Maharaja Ranjit Singh College of Professional Sciences,Indore

Department of Computer Science

Lesson Plan - B. Sc. I (July 2019 - Mar 2020)

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 2019 - Mar 2020)

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 2019 - Mar 2020)

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 micrococontrollers
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,Indore

Department of Computer Science

Lesson Plan - B. Sc. I (July 2019 - Mar 2020)

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

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Department of Computer Science

Lesson Plan - B.Sc. IInd Year CS & BT+CS(July 2019 - Mar 2020)

Subject - Data Structure

Teacher - Shwetanjali Vijayvargiya

Day/Lecture	Unit	Topic
1	1	Introduction of Data Structures
2		Data Types in Programming Language
3		Abstract Data Structures
4		Array Data Structure
5		2D Array Implementation
6		Matrix Operations
7		Stack Data Structure
8		Stack Implementation
9		Infix to Postfix Conversion
10		Infix to Postfix Conversion Algorithm and Program
11		Infix to Prefix Conversion
12		Infix to Prefix Conversion Algorithm and Program
13		Postfix Evaluation Aloritham
14		Recursion using Stack
15		Queue Data Structure
16		Circular Queue
17		Double Ended Queue
18		Priority Queue and Application of Queue.
19	2	Linked List
20		Linked List Insertion and Deletion
21		Circular Linked List
22		Circular Linked List Creation and Deletion
23		Doubly Linked List
24		Circular Doubly Linked List
25		Stack Using Linked List
26		Queue Using Linked List
27		Application of Linked List.
28		Revision of 1st and 2nd Unit
29		Class test.
30	3	Tree Data Structure and basic terminology
31		Binary trees and representation of tree.
32		Postorder, Preorder and Inorder Traversing
33		Application of Binary Tree
34		Program fot Binary Tree
35		Binary Search Tree Program of Binary Search in Tree
36		Threaded Binary Tree
37		AVL Tree
38		Revision of 3rd Unit
39		Searching Methods
40		Linear and Binary Search
41		Program for Binary and Linear Search.
42		Bubble sort with Program

43	4	Selection sort with Program
44		Insertion Sort with Program
45		quick Sort with Program
46		heap sort with algoritham
47		Comparison of Sorting methoda.
48		Revision of 4th unit
49	5	Hash function with hash table
50		Collision resolution technique
51		Introduction of Graph with terminology
52		Graph Representation Methods- Matrix and list Representation
53		Graph Traversal technique-Breadth First Search and Depth First Search
54		Algoritham for BFS and DFS
55		Minimum Spanning tree
56		problem of minimum spanning tree.
57		Shortest path algorithm
58		question using shortest path algo
59		Revision of 5th Unit
60		Revision.

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Department of Computer Science

Lesson Plan - B.Sc. IInd Year CS & BT+CS(July 2019 - Mar 2020)

Subject - Data Structure

Teacher - Shwetanjali Vijayvargiya

Day/Lecture	Practical
1	Write a program for insertion, deletion and traversal of elements of an array.
2	Write a program to find addition of two matrix.
3	Write a program to find multiplication of two matrix.
4	Write a program to find transpose of a matrix.
5	Write a program for complete implementation of stack using array with push, pop andtraversal operations
6	Write a program for conversion of an infix expression into postfix representation
7	Write a program for evaluation of postfix expression
8	Write a program for complete implementation of queue using array with insertion,deletionand traversal operations
9	Write a program for complete implementation of circular queue using array with insertion,deletion and traversal operations
10	Write a program for complete implementation of double ended queue using array with insertion, deletion and traversal operations
11	Write a program to create singly linked list(creation, insertion, deletion and traversal)
12	Write a program to create doubly linked list (creation, insertion, deletion and traversal).
13	Write a program for complete implementation of stack using linked list with push, pop andtraversal operations
14	Write a program for complete implementation of queue using linked list with insertion,deletion and traversal operations.
15	Write a program for implementation of binary tree (creation, insertion, deletion)
16	Write a program for preorder, inorder and postorder traversal of binary tree.
17	Write a program for implementing graphs and showing depth first search and breadth first search traversals.
18	Write a program for linear search.
19	Write a program for Binary search.
20	Write a program for interpolation search.
21	Write a program for bubble sort.
22	Write a program for selection sort.
23	Write a program for insertion sort.
24	Write a program for merge sort.
25	Write a program for quick sort.

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Lesson Plan - BSc II Year(July 2019 - Mar 2020)

Subject - OOPs using C++

Teacher - Prof. Meenakshi Vyas

Day/Lecture	Unit	Topic
1	1	Introduction to C++
2		programming paradigms
3		key concepts of object-oriented programming
4		Adavantages of OOP'S
5		Input and output in C++
6		pre-defined streams
7		Unformatted console I/O operations
8		formatted console I/O operations
9	2	C++ declaration
10		parts of C++ program
11		Types of tokens
12		Keywords
13		Identifiers
14		data types
15		constants
16		Operators
17		Procedence of operators
18		Referencing and dereferencing operators
19		Scope access operator
20		Control structures
21		Decision making statements
22		Looping statement
23	3	Functions
24		Types of Function
25		Library functions
26		inline functions
27		function overloading: principal
28		Classes and objects
29		declaring classes and objects
30		accessing class members
31		access specifiers
32		defining member functions
33		member function inside the class
34		member function outside the class
35		static member variables and functions
36		friend function
37		friend classes
38		overloading member functions
39	4	Constructors
40		types of constructors
41		types of constructors

42		destructors
43		operator overloading
44		overloading unary operator
45		binary operator
46		Inheritance
47		access specifiers
48		protected data with private inheritance
49		Types of inheritances
50		Types of inheritances
51		virtual base class
52	5	Pointers & arrays
53		pointer declaration
54		pointer to class & object
55		Array
56		declarations & initialization
57		arrays of classes
58		Polymorphism
59		Static(early) binding
60		Dynamic (late) binding
61		Virtual function
62		Pure virtual function

Maharaja Ranjit Singh College of Professional Sciences, Indore	
Department of Computer Science	
Lesson Plan - BSc II Year(July 2019 - Mar 2020)	
Subject - Practical OOPs through C++	
Teacher - Prof Meenakshi Vyas	
Day/Lecture	**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

Maharaja Ranjit Singh College of Professional Sciences,Indore

Department of Computer Science

Lesson Plan - B. Sc.(CS/Hons) III Year (July 2019 - March 2020)

Subject - Database 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 Models
4		Data Models
5		Data Models
6		Database language, Database administrator,
7		Database System Structure.
8		3 View Architecture of DBMS
9		Data Independence and its types
10	II	Entity Relationship Model: Basic Concepts,
11		Relationships, Mapping Constraints,
12		Entity Set, weak Entity, Strong Entity, Entity Features
13		Types of Keys, Types of Attributes
14		E-R Model Notations, E -R Diagram
15		design of an E-R database schema
16		Generalization
17		Specialization
18		Aggrigation
19		Reduction of E-R schema to table
20	III	Set Theory Notations: Relations, Domain
21		Set Theory Notations: Attributes, Tuples, Keys
22		Types of Attributes
23		Types of Keys
24		Entity & Refferential Intigrity
25		Extention and Intention
26		Relational Algebra Operations
27		Relational Algebra Operations
28		Relational Algebra Operations
29	IV	Functional Dependencies
30		Functional Dependencies
31		Pitfalls in Relational Database Design, Decomposition
32		Normalization using functional dependencies
33		Normalization using multivalue dependencies
34		Normalization using joined dependencies
35		Integrity Constraints:- domain constraints, entity integrity constraints, referential integrity constraints
36		Indexing
37		Hashing
38		B-Tree Index File

39	V	Static & Dynamic Hashing
40		Multiple Key Accesses
41		Multiple Key Accesses
42		Examples
43		Examples

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Department of Computer Science

Lesson Plan - B. Sc.(CS/Hons) III Year (July 2019 - March 2020)

Subject - Database 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
19	Triggers
20	Functions
21	Procedures
22	Cursors

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Department of Computer Science

Lesson Plan - B. Sc. III (July 2019 -Dec2020)

Subject - Operating System Concepts

Teacher - Harshita sharma

Day/Lecture	Unit	Topic
1	I	Introduction to operating system:Defination,its components
2		Types of operating system- batch,multiprogrammming,
3		multitasking operating system,multiprocessor operating system,
4		real time operating system,client server operating system,peer-peer
5		distributed operating system and clustered operating system
6		Introduction to services of operating system
7		System calls,protection of input /output
8		Memory and CPU
9	II	Introduction to process scheduling: concept of a process.
10		process states,PCB,process life cycle
11		Concept of how to apply operations on process
12		context switch,types of schedulers
13		CPU burst-I/O burst cycles
14		Dispatcher,scheduling criteria
15		scheduling algorithms- FCFS
16		SJF AlgorithmSTRN Algorithm,Round Robin Algorithm,
17		priority,event driven,multilevel queue
18		performance evaluation of algorithms through deterministic modelling
19	III	Memory management: address binding,logical space
20		and physical address spacedynamic loading and linking.
21		contiguous memory allocation:static and dynamic partitioned memory
22		Introduction to fragmentation
23		swapping relocation,compaction,protection
24		Introduction to Non contiguous memory allocation:
25		concept of paging segmentation
26		Virtual memory: demand paging,page fault
27		page Replacement algorithms-FIFO algorithm
28		Concept of LRU-least recently used algorithm
29		Concept of optimal algorithm
30		solved practise questions based on algorithms
31		Concept of Thrasing,pagefault frequency
32	IV	Interprocess communication need for synchronization
33		Defination of Deadlocks,avoidance,prevention of Deadlock.
34		detection and recovery of Deadlock
35		Disk organization,directory structure
36		Concept of disk space management
37		contiguous and non contiguous allocation strategies
38		Introduction to disk address translation

39		disk cashing,disk sheduling algorithms
40		Device Management:dedicated devices,shared devices
41		Introduction to security and protection
42		Security threats and goals
43		penetration attempts.
44		security policies and mechanisms
45		concept of authntication,protection and access control.
46	V	Introduction to Linux operating system
47		History and features of linux
48		Introduction to Linux architecture
49		File system of linux hardware requirements
50		Introduction to Linux standard directories
51		Introduction toLinux kernel
52		working with linux: KDE and Gnome graphical interface
53		Introduction to various types of shells available in Linux
54		Introduction to vi editor
55		Introduction to Linux Commands
56		concept of file security in linux
57		practical on how to use different types of commands in linux
58		practical on how to create file directory with the help of commands
59		Revision of Linux commands
60		Revision of practical implementation on linux commmands

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Department of Computer Science

Lesson Plan - B.Sc. III Year (July-2019 -April-2020)

Subject - Operating System(practical)

Teacher - Harshita Sharma

Day/Lecture	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
	VI Editor Commands
	VI Editor Commands
	VI Editor Commands
	Process Commands
	Process Commands
	Communication Commands
	Communication Commands
	Communication Commands

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Department of Computer Science

Lesson Plan - B.S.C III-HONS (July 2019 -Dec2020)

Subject - Java Programming

Teacher - Harshita sharma

Day/Lecture	Unit	Topic
1	I	Intrroduction to java ,architecture of jvm
2		primitive data types-integer,short,long,byte,float,double,unicode
3		character set ,boolean,ranges of data type,default initial values
4		wrapping of integer arithematic,casting comments.
5		identifier and reserved words,local variables.
6		operators:Arithematic,relational,logical assignments.
7		Increment and decrement,conditional,bitwise,special
8		Expression and its Evaluation in java.
9		practical on simple programs of java
10		practical on programs of how to use datatypes
11		practical on programs of operators
12	II	statements simple and compound:if statement,if…else…statement
13		Nesting of if…else..statement,else…if ladder,switch.
14		practical on programs of if else or ladder if statements
15		loops concept - while,do-while,for loop,labelled loops
16		practical on programs of loops
17		jumps statements:break case continue.
18		practical on programs of break and continue statements.
19		class type data: strings,arrays and its types
20		practical on programs of string library functions
21		practical on programs of arrays
22	III	Defination and naming conventions for the member of java classes
23		instance field and methods of java
24		practical on program of how to create classes and objects in java
25		concept of constructor in java,method overloading
26		practical on program of constructor and its types
27		practical on program of method overloading
28		static members,nesting of methods
29		concept of inheritance:types of inheritance
30		Extending a class ,overriding methods
31		practical on program of overriding methods
32		Final variable and methods ,final classes
33		Finalize methods,abstract methods and classes
34		visibilllity control
35		practical on program of final variable and method
36		practical on program of finalize method
37	IV	creating threads ,Extending the thread class
38		stopping and blocking a thread
39		life cycle of thread
40		concept of thread methods
41		practical on stopping and blocking threads
42		practical on extending the thread class
43		thread Exception,thread priority,synchronization
44		implementing the runnable interface
45		synchronizing concept of java
46		Exception of try catch final blocks examples
47		practical on thread priority and snchronization
48		practical on how to implement runnable interface

49		practical on how to set thread priority
50		practical on synchronisation of thread concept
51	V	java virtual machine concept java paltform overview
52		local and remote Applet vs applications,writing applet
53		Applet life cycle ,creating and Exexutable applet
54		designing a web page using applet code
55		applet tag,adding applet to html file
56		practical on how to Run the applet
57		passing parameters to applet,aligning the display
58		Html tags and applets
59		practical on how to design web page
60		practical on creating and making an exexutable applet

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Department of Computer Science

Lesson Plan - B.S.C III-HONS (July 2019 -Dec2020)

Subject - Java Programming Practical

Teacher - Harshita sharma

Day/Lecture	Topic
1	Write a simple java program to print hello
2	Write a program to print factorial of a number
3	Write a program to print fibonacci series
4	Write a program to find greatest of n numbers
5	Write a program to find whether a given number is even or odd
6	Write a program to find largest of three numbers
7	Write a program to check number is palindrome or not
8	Write a program to reverse a string
9	Write a program to convert string into upper and lower case
10	Write a program to swap two numbers without using a third variable
11	Write a program for string concatenation
12	Write a program to find longest word in a string
13	Write a java program to demonstrate the implementation of abstract class.
14	Write a java program to implement single level inheritance
15	Write a java program to implement method overriding
16	Write a java program to implement multiple inheritance.
17	Write a java program to implement method overloading through Interface
18	Write a java program to designed a class that demonstrates the use of constructor and destructor.
19	Write a java program to print largest among two numbers
20	Write a java program to print date and time
21	Write a java program to take input from user using scanner class
22	Write a java program to check given number is a leap year or not
23	Write a java program to print multiplication table using thread
24	Write a java program to print hello world using simple Runnable in Thread
25	Write a java program to implement thread life cycle.
26	Write a java program to implement multithreading.
27	Write a java program to open a file and display the contents in the console window.
28	Write a java program to copy the contents from one file to other file.
29	Write a java program to read the student data from user and store it in the file.
30	Write a java program to print missing number in an array
31	Write a java program to merge two Array
32	Write a java program for multiplying two matrices and print the product for the same.
33	Write a java program to add two matrices and print the resultant matrix.
34	Write a java program to sort 2-D Array
35	Write a java program to transpose matrix using one Array
36	Write a Applet program to display calculator
37	Write a Applet program to print different geomatric shapes
38	Write a Applet program to draw face
39	Write a Applet program to show clock timing
40	Write a Applet program to change Applet backgroun color using scrollbar

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Department of Computer Science

Lesson Plan - B.Sc. (CS Hons) III Year (July 2019 - Mar 2020)

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

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Lesson Plan - B.Sc. III CS Hons (July 2019 - Mar 2020)

Subject - Software Engineering

Teacher - Prof. Pravin Kumar Sharma

Day/Lecture	Unit	Topic
1	I	Data, Information and system, types of system, its characteristics and components
2	I	Business system and its types, Environment
3	I	Introduction of software engineering: definition and application
4	I	System Analysis and its different phases
5	I	system requirement, SDLC and phases of SDLC
6	I	Continue phases of SDLC
7	I	Need of SDLC, Introduction of SDLC Models
8	I	Water fall, Spiral, V-Model and RAD Model
9	I	Big-Bang, Evolutionary, Prototyping
10	II	Project Selection: Sources of Project request(deprtmental managers, senior executives, system analyst and outside group)
11	II	Managaing Project reivew and slection: different committee methods
12	II	recognition of need (preliminary investigation) and its methods
13	II	Fact Finding Techniques(Study of existing documents, PI, Questionniares, JAD, RAD, Onsight observation and researh on website)
14	II	Fesibility Anlaysis: Types of feasibility study
15	II	Economic Analysis: different types of Costs and Benefits occurred during project development
16	II	Cost and Benefit determination, steps of determining cost nad benefit analysis
17	III	Introduction of Structured system analysis and its goals
18	III	SDLC with structured system analysis: Explosion of Process into sub processes
19	III	Tools of structured system analysis: DFD, its different sysmbols and rules of constructing DFD
20	III	Software design fundamentals: general defintion of design, its goal and software desing model
21	III	Arhcitectural, Procedural and software design fundamentals, software architecture
22	III	continue tools of SSA: Data dictionary, its formats and elements, Structured English
23	III	continue tools of SSA: Decision Tree and Decision table, its types

24	III	Object oriented design models: Object, Dynamic and Fucntional Model(DFD, Use-Case, Class. Object, Sequence, Collaboration, State, Activity, Component and Deployment)
25	III	Data flow Oriented Desing
26	IV	Introduction of software quality assurance, Quality factor specification
27	IV	Software requirement, software desing, software testing and implementation
28	IV	Levels of quatliy assurance: Testing, Validation and Certification
29	IV	Software Testing fundamentals: Tetability, Operability, Observability, Controlabilit, Decomposability, simplicity, Stabiltiy and understandibility
30	IV	Characterícstics of Test: High probalility, Strategic approach to software tesing
31	IV	Validation and Verification, Conventional software architecture of testing
32	IV	Strategic Issues, Criteria for completion of testing
33	IV	Methods of Testing: While box, Black box, Gray box, Visual
34	IV	Levels of Testing: Unit, Integration and System
35	IV	Objectives of Testing: Regression, Acceptance, Alpha and Beta
36	V	System Implentation: Definition and its types
37	V	Conversion, Steps of conversion
38	V	Activity network of conversion
39	V	File conversion, Test files, data entry, audit control and user training
40	V	Post implementation review, review plan
41	V	Software Maintenance: Defintion, its types, activities of maintenance
42	V	Methods of reducing Maintenance cost: Maintenace Management audit,
43	V	Software system audit and software modification
44	V	Hardware and software selection process
45	V	Major Phases of Hardware Selection: Requirement analysis, System Specification,
46	V	RFP, Evlauation and Validation,
47	V	Vendor Selection and Post Installation review
48	V	Major Phases of Software Selection: Reliability,Fucntionality,
49	V	Capacity, Flexibility, Usability Security , Performance,
50	V	Servicability, Owership and Minimal cost

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Department of Computer Science

Lesson Plan - B. Sc. CS Hons III Year (July 2019 - Feb 2020)

Subject - BCIT

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
3	I	Classicfication of computer (Purpose, Data Handling and Functionality)
4	I	Desktop, Portable: Notebook, Laptop, smart phone
5	I	Difference between workstation and server
6	I	What is memory?, types of memory with the help of hierarchical diagram
7	I	Primary Memory: RAM and its types, Rom and its types
8	I	Input devices and its functions (Keyboard, Mouse, Scanner, Joystick and Touch Screen)
9	I	Output Devices and its fucntions(Monitor its types and characteristics)
10	I	Printer and its types (Impact: Dotmatrix, Daisy wheel and Non-Impact: Inkjet and Laserjet)
11	I	Introduction Secondary storage devices with hierarchical diagram
12	I	Sequential access devices: Magnetic Tape and Process to store data in magnetic tape
13	I	Direct Access devices: Magnetic disc (floppy and Hard disk its types) and Optical disc (CD, DVD, CD-RW, WROM)
14	I	Technology used in flash memory and memory cards.
15	II	What is an Operating System? Its logical architecutre and its classification (CLI and GUI)
16	II	Types of Operating system(Batch, Multitasking, Time sharing, Multiprocessor, Real time and Embeded)
17	II	Booting process(Cold and Warm), Introduction of DOS and required system files to run DOS.
18	II	Internal and External commands of DOS(date, time, cls, copy con, format)
19	II	Windows Operating System and its features, difference between menu oriented and ribbon oriented windows O.S.
20	II	Control panel and its different application, recycle bin, operations on file and folders (rename, move, seraching contents)
21	III	What is word processing?, different word processing softwares

22	III	features of MS-Word processor 2007, ways of creating documents using(Blank, Template)
23	III	Previewing a document before printing, protecting documents
24	III	Different components of word processor(Formatting, Ruler, Status and Ribbon, Quick Access tool bar)
25	III	Paragraph formatting and Table handling features of MS-Word 2007
26	III	Mail-Merge and Macro Creation in MS-Word 2007
27	III	Header and Footer(Different 1st page and Even-Odd)
28	III	Insert Picture, wordart and Charts in MS-Word 2007
29	IV	What is Power point?, its Characteristics and Features
30	IV	Ways of creation of new presentation(Blank, Template, Template with suggested contents, from website)
31	IV	Componets of Power Point(Slide, Handouts, Speakler notes and Outline)
32	IV	Insert new slide in presentation, slide layout, slide desing
33	IV	Different views of Power point presntation
34	IV	Slide Transistion, Slide Sorter, options of Setup show Tab
35	IV	Custom animation, how a presentation run Continuously?
36	IV	Introduction of Spread sheet software, different Spread sheet software for different Platforms
37	IV	what is cell?, Cell range , Row range and Column range in MS-Excel
38	IV	Features of MS-Excel, Forumula bar and different built-in formulas used in MS-Excel wroksheet
39	IV	Insert/Delete row and column, Introduction charts and its types
40	IV	Sorting, Filter and freeze panes options used in MS-Excel
41	IV	Creation of marksheet and salary sheet using MS-Excel
42	V	What is Internet?, History of Internet (ARPANET), different types of connections(Leased line, WiFi, Broadband)
43	V	URL, DNS(Domain Name Server), What is web browser(IE, Mozilla, Crome, Opera)
44	V	What is Search Engine? List of popular serach engines according to application
45	V	Website and tis components, types of websites(static and dynamic)
46	V	diffrence between Website and Web Protal
47	V	E-Mail, sending and receiving of E-mail and different protocols used in it.
48	V	E-Mail address contains, and components of E-Mail
49	V	Introduction of virun and antivirus, types of virus(torjan, spam, E-Mail bombing)
50	V	firewall, different issues during firewall operations

51	V	What is Online transcation and points to remember when make online transaction.