Kanya Mahavidyalaya, Kharkhoda (Sonepat)

Lesson Plan Session 2020-21

Name of the Assistant/Associate Professor: Mrs.Preeti	
Class and Section:	**MSC computer science**
Subject:	**COMPUTER ORGANISATION AND ARCHITECTURE**
Paper:	**16MCS21C4**
Year/Semester:	**1st year/1st semester.**

06 Oct. 2020 to 05 Nov. 2020

Month/Week	Topic
October (Week-2)	Representation of Information: Number Systems: Binary, Octal and Hexadecimal, Integer and Floating-point representation, Character codes: ASCII and EBCDIC.
October (Week-3)	Basic Building Blocks and Circuit Design: Boolean Algebra and Logic Gates: OR, AND, NOT, XOR Gates; De Morgan's theorem; Universal building blocks.
October (Week-4)	Simplifying logic circuits : sum of product and product of sum form; Karnaugh Map simplification.
November (Week-1)	Combinational logic blocks (Adders, Multiplexers, Encoders, Decoder)

06 Nov. 2020 to 05 Dec. 2020

Month/Week	Topic
November (Week-2)	Sequential logic blocks (Latches, Flip-Flops, Registers, Counters).
November (Week-3)	Register Transfer Language; Bus and memory Transfer; Micro operations: Arithmetic, Logic & Shift Micro operations.
November (Week-4)	Basic Computer Organization and Design: Instructions Codes, Register reference.

Month/Week	Topic
December (Week-1)	Memory Reference & Input-Output instructions, Instruction Cycle, Timing and Control, Interrupts; Design of Control unit: Hardwired control unit, Micro-programmed control unit.

06 Dec. 2020 to 05 Jan. 2021

Month/Week	Topic
December (Week-2)	Memory Organization: Memory Hierarchy, Main Memory, Auxiliary Memory, Cache Memory, Virtual Memory.
December (Week-3)	Register Organization and Parallel Processing: General Register Organization, Stack Organization, Instruction Formats.
December (Week-4)	Addressing Modes; Data Transfer & Manipulation Instructions, CISC and RISC: Features and Comparison.
January (Week-1)	Pipeline and Vector Processing: Parallel processing, Pipelining, Arithmetic Pipeline, Instruction pipeline and Arrays Processors.

05 Jan. 2021 to 06 Feb. 2021

Month/Week	Topic
January (Week-2)	Assignment work. Group Discussion .
January (Week-3)	Input-Output Organization: Peripheral Devices, Input-Output interface, Asynchronous.
January (Week-4)	Data Transfer, Modes of transfer, Priority interrupt,
February (Week-1)	Direct Memory Access (DMA), input-output processors (IOP), Serial communication. Multi-processors, characteristics of multi-processors,

06 Feb. 2021 to 25 Feb. 2021

Month/Week	Topic
February (Week-2)	Interconnection structures, Inter-processor Arbitration, Inter-processor Communication and Synchronization, Cache Coherence.
February (Week-3)	Karnaugh Map simplification; Logic & Shift Micro operations.

February (Week-4)	Book Revise

Kanya Mahavidyalaya, Kharkhoda (Sonepat)

Lesson Plan Session 2020-21

Name of the Assistant/Associate Professor: Mrs. Kavita
Class and Section: Msc Computer Science
Subject: COMPUTER NETWORKS
Paper: 16MCS22C4
Year/Semester: 1st year/2nd sem

16 March 2021 to 15 April 2021

Month/Week	Topic
March(Week-3)	**Introduction to Computer Network**: Types of Networks, Network Topologies, OSI and TCP/IP, Reference Models; Comparison of Models.
March(Week-4)	**Data Communications Concepts**: Digital Vs. Analog communication; Parallel and Serial Communication
April (Week-1)	Synchronous, Asynchronous and Isochronous Communication; Communication modes: simplex, half duplex, full duplex; Multiplexing
April (Week-2)	Transmission media: Wired-Twisted pair, Coaxial cable, Optical Fiber, Wireless transmission: Terrestrial, Microwave, Satellite, Infra red.

16 April 2021 to 15 May 2021

Month/Week	Topic
April (Week-3)	**Communication Switching Techniques:** Circuit Switching, Message Switching, Packet Switching.
April (Week-4)	**Data Link Layer Fundamentals**: Framing, Basics of Error Detection, Forward Error Correction,
May(Week-1)	Cyclic Redundancy Check codes for Error Detection , Flow Control
May (Week-2)	**Media Access Protocols:** ALOHA, Carrier Sense Multiple Access (CSMA), CSMA with Collision Detection (CSMA/CD), Token Ring, Token Bus.

16 May 2021 to 15 June. 2021

Month/Week	Topic
May (Week-3)	**High-Speed LAN:** Standard Ethernet, Fast Ethernet, Gigabit Ethernet, 10G
May (Week-4)	Wireless LANs: IEEE 802.11, Bluetooth.
June (Week-1)	**Network Layer:** IP Addressing and Routing, Network Layer Protocols: IPv4 (Header Format and Services)
June (Week-2)	ARP, ICMP (Error Reporting and Query message); IPv6 (Header Format and Addressing).

16 June 2021 to 06 July 2021

Month/Week	Topic
June (Week-3)	**Transport Layer:** Process-to-Process Delivery: UDP, TCP; Connect ion Management by TCP; Basics of Congestion Control.
June (Week-4)	**Application Layer:** Domain Name System (DNS); SMTP; HTTP; WWW.

Month/Week	Topic
July (Week-1)	**Network Security:** Security Requirements and attacks; Cryptography: Symmetric Key (DES, AES), Public Key Cryptography (RSA); Firewall.

Kanya Mahavidyalaya, Kharkhoda (Sonepat)

Lesson Plan Session 2020-21

Name of the Assistant/Associate Professor: Dr. Ramesh Saini
Class and Section: M. Sc. 2nd Semester
Subject: Object Oriented Programming Using C++ (Theory & Practical)
Paper: Object Oriented Programming Using C++
Year/Semester: 2nd

16 March 2021 to 15 April 2021

Month/Week	Topic
March(Week-3)	**Concepts**: Procedural Language and Object Oriented approach, Test, Characteristics of OOP: Objects, classes
March(Week-4)	Encapsulation, Data Abstraction, Inheritance, Polymorphism, Test, Dynamic Binding, Message Passing. Data-types, Variables
April (Week-1)	Static Variables, Operators in C++, Arrays, Strings, Test, Structure
April (Week-2)	Functions, Recursion, Control Statements, Assignment.

16 April 2021 to 15 May 2021

Month/Week	Topic
April (Week-3)	Class, object, Memory Allocation for Objects, memory layout of objects, Test

Month/Week	Topic
April (Week-4)	, private, public, protected member functions, static members. Constructors: Features, types
May(Week-1)	dynamic constructor, Test, Parameterized constructors; destructors.
May (Week-2)	Dynamic Memory allocation: new, delete, Test, Object Creation at Run Time; This Pointer, Assignment.

16 May 2021 to 15 June. 2021

Month/Week	Topic
May (Week-3)	Derived Class and Base Class, Different types of Inheritance, Test
May (Week-4)	Overriding member function, Public and Private Inheritance, Ambiguity in Multiple Inheritance, Test
June (Week-1)	Virtual Inheritance, Abstract Class. Definition, operator overloading, Overloading Unary and Binary Operators, Test
June (Week-2)	Function overloading, Virtual function, Friend function, Static function, Assignment

16 June 2021 to 06 July 2021

Month/Week	Topic
June (Week-3)	**Exception handling**: Throwing, Catching, Re-throwing an exception, Test, specifying exceptions; processing unexpected exceptions; Test, Exceptions when handling exceptions
June (Week-4)	resource capture and release, Assignment. **Templates:** Introduction; Class templates; Function templates; Test, Overloading of template function, namespaces., Test
July (Week-1)	Introduction to STL: Standard Template Library: benefits of STL; Test, containers, adapters, iterators, vector, lists, Assignment

Kanya Mahavidyalaya, Kharkhoda (Sonepat)

Lesson Plan Session 2020-21

Name of the Assistant/Associate Professor: : Mrs . Nisha Suhag	
Class and Section: Msc. Computer Science	
Subject: COMPUTER FUNDAMENTALS AND PROGRAMMING IN C	
Paper: 16MCS21C2	
Year/Semester: 1ˢᵗ year/1ˢᵗ sem.	

01 Jan. 2021 to 31 Jan. 2021

Month/Week	Topic
January (Week-1)	**Classification of Computers: Micro, Mini, Mainframe, Super computer. Advantages of Computer.**
January (Week-2)	**Limitations of Computer, Range of Applicaions of Computer, Social concerns of Computer Technology: Positive and Negative Impacts.**
January (Week-3)	**Revesion Computer Crimes, Viruses and their remedial solutions.**
January (Week-4)	**Machine, Assembly, High Level Language, 4GL; Language Translator; Linker, Loader.**

01Feb. 2021 to 28Feb. 2021

Month/Week	Topic
February (Week-1)	**Structures and Union: Defining and Iniializing Structure, Array within Structure, Array of Structure, Nesting of Structure, Pointer to Structure.**
February (Week-2)	**Passing structure and its pointer to Functions; (BY PRESENTATION)**

Month/Week	Topic
February (Week-3)	**Unions: Introduction to Unions and its Utilit ies.** **Computer Software: System Software and Application Software.**
February (Week-4)	**Files Handing: Opening and closing file in C; (BY PRESENTATION)**

01March.2021 to 31 Mar.2021

Month/Week	Topic
March (Week-1)	**Files Handing: Opening and closing file in C; Create, Read and Write data to a file; Operations on file using C Library Funct ions. (Group discussion)**
March (Week-2)	**Working with Command Line Arguments. Modes of Files. ; Funct ions of Operating System. Programming Languages .**
March (Week-3)	**Output Device. CPU: Components of CPU; Memory and Storage Devices.(Group discussion)**
March (Week-4)	**Program Debugging and types of errors.v(Group discussion)**

01 April. 2021 to 15 April. 2021

Month/Week	Topic
April(week 1)	**Computer Fundamentals: Concept of data and informaion; Components of Computer: Hardware Input Device.**
April(Week-2)	**(BOOK REVISION)**

Kanya Mahavidyalaya, Kharkhoda (Sonepat)

Lesson Plan Session 2020-21

Name of the Assistant/Associate Professor: : **Mrs . Nisha Suhag**	
Class and Section: Msc. Computer Science	
Subject: SOFTWARE ENGINEERING	
Paper: 16MCS22C3	
Year/Semester: 1st year/ 2nd sem.	

28 April. 2021 to 31 May. 2021

Month/Week	Topic
January (Week-1)	**Introduction to Software Engineering**: Software crisis, Software engineering Approach and Challenges, Software development process models with comparison: Waterfall, Prototype, Time boxing and Spiral Models.
January (Week-2)	RAD Model and Automat ion through software environments, Quality Standards like ISO 9001, SEI-CMM. Structured Analysis, Behavioral & non-behavioral requirements, Software requirement specification: components & characteristics, Function point metric.
January (Week-3)	**Software Project Planning:** Cost estimate ion, static, Single & multivariate models, COCOMO model, Putnam Resource Allocation Model, Risk management, project scheduling, personnel planning, team structure.
January (Week-4)	**Software Design:** Fundamentals, problem partitioning & abstraction, design methodology, Function Oriented Design.

01 June. 2021 to 30 June. 2021

Month/Week	Topic
February (Week-1)	Software configuration ion management, quality assurance, project monitoring, Empirical. **(BY PRESENTATION)**
February (Week-2)	Cohesion, Coupling & their classification, User Interface Design, Detailed design, Information flow metric. **(BY PRESENTATION)**
February (Week-3)	**Coding:** Choosing Programming Language, Characteristics of Program, Avoiding Dead Codes, and Program Metrics: Size Estimation; Complexity metric (McCabe's Cyclometic Complexity), Halsted Theory, Function Point Analysis.
February (Week-4)	**Software Testing:** Impracticality of Testing all Data and Paths, Levels of testing, Functional vs. Structural testing, Static and Dynamic Testing Tools, Regression testing, Mutation Testing, Stress. **(BY PRESENTATION)**

01 July.2021 to 31 July.2021

Month/Week	Topic
March (Week-1)	**Software Re - Engineering:** Source Code Translation, Program Restructuring, Data Re-Engineering, Reverse Engineering. **(Group discussion)**
March (Week-2)	. **Configuration Management**: Maintaining Product Integrity, Change Management, Version Control, Configuration accounting: Reviews, Walkthrough, Inspection, and Configuration Audits.
March (Week-3)	Reliability Models (JM, GO, MUSA Markov), Limitations of

Month/Week	Topic
	Reliability Models. (Group discussion)
March (Week-4)	**Coding:** Choosing Programming Language, Characteristics of Program, Avoiding Dead Codes, and Program Metrics: Size Estimation; Complexity metric (McCabe's Cyclometic Complexity), Halsted Theory, Function Point Analysis. (Group discussion)

01 August. 2021 to 31 August. 2021

Month/Week	Topic
August(week 1)	**Software Re - Engineering:** Source Code Translation, Program Restructuring, Data Re-Engineering, Reverse Engineering.
August (Week-2)	**Configuration Management**: Maintaining Product Integrity, Change Management, Version Control.
August (Week-3)	Configuration accounting: Reviews, Walkthrough, Inspection, and Configuration Audits. .
August (Week-4)	(BOOK REVISION)

Kanya Mahavidyalaya, Kharkhoda (Sonepat)

Lesson Plan Session 2020-21

Name of the Assistant/Associate Professor: Dr. Ramesh Saini
Class and Section: BCA-6th Semester
Subject: E-Commerce
Paper: BCA-306

Year/Semester: 6ᵗʰ

16 March 2021 to 15 April 2021

Month/Week	Topic
March(Week-3)	Traditional Commerce vs. Electronic Commerce, Impact of E-Commerce, Test
March(Week-4)	Electronic Markets, Internet Commerce, e-commerce in perspective
April (Week-1)	Application of E Commerce in Direct Marketing and Selling, Test
April (Week-2)	Obstacles in adopting E-Commerce Applications; Future of E-Commerce, Assignment.

16 April 2021 to 15 May 2021

Month/Week	Topic
April (Week-3)	Organizational value chains, Strategic Business unit chains, Test
April (Week-4)	Industry value chains. Security Threats to E-commerce: Security Overview
May(Week-1)	Computer Security Classification, Test, Copyright and Intellectual Property
May (Week-2)	security Policy and Integrated Security, Intellectual, Assignment.

16 May 2021 to 15 June. 2021

Month/Week	Topic
May (Week-3)	Property Threats, electronic Commerce Threats, Clients Threats, Test
May (Week-4)	Communication Channel Threats, server Threats, Implementing

Month/Week	Topic
June (Week-1)	security for E-Commerce: Protecting E-Commerce Assets
June (Week-2)	Test, Protecting Intellectual Property, Protecting Client Computers, Assignment.

16 June 2021 to 06 July 2021

Month/Week	Topic
June (Week-3)	Insuring Transaction Integrity, Protecting the Commerce Server, Test, Electronic Payment System: Electronic Cash, Test, Electronic Wallets, Smart Card
June (Week-4)	Credit and Change Card, Assignment, Business to Business E-Commerce: Inter-organizational Transitions, Test, Credit Transaction Trade Cycle, a variety of transactions. Electronic Data Interchange (EDI)
July (Week-1)	Introduction to EDI, Test, Benefits of EDI, EDI Technology, EDI standards, EDI Communication, Test, EDI Implementation, EDI agreement, EDI security, Assignment.