GOVERNMENT POLYTECHNIC PAONTA SAHIB

AT DHAULA KUAN, DISTT. SIRMOUR (HP) - 173031

DEPARTMENT OF COMPUTER ENGG

LESSON PLAN

Academic Year	**2025**
Semester	**V**
Course Code	COPC303
Course Name	Software Engineering
Course Type	**Core**
L-T-P	**L-3-DCS -1-P-0**
Name of Faculty	**Er. Parul Gupta**
Semester Start & End Dates	**4.8.25 to**

STUDY AND EVALUATION SCHEME

Sr. No.	Name of the Subject	Th	Pr	Internal Assessment			External Assessment					Total Marks
				Th	Pr	Total	Th	Hrs	Pr	Hrs	Total	
1	Software Engineering	3	0	40	---	40	60	3	---	--	60	100

Dates	Unit & Topic of Discussion	Topic Details	Delivery Method
	Unit-1 : Introduction to Software Engineering		
Day 1	Introduction	Software Definition, Software Characteristics, Software Crisis, Attributes of Good Software, Program Versus Product,	Chalk and Talk
Day2	Activities of Software Engineering	Exploratory Style of Software Development, Shortcomings, Software Engineering, Software Development Life Cycle, Software Process Framework, Framework Activities - Communication, Planning, Modeling, Construction, and Deployment;	Chalk and Talk
Day 3	Types	Software Application Domains - System Software, Application Software, Scientific/ Engineering Software, Embedded Software, Web Applications.	Chalk and Talk
Day 4	Feasibility Study (Extra topic)	What is, how it is performed and why	Chalk and Talk
Day 5,6	Activity 1	Choose a software project, Make a Team, decide role of each person in team, Find from which domain your software belong, Write one page abstract about what this software will do, write one page why you chosed this software, how it will contribute to solve a problem related to some domain. Write an introduction chapter of	Pen Paper and Team work

		your project report. Also write feasibility analysis report of your project. Also list hardware and software requirement for your project.	
	Unit-2 : Software Life Cycle Models		
Day 7	Models	Classical Models - Waterfall Model and iterative waterfall model	Chalk and Talk
Day 8		V-Model, Prototyping Model	Chalk and Talk
Day 9		Incremental Model, Evolutionary Model; Rapid Application Development (RAD	Chalk and Talk
Day 10		Agile Development Models - Extreme Programming, Scrum, Lean; Spiral Model.	Chalk and Talk
Day 11	Activity 2: Comparison	Compare all the studied on the basis of: description, diagram, weakness, strengths, team size, project type Choose SDLC model as per your project and Team	Pen, Paper and Team discussions
Day 12,13	Activity 3: literature survey	Now you have idea of your software and your team, So, now you go to the internet and study 10 similar projects on the basis of: what they offer, where they lack, background technologies, understanding team capabilities and write your chapter of literature survey for project report	Internet surfing
14	Revision	Student queries and doubts	
15	Class Test 1		
	Unit 3 : Software Project Management		
Day 16	Planning and Estimation Techniques	Software Project Manager - Skills and Responsibilities; Project Planning – Sliding Window Planning,	Chalk and Talk
17-18		SPMP Project Planning; Project Size Estimation - Lines of Code, Function Point,	Chalk and Talk
19-20		Project Estimation Techniques - Empirical, Heuristic and Analytical Estimation Techniques; Expert Judgment,	Chalk and Talk
20-22		COCOMO, COCOMO 2, Project Scheduling - PERT and Gantt Charts; Staffing, Risk Management, Software Configuration Management	
23,24	Activity 4	Choose team leader in your project group, define role of each student in your team, make an estimation chart for your project: expected outcomes, time, risk, project size, effort, how you will manage risk in your project.	Pen, Paper and Team discussions
	Assignment 1		
	Unit 4: Requirement Analysis and Specifications		
25,	Requirement Engg	Requirements Gathering, Requirement Elicitation Techniques: Interviews, Surveys, Questionnaires, Brainstorming;	Chalk and Talk
26	SRS	Requirements Analysis, Software Requirements Specification (SRS) - Role of SRS,	Chalk and Talk

		Characteristics of SRS Document,	
27	Types of Requirements	Functional and Non-functional Requirements, Traceability.	Chalk and Talk
28	Revision	Student queries and doubts	
29,30,31	Activity 5	1. What are different types of requirements in your project 2. Make SRS 3. Choose requirement elicitation technique for your project 4. Complete your requirement elicitation for concerned chapter in your project report	Pen, Paper and Team discussions
	Assignment 2		
32	Class Test 2		
	Unit 5 : Software Design		
33	Design	Overview of the Design Process, Outcome of the Design Process, Abstraction, Design Pattern, Refactoring,	Chalk and Talk
34	Methods of design	Classification of Design Methodologies, Cohesion and Coupling,	Chalk and Talk
35		Software Design Approaches - Function-oriented, Object-oriented; User Interface Design, User Experience.	Chalk and Talk
36,37,38	Activity 6	Submit design chapter for your project report 1. Choose design tools 2. Make your designs	Pen paper an team discussion
	Unit 6 : Coding and Testing		
39		Software Coding, Coding Standards,	Chalk and Talk
40		Code Review - Code Walkthrough, Code Inspection,	Chalk and Talk
41		Documentation, Internal and External Documentation	Chalk and Talk
42,43		Software Testing : Testing activities, Unit, Integration, System and Acceptance Testing, Black Box and White Box Testing	Chalk and Talk
44	Activity 7	What coding guidelines and standards you are following in your project	Pen, Paper and Team discussions
45,46	Activity 8	Write test strategy, cases, test plans	Pen, Paper and Team discussions
47-49	NEUMERICAL REVISIONS		
50 onwards	DISCUSSING OLD PAPERS		

	Name of Book	Author Name	Publication
Prescribed Books	Software Engineering : A Practitioner's Approach	Roger Pressman.	

	Fundamentals of Software Engineering ,	Rajib Mall	PHI.
	Software Engineering: A Precise Approach	Pankaj Jalote	Wiley India

Faculty **HOD**

GOVERNMENT POLYTECHNIC PAONTA SAHIB
AT DHAULA KUAN, DISTT. SIRMOUR (HP) - 173031
Computer Engg.
LESSON PLAN

Academic Year	**2025-26**
Semester	**III**
Course Code	COPC201
Course Name	**Computer Programming Using C**
L-T-P	**L-4-T-0-P-4**
Name of Faculty	**Er. Parul Gupta**
Semester Start & End Dates	**1.8.2025 to .12.2025**

STUDY AND EVALUATION SCHEME

Name of the Subject	Th	Pr	Internal Assessment			External Assessment					Total Marks
			Th	Pr	Total	Th	Hrs	Pr	Hrs	Total	
Computer Programming Using C	4	4	40	40	80	60	3	60	3	120	200

Dates	Unit & Topic of Discussion	Topic Details	Delivery Method
Day 1 to Day 2	**Unit -1 :Introduction to Programming**	Algorithm, Flowchart, Evolution of Programming Languages, Program, Compiler, Linker, Errors (Syntax and Semantic Errors).	Self study (students are advised to make their own notes in class work notebook)
Day 3		——————do————————————	Class discussions
Day 4		Algorithm and flowcharts	Practice session (chalk and Talk)
Day 5		All topics	Student queries
Assignment 1		All topics (Mcqs, true false, fillups, brief introductions)	Online test on google form (students will take print out after completion and arrange in a folder of assignments)
Day 6 to Day 12	**Unit -2: Introduction to C Language**	Brief History of C Language, Features of C Language	Self study (students are advised to make their own notes in class work notebook)
Day 6 and 7		Character Set, Identifier, Keywords, Literals, Variables, Constants, Data Types	Chalk and Talk (students are advised to refer book for practice and take notes during class session)
Day 8 and 9		Structure of a 'C' Program, Comments, Preprocessor Directives,	—do—
Day 10 and 11		Data Types Type Casting, Storage Classes (only introduction)	—do———

Day 12		Practice session 1- basics (examples, syntax regarding above studied concepts)	Practice with Teacher (students are advised to take part actively in problem solving and asking doubts and queries)
Day 13		Practice session 2- advanced (writing programs)	—do—
Day 14		Practice session 3- (writing, manual executing, manual debugging)	—do—
Home assignment 2		All topics	Online test on google form (students will take print out after completion and arrange in a folder of assignments)
Day 15		Revision- all topics, class discussions and student queries	
Day 16 to 18	**Unit-3 : Input/ Output**	Unformatted I/O Functions - getchar(), putchar(), gets(), puts(); Formatted I/O Functions - printf(), scanf(), Format specifier	Chalk ,Talk, program writing and notes making during class
Home assignment 3		All topics	Online test on google form (students will take print out after completion and arrange in a folder of assignments)
Day 19		**Checking of assignment folder and classwork notebook**	
Class test 1		**Class test 1- chapter 1 to 3**	
Day 21 and 22	**Unit-4 : Operators**	Arithmetic Operators, Expressions, Relational Operators, Logical Operators, Bitwise Operators, Assignment Operators, Conditional Operator, Special Operators, Associativity and Order of Precedence of Operators.	Chalk ,Talk and notes making during class
Day 23		Revision of chapter 4	
Day 24		Practice session	Practice with Teacher (students are advised to take part actively in problem solving and asking doubts and queries)
Home assignment 4		All topics	Online test on google form (students will take print out after completion and arrange in a folder of assignments)
Day 25 to 30	**Unit 5: Flow Control Statements**	Branching Statements: if, if...else, Nested if, if...else if Ladder, switch...case; Unconditional - goto, break, continue, return, Loops - while, do...while, for; Nested Loops, Infinite Loops	Chalk ,Talk and notes making during class (refer book for self study along with class notes)
Day 31		Practice session 1: if, if else, nested if	Writing programs, instructions, debugging, finding output
Day 32		Practice session 2: while and do while	—do—
Day 33		Practice session 3: for	—-do—

Day 34		Practice session 4: switch,goto	—do—-
Day 35		Practice session 5: break and continue	—do—-
Home assignment 5		All topics	Online test on google form (students will take print out after completion and arrange in a folder of assignments)
Day 36		Class test 2 for chapter 4 and 5	
Day 37 and 38	**Unit-6 : Arrays, Structures, Unions and Pointers**	Definition of Array, Memory Representation, One-Dimensional Arrays and Two-Dimensional Arrays:,	Chalk ,Talk notes making, practice sessions , program writing and class discussions
Day 39		Declaration and Initialization; Enumeration,	–do–
Day 40,41 and 42		Strings, String Constants,Standard String Functions - srtlen(), strrev(), strcmp(), srtcpy(), strcat();	-do–
Day 43		Structures	
Day 44		Unions	-do-
Day 45 and 46		Pointer: Declaration, Initialization, Assignment;	-do-
		Dynamic Memory Allocation: malloc(), calloc(), free()	Self study and self notes making
		Escape Sequences,	Self study and self notes making
Day 47		Practice session for arrays and pointer	
Day 48		Practice session for structure and unions	
Day 49		Practice session for strings	
Home assignment 6		All topics	Online test on google form (students will take print out after completion and arrange in a folder of assignments)
Day 50	**Unit-7 : Functions**	Definition of Function, Function Prototype,	Chalk ,Talk notes making, practice sessions , program writing and class discussions
Day 51 , 52		Formal and Actual Parameters, Function Call, Call by Value and Call by Reference,	Chalk ,Talk and notes
53,54		Arrays as Function Arguments,	
55,56		Recursion	
Home assignment 7		All topics (Mcqs, true false, fillups, brief introductions)	Online test on google form (students will take print out after completion and arrange in a folder of assignments)

Prescribed Books	Name of Book	Author Name	Publication
	Let Us C	Yashavant P. Kanetkar	bpb

	Computer Programming Using ‘C’	Akhil Pundir	True Edu

Faculty **HOD/OIC**

GOVERNMENT POLYTECHNIC PAONTA SAHIB

AT DHAULA KUAN, DISTT. SIRMOUR (HP) 173031

Computer Engineering

LESSON PLAN

Academic Year	**Aug -Dec -2024**
Semester	**5th**
Course Code	**COPE303**
Course Name	**Web Programming**
Course Type	**Program Elective-IV**
L-DCS	**2-1**
Name of Faculty	**Mukesh Bhardwaj**
Semester Start & End Dates	**04-08-2025 to 26-11- 2025**

STUDY AND EVALUATION SCHEME

Sr .No.	Name of the Subject	Th	Internal Assessment		External Assessment			Total Marks
			Th	Total	Th	Hrs	Total	
1	**Web Programming**	3	40	40	60	3	60	100

Lecture No.	Unit & Topic of Discussion	Delivery Method
	Unit-1 :Dynamic Websites 08 Hrs	
1-8	Review of HTML5, CSS and JavaScript; HTTP, HTTP Request, HTTP Response, Working of a Web Server, Static Websites, Dynamic Websites, Web Applications, Form Data Submission Methods - GET and POST, HTTP Sessions, HTTP Cookies Python language – need, features and advantages	PPT
	Unit-2 :Introduction to PHP 08 Hrs	
9-18	Origin of PHP, Advantages of PHP, Embedding PHP Code in Web Pages, LAMP Stack, Install and Configure PHP Environment, PHP Syntax, Comments, Variables, Naming Variables, Variable Scope, Constants, echo statement, PHP Data Types, String Literals - Single	Chalk and Talk

Lecture No.	Unit & Topic of Discussion	Delivery Method
	and Double Quoted Strings, PHP Operators, PHP Control Statements, PHP Arrays	
	Unit-3 :PHP Functions 08 Hrs	
19-26	PHP Standard Library Functions: String Functions - htmlspecialchars(), ltrim(), rtrim(), trim(),strtoupper(), strtolower(), explode(), implode(), strlen(), strcmp(),strpos(); Math Functions – sqrt(), ceil(), floor(), log(), pow(), sin(), cos(), tan(); User-defined Functions. Sequence types - list, tuple, range, string;	Chalk and Talk
	Unit-4 : PHP Form Processing 10 Hrs	
27-36	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.	Chalk and Talk
	Unit 5: : Using MySQL Database with PHP 12 Hrs	
36-48	Basic Database Concepts - Database, Table, Column, keys & Constraints, 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	Chalk and Talk

	Name of Book	Author Name	Publication
Prescribed Books	**PHP & MySQL**	**Joel Murach and Ray Harris**	**Murach & Asso. Inc**

Faculty HOD

GOVERNMENT POLYTECHNIC PAONTA SAHIB

AT DHAULA KUAN, DISTT. SIRMOUR (HP) 173031

Computer Engineering

LESSON PLAN

Academic Year	**Aug -Dec -2025**
Semester	**3rd**
Course Code	**IoTPC205**
Course Name	**Web Technologies**
Course Type	**Program Core**
L-DCS	**2-1**
Name of Faculty	**Mukesh Bhardwaj**
Semester Start & End Dates	**1-08-2025 to 26-11-2025**

STUDY AND EVALUATION SCHEME

Sr .No.	Name of the Subject	Th	Internal Assessment		External			Total Marks
			Th	Total	Th	Hrs	Total	
1	**Web Technologies**	3	40	40	60	3	60	100

Lecture No.	Unit & Topic of Discussion	Delivery Method
	Unit-1 :Internet and World Wide Web 08 Hrs	
1-8	Brief History of the Internet, Structure of the Internet, Internet Services and Applications, Different Ways to Connect to the Internet, Common Internet Connection Issues and their Solutions, World Wide Web, HTTP, Familiarization with the Key Terms - Network Protocol, Web Server, Web Browser, Website, Web Application, Hypertext, Hyperlink, Search Engine, Proxy Server, URL, DNS	PPT
	Unit-2 : HTML 5 08 Hrs	

9-16	Headings - <h1> … <h6>; Paragraphs - <p>, Special Text Elements - <pre>, <code>, <q>, <var>; Lists : Ordered LIsts ( ), Unordered Lists ( ); Attributes of List Elements: type, start; Nested Lists, Line Break (
	) and Horizontal Rule (<hr>); Text Formatting Elements - <b>, , , <i>, <mark>, <u>, <sub>, <sup>; Tables - <table>, <thead>, <tbody>, <tfoot>, <tr>, <th>, <td>, <colgroup>, <col>; Table Attributes - cellspacing, cellpadding, border,
		Chalk and Talk, PPT

Lecture No.	Unit & Topic of Discussion	Delivery Method
	rowspan, colspan;Images - <img>; Image Attributes - src, alt; Hyperlink - <a>; Hyperlink Attributes - href, target;	
	Unit-3 :: HTML Basic Elements 10 Hrs	

17-26	Headings - <h1> … <h6>; Paragraphs - <p>, Special Text Elements - <pre>, <code>, <q>, <var>;
	Lists : Ordered LIsts ( ), Unordered Lists ( ); Attributes of List Elements: type, start; Nested Lists, Line Break (
	) and Horizontal Rule (<hr>); Text Formatting Elements - <b>, ,
	, <i>, <mark>, <u>, <sub>, <sup>;
	Tables - <table>, <thead>, <tbody>, <tfoot>, <tr>, <th>, <td>, <colgroup>, <col>; Table Attributes - cellspacing, cellpadding, border, rowspan, colspan;Images - ; Image Attributes - src, alt; Hyperlink - ; Hyperlink Attributes - href, target;
		Chalk and Talk, PPT

	Unit-4 : HTML Layout Elements 06 Hrs	
27-32	Block and Inline Elements, Creating Sections - , ; Identifying Elements - id, class and name attributes; Frames - <iframe>; HTML5 Semantic Elements - <main>, <header>, <footer>, <article>, <section>, <nav>, <aside>, <details>, <summary>, <time>, <figure>	Chalk and Talk
	Unit 5: : Cascading Style Sheets 08 Hrs	
33-40	CSS Types - Inline, Internal, External; <style> and <link> elements; CSS Rule, Selector and Declaration; CSS Length Units; CSS Box Model; Setting Margins, Borders and Padding of Elements; CSS Colors - Color Names, RGB and HEX Formats; Setting Colors of Text, Background and Border; Styling Text - font-family, font-size, font-style, font-weight, font-transform, font decoration, text-align; CSS Layout - position and float; Flexbox and Grid layouts; Styling Tables and Lists; Basic Animation using CSS, CSS Pseudo Elements and Pseudo Classes	Chalk and Talk, PPT
	Unit 6 : Javascript 08 Hrs	
41-48	Role of Javascript in a Web Page, Embedding Javascript Code in Web Page, Javascript Variables - Naming, Scope and Lifetime, Hoisting; Javascript Operators, Control Statements; Javascript Arrays; Linking External Javascript File; Accessing and Manipulating HTML DOM Elements with Javascript; JavaScript, BuiltinJavascript Functions, User-defined Functions	Chalk and Talk, PPT

Sr.No.	Name of Book	Author Name	Publication
1.	**Web Technologies - A Computer Science Perspective**	**Jeffrey C.Jackson**	**Pearson**

Faculty

HOD