Govt. Shivalik College Naya Nangal

Govt. Shivalik College Naya Nangal

Teaching Plan (2024-25) **Class: BCA-II(sem 3)**

Subject: Computer Science **Paper: OOPs**

Name: Nidhi Parmar

Sr. No.	Dates	Topics
1.	01-05 August	Evolution of OOP: Procedure Oriented Programming, OOP Paradigm, Advantages and disadvantages of OOP over its predecessor paradigms. Characteristics of Object Oriented Programming:
2.	07-12 August	Abstraction, Encapsulation, Data hiding. Inheritance, Polymorphism, code Extensibility and Reusability. User defined DataTypes.
3.	14- 19 August	Introduction to C++: Identifier and keywords, Constants, Operators Pointers: Pointer Operations, Pointer Arithmetic, Pointers and Arrays, Multiple indirections, Pointer to functions. Function Prototyping.
4.	21-26 August	Definition and Call, Scope Rules, Parameter Passing Value, by address and by reference, Functions returning references, Const Functions, recursion,function overloading. Default Arguments, Const Arguments.
5.	28 Aug – 03 September	Classes, Objects and Members: Class Declaration and Class Definition, Defining member functions, Defining Object, making functions inline, Members access control, Nested Classes, This Pointer.
6.	05 -11 September	Object as function arguments, array of objects, functions returning objects, const members and member functions, Static data members and static member functions, Friend functionsand Friend classes.
7.	12-17 September	Constructors: Properties, types of constructors (Default, parameterized and copy), Dynamic constructors, Multiple constructors in classes. Destructors: Properties, Virtual destructors,.
8.	19-24 September	Destroying objects, Rules for constructors and destructors, Array of objects .Dynamic memory allocation using new and delete

Sr. No.	Dates	Topics
		operators.
9.	26 Sep - 01 October	Inheritance: Defining derived classes, inheriting private members, single inheritance, typeof derivation, function, function redefining, constructors in derived class. Types of inheritance:
10.	02-07 October	Difference between function overloading, redefining and overriding.
11.	9-14 october	Single Multiple, Multi level and Hybrid,Types of base classes: Direct, Indirect, Virtual, Abstract, Code Reusability.
12.	16-21 november	Polymorphism: Methods of achieving polymorphic behavior. virtual functions, late binding, pure virtual functions and abstract
13.	23-03 december	MST exams

Govt. Shivalik College Naya Nangal

Teaching Plan (2024-25) **Class: BCA-III(sem -5)**

Subject: Computer Science **Paper: Java**

Name: Nidhi Parmar

Sr. No.	Dates	Topics
1.	01-05 August	Introduction to java: evolution, features
2.	07-12 August	comparison with C and C++, Java program structure; tokens, keywords
3.	14- 19 August	constants, variables, data types,
4.	21-26 August	statements. Operators and expressions: arithmetic,
5.	28 Aug – 03 September	decrement, conditional, bitwise and special operators.
6.	05 -11 September	Operator precedence & associativity rules.
7.	12-17 September	Control statements: if else,
8.	19-24 September	do while, break, continue, labeled loops.
9.	26 Sep - 01 October	class: syntax, instance variable
10	02-07 October	relational, logical, assignment, increment,
11	9-14 october	switch case, for, while
12	16-21	class variables, methods type casting,

Sr. No.	Dates	Topics
	november	
13	**23-03 december**	MST exams

Govt. Shivalik College Naya Nangal

Teaching Plan (2024-25) **Class: PGDCA-I(sem 1)**

Subject: Computer Science **Paper: I ntroduction to IT and E Commerce**

Name: Nidhi Parmar

Sr. No.	Dates	Topics
1.	**01-05 September**	Introduction. Historical Evolution of Computer, Block Diagram of computer, characterisation of computers, types of computers, the computer generations. processing unit, RAM, ROM, PROM, EPROM. ,
2.	**07-12 September**	Basic Anatomy of Computers: memory unit, input-output unit, arithmetic logic unit, control unit, central Input-Output Devices: Keyboard, Mouse, Joy tick, Track Ball, Touch Screen, Light Pen, Digitizer, Scanners
3.	**14- 19 September**	Printer, Laser printer, and plotters.Number System Non-positional and positional number systems, Base conversion, binary,
4.	**21-26 September**	Computer Software Introduction, types of software, systems software, GUI, operating system, high level languages, assemblers, compilers and interpreters, system utilities, application packages
5.	**28 September – 03 October**	Internet Related Concepts: Internet, Uses of Internet, Basic services of Internet, Email,FTP, TELNET, and Familiarities with terms:HTTP, HTTPS, URL Web Browsers, IP Address, Domain Name ISP Web Portal, Search Engines, Blog, Surfing, Wiki

Sr. No.	Dates	Topics
6.	05 -10 October	. Basic concepts of algorithm and flow charts Flow charts, algorithm and decision tables,stages in the development of computer program, testing and debugging, program documentation
7.	12-17 October	Applications of Information Technology and Trends: IT in Business and Industry, IT in Education & training, IT in Science and Technology, IT and Entertainment, Current Trends in IT Application Al, Virtual Reality.
8.	19-24 October	
9.	26-31 October	Voice Recognition, Robots, Multimedia Technology
10.	02-07 November	Revision E-Commerce Meaning, its advantages & limitations, Infrastructure for E-commerce, Types of E-Commerce
11.	9-14 november	, Voice Recognition Devices, Optical Recognition devices, Dot matrix, Character and Line printer, DeskJet
12.	16-21 november	decimal Hexadecimal, and octal systems, conversion from one system to the other..
13.	23-03 december	MST exams

Govt. Shivalik College Naya Nangal

Teaching Plan (2024-25) **Class: BCA-II(sem 4)**

Subject: Computer Science **Paper: Computer Network**

Name: Nidhi Parmar

Sr. No.	Dates	Topics
1.	01-06February	Introduction to Computer networks. Applications, Network hardware and Software (protocol hierarchies)
2.	08-13February	design issues for layers, interfaces and services: connection oriented and connection less).
3.	15-20February	Network structure and architecture- point to point, multicast, broadcast, Classification of networks- LAN, MAN and WAN

Sr. No.	Dates	Topics
		Reference models, the OSI reference model,
4.	**22-27 February**	TCP/IP reference model. Comparison between OSI and TCP/IP models. Data Link Layer: Design issues, Services to network layer
5.	**01– 06 March**	Framing. Error control, Flow control, Elementary data link protocols unrestricted simplex protocol, simplex stop and wait protocol, simples protocol for a noisy channel.
6.	**08 -13March**	Network layer. Design issues, Services to the transport layer, Routing algorithms- Static non-adaptive and dynamic/adaptive algorithms.
7.	**15-20 March**	Congestion control algorithms the leaky bucket algorithm, the token bucket algorithm. symmetric key signatures,
8.	**22-27 March**	Transport layer, design issues, connection management-addressing establishing and releasing connection, transport layer protocols
9.	**29 March– 03 April**	TCP, UDP Application layer:The DNS Name Space, Electronic Mail,
10.	**05-10 April**	substitution cipers, transposition cipers, one-time pads, two fundamental cryptographic principles public-key algorithms (RSA, other Public-key algorithms) digital signatures
11.	**12-17 April**	The World Wide Web, Network security Introduction to cryptography ,
12.	**19-54 April**	public key-signatures, message digests Revision
13.	**26 April – 04 May**	MST

Govt. Shivalik College Naya Nangal

Teaching Plan (2024-25) **Class: PGDCA-I(sem 2)**

Subject: Computer Science **Paper: OOP's**

Name: Nidhi Parmar

Sr. No.	Dates	Topics
1.	12-14 february	Evolution of OOP: Procedure Oriented Programming, OOP Paradigm,

Sr. No.	Dates	Topics
2.	**15-20February**	Introduction to C++ Identifier, Keywords, Constants, Operators: Arithmetic, relational, logical, conditional and assignment. Size of operator, Operator precedence and associativity Type conversion, Variable declaration, expressions, Difference between function overloading, redefining, and overriding Templates: Generic Functions and Generic Classes
3.	**22-27 February**	statements, manipulators Input and output statements, stream I/O, Conditional and Iterative statements, breaking control statements Storage Classes, Arrays, Arrays as Character Strings, Structures, Unions, Bit fields, Enumerations and User defined types Function overloading: early binding, Polymorphism with pointers, virtual functions, late binding, pure virtual functions and abstract base class.
4.	**01– 06 March**	Pointers: Pointer Operations, Pointer Arithmetic, Pointers and Arrays, Multiple indirections, Pointer to functions. Functions: Prototyping, Definition and Call, Scope Rules. Parameter Passing by value, by address and by reference, rules for operator overloading, operator overloading using friend function.
5.	**08 -13March**	Functions returning references, Const functions, recursion, function overloading, Default Arguments, Const arguments, Pre-processor, Type casting. Reusability. Polymorphism: Methods of achieving polymorphic behavior.
6.	**15-20 March**	Classes and Objects: Class Declaration and Class Definition, Defining member functions, making functions inline, Nesting of member functions, Members access control. THIS pointer. Objects: Object as function arguments, array of objects, functions returning objects, Const member. Static data members and Static member functions,
7.	**22-27 March**	Friend functions and Friend classes Constructors properties, types of constructors, Dynamic constructors, multiple constructors in classes. Destructors: Properties, Virtual destructors: Destroying objects, Rules for constructors and destructors. Array of objects. Dynamic memory allocation using new and delete operators, Nested and container
8.	**29 March– 03 April**	classes, Scopes: Local, Global, Namespace and Class. Inheritance Defining derived classes, inheriting private members,
9.	**05-10 April**	Advantages and disadvantages of OOP over its predecessor paradigms. Characteristics of Object Oriented Programming
10.	**12-17 april**	Operator overloading: overloading binary operator, overloading unary operators,
11.	**19-24 april**	single inheritance, types of derivation,function redefining, constructors in derived class. Types of inheritance, Types of base classes, Code

Sr. No.	Dates	Topics
12.	**26 april**	MST