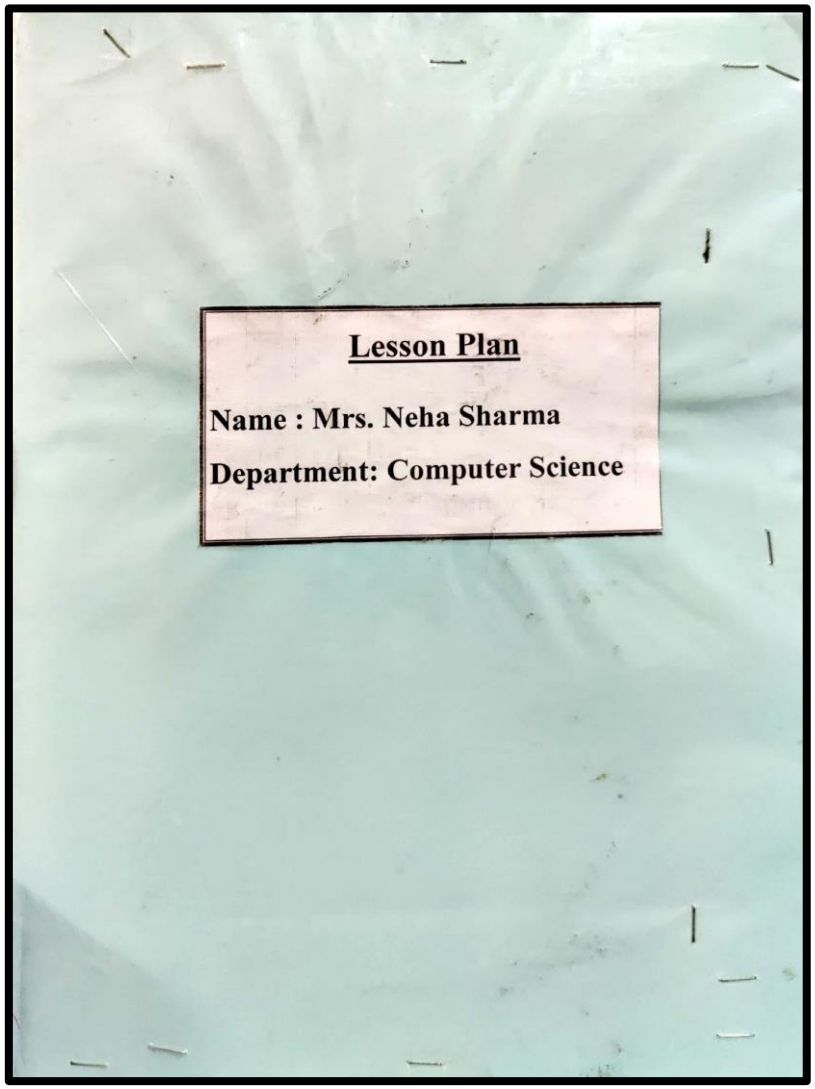
SOPHIA GIRLS' COLLEGE(AUTONOMOUS), AJMER



SOPHIA GIRL'S COLLEGE, AJMER (*AUTONOMOUS*)

B.C.A (SEMESTER III) 2019-20

COMPUTER GRAPHICS- I

Max. Marks :100 (70Ext; 30 Int) Min. Marks: 40(28 Ext;12 Int)

COURSE PLAN

SEM III Month	UNIT/TOPIC	Concepts/facts	Teaching Pedagogy	Learning Outcomes	Questions	Marks Weightage (%)
JULY	UNIT I Graphics hardware Input devices: Keyboard, touch panel, light pens, graphic tablets, joysticks, track ball, data glove, digitizer, image scanner, mouse, voice systems.	Understanding the Input devices in reference of computer graphics	PPT	Understand the structure of modern computer graphics systems and Input output Device	*Knowledge Based* Define data glove. *Understanding Based* Which device is best suitable to take graphic input from the user and why? Give comparison between printer and plotter.	Knowledge--60 Understanding-30 Higher Order-10
	Hard copy devices: Input and non-impact printers such as line printer, dot matrix, laser, inkjet, Plotters.	Understanding the Input devices in reference of computer graphics	Chalk & Talk, PPT			
AUGUST	UNIT II Video Display Devices: Refresh cathode ray tube, raster scan displays, random scan displays, color CRT monitors	Comparison of different display devices and raster and random scan system	PPT and lecture method	To familiarize with Video Display device		

	Jpeg image compression, mpeg video compression. Developing Applications using multimedia, methodology and design, Various multimedia laws: Patent law, Trademark Law, Trade secret Law, and Copyright Law.	How to design a Multimedia application , Business and Ethical laws in society	PPT, Quiz	Study laws of multimedia and design environment	*Higher Order Thinking Skills Based* How DDA algorithm is faster than Bresenham's Line algorithm? Justify your answer by using the line attributes.	
SEPTEMBER	**UNIT III** direct view storage tube, flat panel displays, 3-D view devices, virtual reality, raster scan systems, random scan systems, graphics monitors and work stations. Scan conversion algorithms for Line : function, increment / decrement, equation, algorithm (Digital Differential, Bresenham's)	Practical implmentation of different objects (Pixel, Line)	PPT, Practical	To implement various algorithms to scan, convert the basic geometrical primitives		
OCTOBER	Circle: function, equation (Polynomial & Trigonometry), algorithm (Bresenham's & Mid-Point) Ellipse: function, equation (Polynomial & Trigonometry), Bresenham's algorithm, Area filling techniques: Scan Line, Boundary Fill, Flood Fill Algorithm	Importance of algorithms and compare the best results	PPT, Practical, Live Examples			

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B.C.A III (SEMESTER III) 2019-20

BCA-303 Computer Communication and Networking

Max. Marks :75 (50Ext; 25 Int) Min. Marks: 30(20 Ext;10 Int)

COURSE PLAN

SEM III Month	UNIT/TOPIC	Concepts/facts	Teaching Pedagogy	Learning Outcomes	Questions	Marks Weightage (%)
JULY	**UNIT I** **Networking Basics:** Introduction to digital communications, Types of network: LAN, WAN, MAN. **Types of network terminal:** Client (Thin, Fat, Hybrid). Server (File, Mail, Application, Communication, Database, Print). Client Server Model **Topology:** Bus, Ring, Star, Tree/Snowflake, Mesh, Combined/ Hybrid	Types of nETWORKING Familiarizing the network Terminal The various TOPOLOGIES	PPT, Practical Implementation, Practice questions, worksheet	Study the basic taxonomy and terminology of the computer networking and enumerate the layers of OSI model and TCP/IP model.	*Knowledge Based* What is networking? Define hybrid client *Understanding Based* What is the basic need of topology? *Higher Order Thinking Skills Based* Explain unguided transmission media. Give the appropriate example of each one with drawbacks.	Knowledge- 50 Understanding-35 Higher Order-15
AUGUST	**Terminology:** Amplitude, Frequency, Phase, Bit rate, Baud rate, Bandwidth. **Signal types**: Analog signals, Digital signals, Periodic, Aperiodic	Concept of signal type and modulation	PPT, Practical Implementation	Acquire knowledge of Transmission Media and Error checking and correction		

	Modulation: Amplitude, Frequency, Phase, Demodulation			method		
	UNIT II **Transmission Media:** Guided (Twisted pair cable, Coaxial cable, Fiber Optic Cable), Unguided (Radio waves, Microwaves, Infrared), Transmission Mode: Parallel, Serial	Overview of transmission media	PPT, Practical Implementation, MCQ's			
SEPTEMBER	**Networking Devices:** Repeater, Router, Hub, Switch, Bridge, Gateway **Switching:** Introduction, Types (circuit, packet, message) **Multiplexing:** Frequency division, Wavelength division, Time Division, Demultiplexing	Concept of switching and multiplexing	PPT, Quiz	Gain core knowledge of Asynchronous transmission Mode		
	UNIT III **Protocol:** Standards, Architecture, OSI Model, TCP/IP Model, HDLC **Asynchronous transfer mode:** Introduction, Protocol architecture, ATM cells, ATM layers.	Protocols used in transmission	Neha			

OCTOBER	**Point to Point Protocol:** point-to-point layers, link control protocol, network control protocol. **Error classification:** Types of errors (Single Bit Error, Burst Error).	How graphs can be implemented in different ways and comparison of their complexities. Concept of Fibonacci series and tower of Hanoi	PPT, Practical, Live Examples			

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B.C.A V (SEMESTER V) 2019-20

BCA – 506 Internet tools and Website Development

Max. Marks :75 (50Ext; 25 Int) Min. Marks: 30(20 Ext:10 Int)

COURSE PLAN

/SEM V Month	UNIT/TOPIC	Concepts/facts	Teaching Pedagogy	Learning Outcomes	Questions	Marks Weightage (%)
JULY	**UNIT I** Internet and www: Introduction to internet and its application, email, Telnet, File transfer protocol (FTP), Internet Service Provider (ISP), Domain Name Server (DNS), Internet address, www and its evolution,	Optimization in day to day life and how it is applied to various operations concept of Internet and www	PPT, Practice problems	To get familiar with basics of the Internet	*Knowledge Based* What is WWW? Define FTP. Compare apache and IIS *Understanding Based* Explain Logical and relational operator Give a brief JS datatypes *Higher Order Thinking Skills Based*	Knowledge--40 Understanding-40 Higher Order-20
AUGUST	Uniform Resource Locator (URL) and its types, Browsers: Internet Explorer, Chrome, Mozila firrefox, Opera, Search Engine, Web Server, Apache, IIS, Proxy, HTTP Protocol	Importance of executing operations in parallel	PPT, Quiz	To acquire knowledge and skills for creation of web site considering client side programming using Javascript		
	UNIT II Java Script : Introduction, Keywords, variables, Data type(Numbers, Booleans, Strings, Objects, Null, Undefined), **Operators** : Arithmetic Operators, Relational Operators, Logical Operators, Assignment Operators, Increment/ Decrement Operator, Bitwise Operator, Conditional operator, Comma operator, delete, new, this, Expression, Comment, Input-output	How dynamic we pages are implemented using script code				

Neha

					Compare between import and export. Write code for mouse event and keyboard event?
SEPTEMBER-	**Control Structure**: if-else, switch, Loop: while, do-while, for, for-in, break, continue, return, import, export.	Importance of PL/SQL and data types available in PL/SQL in respect to SQL	PPT, Practical Implementation	Code of control structure using JS syntax	
OCTOBER	**UNIT III** **Array**: create, access, methods (length, sort) **Function**: **Built-in-Function:** (eval(),infinite(), isNaN(), parseFloat(), parseInt()), **User-defined-Function :** (create, calling, return) **Boolean** : toString, valueof() **Date:** getYear(), setYear(), getMonth(), setMonth(), getDate(), setDate(), getDay(), getTime(), setTime(), getHours(), setHours(),getMinutes(), setMinutes(), getSeconds(), setSeconds() **Math:** abs(), min(), max(), pow(), round(), sqrt()	Different ways of handling error types of built functions and user defined functions	PPT, Practical Implementation	Handle the events occurring	

	String: Length, indexOf, lastIndexOf(), search(), slice(), substring(), replace(), toUpperCase(), toLowerCase(), concat(), String.trim(), charAt, charCodeAt Events and Event Handlers : General Information about Events, Defining Event Handlers, events: onClick, onDblClick, onKeyPress, onMouseDown, onMouseMove, onMouseOut, onMouseOver, onMouseUp, onMove	Different types of events in JS				

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SOPHIA GIRL'S COLLEGE, AJMER (AUTONOMOUS)

M.SC Computer Science (Previous) 2019-20

SEMESTER III (M.Sc. C. Final)

MCS – 301 SOFTWARE ENGINEERING

Max. Marks :75 (50Ext; 25 Int) Min. Marks: 30(20 Ext;10 Int)

COURSE PLAN

SEM III Month	UNIT/TOPIC	Concepts/facts	Teaching Pedagogy	Learning Outcomes	Questions	Marks Weightage (%)
JULY	**Unit – I** Concepts of Software Engineering, Software Characteristics, components, applications. Umbrella Activity, System Development Life Cycle (SDLC) . Software Process Model: Water fall model (classical and Itreative), Prototype. Spiral model	Engineering tools , need to. follow protocols while designing software .	PPT	To understand importance of architecture in building effective, efficient, competitive software product.	*Knowledge Based* Define Error in testing. What is software audit? *Understanding Based*	Knowledge—25 Understanding-45 Higher Order-30

Neha

	Software Metrics and Models: Role of Metrics and Measurement, Process and Product Metrics, Size metric, Function Point Analysis, Halsted Theory, Cost Estimation- COCOMO Mode (Basic and Intermediate).	How to choose design method			Discuss the differences between system and unit testing. *Higher Order Thinking Skills Based*		
AUGUST	**Unit – II** Planning and Software Project: Project Scheduling and its goal, Work breakdown structure, Project Scheduling and its techniques: Gantt Chart, PERT and CPM. Introduction to Software Quality assurance. Design: Introduction , Definition, Objective ,Modularity(Cohesion & Coupling) Coding: Introduction, Code Review (Code Walkthrough, Inspection, Clean room Approach)	Features of metrics, how to design reusable components and their inter relationships	PPT, Practical Implementation	To Explain methods of capturing, specifying, visualizing and analyzing software requirements.	Contrast between functional and non functional requirements of software. Give Importance of software testing and compare verification and validation.		
SEPTEMBER	**Unit – III** **Testing :** Testing Fundamentals and Introduction . Definitions of Testing, Testing Objective, Testing Principles. **Software Testing Strategies:** Unit Testing, Integration Testing, Validation Testing (Alpha and Beta Testing) . System Testing (Recovery, Security, Stress, Performance), **Black Box Testing and its Methods:** 1.Graph Based Testing Methods. 2.Equivalence Partitioning. 3.Boundary value Analysis.4. Comparison Testing.	Effective testing leads to easily acceptance for the software	PPT, QUIZ	To explore the different Testing methods			

	White Box Testing and its Methods: Static Testing (Code walk through, code inspections, Reviews). **Dynamic testing** (1. Unit Code /Functional Testing. 2. Unit Code Coverage Testing (Statement, Path, Condition, Function Coverage) 3. Code Complexity 4. Basis Path Testing (Flow Graph Notation, McCabe's Cyclometic), 5. Graph matrix.) .					

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