Maharaja Ranjit Singh College of Professional Sciences, Indore

Department of Computer Science

Lesson Plan - B. Sc. I (July 2017 - Mar 2018)

Subject - **Programming in C**

Teacher - Prof. Pravin Kumar Sharma

Day/Lecture	Unit	Topic
1	I	Introduction of Computer and its components with Block Diagram
2	I	Classification of computers with herachical diagram
3	I	What is Language? Introdcution of Programming languages, its types
4	I	Difference between Procedural, Problem oriented, Introdcution of Structured Progamming : Modular programming
5	I	Introdcution of Top-down and Bottom-Up Analysis
6	I	Need of System, Introduction of SDLC
7	I	Continue SDLC and its different Phases(Problem Definition, Feasiblity Stduy, Analysis)
8	I	Continue SDLC and its different Phases(Design, Development, Implementation and Maintanence)
9	I	Programming Tools(Algorithm, Flowcharts)
10	I	Language Translator and its types
11	II	Introdcution of C Programming Language, types of C, Character set of C
12	II	Identifier, Literal, Tokens, Constant and Variables and types of Variables
13	II	Keywords(reserve words) and Data types used in C and its types (Primary, Userdefined, Derived)
14	II	Different types of operators used in C, program as an example
15	II	Expression, Statement and its types, Hierarchy of Operators
16	II	Structure of C Program with different sections and its significance
17	II	Program to print name and age, calculate simple and compound Interest
18	II	Program for Addition, substraction, swapping values of two using third variable and without third variables
19	III	Arithematic, Conditional, Control and program as an example
20	III	IF, IF-else, Nested If, break, continue and go to and program as an example
21	III	Introduction of Looping statements and types of loops used in C (for, while, do-while and ODD)
22	III	Storage classes and its types, scope of variables used in Strorage classes
23	III	Standard and Console input and output statements , character oriented and string oriented functions
24	III	Formatted and Unformatted(putc(),getc(),puts(),gets(), scanf and printf functions)
25	III	program of standard and console input/output functions

26	III	program to print factorial of given number, and table of given number
27	III	program for switch case, break staatements
28	III	Programs to display uses of storage classes
29	IV	Introduction of Array, its types and storage in memory
30	IV	Different operations of 1D and 2D Array, Intialization of 1D and 2D Array
31	IV	Program for Matrix Addition and Multiplication and Tranpose of Matrix
32	IV	What is function? Its syntax, types and built-in fucntions.
33	IV	function arguments (actual and formal), Call by Value and Call by reference
34	IV	Program to print factorial, table and addition using function
35	IV	What is recursion? Its types and program for factorial using recursion
36	IV	Introduction of pointers, its operators(Adrress of and Inline)
37	IV	Pointer decration, its uses, advantages and disadvantages
38	IV	Pointer of Array, Array of pointer.
39	IV	program to use pointer to an array and Array of pointers
40	IV	Introcution of 2D Array of Characters and program
41	IV	Introduction of Structure, Its Memory representation and Syntax with Structure Variable
42	IV	Accessing of Structure elements using Special Operator(Period operator), Initialization of an Structure
43	IV	Array of Structure, program to print and calculate average of marks of 20 studetns using Array fo structure.
44	IV	Passing Array to function and Array as an argument of function
45	IV	Program to print square of number using call by reference and call by value.
46	V	Introduction of file(Stream) in C, Classification of file with hierarchical diagram
47	V	Operations performed on a file, Formatted and Unformatted file handling fucntions (fputc,fgetc, fputw,fgetw, fgets, fputs and fscanf, fprintf)
48	V	File pointer and Different modes of files(write, read and append, wb,rb,ab)
49	V	fopen(), fclose(), feof(), Binary mode and Text mode of files
50	V	Error handling and ferror() and Clearerr() funtions of files
51	V	Program to create a copy of a file
52	V	Graphics Introduction, different types of functions used in graphics
53	V	drawing and filling image fucntion used in C
54	V	floodfill(), initgraph(), closegraph(), setcolor() functions used in graphics
55	V	putpixel(), Maxcolor(), getcolor(), outtext(), outtextxy() functions used in graphics

56	V	line drawing alogrithm and program in C
57	V	program to draw a circle and fill it with help of setfillstyle() fucntion.
58	V	program to draw a ellipse() and fill it with bar() function
59	V	Bit of animation, textcolor(),texmode() functions
60	V	Program for moving car on screen using graphics functions

Maharaja Ranjit Singh College of Professional Sciences, Indore

Department of Computer Science

Lesson Plan - B. Sc. I (July 2017 - Mar 2018)

Subject - **Programming in C Practical**

Teacher - Prof. Pravin Kumar Sharma

Day/Lecture	Topic
1	Program to print Hello, Name and Age
2	Program for addition of two numbers
3	Program to print all Arithematic operations
4	Program to check it is Even or Odd
5	Program to print pyrarmid of star
6	Program to print half pyramid of star
7	Program to print from 1 to 10
8	Program to print table of given number
9	Program to print reverse of any number
10	Program to print fibonnaci series
11	Program for accessing elements of an array
12	Program to Insert, delete elements of array
13	Program to print addition of two numbers using function
14	Program to print reverse string
15	Program to print table of given number using function
16	Program ot print factorial of any given number using function
17	Program to findout given number is prime or not
18	Program to find length of string using string fucntion
19	Program to copy strings using string fucntions
20	Program to find given string is PALINDROME or not
21	Program to perform arithematic operations using switch case
22	Program for Addition, substraction, swapping values of two using third variable and without third variables
23	Program to find out greatest between two numbers
24	Program to print greatest between three numbers
25	Program of standard and console input/output functions

26	Program for switch case, break staatements
27	Program to declare and print structure elements
28	Program to print student records using array of structure
29	Program to create a file
30	Program to perform different operations on file using(feof(), Fwrite, Fread() functions)
31	Program for insert and print matrix elements
32	Program for addition of two matrices
33	Program for substaction of two matrices
34	Program for Matrix multiplication
35	Program for Matrix multiplication
36	Program for 2D array of characrters

Maharaja Ranjit Singh College of Professional Sciences, Indore

Department of Computer Science

Lesson Plan - B. Sc. I Year (July 2017 - Mar- 2018)

Subject - Fundamental of Computers

Teacher - Prof. Meenakshi Vyas

Day/Lecture	Unit	Topic
1	Unit I	Block diagram of computer:
2		Input unit,output unit , CPU
3		What is Memory unit? Need of Memory.
4		Generation of computers
5		Types of computers:Desktop,Laptop plamtop ,and workstations &super computers
6		Classification of Computer
7		Hardware,software and firmware
8		Intro to OS ,Intro to MS Windows
9		Features of windows
10		Desktop,start menu,icons,wall paper,screen saver,task bar
11		Control panel,My computer, windows explorer,Accessories
12		File & Folder Operations
13		Revision
14	Unit II	Software and its types Intro to ,MS Office
15		What is Word Processor,Different Word Processor Available,Intro to MS Word,
16		Features of MS Word,Advantages of using MS Word
17		Mail Merge & Macros
18		Intro To Spreadsheets,Different types of Spread sheets,Intro to excel
19		Features of MS-Excel,Difference between formula & Function,Different Formulas available
20		Filter ,Sorting & Searching
21	Unit III	Need of Number System,Types of Number System,Common NO.Systems
22		Conversions from one Decimal to another base whole no.
23		Conversions from one Decimal to another base fractional no.
24		Practice Exercise
25		Conversions from one another base to Decimal whole no.
26		Conversions from one another base to Decimal fractional no.
27		Practice Exercise
28		What are character codes? Need, BCD,EBCDICcode
29		ASCLII-7,ASCII-8 code
30		Gray code ,ECC & Revision
31		Binary arithmetic:- addition, subtraction,multiplication & division
32		Unsigned binary numbers,Signed magnitude numbers,
33		1's Complement & 2' s complement representation of numbers
34		2's complement arithmetic + ve no expected
35		2's complement arithmetic -ve no expected
36		Boolean algebra, De-morgan' s theorem
37		Boolean fuctions & truth tables,minimizing boolean algebra
38		minimizing boolean algebra,SOP ,POS form
39		Minterms/ maxterms, Intro to karnaugh maps
40		K-Maps 2 & 3 Variables
41		K-Maps 4 & more variables
42		What are logic Gates? Need & Applications, Types of Gates
43		AND OR ,NOT ,NAND, NOR
44		Creating Basic Gates from Universal Gates
45		X-NOR and X-NOR gates
46		Circuit design with gates:
47		Half & Full Adder
48		Half & Full subtractor circuit.
49		Revision

50	Unit IV	Recall :What is memory? Need of memory,Types of Memory
51		Types of Memory,Classification according to different aspects
52		Cache memory, secondary memory and its types
53		Virtual memory concept
54		Memory accessing methods: serial, random & Semi Random access
55		Data bus ,control bus & address bus
56		Word length of a computer, memory addressing capability of cpu
57		processing speed of a computer
58		Microprocessors, single chip microcomputers microcococontrollers
59		Revision
60	Unit V	General architecture of a cpu,Instuction format
61		data transfer instructions
62		Data manipulation instruction and program control instructions
63		accumulator based machine,Stack based machine and general purpose register based machine
64		Addressing modes
65		Addressing modes
66		data transfer schemes
67		(i) Programmed data transfer synchoronous asynchronous and interrupt driver data transfer
68		(ii) Direct memory access data transfer cycle stealing block transfer and burst mode of data transfer
69		Revision
70		Revision

Maharaja Ranjit Singh College of Professional Sciences

Department of Computer Science

Lesson Plan - B. Sc. I (July 2017 - Mar 2018)

Subject -Practical Computer Organization

Teacher - Prof. Meenakshi Vyas

Day/Lecture	Unit	Topic
1		Desktop,start menu,icons,wall paper,screen saver,task bar
2		Control panel
3		Control panel
4		My computer, windows explorer,Accessories
5		Creating and managing folders,
6		Managing files and drives,logging off and shutting down windows
7		Revision
8		Assignment & srteps to complete
9		Wordprocessing,MS Word,Screen Description
10		Creating ,Saving and Opening Document
11		Home Ribbon Options
12		Insert ribbon
13		Insert ribbon:Tables and other features
14		Page Layout
15		Page Layout
16		Refernces
17		Mailing Ribbon :Mail-merge
18		Macro
19		Revision
20		Assignment & srteps to complete
21		Excel- Introduction to workbook and worksheet,screen description
22		Saving a work book, editing cells,Entering information in a worksheet-numbers,formula,etc
23		Entering information in a worksheet-numbers,formula,etc.,
24		Using commands and functions,
25		Moving and copying,Inserting and deleting rows and columns
26		Creating charts,pivot charts and Pivot tables
27		page setup : margins adding headers& footers before printing
28		Print Settings
29		Practice sheets
30		Practice sheets

Maharaja Ranjit Singh College of Professional Sciences, Indore

Department of Computer Science

Lesson Plan - B. Sc.(CS/IT/HONS) III SEM (July 2017 -Dec2017)

Subject - Data Structure using C Language

Teacher - Prof. Shailesh Hirve

Day	Unit	Topic
1	I	Introduction of Data Structures
2		Data Types in Programming Language
3		Abstract Data Structures
4		Array Data Structure
5		Operations on Array
6		Operations on Array
7		2D Array Implementation
8		Matrix Operations
9		Sparse Matrix
10	II	Stack Data Structure
11		Stack Implementation
12		Infix to Postfix Conversion
13		Infix to Postfix Conversion Algorithm
14		Infix to Postfix Conversion Program
15		Infix to Prefix Conversion
16		Infix to Prefix Conversion Algorithm
17		Infix to Prefix Conversion Program
18		Recursion using Stack
19		Queue Data Structure
20		Circular Queue
21		Double Ended Queue
22		Priority Queue
23	III	Linked List
24		Linked List Insertion
25		Linked List Deletion
26		Circular Linked List
27		Circular Linked List Creation
28		Circular Linked List Deletion
29		Doubly Linked List
30		Circular Doubly Linked List
31	IV	Searching Methods
32		Linear and Binary Search
33		Bubble Sort
34		Selection Sort
35		Insertion and Merge Sort

36		Complexity of an Algorithm, Big O Notations
37	V	Tree Data Structure
38		Binary Search Algorithm in Tree
39		Program of Binary Search in Tree
40		Binary Search Tree Creation
41		New Node Creation in Binary Search Tree
42		Postorder, Preorder and Inorder Traversing
43		Preorder to Postorder Conversion
44		Deletion of Node in BST
45		Threaded Binary Tree
46		B-Tree
47		B+tree
48		Introduction of Graph
49		Graph Representation Methods
50		Matrix and List Representation
51		Breadth First Search
52		Depth First Search

Maharaja Ranjit Singh College of Professional Sciences, Indore

Department of Computer Science

Lesson Plan - B. Sc.(CS/IT/HONS) III SEM (July 2017 -Dec2017)

Subject - Data Structure using C Language Practical

Teacher - Prof. Shailesh Hirve

Day	Topic
1	Operations on Array
2	Operations on Array
3	2D Array Implementation
4	Matrix Operations
5	Matrix Operations
6	Matrix Operations
7	Matrix Operations
8	Sparse Matrix
9	Stack Implementation
10	Stack Implementation
11	Infix to Postfix Conversion
12	Infix to Postfix Conversion
13	Infix to Prefix Conversion
14	Infix to Prefix Conversion
15	Recursion using Stack
16	Recursion using Stack
17	Queue Implementation
18	Circular Queue
19	Double Ended Queue
20	Priority Queue
21	Linked List Implementation
22	Linked List Insertion
23	Linked List Deletion
24	Circular Linked List
25	Circular Linked List Creation
26	Circular Linked List Deletion
27	Doubly Linked List
28	Circular Doubly Linked List
29	Linear Search
30	Binary Search
31	Interpolation Search
32	Bubble Sort
33	Selection Sort
34	Insertion Sort
35	Merge Sort
36	Tree Inplementation
37	Program of Binary Search in Tree

38	Binary Search Tree Creation
39	New Node Creation in Binary Search Tree
40	Postorder, Preorder and Inorder Traversing
41	Postorder, Preorder and Inorder Traversing
42	Postorder, Preorder and Inorder Traversing
43	Preorder to Postorder Conversion
44	Deletion of Node in BST
45	Graph Creation
46	Breadth First Search
47	Depth First Search

Maharaja Ranjit Singh College of Professional Sciences, Indore

Department of Computer Science

Lesson Plan - B. Sc.(Hons) III SEM (July 2017 -Dec 2017)

Subject - Operating System using Linux

Teacher - Prof. Shailesh Hirve

Day	Unit	Topic
1	I	Intro to Operating System
2		Types of OS
3		Intro to Linux OS
4		Features of Linux OS
5		Function of OS
6		Architecture of Linux OS
7		Kernel and Shell
8		Difference among DOS, Windows & Linux
11	II	Structure of File System
12		Commands for files and Directories
13		Commands for files and Directories
14		Commands for files and Directories
15		Commands for files and Directories
16		Commands for files and Directories
17		Commands for files and Directories
18	III	Filter & Pipe Commands
19		Filter & Pipe Commands
20		Filter & Pipe Commands
21		Filter & Pipe Commands
22		Concept of Process
23		Process Commands
24		Process Commands
25		Process Commands
26		Mathemetical Commands
27	IV	VI Editor
28		VI Editor Commands
29		VI Editor Commands
30		Communication Commands
31		Communication Commands
32		Communication Commands
33	V	System Administration
34		System Administration Tasks
35		Role of System Administrator
36		User Account Management
37		User Account Management

38		Procedure Steps for Installation of Linux
39		Steps for Hard Disk Partition
40		File System Mounting
41		Backup Strategies

Day
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21

Maharaja Ranjit Singh College of Professional Sciences, Indore

Department of Computer Science

Lesson Plan - B. Sc.(Hons) III SEM (July 2017 -Dec 2017)

Subject - Operating System using Linux Practical

Teacher - Prof. Shailesh Hirve

Topic
Commands for files and Directories
Commands for files and Directories
Commands for files and Directories
Commands for files and Directories
Commands for files and Directories
Commands for files and Directories
Filter & Pipe Commands
Filter & Pipe Commands
Filter & Pipe Commands
Filter & Pipe Commands
Process Commands
Process Commands
Process Commands
Process Commands
Mathemetical Commands
VI Editor Commands
VI Editor Commands
VI Editor Commands
Communication Commands
Communication Commands
Communication Commands

Maharaja Ranjit Singh College of Professional Sciences, Indore

Department of Computer Science

Lesson Plan - B. Sc.(CS/IT/HONS) IV SEM (Jan 2018 - June 2018)

Subject - Data Base Management System

Teacher - Prof. Shailesh Hirve

Day	Unit	Topic
1	I	Introduction of DBMS, purpose of DBMS, view of data,
2		Scheamas, Instances, Data Dictionary
3		Data Base Management System Vs File Processing
4		Three View Architecture of DBMS
5		Advantages and Disadvantages of DBMS
6		Database language, Database administrator,
7		Database user, overall system structure.
8		Data Independence and its types
	II	Data Models
		Data Models
9		Entity Relationship Model: Basic Concepts,
10		Relationships, Mapping Constraints,
11		Entity Set, weak Entity, Strong Entity, Entity Features
12		Types of Keys, Types of Attributes
13		E-R Model Notations, E -R Diagram
14		design of an E-R database schema
15		Reduction of E-R schema to table
		Relational Algebra
		Relational Algebra
		Tuple Calculas
16	III	Pitfalls in Relational Database Design, Decomposition
17		Normalization using functional dependencies
18		Normalization using multivalue dependencies
19		Normalization using joined dependencies
20		Various Normal Forms
21		Various Normal Forms
22		Various Normal Forms
23		Various Normal Forms
24	IV	Introduction to SQL, DDL, DML, and DCL statements
25		Creating Tables, Adding Constraints, Altering Tables
26		Update, Insert, Delete Statements
27		various Form of SELECT- Simple, Using Special Operators for Data Access
28		Nested Queries & Exposure to Joins, Aggregate Functions
29		SQL Commands
30		SQL Commands
31		SQL Commands
32	V	Concept of Transaction, Concurrency Control-Problem & its Basis
33		Concurrency Control -Locks & Deadlocks
34		Concurrency Control -Locks & Deadlocks
35		Recovery-Kind of Failures
36		Recovery Techniques
37		Security-Authentication, Authorization, Access Control
38		Security-Authentication, Authorization, Access Control

Maharaja Ranjit Singh College of Professional Sciences, Indore

Department of Computer Science

Lesson Plan - B. Sc.(CS/IT/HONS) IV SEM (Jan 2018 - June 2018)

Subject - Data Base Management System Practical

Teacher - Prof. Shailesh Hirve

Day	Topic
1	Introduction to SQL, DDL, DML, and DCL statements
2	Introduction to SQL, DDL, DML, and DCL statements
3	DDL Commands
4	DDL Commands
5	DDL Commands
6	DML Commands
7	DML Commands
8	DML Commands
9	various Form of SELECT- Simple, Using Special Operators for Data Access
10	various Form of SELECT- Simple, Using Special Operators for Data Access
11	various Form of SELECT- Simple, Using Special Operators for Data Access
12	various Form of SELECT- Simple, Using Special Operators for Data Access
13	DCL Commands
14	DCL Commands
15	TCL Commands
16	TCL Commands
17	Nested Queries & Exposure to Joins, Aggregate Functions
18	Nested Queries & Exposure to Joins, Aggregate Functions

Maharaja Ranjit Singh College of Professional Sciences, Indore

Department of Computer Science

Lesson Plan - B. Sc. IV Sem (Hons.) Jan 2018 - June 2018

Subject - System Programming

Teacher - Prof. Meenakshi Vyas

Day/Lecture	Unit	Topic
1	1	What is System Programming
2	1	SIC
3	1	SICX
4	1	Instruction Formate
5	1	Instruction Formate
6	1	Addressing Modes
7	1	Addressing Modes
8	1	Addressing Modes
9	1	I/O Programming
10	1	Revision & Doubt Clearing
11	2	What is Assembler & how it works?
12	2	How a program is executed?
13	2	Assembler & its Statements
14	2	Types of assemblers & Machine Dependency
15	2	Design of assembler -one pass & two pass
16	2	Data Structure ,Symbol Table & Literals
17	2	MASM Assembler
18	2	Compiler & its function
19	2	algorithm for compiler
20	2	difference between compiler and algorithm
21	2	Revision & Doubt Clearing
22	3	What is loader & its function
23	3	Types of loader & Its advantages -Disadvantages
24	3	Types of loader & Its advantages -Disadvantages
25	3	Types of loader & Its advantages -Disadvantages
26	3	How loader depends on architecture
27	3	Design of loader
28	3	Subroutine linkage & Concept of reloacation
29	3	Overlay structure & Dynamic Loading
30	3	Automatic Library search
31	3	Linking,and linkage editor
32	3	Types of linking
33	3	MSDOS Linker
34	3	Revision & Doubt Clearing
35	4	Intro To Macro
36	4	Syntax & Algo
37	4	Advantages & Disadvantages of Macro

38	4	Macro vs Function
39	4	Macro within Macro,
40	4	Macro Preprocessor
41	4	Macro assembler
42	4	DS used with Macro
43	4	Machine Dependency of Macros
44	4	Combination of macro with different entities
45	4	Masm Macro
46	4	Revision
47	5	What is System Software ?
48	5	Types of Syetem Softwares
49	5	System Software tools
50	5	Editors
51	5	Design of Editors
52	5	Block Diagram of Editors
53	5	Screen,line & Stream Editors
54	5	Word Processor,User interface
55	5	Command Dialogue
56	5	Debugging,Functions & capabilities
57	5	Debugging Monitors,Relation with other part of Program
58	5	User Interface Criteria
59	5	Revision

Maharaja Ranjit Singh College of Professional Sciences, Indore

Department of

Lesson Plan - BSc V Sem (July 2017 - Dec 2017)

Subject - OOPs using C++

Teacher - Prof. Meenakshi Vyas

Day/Lecture	Unit	Topic
1	1	Introduction to C++
2		Difference Between C & C++
3		Adavantages of OOPs
4		Disadvanctages of OOPs
5		Basic Concept of object-oriented programming
6		Basic Concept of object-oriented programming
7		Characteristics of OOPs
8		Applications of OOPs
9	2	C++ programming basics
10		basic program structure
11		basic program structure
12		data types
13		data types
14		operators
15		manipulator
16		type conversions
17		C++ stream class
18		if, if-else
19		Nested if-else
20		switch-Case.
21		Jump statement: break, continue, go to, exit.
22		loops -for
23		while
24		Do while
25	3	Function and arrays.
26		Function and arrays.
27		Class structure-access specifiers
28		Accessing Public Private and Protected Data
29		Member function,Inline Function
30		Friend function - independent function
31		Friend function -member Function
32		Explain Constructors and types of constructors
33		Constructors and Explain destructure with program.
34		String Functions
35		String Functions
36		Data encapsulation & Polymorphism
37		Operator overloading (unary and binary) with example.

38	4	Programs for operator overloading.
39		Function Overloading.
40		Virtual Fuction
41		Virtual Fuction
42		Pure Virtual Function
43		Doubt Clearing
44	5	Explain Inheritence and types of inheritence.
45		continue with inheritence… and programs of inheritence
46		visibility mode in inheritence with program.
47		Programs of different type of inheritence
48		Virtual Base Classes with example.
49		Abstract Classes
50		Function Templates
51		Class Templates
52		Exception Handling
53		Exception Handling
54		Exception Handling

Maharaja Ranjit Singh College of Professional Sciences, Indore

Department of Computer Science

Lesson Plan - BSc VSem (July 2017 - Dec 2017)

Subject - Practical OOPs through C++

Teacher - Prof Meenakshi Vyas

Day/Lectu	Topic
1	WAP to print your Name.
2	WAP to demonstrate the use of (a) variables and (b) constants.
3	WAP to Simple I/O Function.
4	WAP to find (a) Simple Interest and (b) Compound Interest
5	WAP to show use of scope resolution operator.
6	WAP to allocate & deallocate memory.(new & delete operator)
7	WAP show use manipulators (iomanip.h).
8	WAP to demonstrate type casting in C++.
9	WAP to find greater number from 2 given numbers.
10	WAP to find greatest of three numbers.
11	Display Discount as per followings :-
12	Up to 1000 discount 2 %
13	Up to 5000 discount 10 %
14	Up to 10000 discount 25 %
15	Above 10000 discount 40 %
16	WAP to show use of && and || operator in if condition(suggestion -Leap Year)
17	WAP using switch-case.
18	WAP to print table/numbers from 1-10.
19	WAP to calculate Factorial of a number.
20	WAP to find sum of digits in a number using while.
21	(If 3 digits No. is123 then 1+2+3=6)
22	WAP to check whether a given number is Prime or not.
23	WAP to display elements of an array.
24	WAP to calculate Sum and Average of an array.
25	WAP to sort elements of an array using Bubble sort.
26	WAP to add and subtract 2X2 matrices.
27	WAP to add and subtract 3X3 matrices.
28	WAP to multiply 2X2 matrices.
29	WAP to multiply 3X3 matrices.
30	WAP to ADD, Subtract, Divide and Multiply 2 numbers using Do- While.
31	WAP to create a function using call by Value.
32	WAP to create a function using call by reference.
33	WAP to create a function with default and const arguments.
34	WAP to take i/p & O/p using function.
35	WAP to demonstrate function recursion.
36	WAP to show function Overloading.
37	WAP to input string.
38	WAP to show use of inicap function .
39	WAP to find length of string.
40	WAP to copy String into another String.
41	WAP to concatenate 2 Strings.
42	WAP to compare 2 Strings.

43	WAP to reverse string.
44	WAP to change case of String
45	WAP to add inch and feet using structure.
46	WAP to change price of book using structure with function
47	Explain a structure to define class, object and member function.
48	WAP for accessing public member of class
49	WAP for accessing private member of class
50	WAP for accessing protected member of class.
51	WAP to show use of inline function.
52	WAP to display operator overloading
53	WAP for default constructer.
54	WAP for parameterized constructer.
55	WAP for copy constructer.
56	WAP for dynamic constructer
57	WAP for simple destructor.
58	WAP for constructer & destructor
59	WAP for accessing private member function.
60	WAP to access private member function
61	.WAP for friend function.
62	.WAP for friend function working as a bridge between two classes.
63	WAP for this pointer.
64	WAP for static data member & member function.
65	WAP for overloading of binary operator using friend function.
66	WAP for overloading of unary operator using friend function.
67	WAP to compare complex no. using class.
68	WAP for single inheritance.
69	WAP for multilevel inheritance.
70	WAP for multiple inheritances.
71	WAP for hierarchical inheritance.
72	WAP for hybrid inheritance.
73	WAP for constructor and destructor using inheritance.
74	WAP for virtual function
75	WAP to show use of class templates
76	WAP to show use of class templates

Maharaja Ranjit Singh College of Professional Sciences, Indore		
Department of Computer Science		
Lesson Plan - BSc V Sem(July 2017 - Dec 2017)		
Subject - computer graphics and multimedia		
Teacher - Meenakshi vyas		
Day/Lecture	**Unit**	**Topic**
1	1	What is Computer Graphics
2		Pixel,frame,buffer
3		application of computer graphics
4		Raster graphics fundamentals
5		Display devices random scan
6		Color CRT monitor
7		DUST and plasma panel
8	2	Algorithms for line generation
9		mid point circle generation
10		Bresenhams Circle algorithm
11		polygon generation algorithm
12		polygon generation algorithm
13		polygon filling
14		Anti aliasing
15		2D transformation: Translation
16		Scaling,Rotation,Reflection
17		homogeneous coordinates
18	3	3-D transformation: translation
19		Scaling,Rotation,Reflection
20		windowing & clipping windows
21		windowing & clipping windows
22		view port ,line clipping
23		polygon clipping
24		polygon clipping
25		segment table , segment creation-deletion-rename
26		segment table , segment creation-deletion-rename
27	4	Multimedia: Text - font faces
28		animating text ,hyper text
29		sound: MIDI
30		digital audio basics
31		auto file formats
32		audio editing
33		MCI- multimedia
34		control interface
35		image- bitmap
36		vector drawing
37		color palate
38		concept of 3D modeling
39		image file formats (BMP, JPG)
40		animation: principle of animation

41		cell animation
42		kinematics
43		morphing
44	5	video- broadcast video standards (NTSC, PAL)
45		integrating computer and television
46		video capture board
47		shooting and editing video
48		recording formats 9S - VHS (video hardware resolution)
49		video compression (JPEG, MPEG)
50		hard copy devices: printers & plotters
51		input devices: mouse,trackball
52		light pen ,scanner
53		digital camera

Maharaja Ranjit Singh College of Professional Sciences

Department of Computer Science

Lesson Plan - BSc V Sem(July 2017 - Dec 2017)

Subject - Computer Graphics Practical

Teacher - Prof Meenakshi Vyas

Day/Lectu	Topic
1	Develop DDA Line drawing algorithm & its program.
2	Develop Bresenhams circle drawing algorithm with program
3	Write Polygon generation algorithm.
4	Wap to generate polygon
5	Write polygon filling algorithm.
6	Wap to fill any polygon
7	Wap to translate a 2D object.
8	Wap to Scale a 2D object.
9	Wap to Rotate a 2D object.
10	Wap to Reflection a 2D object.
11	Wap to translate a 3D object.
12	Wap to Scale a 3D object.
13	Wap to Rotate a 3D object.
14	Wap to design front page of any report using graphics techniques
15	Wap to draw and object and animate it using transformations

Maharaja Ranjit Singh College of Professional Sciences, Indore

Department of Computer Science

Lesson Plan - B.Sc. (CS Hons) V Sem (July 2017 - Dec 2017)

Subject - Computer Oriented Numeriacal Methods

Teacher - Shwetanjali Vijayvargiya

Day/Lecture	Unit	Topic
1	1	Explain Floating Point Number Operations.
2		Explain Normalization and their consequences.
3		Solve problems using Bisection Methods.
4		Solve problems using False Position Methods
5		Solve problems using Secant Method
6		Solve problems using Newton Raphson Method
7		continue Newton Raphson method with more problems
8		Solve problems using Graffes Root Squaring Method
9		Convergence of Solution
10		programs of different methods
11		Revision.
12	2	Solution of Simultaneous Liner Equation Using Gauss Elimination Method.
13		Solution of Simultaneous Liner Equation Using Gauss Seidal Method
14		Solution of Simultaneous Liner Equation Using Gauss Jordan Elimination Method
15		Solution of Simultaneous Liner Equation Using Jacobi Method
16		Solution of Simultaneous Liner Equation Using Triangularization Method
17		Explain III Conditioned Equation and Pivoting Condensation using problems.
18		Least Curve Fitting method using problems
19		Continue Least Curve Fitting with more problems.
20		Non Linear Curve Fitting using Problems.
21		Revision of 1st and 2nd unit.
22	3	Definition Of Forward, Backward,Shifting Operators.
23		Definition of Divided Difference Central and Averaging Operators and Relationships b/w Operators.
24		Newton's Forward Interpolation Formula and solve problem using forward method.
25		Newton's backward Interpolation Formula and solve problem using backward method.
26		Newton's divided Interpolation Formula and solve problem using divided Interpolation method.
27		Lagrange's Interpolation Formula and solve problem using Lagrange's Interpolation method.
28		Continue Langrange's problem.
29		Revision of 3rd Unit
30		Class test of Three units.
31	4	Numerical Differentiation using Newton's Forward Interpolation Formula and solve problem using method
32		Numerical Differentiation using Newton's Backward Interpolation Formula and solve problem using method
33		Numerical Differentiation using Newton's divided Interpolation Formula and solve problem using method.
34		Solve Numerical Integration problem using Newton- Cote's Formula
35		Solve Numerical Integration problem using Trapezoidal Rule and Simpson's one Third Rule
36		Solve Numerical Integration problem using Simpson's Three Eight Rule.
37		Programs of different methods.
38		Revision of 4th unit.
39	5	Numerical Solutions of Ordinary Differential Equations using Euler's Method.
40		Numerical Solutions of Ordinary Differential Equations using Euler's Modifies Method.
41		Solve Problem using Tailor's Series Method.
42		Solve Problem using Picard's Method.
43		Solve Problem using Runga Kutta Second Order and Fourth order Method.
44		Revision
45		Programs of different methods.

Maharaja Ranjit Singh College of Professional Sciences, Indore

Department of Computer Science

Lesson Plan - B.Sc. (CS Hons) V Sem (July 2017 - Dec 2017)

Subject - Computer Oriented Numeriacal Methods(practical)

Teacher - Shwetanjali Vijayvargiya

Day/Lecture	Topic
	Write a program to convert floating point number into normalized floating point number.
	Write a program to add two floating point number and convert into normalized floatingpoint number.
	Write a program to solve real root of the equation using Bisection Method.
	Write a program to solve real root of the equation using Secants Method.
	Write a program to solve real root of the equation using Regular Falsi Position Method.
	Write a program to solve real root of the equation using Newton Raphson's Method.
	Write a program to solve simultaneous liner equation using Gauss Elimination Method
	Write a program to solve simultaneous liner equation using.Gauss Jordon's Method.
	Write a program to solve simultaneous liner equation using Jacobi's Method.
	Write a program to solve simultaneous liner equation using Gauss Seidal Method.
	Write a program for Newton's Forward Difference Formula.
	Write a program for Newton's Backward Difference Formula.
	Write a program for Newton's Divided Difference Formula.
	Write a program for Lagrange's Interpolation Formula.
	Write a program for evaluation of integral by Trapezoidal's Rule
	Write a program for evaluation of integral by Simpson's 1/3 Rule
	Write a program for evaluation of integral by Simpson's 3/8 Rule
	Write a program for Euler's Method.
	Write a program for Runga Kutta Second Order Method.
	Write a program for Runga Kutta Fourth Order Method

Maharaja Ranjit Singh College of Professional Sciences, Indore

Department of Computer Science

Lesson Plan - B. Sc. V (July 2017 - Dec 2017)

Subject - BCIT - I

Teacher - Prof. Pravin Kumar Sharma

Day/Lecture	Unit	Topic
1	I	What is computer stands for?, Computer characteristics and applications
2	I	Block diagram of computer and function of each component and
3	I	Classicfication of computer (Purpose, Data Handling and Functionality), its capabilities
4	I	Desktop, Portable: Notebook, Laptop, smart phone
5	I	Smart and dumpTerminal, Client and Server
6	I	What is memory?, types of memory with the help of hierarchical diagram
7	I	Primary Memory: (RAM: SRAM and DRAM) and (ROM: PROM, EPROM, EEPROM) and Cache memory
8	II	Input devices and its functions (Keyboard, Mouse, Scanner, Joystick and Touch Screen, MICR, Barcode reader, Digitializing tablet, VRS)
9	II	Output Devices and its fucntions(Monitor: VGA, SVGA, XGA its types, characteristics)
10	II	Printer and its types (Impact: Dotmatrix, Daisy wheel and Non-Impact: Inkjet and Laseriet)
11	II	SMPS, Cards and its types: Display, Video and Graphic and Audio, Nerwork)
12	II	Introduction of Ports(Serial, Parellal and USB)
13	III	Introduction Secondary storage devices with hierarchical diagram
14	III	Sequential access devices: Magnetic Tape and Process to store data in magnetic tape(size and volume of magentic tape)
15	III	Direct Access devices: Magnetic disc (floppy and Hard disk its types) and Optical disc (CD, DVD, CD-RW, WROM)
16	III	Technology used in flash memory and memory cards.
17	III	Disc pack and its fuctional diagram, Zip disc and wichester disc
18	III	Seek time, Letancy time , tansmission time and Total Access time in sequeintial access and direct access devices
19	IV	What is an Operating System? Its logical architecutre and its classification (CLI and GUI)
20	IV	Types of Operating system(Batch, Multitasking, Time sharing, Multiprocessor, Real time and Embeded)
21	IV	Booting process(Cold and Warm), Introduction of DOS and required system files to run DOS
22	IV	Difference between DOS, Windows and LINUX
23	IV	Internal and External commands of DOS(date, time, cls, copy con, format)
24	IV	Windows Operating System and its features, difference between menu oriented and ribbon oriented windows O.S.
25	IV	Introduction of Windows 7 and 8: its features,
26	IV	Windows 8.1: Touchscreen featuresCutomization of Application software as required
27	IV	Operations on file and folders: move, copy, rename, serach content
28	IV	Control panel and its options, recyble bin, creation of folder and shortcut
29	IV	Introduction of Linux Operatiing system and features
30	IV	File sytem of LINUX O.S., Commands to perform different file operations

31	IV	GUI mode of LINUX operating system: Ubuntu, Fedora and Debian
32	IV	Desktop and available options on Linux Ubuntu GUI mode
33	V	Introcution of Application packages(MS-Office, Tally, Open Office)
34	V	What is PDF stand for?, Introduction of Different PDF readers and its features and platforms
35	V	Adobe Acrobat reader, Nitro and PDF Xchange
36	V	What is word processing?, different word processing softwares
37	V	features of MS-Word processor 2007, ways of creating documents using(Blank, Template)
38	V	Previewing a document before printing, protecting documents
39	V	Different components of word processor(Formatting, Ruler, Status and Ribbon, Quick Access tool bar)
40	V	Paragraph formatting and Table handling features of MS-Word 2007

Maharaja Ranjit Singh College of Professional Sciences, Indore

Department of Computer Science

Lesson Plan - B.Sc. (CS Hons) VI Sem (Jan 2018 - June 2018)

Subject - Computer Network

Teacher - Prof. Meenakshi Vyas

Day/Lecture	Unit	Topic
1	1	Computer Network Goals and Applications.
2		Explain OSI Model Layers.
3		Eplain TCP/IP. Compare with OSI.
4		Explain LAN, MAN and WAN
5		Explain different topologies
6		LAN components – File server, Workstations, Network Adapter Cards.
7		Connection Oriented and Connection less services.
8		Revision of 1st unit
9	2	Explain Data communication system.
10		data communication links.
11		Serial and encoded data formats
12		error detection & correction techniques.
13		Solve problems on CRC.
14		Solve problems based on hammingcode.
15		Switching Techniques – Circuit Switching, Packet Switching, Message Switching.
16		Revision of 2nd unit
17		Class test
18	3	Data link protocol
19		Character oriented protocol & bit oriented protocol
20		Network architecture protocols
21		Explain Ethernet and token bus.
22		Explain token ring.
23		Revision of 3rd Unit.
24	4	Explain basics of Internet.
25		Viewing web pages with a browser
26		Explain how to use a browser for a mail, News and chat, security and privacy issues
27		Advantage and disadvantage of Internet and Internet Services.
28		Explain Web server and proxy server, Web caches
29		Give knowledge about web browser like Internet Explorer, Netscape Navigator, and Communication Suit
30		Internet Security issues
31		Data encryption and Digital Signature and Certificates
32		Revision
33	5	Introduction to Web Pages, HTML, HTML Elements and pages
34		Formatting text and pages
35		Including picture and links in a page
36		Creating tables and lists
37		Splitting pages into frames
38		Site Design and Navigation
39		The home page Navigational tools
40		Formatting the body section using block level
41		Formatting using text level & using phrase
42		Formatting using font style
43		Java Script and Browser
44		Java Script and sever
45		Embedding Java Script & HTML
46		Java Script fundamentals:-Variables, Value Store house
47		Java Script statements, loops, condition and functions
48		Java Script objects properties and methods
49		Comparison of HTML, DHTML and XML

Maharaja Ranjit Singh College of Professional Sciences, Indore

Department of Computer Science

Lesson Plan - B.Sc. (CS Hons) VI Sem (Jan 2018 - June 2018)

Subject - Computer Network(practical)

Teacher - Prof. Meenakshi Vyas

Day/Lecture	Topic
1	HTML Elements and pages
2	Formatting text and pages
3	Including picture and links in a page
4	Creating lists
5	Creating lists
6	Creating tables with its attributes
7	Creating tables with its attributes
8	Creating tables with its attributes
9	Splitting pages into frames
10	Splitting pages into frames
11	Creating static forms with its controls
12	Creating static forms with its controls
13	Creating static forms with its controls
14	.....
15	Embedding Java Script & HTML
16	Embedding Java Script & HTML
17	Java Script fundamentals:-Variables, Value Store house
18	Java Script fundamentals:-Variables, Value Store house
19	Java Script statements, loops, condition and functions
20	Java Script statements, loops, condition and functions
21	Java Script statements, loops, condition and functions
22	Java Script statements, loops, condition and functions
23	Java Script statements, loops, condition and functions

Maharaja Ranjit Singh College of Professional Sciences, Indore

Department of Computer Science

Lesson Plan - B. Sc. VI Sem hons (Jan2018 -June 2018)

Subject - Computer Architecture

Teacher - Shwetanjali Vijayvargiya

Day/Lecture	Unit	Topic
1	1	Introduction to organization and architecture
2		structure and function of System.
3		history of Computers with digrams
4		Explain computer components
5		Explain computer function
6		Pentium and power evolution for performance
7		Explain interconnection structure
8		Explain bus interconnection and PCI.
9		Future bus concept.
10		Revision of 1st unit.
11	2	Explain Computer Memory System
12		Explain primary memory with types
13		Secondary memory with types
14		Continue Secondary memory.
15		cache memory with types.
16		Explain Advance DRAM organization
17		Optical memory
18		Revision of 2nd unit.
19		Class test of 1st and 2nd memory.
20	3	Machine Instruction Characteristics
21		Types of Operand and Type of Operations
22		Assembly Language
23		Addressing mode and Instruction formats
24		Explain Instruction Cycle
25		Instruction Pipelining.
26		Process and register organization.
27		Revision of 3rd unit
28	4	Micro Operations and control of the CPU
29		Hardwired implementation
30		Explain Concepts of Micro programmed control
31		microinstruction sequencing and microinstruction execution
32		applications of micro programming
33		Revision of 4th unit

34		External Devices, I/O modules
35		Programmed I/O and Interrupt-Driven I/Owith flowchart
36		Direct Memory Access
37		I/O Channels and processors
38	5	External Interface and parallel processor
39		Explain RAID memory.
40		Revision..
41		Revision
42		Class test.

Maharaja Ranjit Singh College of Professional Sciences, Indore

Lesson Plan - BSc VI Sem

Subject - Visual Basic .NET (Jan2018 -June 2018)

Teacher - Prof. Meenakshi Vyas

Day/Lectu	Unit	Topic
1	I	Introduction to VB.NET, Event Driven Programming
2		.NET as better, Programming Platform NET Framework, NET Architecture
3		CLR, The Just-In-Time Compiler, Garbage Collection
4		.NET Framework class library
5		introduction VB.NET Development Environment
6		Visual development & event drive Programming -Methods and events.
7		Visual development & event drive Programming -Methods and events.
8		Screen Description of editor-how to use it for developing programs
9		Creating test program.
10		Creating Basic program.
11	II	Variables -Declaring variables, Data Type of Variables
12		Arrays
13		Handling and Using Interfaces
14		conditional statement if and endif
15		comparison with other programming languages
16		implementation of conditional Statements
17		loop statement: Do
18		For-next,for each next
19		while end while
20		with end with
21		nested loops
22		Message box & Input box
23		Function creation
24	III	Text Boxes, Buttons, Labels
25		Check Boxes, and Radio Buttons.
26		List Boxes, Combo Boxes
27		Picture Boxes, Scrollbars
28		Splitters, Timer
29		Menus, Built-in Dialogs Image List
30		Tree Views, List Views
31		Toolbars available
32		Toolbars available
33		Status Bar and Progress bars
34		OpenFileDilog
35		SaveFileDialog
36		Font Dialog
37	IV	Understanding Delegates

38		Class Library Overview, Creating a Class Library
39		Working with the Class Library
40		Understanding Built-In Classes
41		Creating User-Defined Classes.
42		Understanding Constructors and Instance Variables.
43		Introduction to Error Types: Understanding Syntax Errors, Understanding Runtime Errors
44		Using Exception Handling
45		Using Exception Handling
46		Understanding Logical Errors
47		Using Break Points.
48	V	Database Connections
49		Data adapters
50		datasets, Data Reader
51		Connection to database with server explorer
52		Multiple Table Connection Data
53		binding with controls like Text Boxes, List Boxes
54		Data grid
55		Navigating data source
56		Data Grid View
57		Data form wizard
58		Data validation
59		Connection Objects
60		Command Objects
61		Data Adapters
62		Dataset Class.

Maharaja Ranjit Singh College of Professional Sciences, Indore

Department of Computer Science

Lesson Plan - BSc VI Sem

Subject - Practical VB.Net(Jan2018 -June 2018)

Teacher - Prof Meenakshi Vyas

Day/Lecture	Topic
1	Create a window application for simple Calculator.
2	Create a window application to compare b/w two no, compare b/w 3 no.
3	Create a login form for a user. .
4	Create a program with a textbox and one button control to check no is even or odd.
5	Create a program with a textbox and one button control check the year is leap year or Not.
6	Create a windows application to calculate simple interest.
7	Create a windows application to calculate factorial of a number.
8	Create a windows application to calculate for storing and displaying 10 numbers in an Array.
9	Create a windows application to display your name scrolling using timer..
10	Create a windows application to calculate to generate Fibonacci series.
11	Create a windows application to display same menu as in MS-WORD 2003.
12	Create a windows application to calculate Sum and Average of 10 numbers stored in an array.
13	Create a program to determine whether a given angle forms a valid triangle.
14	Create a program which allow user to select gender using checkbox control
15	Create a program to change the case of text box according to selected radio button.
16	Create a program to add a record in SQL-SERVER Database.
17	Create a program with a textbox and two button control to set the buttons to open a file and to save a file dialogbox.
18	Create a windows application that contains text boxes and a button. The click event of the button displays the percentage of student on the basis of marks entered in the text boxes.

Maharaja Ranjit Singh College of Professional Sciences, Indore

Department of Computer Science

Lesson Plan - B. Sc. VI (Jan 2018 - June 2018)

Subject - BCIT - II

Teacher - Prof. Pravin Kumar Sharma

Day/Lecture	Unit	Topic
1	I	Introduction of MS-Power Point and its features
2	I	Different components of MS-Power Point(Slide, Handouts, Speaker Notes and Outline)
3	I	Different Views of MS-Power Point,
4	I	Different ways to create MS Power-Point Presentation
5	I	Slide Master and Various themes applied on presentation
6	I	Operations performed on a slide(Insert, Delete, Move, Copy)
7	I	Saving presnetation with different file format
8	II	Introduction of Smart Art, insert picture from file/clipart
9	II	Process to convert old style presentation into new style presentation
10	II	Insert table, charts and different oragnizational charts in presentation
11	II	process to create hyperlink to connect different files and presentation with existing presentation
12	II	Slide Sorter, slide transition and Animation effects.
13	II	Setup slide show options, rehearse timing
14	III	How a presentation run continuously?
15	III	Introduction of spreadsheet software and different spreadsheet software for different platfroms
16	III	Features of MS-Excel, Cell, Row and Column Range
17	III	operations on spreadhseet(copy, move , rename, insert and protecting)
18	III	Insert/Delete row and column, Introduction charts and its types
19	III	creation of charts using data references
20	III	Forumula bar and different built-in formulas used in MS-Excel wroksheet
21	III	creation of marksheet and salary sheet using user defined and built-in formulas of MS-Excel
22	III	Sorting, Filter and freeze panes options used in MS-Excel
23	IV	What is Internet, Its advantages and disadvantages, History of Internet(ARPANET)
24	IV	Introduction of Protocol, different types of protocol used on Internet (SMTP, FTP, TCP/IP, HTTP)
25	IV	DNS, URL, WWW, WWW consortium
26	IV	Search Engine and list of different search engine available
27	IV	Applications of Internet
28	IV	What is E-Mail? Process of sending and receiving of E-Mail and its different protocols
29	IV	What is Network? Types of network(LAN.MAN,WAN)

30	IV	Different network topologies (BUS, Ring, Star, Mesh and Hybrid)
31	IV	What is Cloud computing? Introduction of Web office
32	IV	Introduction of mobile computing and different mobile apps
33	V	Email, Internat and Social networking ethics
34	IV	Introduction of virun and antivirus, types of virus(torjan, spam, E-Mail bombing)
35	IV	firewall, different issues during firewall operations
36	IV	What is Online transcation and points to remember when make online transaction
37	IV	cyber policies and Intellectual Proerty Rights(IPR)
38	IV	Violation of copyright and redressal