

PLANNED SYLLABUS COVERAGE (Theory)

GP Kangra

Department : Computer Engineering

Subject : Computer Organization & Architecture

Course : Diploma

Duration : 3 Years


SYLLABUS COVERAGE

Total Periods : 56

Theory : 4

S.No.	Period No.	Topic	Detail	Instruction Reference	Additional Study Recommended	Remarks
1.	1-6	Unit I Introduction	Brief history of computers, Block Diagram of Digital Computers, Computer Organization, Computer Design and Computer Architecture, Von Neumann Architecture.	Computer Architecture & Organization by J.P. Hayes, McGraw Hills.		
2	7-16	Unit II Computer Arithmetic	Addition and Subtraction with Signed-Magnitude Data - Hardware Implementation and Algorithm, Addition and Subtraction with 2's Complements Data - Hardware for 2's complement addition and subtraction, algorithm for adding and subtracting numbers in 2's complement representation, Multiplication Algorithms - Hardware Implementation for Signed-Magnitude Data, Booth Multiplication Algorithm.	Fundamentals of Microprocessors and Microcontroller by B. Ram, Dhanpat Rai Publications.		
3	17-26	Unit III Central Processing Unit	Components of CPU, General Register Organization, Stack Organization - Register and Memory Stack, Reverse Polish Notation and Evaluation of Arithmetic Expressions; Instruction formats - Three Address Instructions, Two Address Instructions, One Address Instructions, Zero Address Instructions; Brief Introduction to RISC and CISC; Microprogrammed Vs Hardwired Control Units.			
4	27-34	Unit IV Memory Organization	Memory Device Characteristics, Memory Hierarchy, Main Memory (RAM & ROM), Introduction to Associative Memory, Cache Memory - Locality of Reference, Hit Ratio, Writing into Cache - Write Through, Write Back;			

S.No.	Period No.	Topic	Detail	Instruction Reference	Additional Study Recommended	Remarks
5	35-42	Unit V Input-Output Organization	Peripheral Devices, Input-Output Interface - I/O Versus Memory Bus, Isolated versus Memory-Mapped I/O; Modes of Transfer - Programmed I/O, Interrupt-initiated I/O and DMA.			
6	43-50	Unit VI 8085 Microprocessor	Features, Block Diagram, Registers, Address Bus, Data Bus, Interrupts, Addressing Modes, Instruction Set (Introduction only), Memory and I/O Interfacing.			
7	51-56	Unit VII Overview of Advanced Microprocessor Technologies	Parallel Processing, Pipelining, Vector Processing, Hyper Threading			

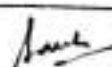
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DATE: 01/4/2021	

PLANNED SYLLABUS COVERAGE (Theory)
For the Session March – July 2021

Subject : Data Structure using C

GP Kangra		Department : Computer Engineering		Course : Diploma (4 th Semester) Duration : 6 Months		
SYLLABUS COVERAGE		Total Periods : 56		Theory : 4		
S.No.	Period No.	Topic	Detail	Instruction Reference	Additional Study Recommended	Remarks
1.	1-5	Unit-1 : Introduction	Data Types, Data Structures - Linear and Non-Linear Data Structures, Pointers, Dynamic Memory Allocation (malloc(), calloc() and free())			
2.	6-14	Unit-2 : Arrays and Structures	One-Dimensional Arrays - Representation in Memory, Declaration, Initialization, Operations on Arrays - Traversing, Searching, Insertion, Deletion and Sorting, Two-Dimensional Arrays - Representation in Memory (Row-Major and Column-Major Order), Declaration, Initialization, Structures - Declaration, Typedef Declarations, Initialization of Structures, Accessing the Members of a Structure, Nested Structures, Arrays of Structures, Passing Structures as Function Parameters, Self-referential Structures.	Data Structures using C by Tanenbaum, Prentice Hall of India Data Structures using C by Tanenbaum, Prentice Hall of India	www.TutorialsPoint.com www.geeksforgeeks.org	
3.	15-24	Unit-3 : Stacks and Queues	Stack, Representation of stacks, Implementation of stacks (using arrays), Operations on Stacks - Push, Pop, Peek; Applications of Stacks; Queues, Operations on Queues, Applications of Queues, Circular Queues, Double-Ended Queues. Keys; Association, Relationship, Roles, and Structural Constraints, ER Diagrams.			

4.	25-36	Unit-4 : Linked Lists	<p>Linked List, Representation of Linked Lists in Memory, Linked Lists versus Arrays, Operations on Linked List - Insertion, Deletion, Traversing, Searching; Application of Linked Lists; Doubly Linked Lists, Operations on Doubly Linked Lists - Insertion, Deletion, Traversing, Circular Linked Lists.</p>	Data Structures using C by Tanenbaum, Prentice Hall of India	www.TutorialsPoint.com
5.	37-46	Unit-5 : Trees	<p>Basic Concept of Trees - Node, Root, Parent, Children, Sibling, Leaves; Binary Tree, Traversing Binary Trees (Pre order, Post order and in order), Applications of Trees.</p>		
6.	47-56	Unit-6 : Sorting and Searching	<p>Search algorithm (Linear and Binary), Sorting, Sorting Algorithms (Bubble Sort, Selection Sort, Merge Sort) and their comparisons.</p>	Data Structures using C by Tanenbaum, Prentice Hall of India	www.geeksforgeeks.org


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PLANNED SYLLABUS COVERAGE (Theory)

For the Session April –July 2021

GP Kangra		Department : Computer Engineering		Subject : Relational Database Management System		
		Course : Diploma (4 th Semester)		Duration : 6 Months		
SYLLABUS COVERAGE		Total Periods : 56		Theory : 4		
S.No.	Period No.	Topic	Detail	Instruction Reference	Additional Study Recommended	Remarks
1.	1-4	Unit-1 : Introduction to Database Systems	Database Systems, Database and its Purpose, Comparison of Database Approach with File-based and Traditional Record Keeping Approaches, Advantages and Disadvantages of Database Approach, Classification of Database Users, Role of DBA.	An introduction to Database systems by C.J Date ,Adison Wesley Publication	www.Tutorials point.com	
2.	5-10	Unit-2 : Database System Concepts and Architecture	Data Models, Schemas, and Instances; ANSI/SPARC Architecture of a Database System, External Level, Conceptual Level, Internal Level, Mappings; Data Independence, Logical Data Independence, Physical Data Independence.	An introduction to Database systems by Bipin C. Desai ,Galgotia Publication	www.geeksforgeeks.org	
3.	11-16	Unit-3 : Relational Model	Relational Database Model, Relations, Attributes, Tuples, Domains; Key - Primary Key, Candidate Keys, Alternate Keys, super key, Secondary Key, Foreign Keys; Database Constraints.			
4.	17-20	Unit-4 : Entity Relationship Model	Entity, Entity Sets, Strong and Weak Entities, Attributes, and Keys; Association, Relationship, Roles, and Structural Constraints, ER Diagrams.			

5.	21-40	Unit-5 : Structure Query Language (SQL) using MySQL	Object Naming Conventions, Keywords, Database, Table, View, Index, Alias; Data Types - Numeric, Date and Time, String Types; Data Definition Language(DDL): CREATE, DROP, ALTER, RENAME, Data Manipulation Language (DML): INSERT, UPDATE , DELETE, SELECT, SELECT Clauses: FROM, WHERE,ORDER BY, GROUP BY, HAVING, Operators: Arithmetic, Logical, Relational, String; Joins: Inner, Left, Right and Outer Joins; Subqueries, Set Operations: Union, Intersect, Minus, Data Control Language(DCL): GRANT, REVOKE; Transaction Control Language(TCL): COMMIT, ROLLBACK, SAVEPOINT.	An introduction to Database systems by C.J Date ,Adison Wesley Publication	<a href="http://www.Tutorials
point.com">www.Tutorials point.com	
6.	41-46	Unit-6 : Dependencies and Normalization	Prime and Non-Prime Attributes, Functional Dependencies, Trivial and Non-trivial Dependencies, Non-Loss Decomposition, Normalization, First, Second and Third Normal Forms, Boyce/Codd Normal Form.	An introduction to Database systems by Bipin C. Desai ,Galgotia Publication	<a href="http://www.geeksfor
geeks.org">www.geeksfor geeks.org	
7.	47-56	Unit-7 : Functions in SQL	Numeric: ABS, ROUND, FLOOR, CEIL, SQRT, POWER, TRUNCATE, LOG; Date and Time Functions : NOW, DATE, TIME, CURDATE, CURTIME, DAY, MONTH, YEAR, DATEDIFF, DATE_SUB, DATE_ADD, DATE_FORMAT; String Functions : CONCAT, LENGTH, UPPER, LOWER, LEFT, RIGHT, LTRIM, RTRIM; Aggregate Functions: MAX, MIN, SUM, AVG, COUNT; Data Conversion Functions: CAST, STR_TO_DATE; User Defined Procedures and Functions (Introduction only).	An introduction to Database systems by Bipin C. Desai ,Galgotia Publication	<a href="http://www.geeksfor
geeks.org">www.geeksfor geeks.org	

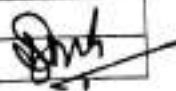
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PLANNED SYLLABUS COVERAGE (Theory)

GP Kangra	Department : Computer Engineering	Subject : Web Programming
	Course : Diploma	Duration : 3 Years
SYLLABUS COVERAGE	Total Periods : 56	Theory : 4

S.No.	Period No.	Topic	Detail	Instruction Reference	Additional Study Recommended	Remarks
1.	1-8	Unit I Dynamic Websites Basics	Review of HTML5, CSS and JavaScript; HTTP, HTTP Request, HTTP Response, URL, Working of Web Servers and Web Browsers, Static Websites, Dynamic Websites, Web Applications, Form Data Submission Methods - GET and POST, HTTP Sessions, HTTP Cookies.	Learning PHP, MySQL & JavaScript by Robin Nixon, O'Reilly Media.		
2.	9-18	Unit II Introduction to PHP	Origin of PHP, Advantages of PHP, Working of PHP, Embedding PHP Code in Webpages, LAMP Stack, Install and Configure PHP Environment, PHP Script, PHP Syntax, Statements, Comments, Variables, Naming Variables, Variable Scope, Constants, echo and print Statements, PHP Data Types, String Literals - Single and Double Quoted Strings, Operators, PHP Control Statements, PHP Arrays.	PHP and MySQL for Dynamic Web Sites by Larry Ullman, Peachpit Press		
3.	19-26	Unit III PHP Functions	PHP Standard Library Functions: String Functions - htmlspecialchars(), ltrim(), rtrim(), trim(), strtoupper(), strtolower(), explode(), implode(), strlen(), strcmp(), strpos(); Math Functions - sqrt(), ceil(), floor(), log10(), pow(), sin(), cos(), tan(); User-defined Functions.	http://www.w3schools.com		
4.	27-32	Unit IV PHP Form Processing	HTML Form Element, action and method Attributes, submit and clear Buttons, Form Elements, name and id attributes, Hidden Input, Client-side Form Validation, PHP Superglobals - \$GLOBALS, \$_SERVER, \$_REQUEST, \$_POST, \$_GET, \$_FILES, \$_ENV, \$_COOKIE, \$_SESSION; Server-side Validation, Handling Uploaded Files.			

S.No.	Period No.	Topic	Detail	Instruction Reference	Additional Study Recommended	Remarks
5.	33-40	Unit V PHP Advanced Features	Handling Date and Time; Dealing with Multiple PHP files : include, require, include_once and require_once; HTTP Sessions and Cookies, Error and Exception Handling in PHP, PHP Mail, using HTTP Headers with header() Function, Cross-Site Scripting (XSS) Attack and its Prevention.	Learning PHP, MySQL & JavaScript by Robin Nixon, O'Reilly Media.		
6.	41-50	Unit VI Using MySQL Database in PHP	Basic Database Concepts - Database, Table, Column Types, Constraints, Views, Creating Database Users and Granting Privileges; Connecting PHP to MySQL, Executing Simple SQL Statements - INSERT, UPDATE, DELETE and SELECT, Retrieving and Processing Query Results, mysqli_real_escape_string() function, Handling MySQL errors, Handling SQL Injection.	PHP and MySQL for Dynamic Web Sites by Larry Ullman, Peachpit Press	Web Resources	
7.	51-56	Unit VII Using XML and AJAX with PHP	Role of XML, XML Syntax, XML Tags, XML Elements, XML Attributes, Manipulating XML in PHP; Role of AJAX, Handling AJAX Requests in PHP.	http://www.w3schools.com		

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LESSON PLANNED (THEORY)

GP KANGRA		DEPARTMENT: COMP. ENGG.		SUBJECT: Software Engineering		
		COURSE: Diploma		DURATION: 3 Years		
SYLLABUS COVERAGE		TOTAL PERIODS: 56		THEORY: 56		
Sr. No	Period Nos.	Topic	Details	Instructio n Reference	Addition al Study Recomd.	Remarks
1.	1 to 6	Introduct ion to Software Engineer ing	Software Overview: Definition, Characteristics, Software Evolution; Software Paradigms: Software Development Paradigm, Software Design Paradigm and Programming Paradigm. Software Engineering: Definition, Need of Software Engineering, Emergence of Software Engineering and Notable Changes in Software Development Practices.	Software Engineerin g: A Practitione r's Approach, Roger S. Pressman, McGraw Hill.		
2.	7 to 16	SDLC and Models	Software Development Life Cycle Activities: Communication, Requirement Gathering, Feasibility Study, System Analysis, Software Design, Coding, Testing, Integration, Implementation and Operation and Maintenance; Software Development Life Cycle Models: Classical Waterfall Model, Prototype Model, Rapid Application Model, Spiral Model, Comparison of Different Life Cycle Models, Selection Criteria of an Appropriate Life Cycle Model for a Project.			
3.	17 to 24	Software cost Estimati on	Metrics used for Project Size Estimation, Project Estimation Techniques, Empirical and COCOMO Estimation Techniques.			
4.	25 to 34	Software	Software Requirements: Goal of the Requirements Analysis and Specification Phase, Types of Requirements - Functional Requirements, Non-Functional			

		Requirement Analysis & Specification	Requirements and User Interface Requirements; Requirement Elicitation Process: Requirements Elicitation, Organizing Requirements, Negotiation, Discussion and Documentation; Requirement Elicitation Techniques: Interviews, Surveys, Questionnaires, Brainstorming, Requirements Analysis, Software Requirements Specification (SRS) Document, User of SRS Document, Characteristics of a Good SRS Document.			
5.	35 to 42	Software Design	Software Design Overview: Goals and Outcome of Software Design Phase, Characteristics of a Good Software Design, Cohesion and Coupling; Software Design Levels: Architectural Design, High-level Design and Detailed Design; Software Analysis and Design Tools (Introduction Only): Data Flow Diagram, Structure Charts. Software Design Strategies: Structured Design, Function Oriented Design, Software Design Approaches: Top Down Design, Bottom Up Design.			
6.	43 to 48	Software coding	Software Coding Overview: Goal of Software Coding Phase, Coding Standards and Guidelines. Code Reviews: Code Walkthrough, Code Inspection and Clean Room Testing. Software Documentation: Internal Software Documentation and External Software Documentation.			
7.	49 to 56	Software Testing	Software Testing Overview: Goal of Software Testing Phase, Software Verification versus Software Validation and Testing Activities, Software Testing Approach: Black Box Testing Approach and White Box Testing Approach. Software Testing Techniques: Unit Testing Technique, Integration Testing Technique and System Testing Technique.			