Arithmetic and 16-Bit Data operations,
	3	BCD-to-Binary Conversion, Binary-to-BCD Conversion, Code Conversion, Binary-to-ASCII and ASCII to-Binary Code Conversion,
	4	Introduction To Advanced Instructions and Applications, Multiplication, Subtraction With Carry.
	5	Software Development System and Assemblers: Microprocessors-Based Software Development system
October	1	Operating System and Programming Tools, Assemblers and Cross-Assemblers
	2	Writing Program Using Cross Assemblers. 8085 Interrupts: The 8085 Interrupt, 8085 Vectored Interrupts, Restart as S/W Instructions

PRINCIPAL
Kandivli Education Society's
B. K. Shroff College of Arts &
M. H. Shroff College of Commerce
Bhulabhai Desai Road,
Kandivli (West), Mumbai-67.

	3	Additional I/O Concepts and processes. Interfacing Concepts, Ports, Interfacing Of I/O Devices,
	4	Interrupts In 8085, Programmable Interrupt Controller 8259A, Programmable Peripheral Interface 8255A.
	5	Advanced Microprocessors: 8086 logical block diagram and segments, 80286: Architecture
November	1	Registers (Real/Protected mode), Privilege levels, descriptor cache, 80386: Architecture, Register organization,
	2 & 3	Memory access in protected mode, Only the technical features of Pentium: Architecture and its versions.

HEAD
Department
of
Information Technology

PRINCIPAL
Kandivli Education Society's
S. K. Shroff College of Arts &
M. H. Shroff College of Commerce
Bhulabhai Desai Road,
Kandivli (West), Mumbai-67

Teaching Plan for the Year 2020-2021

Department	INFORMATION TECHNOLOGY
Class	SYBSCIT
Course	Blockchain Technology
Semester	III
Teacher / Professor	Mr. Manish Kumar Singh
Division	A&B

Month	Week	Unit/Topic
July	4	Distributed Database, Two General Problem, Byzantine General problem
	5	Fault Tolerance, Hadoop Distributed File System
August	1	Distributed Hash Table, ASIC resistance, Turing Complete.
	2	Cryptography: Hash function
	3	Digital Signature - ECDSA, Memory Hard Algorithm, Zero Knowledge Proof.
	4	Blockchain: Introduction, Advantage over conventional distributed database
	5	Blockchain Network, Mining Mechanism, Distributed Consensus
September	1	Merkle Patricia Tree, Gas Limit, Transactions and Fee, Anonymity
	2	Reward, Chain Policy, Life of Blockchain application,
	3	Soft & Hard Fork, Private and Public blockchain.
	4	**Distributed Consensus:** Nakamoto consensus, Proof of Work, Proof of Stake, Proof of Burn
	5	Difficulty Level, Sybil Attack, Energy utilization and alternate.
October	1	Cryptocurrency: History, Distributed Ledger, Bitcoin protocols - Mining strategy and rewards
	2	Ethereum - Construction, DAO, Smart Contract, GHOST
	3	Vulnerability, Attacks, Sidechain, Namecoin
	4	Cryptocurrency Regulation: Stakeholders, Roots of Bitcoin, Legal Aspects
	5	Cryptocurrency Exchange, Black Market and Global Economy
November	1	Blockchain Applications: Internet of Things, Medical Record Management System,
	2 & 3	Domain Name Service and future of Blockchain & Revision

HEAD
Department
of
Information Technology

PRINCIPAL
Kandivli Education Society's
B. K. Shroff College of Arts &
M. H. Shroff College of Commerce
Bhulabhai Desai Road,
Kandivli (West), Mumbai-67.

Teaching Plan for the Year 2020-2021

Department	INFORMATION TECHNOLOGY
Class	SYBSCIT
Course	Artificial Intelligence
Semester	IV
Teacher / Professor	Mr. Manish Kumar Singh
Division	A & B

Month	Week	Unit/Topic
January	2	Introduction: What is Artificial Intelligence? Foundations of AI, history, the state of art AI today.
	3	Intelligent Agents: agents and environment, good behavior, Nature of environment, the structure of agents.
	4	Solving Problems by Searching: Problem solving agents, examples problems, searching for solutions,
	5	uninformed search, informed search strategies, heuristic functions.
February	1	Beyond Classical Search: local search algorithms, searching with non-deterministic action
	2	searching with partial observations, online search agents and unknown environments.
	3	Adversarial Search: Games, optimal decisions in games,
	4	alpha-beta pruning, stochastic games, partially observable games, state-of-the-are game programs.
March	1	Logical Agents: Knowledge base agents, The Wumpus world, logic, propositional logic,
	2	propositional theorem proving, effective propositional model checking, agents based on propositional logic.
	3	First Order Logic: Syntax and semantics, using First Order Logic
	4	Knowledge engineering in First Order Logic.
	5	Inference in First Order Logic: propositional vs. First Order, unification and lifting, forward and backward chaining, resolution.
April	1	Planning: Definition of Classical Planning, Algorithms for planning as state space search, planning graphs, other classical planning approaches,
	2	analysis of planning approaches, Time, Schedules and resources, hierarchical planning, Planning and Acting in Nondeterministic Domains, multiagent planning,
	3	Knowledge Representation: Categories and Objects, events, mental events and objects, reasoning systems for categories, reasoning with default information, Internet shopping world

Submitted by: Mr. Manish Kumar Singh

HEAD
Department
of
Information Technology

PRINCIPAL
Kandivli Education Society's
B. K. Shroff College of Arts &
M. H. Shroff College of Commerce
Bhulabhai Desai Road,
Kandivli (West) Mumbai-67

Teaching Plan for the Year 2020-2021

Department	INFORMATION TECHNOLOGY
Class	SYBSCIT
Course	Operating System
Semester	IV
Teacher / Professor	Mrunali Sawant
Division	A and B

Month	Week	Unit/Topic
January	2	Introduction to System Software & operating System, Overview of all system software: Compiler, Assembler, Linker, Loader, Operating system
	3	OS services and Components, Types of OS-Batch, multiprocessing, multitasking, timesharing,
	4	Distributed OS, Real time OS, virtual machines,
	5	System Calls, types of System calls, Buffering, Spooling
February	1	Process and Thread Management: - Concept of process and threads, Process states, Process management (Practicals)
	2	Context switching, Interaction between processes and OS, Multithreading,
	3	CPU scheduling algorithms, Concurrency Control Concurrency Control: Concurrency and Race Conditions
	4	Mutual exclusion requirements, Software and hardware solutions,
March	1	Semaphores, Monitors, Classical IPC problems and solutions,
	2	Deadlock, Characterization, Detection, Recovery, Avoidance and Prevention
	3	Memory Management Memory Management: Memory partitioning, Swapping, Paging, Segmentation
	4	Virtual memory, Overlays. Demand paging, Performance of Demand paging, Virtual memory concepts, Practicals
	5	Page replacement algorithms, Allocation algorithms, Mass Storage Structure: Mass Storage Structure: Secondary-Storage Structure

HEAD
Department
of
Information Technology

PRINCIPAL
Kandivli Education Society's
B. K. Shroff College of Arts &
M. H. Shroff College of Commerce
Bhulabhai Desai Road,
Kandivli (West), Mumbai-67.

April	1	Disk structure, Disk scheduling, Disk management, Swap-space management, Disk reliability, Stable storage implementation
	2	Introduction to clock, Clock hardware (self studies) , File systems File systems: File concept, File support, Access methods Clock software
	3	Allocation methods, Directory systems, File protection, Free space management Remedial leacture on previous important topic

Submitted by: Mrunali Sawant

HEAD
Department
of
Information Technology

PRINCIPAL
Kandivli Education Society's
B. K. Shroff College of Arts &
M. H. Shroff College of Commerce
Bhulabhai Desai Road,
Kandivli (West), Mumbai-67

Teaching Plan for the Year 2020-2021

Department	INFORMATION TECHNOLOGY
Class	SYBSCIT
Course	Embedded System
Semester	IV
Teacher / Professor	Dr. Vishesh Shrivastava
Division	A & B

Month	Week	Unit/Topic
January	2	Introduction: Embedded Systems and general purpose computer systems, history, classifications, applications and purpose of embedded systems Core of embedded systems: microprocessors and microcontrollers,
	3	RISC and CISC controllers, Big endian and Little endian processors, Application specific ICs, Programmable logic devices, COTS, sensors and actuators, communication interface, embedded firmware, other system components.
	4	Characteristics and quality attributes of embedded systems: Characteristics, operational and non-operational quality attributes.
	5	Embedded Systems: Application and Domain Specific: Application specific – washing machine, domain specific - automotive. Other embedded systems Chocolate Vending Machine, Room Temperature Controller.
February	1	Embedded Hardware: Memory map, i/o map, interrupt map, processor family, external peripherals, memory RAM ,
	2	ROM, types of RAM and ROM, memory testing, CRC ,Flash memory. Peripherals: Control and Status Registers, Device Driver, Timer Driver - Watchdog Timers.
	3	The 8051 Microcontrollers: Microcontrollers and Embedded processors, Overview of 8051 family.8051 Microcontroller hardware, Input/output pins, Ports, and Circuits, External Memory
	4	8051 Programming in C: Data Types and time delay in 8051 C, I/O Programming, Logic operations, Data conversion Programs. structure of embedded program, infinite loop, compiling, linking and debugging.
March	1	Real Time Operating System (RTOS):Operating system basics, types of operating systems, Real-Time Characteristics, Selection Process of an RTOS.
	2	Design and Development: Embedded system development Environment – IDE, types of file generated on cross compilation, disassembler/ de-compiler, simulator, emulator and debugging, embedded product development life-cycle, trends in embedded industry.
	3	Open Source Embedded Development Board (Arduino): Arduino: Birth, Open Source community, Functional Block Diagram of Arduino.

PRINCIPAL
Kandivli Education Society's
B. K. Shroff College of Arts &
M. H. Shroff College of Commerce
Bhulabhai Desai Road,
Kandivli (West), Mumbai-67

	4	Functions of each Pin of Arduino, Arduino Development Board diagram (including different blocks only): IDE, I/O Functions, Looping Techniques, Decision Making Techniques,
	5	Designing of 1st sketch, Programming of an Arduino (Arduino ISP), Arduino Boot loader, Serial Protocol (serial port Interfacing), Initialization of Serial Port using Functions, Basic Circuit For Arduino
April	1	Interface Digital and Analog I/O Devices (Arduino Interfacing): Basic Interfacing and I/O Concept, Interfacing LED,Switch,7seg LED its and Code, Interfacing POT,LM35,Acelerometer (ADXL3C5C) and its Code,
	2	Interfacing keypad and Code for it, Initialization for serial port and code for it, Interfacing DC motor and its Code, Interfacing 16x2 LCD and its code Embedded system Applications (Arduino): Motor Driver L293D, IR Sensor, Interfacing L293D with Arduino,
	3	Code for Line Follower Robot, Interfacing Accelerometer with Arduino, Record Gestures, Code For Accelerometer based Robot. Interfacing of RF Tx/RF Rx with Arduino, Interfacing of Relay Driver ULN2803 with Arduino Code for Home automation and its Control.

Submitted by: Dr. Vishesh Shrivastava

HEAD
Department
of
Information Technology

PRINCIPAL
Kandivli Education Society's
B. K. Shroff College of Arts &
M. H. Shroff College of Commerce
Bhulabhai Desai Road,
Kandivli (West), Mumbai-67

Teaching Plan for the Year 2020-2021

Department	INFORMATION TECHNOLOGY
Class	SYBSCIT
Course	Enterprise Java
Semester	IV
Teacher / Professor	Prashant Chaubey
Division	A & B

Month	Week	Unit/Topic
January	2	Understanding Java and the J2EE Platform, Reviewing XML Fundamentals
	3	Introducing Application Servers, Understanding Remote Method Invocation.
	4	Creating a Magazine Publisher Application Using Servlets, Using the Servlet Context, Performing URL Redirection
	5	Session tracking with servlets, Listeners, Filters, Deploying servlets, The Web-application archive, web.xml Deployment Descriptor
February	1	Introducing JSP, Examining MVC and JSP,JSP Scripting Elements and Directives
	2	Implicit JSP objects, Working with Variable Scopes, Error Pages, Using JavaBeans
	3	Using JSP Tag Extensions: Why Use Tag Extensions? Explaining Custom-Tag Concepts, explaining taglib Mapping, Understanding Tag Handlers Exploring Dynamic Attributes
	4	Working with JavaMail: Understanding the Protocols for JavaMail, JavaMail Components
March	1	Using the JavaMail API
	2	Integrating JavaMail into J2EE Understanding the Java Messaging Service
	3	Introducing JMS, Examining Messaging Models, Understanding the Major JMS Components
	4	Configuring JMS, Connexia Airlines Point-to-Point Messaging Business Case
	5	Magazine-Publisher Publish-Subscribe Messaging Business Case, Explaining Reliable Messaging
April	1	Introducing Web Services, SOAP, WSDL, and UDDI, Understanding J2EE Web Services,
	2	with Service-Tier Patterns, Using Data-Tier Patterns
	3	Revision

Submitted by: Prashant Chaubey

HEAD
Department
of
Information Technology

PRINCIPAL
Kandivli Education Society's
B. K. Shroff College of Arts &
M. H. Shroff College of Commerce
Bhulabhai Desai Road,
Kandivli (West), Mumbai-67.

Teaching Plan for the Year 2020-2021

Department	INFORMATION TECHNOLOGY
Class	SYBSCIT
Course	Operations Research
Semester	IV
Teacher / Professor	Dr. Sanjay Mishra
Division	A and B

Month	Week	Unit/Topic
January	2	History ,Nature of Operation Research ,Impact of Operation Research, Application Areas
	3	Linear Programming Introduction, Graphical solution, The standard form of linear programming problems, Basic feasible solutions,
	4	Simplex algorithm, Maximization problem,
	5	Minimization, Degeneracy, Artificial variables, Big M
February	1	**Transportation Problem** : North-west corner Rule – least cost methods – Vogel's approximation method,
	2	MODI Method, Minimization and Maximization problem
	3	**Assignment Problem**: Hungarian method (Minimization and Maximization)
	4	**PERT and CPM** Arrow network ,Time estimates, earliest expected time, latest allowable occurrence time
March	1	latest allowable occurrence time and slack time Critical path, Probability of meeting scheduled date of completion of project,
	2	Calculation of CPM network ,Various floats for activities, Project crashing.
	3	**Sequencing Problem**: Two machines n jobs , three machines n jobs
	4	**Game Theory:** Theory of Games, Rules for Game Theory
	5	Two-person Zero sum games (pure strategy, mixed strategy and game by dominance)
April	1	Solving simple games
	2	Revision
	3	Revision

Submitted by: Dr. Sanjay Mishra

HEAD
Department
of
Information Technology

PRINCIPAL
Kandivli Education Society's
B. K. Shroff College of Arts &
M. H. Shroff College of Commerce
Bhulabhai Desai Road,
Kandivli (West), Mumbai-67

Teaching Plan for the Year 2020-2021

Departmer	INFORMATION TECHNOLOGY
Class	TYBSCIT
Course	Advanced Web Programming
Semester	V
Teacher / I	Ms. Mrunali Sawant
Division	A & B

Month	Week	Unit/Topic
July	4	Introducing .NET: The .NET Framework, C#, VB, and the .NET Languages
	5	The Common Language Runtime, The .NET Class Library. The C# Language: C# Language Basics, Variables and Data Types, Variable Operations,
August	1	Object-Based Manipulation, Conditional Logic, Loops, Methods, Types, Objects, and Namespaces: The Basics About Classes,
	2	Building a Basic Class, Value Types and Reference Types, Understanding Namespaces and Assemblies, Advanced Class Programming.
	3	Web Form Fundamentals: Writing Code, Using the Code-Behind Class, Adding Event Handlers, Understanding the Anatomy of an ASP.NET Application, Introducing Server Controls, Using the Page Class, Using Application Events, Configuring an ASP.NET Application.
	4	Form Controls: Stepping Up to Web Controls, Web Control Classes, List Controls, Table Controls, Web Control Events and AutoPostBack, Validation, Understanding Validation, Using the Validation Controls,
	5	Rich Controls, The Calendar, The AdRotator, Pages with Multiple Views, User Controls and Graphics, User Controls, Dynamic Graphics, The Chart Control,
September	1	Website Navigation: Site Maps, URL Mapping and Routing, The SiteMapPath Control, The TreeView Control, The Menu Control. Error Handling, Logging, and Tracing: Avoiding Common Errors, Understanding
	2	Exception Handling, Handling Exceptions, Throwing Your Own Exceptions, Using Page Tracing State Management: Understanding the Problem of State, Using View State, Transferring Information Between Pages,
	3	Using Cookies, Managing Session State, Configuring Session State, Using Application State, Comparing State Management Options Styles,
	4	Themes, and Master Pages: Styles, Themes, Master Page Basics, Advanced Master Pages (practical on Master page)
	5	ADO.NET Fundamentals: Understanding Databases, Configuring Your Database,
October	1	Understanding SQL Basics, Understanding the Data Provider Model, Using Direct Data Access, Using Disconnected Data Access. (Practical on Data base)
	2	Data Binding: Introducing Data Binding, Using Single-Value Data Binding, Using Repeated-Value Data Binding, Working with Data Source Controls, The Data Controls: The GridView,
	3	Formatting the GridView, selecting a GridView Row, Editing with the GridView, Sorting and Paging the GridView, Using GridView Templates, The DetailsView(Self study) and FormView (practical on form view and grid view)
	4	XML: XML Explained, The XML Classes, XML Validation, XML Display and Transforms. (practical on xml)

PRINCIPAL
Kandivli Education Society's
B. K. Shroff College of Arts &
M. H. Shroff College of Commerce
Bhulabhai Desai Road,
Kandivli (West), Mumbai-67

	5	Security Fundamentals: Understanding Security Requirements, Authentication and Authorization, Forms Authentication, Windows Authentication.
November	1	ASP.NET AJAX: Understanding Ajax, Using Partial Refreshes, Using Progress Notification, Implementing Timed Refreshes,
	2 & 3	Working with the ASP.NET AJAX Control Toolkit . Remedial lecture on important topic and discussion on website project

HEAD
Department
of
Information Technology

PRINCIPAL
Kandivli Education Society's
B. K. Shroff College of Arts &
M. H. Shroff College of Commerce
Bhulabhai Desai Road,
Kandivli (West), Mumbai-67

Teaching Plan for the Year 2020-2021

Departmer	INFORMATION TECHNOLOGY
Class	TYBSCIT
Course	Enterprise Java
Semester	V
Teacher /	Gauravi desai
Division	A & B

Month	Week	Unit/Topic
July	4	Understanding Java EE: WhatisanEnterpriseApplication? Retrieving data. Wait a few seconds and try to cut or copy again. Retrieving data. Wait a few seconds and try to cut or copy again. JavaEE Architecture,Serverand Containers: TypesofSystemArchitecture, JavaEEServer, JavaEEContainers. Introduction to Java Servlets: TheHeadforDynamicContent, JavaServletTechnology, WhyServlets? WhatcanServletsdo?
	5	Servlet API and Lifecycle: JavaServletAPI, TheServletSkeleton, TheServletLifeCycle, ASimpleWelcomeServlet WorkingwithServlets: GettingStarted, UsingAnnotationsInsteadofDeploymentDescriptor. Working with Databases: WhatIsJDBC? JDBCArchitecture, AccessingDatabase, TheServletGUI and DatabaseExample.
August	1	Request Dispatcher: Resquestdispatcher Interface, Methods of Requestdispatcher, Requestdispatcher Application. COOKIES: KindsofCookies, WhereCookiesAreUsed? CreatingCookiesUsingServlet, DynamicallyChangingtheColorsofAPage SESSION: WhatAreSessions? LifecycleofHttpSession, SessionTrackingWithServletAPI, AServlet Session Example
	2	Workingwith Files: UploadingFiles, CreatinganUploadFileApplication, DownloadingFiles, CreatingaDownloadFileApplication
	3	Workingwith Non-Blocking I/O: CreatingaNon- BlockingReadApplication, CreatingTheWeb Application, CreatingJavaClass, Creating Servlets, Retrieving The File, Creating index.jsp
	4	Introduction To Java ServerPages: WhyuseJava ServerPages? DisadvantagesOfJSP, JSPv\sServlets, LifeCycleofaJSPPage, HowdoesaJSPfunction? HowdoesJSPexecute? AboutJava ServerPages

HEAD
Department
of
Information Technology

PRINCIPAL
Kandivli Education Society's
B. K. Saraff College of Arts &
N. H. Saraff College of Commerce
Bhulabhai Desai Road,
Kandivli (West), Mumbai-67.

	5	Getting Started With Java ServerPages: Comments, JSPDocument, JSPElements, JSPGUIExample. Action Elements: IncludingotherFiles, ForwardingJSPPagetoAnotherPage, PassingParametersforotherActions, LoadingaJavabean.
September	1	Implicit Objects, Scopeand ElExpressions: ImplicitObjects, CharacterQuotingConventions, UnifiedExpressionLanguage[UnifiedEl], ExpressionLanguage
	2	Java Server Pages Standard Tag Libraries: WhatiswronginusingJSPScriptletTags? HowJSTLFixesJSPScriptlet'sShortcomings? DisadvantagesOfJSTL, TagLibraries.
	3	Enterprise Beans: EnterpriseBeansArchitecture, BenefitsofEnterpriseBean, TypesofEnterpriseBean, Accessing EnterpriseBeans, EnterpriseBeanAccess, Testing, PackagingEnterpriseBeans\
	4	Workingwith Session Beans: WhentouseSessionBeans? TypesofSessionBeans, RemoteandLocalInterfaces, AccessingInterfaces, LifecycleofEnterpriseBeans, PackagingEnterpriseBeans, Exampleof StatefulSessionBean, Example ofStatelessSessionBean, Example of SingletonSessionBeans.
	5	Working with Message DrivenBeans: LifecycleofaMessageDrivenBean, UsesofMessageDrivenBeans, TheMessage DrivenBeansExample. Interceptors: Request andInterceptor, Defining An Interceptor, AroundInvokeMethod, ApplyingInterceptor, Adding An Interceptor To An Enterprise Bean, Build and Run the Web Application.
October	1	Java Naming and Directory Interface: What is Naming Service? What is Directory Service? What is Java Naming and Directory interface? Basic Lookup, JNDI Namespace in Java EE, Resources and JNDI, Datasource Resource Definition in Java EE.
	2	Persistence, Object/Relational Mapping And JPA: WhatisPersistence? PersistenceinJava, CurrentPersistenceStandardsinJava, WhyanotherPersistenceStandards? Object/RelationalMapping,
	3	Introduction to JavaPersistence API: TheJavaPersistenceAPI, JPA,ORM,DatabaseandtheApplication, ArchitectureofJPA, HowJPAWorks? JPA Specifications.

HEAD
Department
of
Information Technology

PRINCIPAL
Kandivli Education Society's
B. K. Shroff College of Arts &
M. H. Shroff College of Commerce
Bhulabhai Desai Road,
Kandivli (West), Mumbai-67

	4	Writing JPA Application: ApplicationRequirementSpecifications, SoftwareRequirements, TheApplicationDevelopmentApproach, CreatingDatabaseandTablesinMysql, creatingaWebApplication, AddingtheRequiredLibraryFiles, creatingaJavabeanClass, CreatingPersistenceUnit[Persistence.Xml], CreatingJSPS, CreatingPersistenceUnit[Persistence.Xml], CreatingJSPS, TheJPAApplicationStructure, RunningtheJPAApplication.
	5	Introduction to Hibernate: WhatisHibernate? WhyHibernate? Hibernate,DatabaseandTheApplication, ComponentsofHibernate, ArchitectureofHibernate, HowHibernateWorks?
November	1	WritingHibernateApplication: ApplicationRequirementSpecifications, SoftwareRequirements, TheApplicationDevelopmentApproach, CreatingDatabaseandTablesinMysql, creatingaWebApplication, AddingtheRequiredLibraryFiles, creatingaJavabeanClass, CreatingHibernateConfigurationFile, AddingaMappingClass, CreatingJSPS, RunningTheHibernateApplication.
	2 & 3	REVISION

HEAD
Department
of
Information Technology

PRINCIPAL
Kandivli Education Society's
B. K. Shroff College of Arts &
M. H. Shroff College of Commerce
Bhulabhai Desai Road,
Kandivli (West), Mumbai-67.

Teaching Plan for the Year 2020-2021

Department	INFORMATION TECHNOLOGY
Class	TYBSCIT
Course	Artificial Intelligence
Semester	V
Teacher / I	Mr. Manish Kumar Singh
Division	A & B

Month	Week	Unit/Topic
July	4	Introduction: What is Artificial Intelligence? Foundations of AI, history, the state of art AI today.
	5	Intelligent Agents: agents and environment, good behavior
August	1	Nature of environment, the structure of agents.
	2	Solving Problems by Searching: Problem solving agents, examples problems, searching for solutions,
	3	uninformed search
	4	informed search strategies, heuristic functions.
	5	Beyond Classical Search: local search algorithms, searching with non-deterministic action
September	1	searching with partial observations, online search agents and unknown environments.
	2	Adversarial Search: Games, optimal decisions in games,
	3	alpha-beta pruning, stochastic games, partially observable games, state-of-the-art game programs.
	4	Logical Agents: Knowledge base agents, The Wumpus world, logic, propositional logic,
	5	propositional theorem proving, effective propositional model checking, agents based on propositional logic.
October	1	First Order Logic: Syntax and semantics, using First Order Logic
	2	Knowledge engineering in First Order Logic.
	3	Inference in First Order Logic: propositional vs. First Order, unification and lifting.
	4	forward and backward chaining, resolution.
	5	Planning: definition of Classical Planning, Algorithms for planning as state-space search, planning graphs, other classical planning approaches,
November	1	extensions to planning approaches, Time, Schedules and resources, hierarchical planning, Planning and Acting in Nondeterministic Domains, multi-agent planning,
	2 & 3	Knowledge Representation: Categories and Objects, events, mental events and objects, reasoning systems for categories, reasoning with information, Internet shopping world

HEAD
Department
of
Information Technology

PRINCIPAL
Kandivli Education Society's
B. K. Shroff College of Arts &
M. H. Shroff College of Commerce
Bhulabhai Desai Road,
Kandivli (West), Mumbai-67

Teaching Plan for the Year 2020-2021

Department	INFORMATION TECHNOLOGY
Class	TYBSCIT
Course	Internet of Things
Semester	V
Teacher /	Dr. Vishesh Shrivastava
Division	A & B

Month	Week	Unit/Topic
July	4	The Internet of Things: An Overview : The Flavour of the Internet of Things, The "Internet" of "Things", The Technology of the Internet of Things, Enchanted Objects, Who is Making the Internet of Things?
	5	Design Principles for Connected Devices: Calm and Ambient Technology, Magic as Metaphor, Privacy, Keeping Secrets, Whose Data Is It Anyway? Web Thinking for Connected Devices, Small Pieces, Loosely Joined, First-Class Citizens On The Internet, Graceful Degradation, Affordances.
August	1	Internet Principles: Internet Communications: An Overview, IP, TCP, The IP Protocol Suite (TCP/IP), UDP, IP Addresses, DNS, Static IP Address Assignment,
	2	Dynamic IP Address Assignment, IPv6, MAC Addresses, TCP and UDP Ports, An Example: HTTP Ports, Other Common Ports, Application Layer Protocols. HTTP, HTTPS: Encrypted HTTP, Other Application Layer Protocols.
	3	Thinking About Prototyping: Sketching, Familiarity, Costs versus Ease of Prototyping, Prototypes and Production, Changing Embedded Platform, Physical Prototypes and Mass Personalisation,
	4	Climbing into the Cloud, Open Source versus Closed Source, Why Cloud? Why Open? Mixing Open and Closed Source, Closed Source for Mass Market Projects, Tapping into the Community.
	5	Prototyping Embedded Devices: Electronics, Sensors, Actuators, Scaling Up the Electronics, Embedded Computing Basics, Microcontrollers, System-on-Chips, Choosing Your Platform
September	1	Arduino, Developing on the Arduino, Some Notes on the Hardware, Openness. Raspberry Pi, Cases and Extension Boards, Developing on the Raspberry Pi, Some Notes on the Hardware, Openness.
	2	Prototyping the Physical Design: Preparation, Sketch, Iterate, and Explore, Non-digital Methods, Laser Cutting, Choosing a Laser Cutter, Software, Tips and Joints, 3D Printing, Types of 3D Printing, Software, CNC Milling, Repurposing/Recycling.
	3	Prototyping Online Components: Getting Started with an API, Mashing Up APIs, Scraping, Legalities, Writing a New API, Clockodillo, Security,
	4	Implementing the API, Using Curl to Test, Going Further, Real-Time Protocols, Polling, Comet, Other Protocols, MQ Telemetry Transport, Extensible Messaging and Presence Protocol, Constrained Application Protocol.
	5	Techniques for Writing Embedded Code: Memory Management, Types of Memory, Making the Most of Your RAM, Performance and Battery Life, Libraries, Debugging,

PRINCIPAL
Kandivli Education Society's
B. K. Shroff College of Arts &
M. H. Shroff College of Commerce
Shulabhai Desai Road,
Kandivli (West), Mumbai-67.

October	1	Business Models: A Short History of Business Models, Space and Time, From Craft to Mass Production, The Long Tail of the Internet, Learning from History,
	2	The Business Model Canvas, Who Is the Business Model For? Models, Make Thing, Sell Thing, Subscriptions, Customisation, Be a Key Resource, Provide Infrastructure: Sensor Networks, Take a Percentage,
	3	Starting an Internet of Things Startup, Hobby Projects and Open Source, Venture Capital, Government Funding, Crowdfunding, Lean Startups.
	4	Moving to Manufacture: What Are You Producing? Designing Kits, Designing Printed circuit boards, Software Choices, The Design Process, Manufacturing Printed Circuit Boards, Etching Boards,
	5	Drilling Boards. Assembly, Testing, Mass-Producing the Case and Other Options, Certification, Costs, Scaling Up Software, Deployment, Connectivity and Maintainability, Security, Performance, User Community.
November	1	Defining, Characterizing the Internet of Things, Privacy, Control, Disrupting Control.
	2 & 3	Consumerism, Environment, Physical Thing, Electronics, Internet Solutions, The Internet of Things as Part of the Solution, Cautious Optimism, The Open Internet of Things Definition.

HEAD
Department
of
Information Technology

PRINCIPAL
Kandivli Education Society's
B. K. Birla College of Arts &
M. H. Saraff College of Commerce
Bhulabhai Desai Road,
Kandivli (West), Mumbai-67

Teaching Plan for the Year 2020-2021

Departmen	INFORMATION TECHNOLOGY
Class	TYBSCIT
Course	Software Project Management
Semester	V
Teacher /	Devang Th
Division	A & B

Month	Week	Unit/Topic
July	4	Introduction to Software Project Management: Introduction, Why is Software Project Management Important? What is a Project? Software Projects versus Other Types of Project, Contract Management and Technical Project Management, Activities Covered by Software Project Management, Plans, Methods and Methodologies, Some Ways of Categorizing Software Projects,
	5	Project Charter, Stakeholders, Setting Objectives, The Business Case, Project Success and Failure, What is Management? Management Control, Project Management Life Cycle, Traditional versus Modern Project Management Practices.
August	1	Project Evaluation and Programme Management: Introduction, Business Case, Project Portfolio Management, Evaluation of Individual Projects, Cost–benefit Evaluation Techniques, Risk Evaluation, Programme Management, Managing the Allocation of Resources within Programmes, Strategic Programme Management, Creating a Programme, Aids to Programme Management, Some Misconceptions about Programme Management, Benefits Management.
	2	An Overview of Project Planning: Introduction to Step Wise Project Planning, Step 0: Select Project, Step 1: Identify Project Scope and Objectives, Step 2: Identify Project Infrastructure, Step 3: Analyse Project Characteristics, Step 4: Identify Project Products and Activities, Step 5: Estimate Effort for Each Activity, Step 6: Identify Activity Risks, Step 7: Allocate Resources, Step 8: Review/Publicize Plan, Step 9 and 10: Execute Plan/Lower Levels of Planning
	3	Selection of an Appropriate Project Approach: Introduction, Build or Buy, Choosing Methodologies and Technologies, Software Processes and Process Models, Choice of Process Models, Structure versus Speed of Delivery,
	4	The Waterfall Model, The Spiral Model, Software Prototyping, Other Ways of Categorizing Prototypes, Incremental Delivery, Dynamic Systems Development Method, Rapid Application Development, Agile Methods, Extreme Programming (XP), Scrum, Agile Software Development, Managing Iterative Processes, Software Effort: The Most Appropriate Process Model.
	5	Software Effort Estimation: Introduction, Where are the Estimates Coming From? Problems with Over- and Under-Estimates, The Basis for Software Estimating, Software Effort Estimation Techniques, Bottom-up Estimating, The Top-down Approach and Parametric Models, Expert Judgement, Estimating by Analogy,
September	1	Function Point, Analysis, Function Points Mark II, COSMIC Function Points, COCOMO II: A Parametric Productivity Model, Cost Estimation, Staffing Term, Effect of Schedule Compression, Capers Jones Rules of Thumb
	2	Activity Planning: Introduction, Objectives of Activity Planning, When Project Schedules, Projects and Activities, Sequencing and Scheduling Activities, Network Planning Models, Formulating a Network Model, Adding the Time Dimension, The Forward Pass, The Backward Pass, Identifying the Critical Path,

PRINCIPAL
Kandivli Education Society's
B. K. Sanghvi College of Arts &
M. H. Shroff College of Commerce
Bhulabhai Desai Road,
Kandivli (West), Mumbai-67

HEAD
Department
of
Information Technology

	3	Activity Float, Shortening the Project Duration, Identifying Critical Activity-on-Arrow Networks. Risk Management: Risk, Categories of Risk, Risk Management A Framework for Dealing with Risk, Risk Identification, Risk Assessment, Risk Planning, Risk Management,
	4	Evaluating Risks to the Schedule, Boehm's Top 10 Risks and Counter Measures, Applying the PERT Technique, Monte Carlo Simulation, Critical Chain Concepts. Resource Allocation: Hierarchy, Nature of Resources, Identifying Resource Requirements,
	5	Scheduling Resources, Creating Critical Paths, Counting the Cost, Monitoring, Publishing the Resource Schedule, Cost Schedules, Monitoring the Sequence.
October	1	Monitoring and Control: Introduction, Creating the Framework, Collecting the Data, Review, Visualizing Progress, Cost Monitoring, Earned Value Analysis, Prioritizing Monitoring, Getting the Project Back on Track, Change Control, Software Configuration Management (SCM).
	2	Contracts: Introduction, Types of Contract, Stages in Contract Placement, Typical Terms of a Contract, Contract Management, Acceptance.
	3	People in Software Environments: Introduction, Understanding Behaviour, Organizational Behaviour: A Background, Selecting the Right Person for the Job, Instruction in the Best Practices, Motivation,
	4	The Oldham–Hackman Job Characteristics Model, Stress, Stress Management, Health and Safety, Some Ethical and Professional Issues, Working in Teams: Introduction, becoming a Team, Decision Making, Organization and Team Structures,
	5	Communication Genres, Communication Plans, Leadership. Software Quality: Introduction, The Place of Software Quality in Project Planning, Importance of Software Quality, Defining Software Quality, Software Quality Models, ISO 9126, Product and Process
November	1	Process Quality Management, Quality Management Maturity, Process Capability Models, Techniques to Help Enhance Software Quality, Testing, Software Reliability, Quality Plans.
	2 & 3	Project Closeout: Introduction, Reasons for Project Closure, Project Closure Process, Performing a Financial Closure, Project Closeout Reports

HEAD
Department
of
Information Technology

PRINCIPAL
Kandivli Education Society's
B. K. Shroff College of Arts &
M. H. Shroff College of Commerce
Bhulabhai Desai Road,
Kandivli (West), Mumbai-67