EWING CHRISTIAN COLLEGE, PRAYAGRAJ

(An Autonomous Constituent College of Allahabad University)

TEACHING PLAN

Department: **Centre for Computer Sciences**

Name of the Teacher: **Er. Sonu Pandey**

Course Name: **B.Sc.**   Semester: **I**

Paper Name: **Introduction to Computing Systems**   Paper Code: **1COATH1**

Year: **2021 – 2022**

Lecture No.	Topic
1	Introduction to Computers
2	Computing History
3	Characteristics and Capabilities of computer
4	Introduction to peripheral devices
5	Hardware and software
6	Generations of computers
7	Computer language
8	Computer language generations - Machine level, Assembly & High level Computer languages
9	Translators - Compiler/Assembler and Interpreter
10	Computer Application Areas
11	Block Diagram - CPU, Control Unit, ALU
12	Input / Output Devices: Keyboard, Mouse, VDU, LCD, LED
13	Printer and their types
14	character set - ASCII, BCD and EBCDIC.
15	character set - ASCII, BCD and EBCDIC. (Continued)
16	**Computer Memory** – Primary and Secondary memory
17	**Computer Memory** – Primary and Secondary memory (Continued)
18	Types of Read Only Memory and Read-Write memory.
19	SRAM, DRAM, PROM, EPROM, EEROM, Flash Memory etc
20	Concept of cache memory, Memory hierarchy
21	Virtual memory concepts
22	**Storage Devices**: Storage mechanism
23	Magnetic and optical disks
24	concepts of tracks and sectors in magnetic and optical disks
25	Compact disc, DVD and Blue ray technology
26	Operating system
27	Functions of Operating system
28	Single user vs Multiuser OS
29	MS-DOS basic commands
30	Overview of MS-Windows

EWING CHRISTIAN COLLEGE, PRAYAGRAJ

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TEACHING PLAN

Department: **Centre for Computer Sciences**

Name of the Teacher: **Dr. Padmanabh Tripathi**

Course Name: **B.Sc.**   Semester: **I**

Paper Name: **Programming in 'C'**   Paper Code: **1COATH2**

Year: **2021 – 2022**

Lecture No.	Topic
1	Programming Concepts
2	Programming Concepts (Continued)
3	Program Development Stages
4	Program Development Stages (Continued)
5	Design Tools – Algorithms
6	Design Tools – Flowcharts
7	Design Tools – Flowcharts (Continued)
8	Coding, Testing, Debugging and Implementation phases
9	Introduction to 'C' Language
10	Data-Types and Data range, Memory Allocation
11	Operators in 'C'
12	Input and output handling
13	Input and output handling (Continued)
14	Decision Making using if statement, nested and compound if
15	Decision Making – switch statement, break and continue
16	Handling loops – for, while and do. While
17	Nested loops and nested if's
18	Array – Single and Multi-dimension – creation and accessing
19	Array operations – Searching, Sorting, Merging etc.
20	Functions – Declaration, Definition and calling of a function
21	Functions – Call by value and call by reference, default parameters
22	Structures – Declaration, definition and using of it
23	Structures – Nested Structures, accessing nested members and using
24	Pointers – declaration, defining and using, Types and its uses
25	Pointers – continued
26	Preprocessor Directives
27	Enumerators
28	File Handling – Opening, closing, writing and reading text files
29	File Handling – Handling formatted data files
30	File Handling – Pointer movement, Handling binary files

Teacher's Signature

EWING CHRISTIAN COLLEGE, PRAYAGRAJ

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TEACHING PLAN

Department: **Centre for Computer Sciences**

Name of the Teacher: **Er. Sonu Pandey**

Course Name: **B.Sc.**   Semester: **II**

Paper Name: **Data Structures**   Paper Code: **2COATH2**

Year: **2021 – 2022**

Lecture No.	Topic
1	Introduction to Data Structures
2	Basic Terminology and Elementary Data Organization
3	Data Structure operations
4	Algorithm Complexity and Time-Space trade-off.
5	**Stacks:** Array Representation
6	Implementation of stack
7	Operations on Stacks: Push & Pop
8	Linked Representation of Stack
9	Operations Associated with Stacks
10	Application of stack
11	Conversion of Infix to Prefix and Postfix Expressions
12	Evaluation of postfix expression using stack.
13	**Queues**
14	Array and linked representation and implementation of queues,
15	Operations on Queue: Create, Add, Delete, Full and Empty
16	Circular queue, Deque, and Priority Queue
17	**Linked list**: Representation and Implementation of Singly Linked Lists
18	Two-way Header List
19	Traversing and Searching of Linked List
20	Overflow and Underflow
21	Insertion and deletion to/from Linked Lists
22	Insertion and deletion Algorithms
23	Doubly linked list, Linked List in Array
24	Polynomial representation and addition
25	Generalized linked list, Garbage Collection and Compaction
26	**Trees**: Basic terminology, Binary Trees, Binary tree representation,
27	Algebraic Expressions, Complete Binary Tree. Extended Binary Trees
28	Array and Linked Representation of Binary trees, Traversing Binary trees
29	Threaded Binary trees. Traversing Threaded Binary trees, Huffman algorithm.
30	**Binary Search Trees**: Binary Search Tree (BST), Insertion and Deletion in BST

EWING CHRISTIAN COLLEGE, PRAYAGRAJ

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TEACHING PLAN

Department: **Centre for Computer Sciences**

Name of the Teacher: **Er. Abhishek Srivastava**
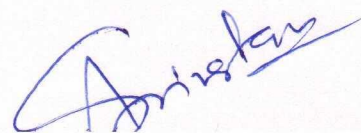
Course Name: **B.Sc.**

Semester: **III**

Paper Name: **C++ Programming**

Paper Code: **3COATH1**

Year: **2021 – 2022**

Lecture No.	Topic
1	Introduction to Programming Techniques
2	POP, OOP, OOP Concept
3	characteristics, Applications
4	Introduction to OOP languages
5	Introduction to C++, Features
6	Bridging C & C++ (Overview of C Concepts)
7	C++ Data Types, Tokens, Keywords, Operators
8	Decision Making & Branching introduction
9	If Statement, If-Else statement, Nesting of If-Else
10	Programs related to if Conditions
11	Switch statement and its programs
12	Looping introduction
13	While Statement, Do Statement and its programs
14	For Statement and its programs
15	Overview of functions, Declaring Data Members, Member Functions, Types of class Members
16	Nesting of classes, Function
17	Array – Single and Multi-dimension – creation and accessing
18	Functions – Declaration, Definition and calling of a function
19	Member Function definition inside the class and outside the class
20	Friend Function, Inline Function, Static Members & Functions
21	Scope Resolution Operator, Private and Public Member Functions
22	Nesting of Member Functions, Default Parameter
23	Creating Objects, Accessing class data members, Accessing member functions, Arrays of Objects
24	Objects as function arguments: Pass by value, Pass by reference, Pointers to Objects
25	Declaration and Definition, Default Constructors, Parameterized Constructors
26	Function Overloading, Constructor Overloading, Copy Constructors. Destructors: Definition and use
27	Inheritance, Types of Inheritance- Single, Multiple, Multilevel, Hybrid, Hierarchical
28	Operator Overloading, Binary
29	Operator Overloading Unary Operators
30	File handling Introduction

EWING CHRISTIAN COLLEGE, PRAYAGRAJ

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TEACHING PLAN

Department: **Centre for Computer Sciences**

Name of the Teacher: **Dr. Lokendra Kumar Tiwari**

Course Name: **B.Sc.**   Semester: **III**

Paper Name: **Operating System**   Paper Code: **3COATH2**

Year: **2021 – 2022**

Lecture No.	Topic
1	Operating system and functions, Classification of Operating systems
2	Operating Systems Structure-Layered structure
3	System Components, Operating System service, Reentrant Kernels, Monolithic and Microkernel Systems.
4	Process concept, Principle of concurrency
5	Producer / Consumer Problem
6	Mutual Exclusion, Critical Section Problem
7	Dekker's solution, Peterson's solution, Semaphores
8	Test and Set operation, Classical Problem in concurrency-
9	Inter Process Communication models and Schemes, Process Generation.
10	Scheduling Concepts, Performance Criteria
11	Process States, Process Transition diagram Schedulers
12	Process Control Bank (PCB)
13	Process address space, Process identification information
14	Threads and their management
15	Scheduling Algorithms, Multiprocessor Scheduling
16	Deadlock: System model Deadlock Characterization
17	Prevention, Avoidance and detection, Recovery from deadlock
18	Memory Management Basic bare machine. Resident monitor
19	Multiprogramming with fixed partitions
20	Protection schemes
21	Paging Segmentation, Paged segmentation, Virtual memory concepts
22	Demand paging, Performance of demand paging, Page replacement algorithms
23	Thrashing, Cache memory organization, Locality of reference,
24	I/O Management and Disk Scheduling
25	I/O devices, and I/O sub systems
26	I/O buffering, Disk storage and disk scheduling
27	RAID. File System: File concept
28	File organization and access mechanism
29	file directors, and File sharing
30	File system implementation issues, File system protection and security.

EWING CHRISTIAN COLLEGE, PRAYAGRAJ

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TEACHING PLAN

Department: **Centre for Computer Sciences**

Name of the Teacher: **Dr. Lokendra Kumar Tiwari**

Course Name: **B.Sc.**　　　　　　　　　　　　Semester: **IV**

Paper Name: **Data Science**　　　　　　　　　Paper Code: **4COATH1**

Year: **2021 – 2022**

Lecture No.	Topic
1	Introduction to Data Science
2	Big Data and Data Science hype
3	Datafication - Current landscape of perspectives
4	Basic Machine Learning Algorithms-Introduction
5	Linear Regression-Introduction
6	k-Nearest Neighbors (k-NN) - k-means
7	Artificial Neural Network (ANN) and Genetic Algorithms
8	Extracting Meaning From Data
9	Feature Generation (brainstorming, role of domain expertise, and place for imagination)
10	Feature Selection algorithms
11	Filters; Wrappers
12	Decision Trees
13	Random Forests,
14	Mining Social-Network Graphs
15	Clustering of graphs
16	Direct discovery of communities in graphs
17	Partitioning of graphs
18	Neighborhood properties in graphs
19	Data Visualization
20	Basic principles, ideas and tools for data visualization
21	Examples of inspiring (industry) projects
22	Exercise: create your own visualization of a complex dataset
23	Data Science and Ethical Issues
24	Discussions on privacy
25	Security and Ethics in Data visualization
26	A look back at Data Science
27	Some Real Word Examples of Data Science
28	Security Issues in Data Science
29	Forensics and Data Science
30	Next Generation Data Scientists.

EWING CHRISTIAN COLLEGE, PRAYAGRAJ

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TEACHING PLAN

Department: **Centre for Computer Sciences**

Name of the Teacher: **Dr. Padmanabh Tripathi**

Course Name: **B.Sc.**   Semester: **IV**

Paper Name: **Database Management System**   Paper Code: **4COATH2**

Year: **2021 – 2022**

Lecture No.	Topic
1	Introduction to Databases
2	Traditional database management Vs Database System
3	DBMS – Data Models
4	DBMS – Architecture, tiers
5	Database Design – ER Modeling, Database Schema
6	Relation types, roles and structural constraints
7	Relational Model and its concepts
8	Relational Algebra
9	Relational Algebra (Continued)
10	Introduction to SQL, Data types, DDL, DML, DCL
11	SQL commands to create database and tables
12	Data retrieval, searching, sorting and grouping
13	Establishing Views and Indexes of a table
14	Aggregate functions and handling sub-queries
15	Data Transaction Commands – Commit, rollback and savepoint
16	Data Control Commands – Grant and Revoke
17	PL/ SQL – Character set , Data types,
18	PL/ SQL – Decision making
19	PL/ SQL – Loop Handling
20	Cursors
21	Triggers
22	Exception Handling
23	Database Normalization – Concept and need of normalization
24	Normalization forms
25	Database Security
26	Transaction Handling, Locking
27	Query processing and query optimization
28	Concurrency control and recovery techniques
29	Data Warehousing
30	Data Mining

Teacher's Signature

EWING CHRISTIAN COLLEGE, PRAYAGRAJ

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TEACHING PLAN

Department: **Centre for Computer Sciences**

Name of the Teacher: **Dr. Lokendra Kumar Tiwari**

Course Name: **B.Sc.**   Semester: **V**

Paper Name: **System Analysis and Design**   Paper Code: **5COATH1**

Year: **2021 – 2022**

Lecture No.	Topic
1	Concept of System and Information System
2	Types of Information System: TPS, MIS, DSS
3	Interpersonal Communication System.
4	System Development Life Cycle
5	Recognition of needs for System Change
6	Analysis, Design, Implementation & maintenance
7	Feasibility Study: Types of Feasibility, Steps
8	Role of System Analyst:
9	Academic & Personal Qualifications,
10	the Multifaceted Role of Analyst, the Analyst-User Interface.
11	System Planning
12	Initial Investigation
13	Strategies for Determining Information Requirement
14	Problem Definition
15	Project Initiation
16	Back Ground Analysis
17	Fact Analysis.
18	Review of written Documents, On-site Observations.
19	Interviews & Questionnaires, Fact Analysis, Performance Analysis.
20	Efficiency Analysis, Service Analysis.
21	Information Gathering: Information about the firms
22	Tools – Interview, Questionnaires.
23	The Tools of Structured Analysis
24	The Dataflow Diagram (DFD)
25	Data Dictionary, Decision Tree and Structured English
26	Fundamental Design Activities
27	Verification and Validation
28	Testing and Different forms of Tests-Basic Introduction
29	Black Box Testing and related examples
30	White Box Testing and related examples
31	Input/output & Form Design
32	Input / CRT/ design
33	Output design, Requirements,
34	Preparation of a Test Plan for system
35	Quality Assurance-Introduction
36	Implementation of Quality assurance

37	Inspection, walks through, follow up
38	Documentation and report writing
39	Project Management
40	Measuring the process
41	Planning and Estimation
42	Identifying and Evaluating Risk.
43	Organizing resources
44	Defining a project schedule
45	Monitoring, Review.

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TEACHING PLAN

Department: **Centre for Computer Sciences**

Name of the Teacher: **Er. Abhishek Srivastava**

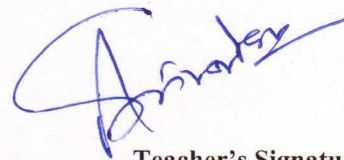Course Name: **B.Sc.**   Semester: **V**

Paper Name: **Computer Graphics**   Paper Code: **5COATH2**

Year: **2021 – 2022**

Lecture No.	Topic
1	Origin of Computer Graphics
2	new display devices
3	how the interactive graphics display works
4	general purpose graphics S/W,
5	user interface. Graphical Input Devices & Input Techniques
6	Introduction to Cyber Laws – India and Globe (Continued)
7	mousse, tablets, light-pen,
8	3 dimensional input devices
9	comparators, positioning techniques,
10	pointing & selection
11	inking and painting.
12	Point Plotting Techniques
13	Coordinate System, Incremental Method
14	Line Drawing Algorithms(Introduction)
15	Line Drawing Algorithms, (DDA and Numerical)
16	Line Drawing Algorithms (Bresenhams and Numerical)
17	Line Drawing Algorithms, (Numerical)
18	Circle Generators (Mid-point Circle drawing algo and proof)
19	Circle Generators (Numerical)
20	Circle Generators (Bresenhams Line Drawing Algo)
21	Circle Generators (Numerical)
22	Display Devices & Controllers
23	The CRT, Inherent Memory Devices
24	The Storage Tube Display, Random Scan
25	The Refresh Line Drawing Display, Raster Scan
26	Framebuffer, Aspect Ratio, Interlacing
27	Transformation,
28	Concatenation, Matrix Representation
29	Translation, Rotation, Scaling
30	Numerical based on Translation, Rotation, Scaling
31	Reflection, Numerical
32	Shearing Transformation
33	Clipping & Windowing introduction
34	Line Clipping Algo, Midpoint Subdivision

35	Cohen-Suderland Lin clipping Algo, Numerical
36	Numerical
37	Polygon Clipping,
38	Viewing Transformations,
39	Windowing Transformations,
40	Segments, how to create, rename, delete a segment
41	posting and unposting a segment, free storage allocation
42	Geometric Modeling
43	symbols and instances, boxing and unboxing
44	advantages and limitations of display procedures
45	3-D Transformation and Numerical

Teacher's Signature

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TEACHING PLAN

Department: **Centre for Computer Sciences**

Name of the Teacher: **Er. Sonu Pandey**

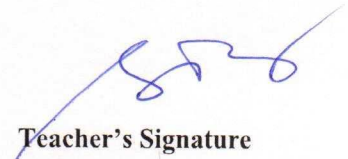Course Name: **B.Sc.**   Semester: **V**

Paper Name: **Java Programming**   Paper Code: **5COATH3**

Year: **2021 – 2022**

Lecture No.	Topic
1	**Introduction to Java**
2	History of Web
3	Features of Java, JDK Environment
4	Object Oriented Programming Concept Overview of Programming.
5	Classes and Objects
6	Abstraction, Encapsulation, Inheritance, Polymorphism
7	Difference between C++ and JAVA
8	**Java Programming Fundamental**
9	Structure of java program
10	Data types, Variables, Operators, Keywords
11	Naming Convention, Decision Making (if, switch)
12	Looping(for, while and do-while)
13	Type Casting
14	Creating Classes and objects
15	Memory allocation for objects
16	Constructor and their types
17	Implementation of Inheritance
18	Implementation of Polymorphism
19	Method Overloading
20	Method Overriding
21	Nested and Inner classes
22	**Arrays and Strings**: Arrays, Creating an array
23	Types of Arrays
24	String class Methods
25	String Buffer methods.
26	Abstract Class-Abstract classes and methods
27	Interface
28	Packages
29	Creating user defined packages
30	Exception Handling and Exception types
31	Using try catch and multiple catch
32	Nested try and catch block
33	Differentiate Throw and throws
34	Finally Block
35	Creating User defined Exceptions
36	File Handling

37	Byte Stream
38	Character Stream
39	File IO Basics
40	File Operations
41	Creating file
42	Reading file
43	Writing File
44	Different programs related to file handling
45	Different programs related to file handling(Continued..)

Teacher's Signature

EWING CHRISTIAN COLLEGE, PRAYAGRAJ

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TEACHING PLAN

Department: **Centre for Computer Sciences**

Name of the Teacher: **Dr. Padmanabh Tripathi**

Course Name: **B.Sc.**   Semester: **VI**

Paper Name: **Web Technology**   Paper Code: **6COATH1**

Year: **2021 – 2022**

Lecture No.	Topic
1	Introduction to Web
2	History of Web
3	Web growth and development
4	Web Protocols – HTTP, HTTPS, SMTP etc.
5	Introduction to Cyber Laws – India and Globe
6	Introduction to Cyber Laws – India and Globe (Continued)
7	Web Development Tools
8	Introduction to HTML
9	HTML Tags – Types, Text Formatting Tags
10	Creating Hyperlinks – Text, image, e-mail
11	List management in HTML – Ordered, Unordered and Definition Lists
12	Creating Tables
13	Creating Frames
14	Creating Image-map
15	HTML Forms
16	HTML Forms (Continued)
17	HTML Forms (Continued)
18	CSS – Cascading Style Sheet – Internal and inline
19	CSS – Cascading Style Sheet (Continued) – External CSS
20	Introduction to Javascript
21	Document Object Model (DOM)
22	Decision Making in Javascript
23	Loop Handling
24	Creating Javascript Functions
25	Javascript Arrays
26	Event Handlers
27	Event Handlers (Continued)
28	Working with browser objects
29	Creating browser-specific scripts
30	Creating cross- browser scripts
31	Introduction to PHP
32	Creating PHP Scripts
33	Decision Making and looping in PHP
34	Creating PHP Functions
35	Array Handling
36	Form Handling in PHP – GET & POST Methods

37	Introduction to Active Server Pages (ASP)	
38	ASP Objects	
39	ASP Methods	
40	ASP Scripts for establishing database connection	
41	ASP Scripts for establishing database connection (Continued)	
42	Introduction to Web Publishing	
43	Preparing a website to ready-to-host	
44	Hosting Website Procedures	
45	Webmaster – Roles and Responsibilities	

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EWING CHRISTIAN COLLEGE, PRAYAGRAJ

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TEACHING PLAN

Department: **Centre for Computer Sciences**

Name of the Teacher: **Er. Sonu Pandey**

Course Name: **B.Sc.**   Semester: **VI**

Paper Name: **.NET WITH C#**   Paper Code: **6COATH2**

Year: **2021 – 2022**

Lecture No.	Topic
1	**Introduction to .NET**
2	Definition, Features of .NET
3	CLR, CTS, CLS, MSIL
4	Managed Code and Managed data
5	Assembly and Namespace
6	Introduction to C#
7	Features of C#
8	**Data Types and Variables**
9	value type, reference type
10	Boxing and Un Boxing
11	Instance variable
12	Array elements
13	Parameters(value/ reference/ output), local variables
14	**Control Statements**
15	If and switch
16	Looping (while, do, for, for-each)
17	Break and continue
18	Goto and return statements
19	**Exception Handling**
20	Exception, causes of exception, checked and un checked statements
21	Try and catch block
22	Nested Try Block with catch block
23	Multiple catch block
24	Finally block and their examples
25	throwing exceptions
26	**Namespace:** Definition, Namespace declaration
27	Using directives, alias.
28	**Classes:** Definition and declaration
29	class modifiers
30	Abstract class
31	Sealed class and their examples
32	Constructors and Destructors
33	Methods, Methods Parameters (value/ reference/ output)
34	parameter array, static and instance method
35	virtual method
36	Override method, method overloading

37	method hiding
38	Sealed method, Abstract method
39	**Array Indexes:** Definition Accessors, Read-only and write-only properties
40	Definition and declaration of arrays
41	Single dimension/ multi dimension array
42	Rank of an array, jagged array
43	Definition of structure and their examples
44	difference between class and struct, Enums, Enum members
45	Definition of delegates, single cast and multi cast delegates, Events.

Teacher's Signature

EWING CHRISTIAN COLLEGE, PRAYAGRAJ

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TEACHING PLAN

Department: **Centre for Computer Sciences**

Name of the Teacher: **Dr. Lokendra Kumar Tiwari**

Course Name: **B.Sc.**   Semester: **VI**

Paper Name: **Software Engineering**   Paper Code: **6COATH13**

Year: **2021 – 2022**

Lecture No.	Topic
1	Introduction to Software Engineering
2	Components, Software Characteristics, Software Crisis
3	Software Engineering Processes
4	Similarity and Differences from Conventional Engineering Processes
5	Software Quality Attributes
6	Software Development Life Cycle (SDLC) Models
7	Water Fall Model
8	Prototype Model, Spiral Model
9	Evolutionary Development Models
10	Iterative Enhancement Models
11	Software Requirement Specifications (SRS)
12	Requirement Engineering Process
13	Elicitation, Analysis, Documentation
14	Review and Management of User Needs
15	Feasibility Study, Information Modeling
16	Data Flow Diagrams
17	Entity Relationship Diagrams
18	Decision Tables, SRS Document, IEEE Standards for SRS.
19	Basic Concept of Software Design
20	Architectural Design, Low Level Design
21	Modularization, Design Structure Charts, Pseudo Codes
22	Flow Charts, Coupling and Cohesion Measures
23	Design Strategies: Function Oriented Design
24	Object Oriented Design, Top-Down and Bottom-Up Design
25	Software Testing
26	Testing Objectives, Unit Testing
27	Integration Testing, Acceptance Testing
28	Regression Testing, Testing for Functionality and Testing for Performance
29	Top-Down and Bottom-Up Testing Strategies
30	Test Drivers and Test Stubs
31	Structural Testing (White Box Testing),
32	Functional Testing (Black Box Testing).
33	Software as an Evolutionary Entity
34	Need for Maintenance
35	Categories of Maintenance
36	Preventive, Corrective and Perfective Maintenance

37	Cost of Maintenance
38	Software Re-Engineering, Reverse Engineering
39	Software Configuration Management Activities, Change Control Process
40	Software Version Control
41	An Overview of CASE Tools
42	Estimation of Various Parameters such as Cost, Efforts, Schedule/Duration, Constructive Cost Models (COCOMO)
43	Resource Allocation Models
44	Software Risk Analysis
45	Software Management.

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TEACHING PLAN

Department: **Centre for Computer Sciences**

Name of the Teacher: **Er. Sonu Pandey**

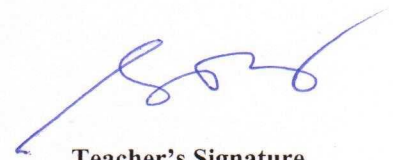Course Name: **B.Sc.**   Semester: **VI(SSEC)**

Paper Name: **PC Assembling and Trouble Shooting**   Paper Code: **6COATH4**

Year: **2021 – 2022**

Lecture No.	Topic
1	**Hardware basics and Trouble shooting**
2	Introduction to input devices
3	Multiplexed and Non-Multiplexed keypad
4	Scanner and Microphones
5	Interfacing and keypad and mouse
6	Introduction to Output Devices
7	Display devices LED, LCD
8	**7-segment LED and VDU**
9	Speakers and Projectors
10	Interfacing I/O devices with System
11	Printer and their interfacing with the system
12	Video and Sound Cards
13	Graphics accelerator cards
14	Introduction to mother board
15	Mother board and Chipset
16	Types of Mother board
17	Types of Bus Standard
18	Display Standard
19	Memory devices-Primary and Secondary
20	Interfacing the memory devices with the system
21	Cache memory
22	**Extended and Expanded Memory**
23	Concepts of Virtual Memory
24	Operating System Introduction
25	OS types and Role OS in machine
26	Introduction to DOS
27	Windows and Linux
28	Concepts of main module of OS
29	Memory management techniques
30	Device Interfacing techniques
31	File management techniques
32	Difference between file management and DBMS
33	Security
34	Security services provided by OS

35	Concept of Networking
36	Advantage and disadvantage of computer networks
37	Classification of Networks and Protocol
38	Basics of different networking devices
39	Basics of Network Media
40	IP and Its Role
41	Concepts of sub-netting
42	Difference between IPV4 and IPV6
43	Layard approach to network design
44	Concepts of Socket Programming
45	SMPS and its types & various type of connectors

Teacher's Signature