PARUL INSTITUTE OF ENGINEERING & TECHNOLOGY

STUDENT INFORMATION HANDBOOK

DEPARTMENT OF INFORMATION TECHNOLOGY

SEMESTER 5

2022-23

P.O.LIMDA, TA. WAGHODIA, DIST VADODARA
PH.02668 -260338.

PARUL INSTITUTE OF ENGINEERING & TECHNOLOGY

AT & PO: LIMDA, Ta: Vaghodia

Dist: Vadodara

5ITA

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
09:30 to 10:30	APJ:{PS}:[A-323]	5ITA1:APJ:{PS} :[A-323] 5ITA2:APJ:{MM}:[A-323]	DAA:{JKP}:[A-323]	RES:{}:[A-323]	DADV:{PNC}:[A-323]
10:30 to 11:30	DADV:{PNC}:[A-323]		RES:{}:[A-323]	DAA:{JKP}:[A-323]	WP:{TP}:[A-323]
11:30 to 12:15					
12:15 to 1:15	DAA:{JKP}:[A-323]	APJ:{PS}:[A-323]	5ITA1:WP:{DKS} :[A-323] 5ITA2:WP:{TP}:[A-323]	LIBRARY	5ITA1:DADV:{PNC} :[A-323] 5ITA2:DADV:{KC}:[A-323]
1:15 to 2:15	PCE:{}:[A-323]	TOC:{AK}:[A-323]			
2:15 TO 2:30					
02:30 to 03:30	TOC:{AK}:[A-323]	5ITA1:DAA:{JKP} :[A-323] 5ITA2:DAA:{N1}:[A-323]	APJ:{PS}:[A-323]	DADV:{PNC}:[A-323]	LIBRARY
03:30 to 04:30	WP:{TP}:[A-323]		TOC:{AK}:[A-323]	WP:{TP}:[A-323]	

PARUL INSTITUTE OF ENGINEERING & TECHNOLOGY

AT & PO: LIMDA, Ta: Vaghodia

Dist: Vadodara

5ITB

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
09:30 to 10:30	5ITB1:WP:{DKS} :[A-227] 5ITB2:WP:{TP}:[A-227]	DAA:{JKP}:[A-227]	WP:{DKS}:[A-227]	5ITB1:APJ:{N2} :[A-227] 5ITB2:APJ:{MM}:[A-227]	TOC:{RS}:[A-227]
10:30 to 11:30		RES:{}:[A-227]	APJ:{MM}:[A-227]		WP:{DKS}:[A-227]
11:30 to 12:15					
12:15 to 1:15	DADV:{KC}:[A-227]	LIBRARY	DADV:{KC}:[A-227]	DAA:{JKP}:[A-227]	DAA:{JKP}:[A-227]
1:15 to 2:15	TOC:{RS}:[A-227]		TOC:{RS}:[A-227]	APJ:{MM}:[A-227]	RCE:{}:[A-227]
2:15 TO 2:30					
02:30 to 03:30	APJ:{MM}:[A-227]	5ITB1:LIBRARY 5ITB2:DADV:{KC}:[A-227]	5ITB1:DADV:{KC}:[A-227] 5ITB2 :LIBRARY	DADV:{KC}:[A-227]	5ITB1:DAA:{JKP} :[A-227] 5ITB2:DAA:{N1}:[A-227]
03:30 to 04:30	WP:{DKS}:[A-227]			RES:{}:[A-227]	

PARUL INSTITUTE OF ENGINEERING & TECHNOLOGY

AT & PO: LIMDA, Ta: Vaghodia

Dist: Vadodara

5ITC

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
09:30 to 10:30	DAA:{N1}:[A-226]	APJ:{N2}:[A-226]	TOC:{AK}:[A-226]	WP :{DKS}:[A-226]	5ITC1:DAA:{} :[A-226] 5ITC2:DAA:{}:[A-226]
10:30 to 11:30	PCE:{}:[A-226]	DAA:{N1}:[A-226]	APJ:{N2}:[A-226]	DAA:{N1}:[A-226]	
11:30 to 12:15					
12:15 to 1:15	5ITC1:APJ:{PS} :[A-226] 5ITC2:APJ:{MM}:[A-226]	DADV:{PNC}:[A-226]	LIBRARY	TOC:{AK}:[A-226]	TOC:{AK}:[A-226]
1:15 to 2:15		WP :{DKS}:[A-226]		RES:{}:[A-226]	WP :{DKS}:[A-226]
2:15 TO 2:30					
02:30 to 03:30	5ITC1:DADV:{PNC} :[A-226] 5ITC2:DADV:{KC}:[A-226]	5ITC1:WP:{} :[A-226] 5ITC2:WP:{}:[A-226]	DADV:{PNC}:[A-226]	LIBRARY	DADV:{PNC}:[A-226]
03:30 to 04:30			RES:{}:[A-226]		APJ:{N2}:[A-226]

PARUL INSTITUTE OF ENGINEERING & TECHNOLOGY

AT & PO: LIMDA, Ta: Vaghodia

Dist: Vadodara

5ITD

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
09:30 to 10:30	APJ:{MM}:[A-]	5ITD1:DADV:{PNC} :[A-315] 5ITD2:DADV:{KC}:[A-315]	WP:{TP}:[A-]	LIBRARY	DADV:{KC}:[]
10:30 to 11:30	DADV:{KC}:[]		DADV:{KC}:[]		APJ:{MM}:[A-]
11:30 to 12:15					
12:15 to 1:15	TOC:{AK}:[A-]	DADV:{KC}:[A-227]	DAA:{N1}:[A-226]	WP:{TP}:[A-323]	5ITD1:APJ:{N2} :[A-321] 5ITD2:APJ:{MM}:[A-321]
1:15 to 2:15	WP:{TP}:[A-]	DAA:{N1}:[A-227]	PCE:{}:[A-226]	DAA:{N1}:[A-323]	
2:15 TO 2:30					
02:30 to 03:30	5ITD1:DAA:{} :[A-322] 5ITD2:DAA:{}:[A-322]	RES:{}:[A-321]	LIBRARY	APJ:{MM}:[A- 226]	5ITD1:WP:{DKS} :[A-321] 5ITD2:WP:{TP}:[A-321]
03:30 to 04:30		TOC:{AK}:[A-321]		PCE:{}:[A-226]	

Faculty of Engineering & Technology
Proposed Academic Calendar for A. Y. 2022-23 (Odd Semester)
Bachelor of Technology - 5th Semester

Week No.	Teach. Week No.	Week Beginning	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	1	May/June	30 - Teaching Start	31	01	02	03	04
2	2	June	06	07	08	09	10	11
3	3	June	13	14	15	16	17	18
4	4	June	20 - Weekly 1	21	22	23	24	25 - Result Weekly 1
5	5	Jun/July	27 - Weekly 2	28	29	30	01	02 - Result Weekly 2
6	6	July	04 - Weekly 3	05	06	07	08	09 - Result Weekly 3
7	7	July	11 - Weekly 4	12	13	14	15	16 - Result Weekly 4
8	8	July	18 - Weekly 5	19	20	21	22	23 - Result Weekly 5
9	9	July	25 - Weekly 6	26	27	28	29	30 - Result Weekly 6
10	10	Aug	01	02	03 - Mid Sem Exam	04 - Mid Sem Exam	05 - Mid Sem Exam	06
11	Exam	Aug	08 - Mid Sem Exam	09 - Mid Sem Exam	10 - Mid Sem Exam	11 - Rakshabandhan	12	13
12	11	Aug	15 - Independence Day	16	17	18	19 - Janmashtmi	20
13	12	Aug	22	23	24	25	26	27 - Mid Sem Result
14	13	Aug/Sept	29	30	31 - Ganesh Chaturthi	01	02	03
15	14	Sept	05 - TW Submission	06 - TW Submission	07 - TW Submission	08 - TW Submission	09 - TW Submission	10
16	15	Sept	12	13	14	15	16	17
17	16	Sept	19- RL	20 - RL	21 - RL	22 - RL	23 - RL	24 - Teaching End
18	Exam	Sept/Oct	26 - End Sem Practical	27 - End Sem Practical	28 - End Sem Practical	29 - End Sem Practical	30 - End Sem Practical	01 - End Sem Practical
19	Exam	Oct	03 - End Sem Theory	04 - End Sem Theory	05 - End Sem Theory	06 - End Sem Theory	07 - End Sem Theory	08 - End Sem Theory
20	Exam	Oct	10 - End Sem Theory	11 - End Sem Theory	12 - End Sem Theory	13 - End Sem Theory	14 - End Sem Theory	15 - End Sem Theory

Faculty Representative Detail

Sr. No	Name of Faculty	DIV	Mobile No	E-mail ID
1	Prof. Tejal Patel	4IT1+4ITC	8347066800	tejal.patel@paruluniversity.ac.in
2	Prof. Mahendra Kr. Meena	4IT2+4ITC	7870529077	mahendra.meena270243@paruluniversity.ac.in
3	Prof. Khushbu chauhan	4ITD	9974069837	Khushbu.chauhan21542@paruluniversity.ac.in

Faculty List of BE IT SEM-4

Sr No	Name of Faculty	Alias of Faculty	Mobile No	E-mail ID	Subject Code
1	Mahendra Meena	MM	7870529077	mahendra.meena270243@paruluniversity.ac.in	
2	Dheeraj Kr. Singh	DKS	8000503090	dheeraj.singh@paruluniversity.ac.in	
3	Shaleen Sukla	SS	9428282968	shaleen.shukla270186@paruluniversity.ac.in	
4	Tejal Patel	TP	8347066800	tejal.patel@paruluniversity.ac.in	
5	Prashant Sahatiya	PS	8155812895	prashant.sahatiya270187@paruluniversity.ac.in	
6	Jayshree Parmar	JKP	9898675116	jayshree.parmar2946@paruluniversity.ac.in	
7	Khushbu chauhan	KC	9974069837	Khushbu.chauhan21542@paruluniversity.ac.in	
8	Pintu Chauhan	PNC	7400280151	pintu.chauhan270114@paruluniversity.ac.in	

BE IT SEM-5 Teaching Scheme

Lect - Lecture, **Tut** - Tutorial, **Lab** - Lab, **T** - Theory, **P** - Practical, **CE** – Continuous Evaluation

Semester - 5

						Internal Marks			External Marks		Passing Marks (Theory + CE)	Passing Marks (Practical)	Total Marks
Code	Subject	Credit	Lect	Lab	Tut	T	P	CE	T	P	Int. + Ext.	Int. + Ext.	
	Design and Analysis of Algorithms	3	3	0	0	20	-	20	60	-	40	-	100
	Design and Analysis of Algorithms Laboratory	1	0	2	0	-	20	-	-	30	-	25	50
	Advanced Java Programming	3	3	0	0	20	-	20	60	-	40	-	100
	Advanced Java Programming Laboratory	1	0	2	0	-	20	-	-	30	-	25	50
	Web Programming	3	3	0	0	20	-	20	60	-	40	-	100
	Web Programming Laboratory	1	0	2	0	-	20	-	-	30	-	25	50
	Theory of Computation	3	3	0	0	20	-	20	60	-	40	-	100
	Data visualization and Data Analytics	3	3	0	0	20	-	20	60	-	40	-	100
	Data visualization and Data Analytics Laboratory	1	0	2	0	-	20	-	-	30	-	25	50
	Professionalism and corporate ethics	1	0	0	1	-	-	100	0	-	40	-	100
	Open Elective 01	2	2	0	0	-	-	-	-	-	-	-	100
	Total	**22**	**17**	**8**	**1**								**900**

PARUL UNIVERSITY - Faculty of Engineering and Technology

DEPARTMENT OF INFORMATION TECHNOLOGY

SYLLABUS FOR 5th SEM B. TECH. PROGRAMME

Advanced Java Technology

Type of Course: BTech

Prerequisite: Core Java, Web Technology

Rationale: The course aims at teaching advanced concepts of Java and enables the student to understand the process of constructing an enterprise-wide application. After learning the course, the students will be able to do GUI, database, network, and RMI programming. Along with that, they will be able to create a servlet, JSP, JSF, EJB, etc. to develop an enterprise application.

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Scheme					Total
				External		Internal			
Lect Hrs/ Week	Tut Hrs/ Week	Lab Hrs/ Week		T	P	T	CE	P	
3	0	2	4	60	30	20	20	20	150

Lect - Lecture, **Tut** - Tutorial, **Lab** - Lab, **T** - Theory, **P** - Practical, **CE** - CE, **T** - Theory, **P** - Practical

Contents:

Sr.	Topic	Weightage	Teaching Hrs.
1	**AWT & Swing**: Abstract Window Toolkit classes hierarchy, windows fundamentals, creating a frame window in applet, canvas, creating windows program,Graphics-AWT Controls, Layout Managers, JApplet, JLabel, JTextField, JButton, JCheckBox, JRadioButton, JComboBox, Menus, MouseEvent Class , ActionEvent Class, WindowEventClass MouseListener, ActionListener, WindowListener and KeyListner	7%	5
2	**Java Database Programming:** Introduction, SQL syntax, Environment, Drive Types, Connections, Statements, Result Sets, Data types, Transactions, Creating aJavaBean, JavaBean Properties, Types of beans, Stateful Session bean, Stateless Session bean, Entity bean	7%	4
3	**Java Network Programming:** Network Programming with Java.net package, client programs, server programs, content and protocol handlers, chat application example	8%	3
4	**Java RMI Programming:** RMI architecture, RMI registry, Writing distributed application with RMI, Naming services, Naming And Directory Services, Overview of JNDI, Object serialization and Internationalization	8%	3

5	**Java Enterprise Edition:** Java Enterprise Edition, Architecture, Containers, Facilities provided by the server, Developing applications. Changes from Java EE 5 to Java EE 8.	8%	3
6	**Java Server Side Programming: Servlet Technology & Filter:** Servlet Overview and Architecture, Interface Servlet and the Servlet Life Cycle, Handling HTTP get Requests, Handling HTTP post Requests, Redirecting Requests to Other Resources, SessionTracking, Cookies, Session Tracking with Http Session, Event handlingin Servlets, Introduction of Filte, Filter Config.	12%	5
7	**Java Server Side Programming: JSP Technology:** Understanding JSP page, Servlet v/s JSP, JSP elements, JSP objects,JSP best practices. Implementing AJAX with JavaScript.	10%	5
8	**JSP Tag Extension and JSP Tag Library:** JSP tag extensions, elements of tag extensions, tag extension API, Understanding the tag files, creating custom tags, Classical and simple tag handlers. Implementing JSP tag library, working with core, XML, i18n, SQL, and functions tag libraries.	10%	4
9	**Java Server Faces:** Elements of JSF, JSF Request processing Life cycle, JSF Tag Libraries, JSF standard UI component, Working with Basic beans, JSFinput validation, JSF type conversion, Handling Page navigation in JSF, Internationalization support in JSF Configuring JSF Application.	10%	4
10	**Java Server Business Logic Components (Model): EJB, Spring, Struts:** Services provided by EJB container, Importance of separation of business logic, Types of EJB. Entity bean, Session bean, and Message-driven beans. Spring and Struts. Use of Entity and Session beans.	10%	3
11	**Java Persistence API and Hibernate:** Implementing Entities and Java Persistence API, Understanding Object Relational Mapping, Understanding the Java Persistence API, Introducing Entities, Life cycle of entity, Entity Relationship type, Mapping collection-based Relationships, JPQL, Crating Sample Applications, Hibernate technology. Comparing Hibernate with JPA.	10%	3

***Continuous Evaluation:**

It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

Reference Books:

1. Java Server Programming Java EE6 Black Book (TextBook); Dreamtech Press The completereference J2EE (TextBook) ; Keogh, McGrawHill
2. Herbert Schildt, Java – The Complete Reference (TextBook), Tata McGraw- Hill, Seventh Edition
3. Java EE 5 for beginners by Bayross and Shah; SPD

4. Head First EJB ; O'Reilly
5. Beginning Hibernate Jeff Linwood, Dave Minter; Apress

Useful Links:

1. Jdk
2. NetBeans
3. Eclipse
4. Glassfish / Apache server

Course Outcome:

After Learning the course, the students shall be able to:

1. Understand the need for an enterprise application, use of enterprise server, enterprise solutions.
2. Design console-based, GUI-based, and web-based applications.
3. Implement client-server, network, and database programming.
4. Develop distributed applications using RMI
5. Implement an end-to-end solution from the creation of a database to display to the client for enterprise application.

PARUL UNIVERSITY - Faculty of Engineering and Technology

DEPARTMENT OF INFORMATION TECHNOLOGY

SYLLABUS FOR 5th SEM B. TECH. PROGRAMME

Advanced Java Programming Laboratory

Type of Course: BTech

Prerequisite: Core Java, Web Technology

Rationale: The course aims at teaching advanced concepts of Java and enables the student to understand the process of constructing an enterprise-wide application. After learning the course, the students will be able to do GUI, database, network, and RMI programming. Along with that, they will be able to create a servlet, JSP, JSF, EJB, etc. to develop an enterprise application.

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Scheme					Total
				External		Internal			
Lect Hrs/ Week	Tut Hrs/ Week	Lab Hrs/ Week		T	P	T	CE	P	
0	0	2	1	-	30	-	-	20	50

Lect - Lecture, **Tut** - Tutorial, **Lab** - Lab, **T** - Theory, **P** - Practical, **CE** - CE, **T** - Theory, **P** - Practical

List of Practical:

1. Write a program to create registration form for the student using AWT.
2. Write a program to create calculator using Swing
3. Implement JDBC by connecting with database and execute Prepared Statement
4. Implement JDBC by connecting with database and execute Callable Statement.
5. Implement chat application using java.net.
6. Implement anyone sorting algorithm using TCP/UDP on Server application and Give Input on Client side and client should sorted output from server and display sorted on input side.
7. Implement Student information system using JDBC and RMI
8. Call remote procedure from a jvm to another jvm by implementing RMI.
9. Make a simple calculator using RMI.
10. Study the functionalities of Eclipse/NetBeans and Connect to the Glassfish / Apache server
11. Implement a simple Servlet application. Create directory structure, create references forweb containers, create necessary web.xml and other config files and execute.

12. Create registration form of student using Servlet & JDBC.
13. Create a JSP page that is a student registration form. Perform server-side validations usingJSP.
14. Create a custom tag using JSP tag extension / library.
15. Create user interface of a student registration and login using JSF.
16. Transfer all the Business Logic to the EJB of practical 10.
17. Create database and Implement JPA to provide persistence to practical 10.

Course Outcome:

After Learning the course, the students shall be able to:

1. Understand the need for an enterprise application, use of enterprise server, enterprise solutions.
2. Design console-based, GUI-based, and web-based applications.
3. Implement client-server, network, and database programming.
4. Develop distributed applications using RMI
5. Implement an end-to-end solution from the creation of a database to display to the client for enterprise application.

PARUL UNIVERSITY - Faculty of Engineering and Technology

DEPARTMENT OF INFORMATION TECHNOLOGY

SYLLABUS FOR 5th SEM B. TECH. PROGRAMME

Web Programming

Type of Course: BTech

Prerequisite: Programming, TCP/IP protocols and client-server development.

Rationale: web programming enables student to create web based application as per requirement ofmarket which is driven by Internet based applications.

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Scheme					Total
				External		Internal			
Lect Hrs/	Tut Hrs/	Lab Hrs/		T	P	T	CE	P	
3	0	0	3	60	-	20	20	-	100

Lect - Lecture, **Tut** - Tutorial, **Lab** - Lab, **T** - Theory, **P** - Practical, **CE** - CE, **T** - Theory, **P** - Practical

Contents:

Sr.	Topic	Weightage	Teaching Hrs.
1	**Introduction to HTML**: The development process, basic HTML, formatting and fonts,commenting code, color, hyperlink, lists, tables, images, simple HTMLForms, web site structure, frames and frame sets. Introduction to HTML5: what is HTML5, Main Structure, basic tags like header, footer, article, section, Text, Forms, Video and Audio, Canvas,Drag & Drop, Geolocation.	15%	6
2	**Style sheets**: Introduction to CSS, what is requirement of CSS, basic syntax and structure, CSS Box Model, using CSS, background images, colors and properties, manipulating texts, using fonts, borders and boxes, margins, padding lists, positioning using CSS, CSS2 CSS3: Transparency, Gradients, Backgrounds, Round borders,Typography, Shadows, Transformations, Transitions.	15%	6

3	**JavaScript**: Overview of JavaScript, Introduction to Client side scripting, need for JavaScript, How to develop JavaScript, simple JavaScript, variables, ,Control statements, loops and repetition, JavaScript arrays, functions, Constructors, JavaScript objects and user defined objects, HTML DOM, Browser Object Model, event handling in JavaScript. Formvalidation using JavaScript regular expression, Pop up boxes. DHTML: Combining HTML, CSS and JavaScript, Events and buttons	20%	8
4	**XML**: Introduction to XML, uses of XML, simple XML, XML key components, DTD and Schemas, Using XML with application. Transforming XML using XSL and XSLT	10%	5
5	**JSON AND JQUERY**: Introduction of jQuery, Uses of jQuery, Syntax, Selectors and Events,JSON, Use of JSON.	10%	5
6	**PHP**: Environment Setup, Variable Types, Constants, Operator Types, Decision Making, Arrays, Strings, Web Concepts, File Inclusion, GET & POST, Functions, Cookies, Sessions, File Uploading, Object Oriented Programming with PHP	15%	6
7	**PHP and MySQL**: Basic commands with PHP examples, Connection to server, creating database, selecting a database, listing database, listing table names, creating a table, inserting data, altering tables, queries, deleting database, deleting data and tables, PHP myadmin and database	15%	6

***Continuous Evaluation:**

It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

Reference Books:

1. Web Technology, Moseley and Savaliya, Wiley India
2. HTML 5 Black Book 2Ed, Kogent Learning Solutions Inc, dreamtech
3. Web Design, Joel Sklar, Cengage Learning
4. Learning PHP, MySQL, JavaScript, CSS & HTML5, 3rd Edition, Robin Nixon, O'Reilly
5. PHP: The Complete Reference By Steven Holzner, McGrawhil

Course Outcome:

1. Summarize the server side scripts for designing web-based services with database connectivity.
2. Use the various HTML tags with appropriate styles to display the various types of contents effectively.
3. Develop the dynamic web pages using HTML, CSS and JavaScript applying web design principlesto make pages effective.

PARUL UNIVERSITY - Faculty of Engineering and Technology

DEPARTMENT OF INFORMATION TECHNOLOGY

SYLLABUS FOR 5th SEM B. TECH. PROGRAMME

Web Programming Laboratory

Type of Course: BTech

Prerequisite: Programming, TCP/IP protocols and client-server development.

Rationale: web programming enables student to create web based application as per requirement ofmarket which is driven by Internet based applications.

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Scheme					Total
				External		Internal			
Lect Hrs/	Tut Hrs/	Lab Hrs/		T	P	T	CE	P	
0	0	4	2	-	30	-	-	20	50

Lect - Lecture, **Tut** - Tutorial, **Lab** - Lab, **T** - Theory, **P** - Practical, **CE** - CE, **T** - Theory, **P** - Practical

List of Practical:

1	Create a web page illustrating text formatting tags available in HTML
2	Create a web page to demonstrate working of ordered, unordered and nested list.
3	Create a HTML5 web page which shows the use of Canvas.
4	Create a HTML5 web page which shows the use of Audio & Video.
5	Create a student registration form using the following tags, , , , The registration form must consist of following information: First Name, Middle Name, Last Name, Gender (use radio button), Address, Phone No., email id, Hobbies (use checkbox), City, State,Country, College Name (use dropdown menu)
6	Create a HTML5 web page which shows the use of Geolocation.
7	Apply inline, internal and external style sheet for the studentregistration form.
8	Implement 2D transformation on Web page.
9	To create an html page to explain the use of various predefinedfunctions in an array & Date object in JavaScript.
10	Write a Program to show use of alert, confirm and prompt box.

11	Write JavaScript to perform the following operations:a. to find highest from given three values b. to calculate factorial of n
12	Write JavaScript to perform the following operations: a. to calculate sum of 1 to n b. to check whether given number is palindrome or not
13	Write a Java Script program to print current date & time
14	Create CD Catalogue Table in XML and display it using XSL Style Sheet
15	Creating the JavaScript file to handle our json
16	Write a PHP code to print your personal details.
17	Write a PHP code to shows the use of Decision Making and find out ifgiven number is prime or not prime.
18	Write a PHP code for database connection with MySQL and alsoperform Insert and Delete.

***Continuous Evaluation:**

It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

Course Outcome:

1. Summarize the server side scripts for designing web-based services with database connectivity.
2. Use the various HTML tags with appropriate styles to display the various types of contents effectively.
3. Develop the dynamic web pages using HTML, CSS and JavaScript applying web design principles to make pages effective.
4. Design the server-side PHP scripts using various features for creating customized web services.
5. Create a web application using advanced web programming features including AJAX and jQuery using concepts of Web API.

PARUL UNIVERSITY - Faculty of Engineering and Technology
DEPARTMENT OF INFORMATION TECHNOLOGY
SYLLABUS FOR 5th SEM B. TECH. PROGRAMME
Design and Analysis of Algorithms

Type of Course: BTech

Prerequisite: Programming (C or C++), Data structure

Rationale: Algorithm analysis is an important part of computational complexity theory, which provides theoretical estimation for the required resources of an algorithm to solve a specific computational problem. This course enables to understand and analyze efficient algorithms for various applications.

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Scheme					Total
				External		Internal			
Lect Hrs/ Week	Tut Hrs/ Week	Lab Hrs/ Week		T	P	T	CE	P	
3	0	0	4	60	-	20	20	-	100

Lect - Lecture, **Tut** - Tutorial, **Lab** - Lab, **T** - Theory, **P** - Practical, **CE** - CE, **T** - Theory, **P** - Practical

Contents:

Sr.	Topic	Weightage	Teaching Hrs.
1	**Introduction**: Characteristics of algorithm. Analysis of algorithm: Asymptotic analysis of complexity bounds–best, average and worst-case behavior; Performance measurements of Algorithm, Time and space trade-offs, Analyzing control statement, Loop invariant and the correctness of the algorithm, Recurrences-substitution method, recursion tree method, master method.	15%	6
2	**Divide and conquer technique**: Structure of divide-and-conquer algorithms: examples; Binary search,quick sort, Merge sort**,** Strassen Multiplication; Analysis of divide and conquer run time recurrence relations.	15%	6
3	**Greedy technique**: Greedy choice properties, graphs: Minimum Spanning Tree: Kruskal's algorithm, Prim's algorithm, Single source shortest Paths: Dijkstra's algorithm, Huffman code, Activity Selection Problem	20%	7
4	**Dynamic Programming**: The principle of optimality, the Knapsack Problem, All pair shortest paths: Warshall's and Floyd's algorithms, Making Change, Chained Matrix multiplication, Longest Common Subsequence.	20%	8

5	**Exploring Graphs**: An introduction using graphs and games, Undirected Graph, DirectedGraph, Traversing Graphs, Depth First Search, Breath First Search, Topological sort.	10%	5

6	**Backtracking and Branch and Bound**: Introduction to Back tracking, The Eight queen's problem, Branch andBound: Knapsack problem, Travelling Salesman problem	10%	5
7	**Introduction to NP-Completeness**: The class P and NP, Polynomial reduction, NP - Completeness Problem, NP-Hard Problems. Introduction to Randomization and Approximation algorithms	10%	5

***Continuous Evaluation:**

It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

Reference Books:

1. Introduction to Algorithms (Text Book) Thomas Cormen, Charles Leiserson, Ronald Rivest, Clifford Stein; PHI publication
2. Design and Analysis of Algorithms E. Horowitz, S. Sahani; Galgotia
3. Introduction to Design and Analysis of Algorithms, Anany Levitin, Pearson.

Course Outcome: After learning the course the students will be able to:

1. Find the optimal solution by applying various methods
2. Explain the major graph algorithms and their analyses. Employ graphs to model engineering problems, when appropriate.
3. Derive and solve recurrences describing the performance of divide-and-conquer algorithms.
4. Apply pattern matching algorithms to find particular pattern.
5. Analyze the asymptotic performance of algorithms.

PARUL UNIVERSITY - Faculty of Engineering and Technology

DEPARTMENT OF INFORMATION TECHNOLOGY

SYLLABUS FOR 5th SEM B. TECH. PROGRAMME

Design and Analysis of Algorithm Laboratory

Type of Course: BTech

Prerequisite: Programming (C or C++), Data structure

Rationale: Obtaining efficient algorithms is very important in modern computer engineering as the world wants applications to be time and space and energy efficient. This course enables to understand and analyze efficient algorithms for various applications.

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Scheme					Total
				External		Internal			
Lect Hrs/ Week	Tut Hrs/ Week	Lab Hrs/ Week		T	P	T	CE	P	
0	0	2	1	-	30	-	-	20	50

Lect - Lecture, **Tut** - Tutorial, **Lab** - Lab, **T** - Theory, **P** - Practical, **CE** - CE, **T** - Theory, **P** - Practical

List of Practical:

1. Implementation and Time analysis of Bubble, Selection and Insertion sorting algorithms forbest case, average case & worst case.
2. Implementation and Time analysis of Max-Heap sort algorithm.
3. Implementation and Time analysis of Merge Sort algorithms for Best case, Average case &Worst-case using Divide and Conquer.
4. Implementation and Time analysis of Quick-Sort algorithms for Best case, Average case &Worst-case using Divide and Conquer.
5. Write a program to solve fractional knapsack problem.
6. Implementation and Time analysis of Krushkal's Minimum spanning Tree algorithms.
7. Implementation and Time analysis of Prim's Minimum spanning Tree algorithms
8. Write a program to solve 0-1 knapsack problem.
9. Implementation and Time analysis of Depth First Search (DFS) Graph Traversal and BreadthFirst Traversal (BFS) Graph Traversal.

Course Outcome: After learning the course the students should be able to:

1. Find optimal solution by applying various methods
2. Explain the major graph algorithms and their analyses. Employ graphs to model engineering problems, when appropriate.
3. Derive and solve recurrences describing the performance of divide-and-conquer algorithms.
4. Apply pattern matching algorithms to find pattern.

2PARUL INSTITUTE OF ENGINEERING & TECHNOLOGY – FIRST SHIFT
FOURTH SEMESTER INFORMATION TECHNOLOGY
STUDENTS HAND-BOOK-2022-23
PARUL UNIVERSITY - Faculty of Engineering and Technology
DEPARTMENT OF INFORMATION TECHNOLOGY
SYLLABUS FOR 5th SEM B. TECH. PROGRAMME

Renewable Engineering Sources

Type of Course: BTech

Prerequisite: Basic knowledge of Renewable energy sources such as geothermal, wind, solar, hydroelectric and bio-energy.

Rationale: This course develops fundamental understanding about the need for renewableenergy sources and energy scenario of a country. Students will learn the concepts about renewable energy sources like solar energy, wind energy, energy from biomass, geothermal energy, energy from the ocean.

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Scheme					Total
				External		Internal			
Lect Hrs/ Week	Tut Hrs/ Week	Lab Hrs/ Week		T	P	T	CE*	P	
2	0	0	2	60	-	20	20	-	100

Lect - Lecture, **Tut** - Tutorial, **Lab** - Lab, **T** - Theory, **P** - Practical, **T** - Theory, **P** – Practical

***Continuous Evaluation:** It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

Contents:

Sr.	Topic	Weightage	Teaching Hrs.
1	**Introduction:** Thermodynamic laws related to Energy and Power, Energy conversion and unit system. Brief history and need of renewable energy, Global and National scenarios, Prospects ofrenewable energy sources.	10%	3
2	**Solar Energy**: Solar Radiation Geometry, Solar radiation - Outside the earth atmosphere and at earth surface, Instruments for measurementof solar radiation and sunshine, local solar time, derived solar angles, sunrise, sunset and day length. Non concentrating collectors, Solar air heaters-types, solar driers, storage of solar energy-thermal storage, solar pond, solar water heaters, solar distillation and solar still, solar cooker, solar heating & cooling of buildings, photo voltaic - solar cells & its applications.	35%	10

3	**Wind Energy:** Introduction, power in wind, power coefficient, wind mills-types, design consideration, performance, site selection, advantages and disadvantages, applications, wind energy development in India.	17%	5
4	**Bio Energy:** Introduction, types of biogas plants, biogas generation, factors affecting biogas generation, design consideration, advantages and disadvantages, site selection, applications, scope of biogasenergy in India, biomass energy, energy plantation.	13%	4
5	**Ocean Energy:** Introduction, OTEC principle, open cycle OTEC system, closed cycle, hybrid cycle, site selection, Energy from tides estimation oftidal power, tidal power plants, single basin, double basin, site requirements, advantages and limitations, wave energy, wave energy conversion devices, advantages and disadvantages, small scale hydro power	12%	4
6	**Geothermal Energy:** Introduction, Vapor dominated system, Liquid dominated system, Binary Cycle, Hot Dry Rock resources, Magma Resources, Geothermal Energy in India.	13%	4

Reference Books:

1. Renewable Energy Sources and Emerging Technologies D.P Kothari, K.C. Singal, RakeshRanjan.; PHI Publication.
2. Non-Convectional Resources G.S.Sawhney; PHI Publication.
3. Non-Conventional Energy Sources by G D Rai, Khanna Publishers, Delhi.
4. Solar Energy: Principal of thermal collection & storage, S P Sukhatme & J K Nayak.

Course Outcome:

After Learning the course the students shall be able to:

1. List out different renewable energy sources: solar energy, wind energy, bioenergy, tidalenergy, ocean thermal energy, geothermal energy, etc.
2. Evaluate different energy production methods: solar energy, wind energy, bio energy etc.
3. Discuss the key aspects of renewable energy sources: solar energy, wind energy, bioenergy, tidal energy, geothermal energy etc.
4. Describe various applications of solar energy, wind energy, bioenergy, tidal energy, oceanthermal energy, geothermal energy, etc.
5. Calculate energy conversion methods used for solar energy, wind energy and bioenergy.

PARUL UNIVERSITY - Faculty of Engineering and Technology
DEPARTMENT OF INFORMATION TECHNOLOGY
SYLLABUS FOR 5th SEM B. TECH. PROGRAMME
Theory of Computation

Type of Course: B.Tech

Prerequisite: Knowledge in mathematics, including a course in discrete mathematics, and in programming

Rationale: To introduce students the basic concepts in theoretical computer science, and the formal relationships among machines, languages and grammars and computational problems.The course should in addition clarify the practical view towards the applications of these ideas in engineering

Teaching and Examination Scheme:

Teaching Scheme (Hrs./Week)			Credit	Examination Scheme					Total
				External		Internal			
L	T	P		Theory E	Practical V	Theory M	*C.E	Practical P.A	
3	0	0	3	60	0	20	20	0	100

L- Lectures; **T-** Tutorial/Teacher Guided Student Activity; **P-** Practical; **E** - End Semester Theory Exam; **V -** End Semester Viva Exam; **M –** Mid Semester Exam; **P.A.-** Progressive Assessment;

Contents:

Sr. No.	Topic	Weightage	Teaching Hrs.
1.	**Introduction:** Alphabet, languages and grammars, productions and derivation, Chomsky hierarchy of languages.	10%	4
2.	**Regular languages and finite automata:** Regular expressions and languages, deterministic finite automata (DFA) and equivalence with regular expressions, nondeterministic finite automata (NFA) and equivalence with DFA, regular grammars and equivalence with finite automata, properties of regular languages, pumping lemma for regular languages, minimization of finite automata.	20%	10
3.	**Grammars:** **Context-free grammars** (CFG), languages (CFL), Chomsky normal form, Greibach normal forms, nondeterministic pushdown automata (PDA), and equivalence with CFG, parse trees, ambiguity in CFG, pumping lemma for context-free languages, deterministic pushdown automata, closure properties of CFLs. **Context-sensitive languages:** Context-sensitive grammars (CSG) and languages, linear bounded automata and equivalence with CSG.	35%	13

4	**Turing machines:** The basic model for Turing machines (TM), Turing-recognizable (recursively enumerable) and Turing-decidable (recursive) languages and their closure properties, variants of Turing machines, nondeterministic TMs and equivalence withdeterministic TMs, unrestricted grammars and equivalence with Turing machines, TMs as enumerators.	20%	10
5.	**Undecidability:** Church Turing thesis, universal Turing machine, the universal and diagonalization languages, reduction between languages and Rice s theorem, undecidable problems about languages.	15%	7

***C.E-Continuous Evaluation:** It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc

Suggested books:

1. John E. Hopcroft, Rajeev Motwani and Jeffrey D. Ullman, Introduction to AutomataTheory, Languages, and Computation, Pearson Education Asia.

Suggested reference books:

1. Harry R.Lewis and Christos H. Papadimitriou, Elements of the Theory of Computation, Pearson EducationAsia.
2. Dexter C. Kozen, Automata and Computability, Undergraduate Texts in Computer Science, Springer.
3. Michael Sipser , Introduction to the Theory of Computation, PWS Publishing.
4. John Martin, Introduction to Languages and The Theory of Computation, Tata Mc GrawHill.

Online Learning Resources

1. List of Open Source Software/learning website:
2. http://en.wikipedia.org/wiki/Theory_of_computation
3. http://meru.cecs.missouri.edu/courses/cecs341/tc.html 3
4. https://www.coursera.org/courses?query= theory%20of%20computation
5. nptel.ac.in/courses/106104028/theory of computation.
6. https://lagunita.stanford.edu/courses/coursev1:ComputerScience+Automata+SelfPaced/about

Course Outcome:

After successful completion of this course, students will be able to

1. Apply the knowledge of automata theory, grammars & regular expressions for solving theproblem
2. Analyze the give automata, regular expression & grammar to know the language itrepresents
3. Design Automata & Grammar for pattern recognition and syntax checking
4. To distinguish between decidability and undecidability of problems
5. Identify limitations of some computational models and possible methods of proving them

PARUL UNIVERSITY - Faculty of Engineering and Technology

DEPARTMENT OF INFORMATION TECHNOLOGY

SYLLABUS FOR 5th SEM B. TECH. PROGRAMME

Data Visualization and Data Analytics

Type of Course: BTech

Prerequisite: Database management system, Linear algebra.

Rationale: Data Analytics helps small and large organizations maximize the value of their data, unearth insights, build plans, and respond in real-time to customer demand.

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Scheme					Total
				External		Internal			
Lect Hrs/	Tut Hrs/	Lab Hrs/		T	P	T	CE	P	
3	0	0	3	60	-	20	20	-	100

Lect - Lecture, **Tut** - Tutorial, **Lab** - Lab, **T** - Theory, **P** - Practical, **CE** - CE, **T** - Theory, **P** - Practical

Contents:

Sr. No	Topic Name	Weightage (%)	Teaching Hrs.
I	Buzzwords of Data Science, Info-graphic representation of terminologies, Difference between Analysis and Analytics, Applications	20%	9
II	Descriptive Statistics: Population and Sample, Types of Data, Measurement Levels, Representation of categorical variables, Measures of Central Tendency (Mean, Median, Mode), Skewness, Variance, Standard Deviation, Coefficient of Variation, Covariance, Correlation. Histogram Analysis.	20%	9
III	Inferential Statistics: Distribution, Normal Distribution, Standard Normal Distribution, Central Limit Theorem, Standard Error, Estimators and Estimates, Confidence Interval, Students T Distribution, Margin of Error	20%	8
IV	Linear Regression: Introduction to Regression, Simple and Multiple Linear Regression, Correlation vs. Regression, SST (Sum of Squares Total), SSR (Sum of Squares Regression), SSE (Sum of Squares Error) R-Square, Adjusted R-Squared. Multiple Linear Regression, Significance of p-value	20%	8
V	Logistic Regression: Logistic regression, Logit vs logistic, Applications of logistic regression, Introduction to data visualization and various graphical ways of data representation	20%	8

***Continuous Evaluation:**

It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc. 1

Books:

Text Books	1.	The Art of Statistics: Learning from Data (Pelican Books), by David Spiegelhalter
	2.	Principles of Statistics by M G. Bulmer, Dover Publications Inc.
	3.	Statistics 101: From Data Analysis and Predictive Modeling to Measuring Distribution and Determining Probability, Your Essential Guide to Statistics By David Borman, Adams Media
EBooks	1.	An Introduction to the Science of Statistics: From Theory to Implementation, by Joseph C Watkins https://www.math.arizona.edu/~jwatkins/statbook.pdf
	2.	Introduction to Statistics, by David M. Lane http://onlinestatbook.com/Online_Statistics_Education.pdf
Reference Books	1.	Information Dashboard Design: Displaying Data for At-a-glance Monitoring by Stephen Few, Analytics Press
	2.	Beautiful Visualization, by Noah Iliinsky, Julie Steele Publisher(s): O'Reilly Media, Inc. ISBN: 9781449379865
On-line TL Material	1.	The Business Intelligence Analyst Course 2020 https://www.udemy.com/course/the-business-intelligence-analyst-course-2018/
	2.	The Data Science Course 2020: Complete Data Science Bootcamp https://www.udemy.com/course/the-data-science-course-complete-data-science-bootcamp/

Course Outcome:

After Learning the course, the students shall be able to:

1. CO1: Analyze the dataset and perform Descriptive Statistics
2. CO2: Analyze the dataset and perform an Inferential Statistics
3. CO3: Apply linear regression on the given dataset
4. CO4: Apply the logistic regression on the given dataset
5. CO5: Create an interactive data visualization

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FOURTH SEMESTER INFORMATION TECHNOLOGY STUDENTS HAND-BOOK-2022-23

PARUL UNIVERSITY - Faculty of Engineering and Technology

DEPARTMENT OF INFORMATION TECHNOLOGY

SYLLABUS FOR 5th SEM B. TECH. PROGRAMME

Data Visualization and Data Analytics Laboratory

Type of Course: BTech

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Scheme					Total
				External		Internal			
Lect Hrs/	Tut Hrs/	Lab Hrs/ Week		T	P	T	CE	P	
0	0	2	1	-	30	-		20	50

Lect - Lecture, **Tut** - Tutorial, **Lab** - Lab, **T** - Theory, **P** - Practical, **CE** - CE, **T** - Theory, **P** - Practical

List of Practical:

Sr. No.	Name of Experiments
1	Apply pivot table of Excel to perform data analysis
2	Perform Descriptive statistics of given dataset using Data Analysis Toolbox of Excel
3	Perform the Histogram Analysis of given dataset using Data Analysis Toolbox of Excel
4	Perform Simple Linear Regression using Data Analysis Toolbox of Excel or with Python and Interpret the regression table
5	Perform Multiple Linear Regression using Data Analysis Toolbox of Excel or with Python and Interpret the regression table
6	Perform the Logistic Regression and given dataset and interpret the regression table
7	Install Tableau, Understand User Interface, Dimensions, Measures, Pages, Filters, Marks and Show Me, Dataset Connections and Create a visualization
8	Various graphs in Tableau, Integration of Map and geo-locations, Creating Interactive Dashboard and Publishing your Dashboard to Tableau Public Site
9	Scatter Plots, Data Highlighter, Pages and Cards, Annotations Creating Story and publishing on Tableau Public
10	Given a case study: Perform Interactive Data Visualization with Tableau
	Open Ended Experiments
1	Perform Data Visualization with Microsoft Power BI
2	Perform Data Visualization with R

Course Outcome:

After Learning the course, the students shall be able to:

1. CO1: Analyze the dataset and perform Descriptive Statistics
2. CO2: Analyze the dataset and perform an Inferential Statistics
3. CO3: Apply linear regression on the given dataset
4. CO4: Apply the logistic regression on the given dataset
5. CO5: Create an interactive data visualization

FOURTH SEMESTER INFORMATION TECHNOLOGY STUDENTS HAND-BOOK-2022-23
PIET – Department of Information Technology

Academic Year: 2022-23
Name of Faculty: Prashant Sahatiya, Mahendra Kumar Meena
Subject: Advanced Java Technology
Lesson Planning

Sr. No.	Name of Topic	Hrs.	Div.A	Div. B	Div C	Div. D
1	**AWT & Swing**	**5**				
	Abstract Window Toolkit classes hierarchy, windows fundamentals		30-05-22	30-05-22	31-05-22	30-05-22
	Creating a frame window in applet, canvas, creating windows program, Graphics-AWT Controls, Layout Managers, JApplet, JLabel		31-05-22	1-06-22	01-06-22	2-06-22
	JTextField, JButton, JCheckBox, JRadioButton, JComboBox, Menus		01-06-22	2-06-22	03-06-22	3-06-22
	MouseEvent Class, ActionEvent Class, WindowEventClass		06-06-22	6-06-22	07-06-22	6-06-22
	MouseListener, ActionListener, WindowListener and KeyListner		07-06-22	8-06-22	08-06-22	9-06-22
2	**Java Database Programming**	**4**				
	Introduction, SQL syntax, Environment, Drive Types		08-06-22	19-06-22	10-06-22	10-06-22
	Connections, Statements, Result Sets, Data types, Transactions		13-06-22	13-06-22	14-06-22	13-06-22
	Creating a JavaBean, JavaBean Properties, Types of beans		14-06-22	15-06-22	15-06-22	16-06-22
	Stateful Session bean, Stateless Session bean, Entity bean		15-06-22	16-06-22	17-06-22	17-06-22
3	**Java Network Programming**	**3**				
	Network Programming with Java.net package, client programs, server programs		20-06-22	20-06-22	21-06-22	20-06-22
	content and protocol handlers		21-06-22	22-06-22	22-06-22	23-06-22
	chat application example		22-06-22	23-06-22	24-06-22	24-06-22
4	**Java RMI Programming**	**3**				
	RMI architecture, RMI registry		27-06-22	27-06-22	28-06-22	27-06-22
	Writing distributed application with RMI		28-06-22	29-06-22	29-06-22	30-06-22
	Naming services, Naming and Directory Services, Overview of JNDI, Object serialization and Internationalization		29-06-22	30-06-22	01-07-22	1-07-22
5	**Java Enterprise Edition**	**3**				
	Java Enterprise Edition Architecture		04-07-22	04-07-22	05-07-22	4-07-22
	Containers, Developing applications		05-07-22	06-07-22	06-07-22	7-07-22
	Facilities provided by the server, Changes from Java EE 5 to Java EE 8		06-07-22	07-07-22	08-07-22	9-07-22

6	**Java Server Side Programming: Servlet Technology & Filter**	**5**				
	Servlet Overview and Architecture		11-07-22	11-07-22	12-07-22	11-07-22
	Interface Servlet and the Servlet Life Cycle		12-07-22	13-07-22	13-07-22	14-07-22
	Handling HTTP get Requests, Handling HTTP post Requests Redirecting Requests to Other Resources		13-07-22	14-07-22	15-07-22	15-07-22
	Session Tracking, Cookies, Session Tracking with HttpSession		18-07-22	18-07-22	19-07-22	18-07-22
	Event handling in Servlets, Introduction of Filter, Filter Config		19-07-22	20-07-22	20-07-22	21-07-22
7	**Java Server Side Programming: JSP Technology**	**5**				
	Understanding JSP page, Servlet v/s JSP		20-07-22	23-07-22	22-07-22	22-07-22
	JSP elements		25-07-22	25-07-22	26-07-22	25-07-22
	JSP objects, JSP best practices		26-07-22	27-07-22	27-07-22	28-07-22
	Implementing AJAX with JavaScript		27-07-22	28-07-22	29-07-22	29-07-22
	Implementing AJAX with JavaScript		01-08-22	01-08-22	02-08-22	01-08-22
8	**JSP Tag Extension and JSP Tag Library**	4				
	JSP tag extensions, elements of tag extensions, tag extension API		02-08-22	17-08-22	16-08-22	12-08-22
	Understanding the tag files, creating custom tags		16-08-22	18-08-22	17-08-22	22-08-22
	Classical and simple tag handlers, Implementing JSP tag library		17-08-22	22-08-22	23-08-22	25-08-22
	Working with core, XML, i18n, SQL and functions tag libraries		22-08-22	24-08-22	24-08-22	26-08-22
9	**Java Server Faces**	**4**				
	Elements of JSF, JSF Request processing Life cycle		23-08-22	25-08-22	26-08-22	29-08-22
	JSF Tag Libraries JSF standard UI component, Working with Basic beans		24-08-22	29-08-22	30-08-22	01-09-22
	JSF input validation, JSF type conversion, Handling Page navigation in JSF		29-08-22	01-09-22	02-09-22	02-09-22
	Internationalization support in JSF Configuring JSF Application		30-08-22	05-09-22	06-09-22	05-09-22
10	**Java Server Business Logic Components (Model): EJB, Spring, Struts**	**3**				
	Services provided by EJB container, Importance of separation of business logic		05-09-22	07-09-22	07-09-22	08-09-22
	Types of EJB, Entity bean, Session bean, and Message driven beans		06-09-22	08-09-22	09-09-22	09-09-22
	Spring and Struts, Use of Entity and Session beans		07-09-22	12-09-22	13-09-22	12-09-22
11	**Java Persistence API and Hibernate**	**3**				
	Implementing Entities and Java Persistence API, Understanding Object Relational Mapping		12-09-22	14-09-22	14-09-22	15-09-22
	Understanding the Java Persistence API,		13-09-22	15-09-22	16-09-22	16-09-22

	Introducing Entities, Life cycle of entity, Entity Relationship type					
	Mapping collection-based Relationships, JPQL, Crating Sample Applications, Hibernate technology. Comparing Hibernate with JPA		14-09-22	19-09-22	20-09-22	19-09-22

PIET – Department of InformationTechnology

Academic Year: 2022-23
Name of Faculty: Prashant Sahatiya, Mahendra Kumar Meena
Subject: Advanced Java Technology
Lab Planning

Sr. No.	Name of Practical	5ITA1	5ITA2	5ITB1	5ITB2	5ITC1	5ITC2	5ITD1	5ITD2
		Planned Date				Planned Date			
1	Write a program to create registration form for the Student using AWT	31-05-22	31-05-22	02-06-22	02-06-22	30-05-22	30-05-22	3-06-22	3-06-22
2	Write a program to create calculator using Swing	07-06-22	07-06-22	09-06-22	09-06-22	06-06-22	06-06-22	10-06-22	10-06-22
3	Implement JDBC by connecting with database and execute PreparedStatement	14-06-22	14-06-22	16-06-22	16-06-22	13-06-22	13-06-22	17-06-22	17-06-22
4	Implement JDBC by connecting with database and execute CallableStatement	21-06-22	21-06-22	23-06-22	23-06-22	20-06-22	20-06-22	24-06-22	24-06-22
5	Implement chat application using java.net	28-06-22	28-06-22	30-06-22	30-06-22	27-06-22	27-06-22	1-07-22	1-07-22
6	Implement any one sorting algorithm using TCP/UDP on Server application and Give Input on Client side and client should sorted output from server and display sorted on input side	05-07-22	05-07-22	07-07-22	07-07-22	04-07-22	04-07-22	8-07-22	8-07-22
7	Implement Student information system using JDBC and RMI	12-07-22	12-07-22	14-07-22	14-07-22	11-07-22	11-07-22	15-07-22	15-07-22
8	Call remote procedure from a jvm to another jvm by implementing RMI.	19-07-22	19-07-22	21-07-22	21-07-22	18-07-22	18-07-22	22-07-22	22-07-22
9	Make a simple calculator using RMI	19-07-22	19-07-22	28-07-22	28-07-22	18-07-22	18-07-22	29-07-22	29-07-22
10	Study the functionalities of Eclipse/NetBeans and Connect to the Glassfish / Apache server	26-07-22	26-07-22	18-08-22	18-08-22	25-07-22	25-07-22	12-08-22	12-08-22

11	Implement a simple Servlet application. Create directory structure, create references for web containers, create necessary web.xml and other config files and execute	02-08-22	02-08-22	25-08-22	25-08-22	01-08-22	01-08-22	19-08-22	19-08-22
12	Create registration form of student using Servlet & JDBC	16-08-22	16-08-22	01-09-22	01-09-22	22-08-22	22-08-22	26-08-22	26-08-22
13	Create a JSP page that is a student registration form. Perform server side validations using JSP	23-08-22	23-08-22	01-09-22	01-09-22	29-08-22	29-08-22	2-09-22	2-09-22
14	Create a custom tag using JSP tag extension / library	23-08-22	23-08-22	09-09-22	09-09-22	29-08-22	29-08-22	2=09-22	2=09-22
15	Create user interface of a student registration and login using JSF	30-08-22	30-08-22	09-09-22	09-09-22	05-09-22	05-09-22	9=09-22	9=09-22
16	Transfer all the Business Logic to the EJB of practical 10	06-09-22	06-09-22	15-09-22	15-09-22	05-09-22	05-09-22	16-09-22	16-09-22
17	Create database and Implement JPA to provide persistence to practical 10	13-09-22	13-09-22	15-09-22	15-09-22	12-09-22	12-09-22	16-09-22	16-09-22

FACULTY OF ENGG. & TECH. – PIET						
LECTURE PLAN (Theory)						
Academic Year: 2022-2023					**Sem: 5th sem**	
Subject: Data Visualization and Data Analytics					**Department: IT**	
Name of Teacher: Pintu Chauhan, Kushboo chauhan					**Hrs./Week: 03 Hrs /Week**	
Sr. No.	**Name of Topic**	**Hrs Allocated**	**Planned Date**			
			IT 5A	**IT 5B**	**IT 5C**	**IT 5C**
1	**Unit 1**	**9**	**M TR F**	**MWTH**	**T W F**	**MTW**
	Buzzwords of Data science	2	02/06/2022-03/06/2022	30/05/2022-01/06/2022	01/06/2022-03/06/2022	30/05/2022-31/05/2022
	Info-graphic representation of terminologies	3	06/06/2022-09/06/2022	02/06/2022-06/06/2022	07/06/2022-09/06/2022	01/06/2022-06/06/2022
	Difference between Analysis and Analytics	2	10/06/2022-13/06/2022	08/06/2022-09/06/2022	10/06/2022-14/06/2022	07/06/2022-13/06/2022
	Applications	2	16/06/2022-17/06/2022	13/06/2022-15/06/2022	15/06/2022-17/06/2022	14/06/2022-15/06/2022
2	**Unit 2**	**9**				
	Descriptive statistics: Population and sample	1	20/06/2022	16/06/2022	21/06/2022	21/06/2022
	Types of Data	1	23/06/2022	22/06/2022	22/06/2022	22/06/2022
	Measurement Levels	1	24/06/2022	23/06/2022	24/06/2022	28/06/2022
	Representations of categorical variables	1	27/06/2022	29/06/2022	28/06/2022	29/06/2022
	Measures of central Tendency (Mean, Median, Mode)	1	01/07/2022	30/06/2022	01/07/2022	05/07/2022
	Skewness, variance	1	04/07/2022	06/07/2022	06/07/2022	06/07/2022
	Standard deviation, Coefficient of Variation	1	07/07/2022	07/07/2022	12/07/2022	12/07/2022
	Covariance, Correlation	1	08/07/2022	13/07/2022	13/07/2022	13/07/2022
	Histogram Analysis	1	11/07/2022	14/07/2022	16/07/2022	19/07/2022
3	**Unit 3**	**8**				
	Inferential Statistics: Distribution, Normal Distribution,	2	14/07/2022	20/07/2022	20/07/2022	20/07/2022
	Standard Normal Distribution	1	15/07/2022	21/07/2022	26/07/2022	26/07/2022
	Central limit theorem	1	18/07/2022	26/07/2022	27/07/2022	27/07/2022
	Standard Error, Estimators and Estimates	1	21/07/2022	26/07/2022	27/07/2022	27/07/2022
	Confidence Intervall	1	22/07/2022	27/07/2022	01/08/2022	01/08/2022
	Students T distribution	1	25/07/2022	01/08/2022	01/08/2022	01/08/2022
	Margin of Error	1	29/07/2022	01/08/2022	02/08/2022	02/08/2022
4	**Unit 4**	**8**				
	Linear Regression : Introduction to linear regression	1	17/08/2022	17/08/2022	16/08/2022	16/08/2022

	Simple and Multiple linear regression	1	17/08/2022	17/08/2022	17/08/2022	17/08/2022
	Correlation vs Regression	1	18/08/2022	18/08/2022	22/08/2022	22/08/2022
	SST (Sum of Squares Total)	1	22/08/2022	22/08/2022	23/08/2022	23/08/2022
	SSR(Sum of Square Regression)	1	24/08/2022	24/08/2022	29/08/2022	29/08/2022
	SSE (Sum of Squares Error)	1	25/08/2022	25/08/2022	29/08/2022	29/08/2022
	R square, Adjusted R-squared	1	29/08/2022	29/08/2022	30/08/2022	30/08/2022
	Multiple linear regression, significance of p-values	1	29/08/2022	29/08/2022	30/08/2022	30/08/2022
5	**Unit 5**	**8**				
	Logistic Regression: Introduction to logistic regression, Logit vs. Logistics	1	01/09/2022	01/09/2022	01/09/2022	01/09/2022
	Applications of logistic regression	1	12/09/2022	12/09/2022	12/09/2022	12/09/2022
	Introduction to Data Visualization	1	14/09/2022	14/09/2022	13/09/2022	13/09/2022
	Different graphical ways of data representation	1	15/09/2022	15/09/2022	14/09/2022	14/09/2022
	Bar graph, Line graph, Pie chart	1	19/09/2022	19/09/2022	19/09/2022	19/09/2022
	Histogram, scatter diagrams	1	21/09/2022	21/09/2022	20/09/2022	20/09/2022
	Plotograph	1	23/09/2022	22/09/2022	21/09/2022	21/09/2022
	Frequency Distribution	1	23/09/2022	22/09/2022	21/09/2022	21/09/2022

2PARUL INSTITUTE OF ENGINEERING & TECHNOLOGY – FIRST SHIFT
FOURTH SEMESTER INFORMATION TECHNOLOGY STUDENTS HAND-BOOK-2022-23

FACULTY OF ENGG. & TECH. – PIET									
LAB PLAN (Practical)									
Academic Year: 2022-2023							**Sem: 5th sem**		
Subject: Data Visualization and Data Analytics							**Department: IT**		
Name of Teacher: Pintu Chauhan, Khushbu Chauhan							**Hrs./Week: 02 Hrs /Week**		
Sr. No.	**Name of Topic**	**Planned Date**							
		IT5 A1	**IT5 A2**	**IT5 B1**	**IT5 B2**	**IT5 C1**	**IT5 C2**	**IT5 D1**	**IT5 D2**
		FRI	FRI	WED	TUE	MON	MON	TUE	TUE
1	Apply Pivot Table of Excel to perform data analysis	03/06	03/06	01/06	07/06	06/06	06/06	07/06	07/06
2	Perform Descriptive statistics of given dataset using Data Analysis toolbox of Excel	10/06	10/06	08/06	14/06	13/06	13/06	14/06	14/06
3	Perform the Histogram given dataset using Data Analysis toolbox of Excel	17/06	17/06	15/06	21/06	20/06	20/06	21/06	21/06
4	Perform Simple Linear Regression using Data Analysis toolbox of Excel or with python and interpret the regression table	01/07	01/07	22/06	05/07	04/07	04/07	05/07	05/07
5	Perform multiple Linear Regression using Data Analysis toolbox of Excel or with python and interpret the regression table	15/07	15/07	29/06	19/07	18/07	18/07	19/07	19/07
6	Perform the logistics regression and given dataset and interpret the regression table	29/07	29/07	06/07	02/08	01/08	01/08	02/08	02/08
7	Install Tableau, Understand User interface, Dimension, Measures, Pages, Filters, Marks & Show Me	05/08	05/08	13/07	09/08	08/08	08/08	09/08	09/08
8	Various graphs in tableau	12/08	12/08	20/07	23/08	22/08	22/08	23/08	23/08
9	Scatter Plots, Data Highlighter, Page and cards, Annotations creating Story and publishing on Tableau	26/08	26/08	27/07	30/08	29/08	29/08	30/08	30/08
10	Perform Interactive Data Visualization with Tableau	02/09	02/09	17/08	06/09	05/09	05/09	06/09	06/09
11	Perform Data Visualization with Microsoft Power BI	16/09	16/09	24/08	13/09	12/09	12/09	13/09	13/09
12	Perform Data Visualization with R	23/09	23/09	14/09	20/09	19/09	19/09	20/09	20/09

FOURTH SEMESTER INFORMATION TECHNOLOGY STUDENTS HAND-BOOK-2022-23

PIET – Department of Information Technology

Academic Year: 2022-23
Name of Faculty: Jayshree Parmar
Subject: Design and Analysis of Algorithms
Lesson Planning

Sr. No.	Name of Topic	Hrs.	Div.A	Div. B	Div C	Div. D
1	**Introduction:**	**6**				
	Characteristics of algorithm.		30-05-2022	31-05-2022	31-05-2022	31-05-2022
	Analysis of algorithm: Asymptotic analysis of complexity bounds–best, average and worst-case behavior;		31-05-2022	02-06-2022	1-06-2022	02-06-2022
	Performance measurements of Algorithm, Time and space trade-offs		02-06-2022	03-06-2022	02-06-2022	03-06-2022
	Analyzing control statement, Loop invariant and the correctness of the algorithm		06-06-2022	07-06-2022	06-06-2022	07-06-2022
	Recurrences- substitution method,		07-06-2022	09-06-2022	07-06-2022	09-06-2022
	recursion tree method, master method.		09-06-2022	10-06-2022	09-06-2022	10-06-2022
2	**Divide and conquer technique:**	**6**				
	Structure of divide-and-conquer algorithms		13-06-2022	14-06-2022	13-06-2022	14-06-2022
	Binary search,		14-06-2022	16-06-2022	14-06-2022	16-06-2022
	quick sort		16-06-2022	17-06-2022	16-06-2022	17-06-2022
	, Merge sort,		20-06-2022	21-06-2022	20-06-2022	21-06-2022
	Strassen Multiplication;		21-06-2022	23-06-2022	21-06-2022	23-06-2022
	Analysis of divide and conquer run time recurrence relations.		23-06-2022	24-06-2022	23-06-2022	24-06-2022
3	**Greedy technique**	**7**				
	Greedy choice properties,		27-06-2022	28-06-2022	27-06-2022	28-06-2022
	graphs: Minimum Spanning Tree: Kruskal’s algorithm,		28-06-2022	30-06-2022	28-06-2022	30-06-2022
	Prim’s algorithm,		30-06-2022	01-07-2022	30-06-2022	01-07-2022
	Single source shortest Paths: Dijkstra’s algorithm,		04-07-2022	05-07-2022	04-07-2022	05-07-2022
	Huffman code		05-07-2022	07-07-2022	05-07-2022	07-07-2022

	Activity Selection Problem		07-07-2022	08-07-2022	07-07-2022	08-07-2022
	Activity Selection Problem		11-07-2022	12-07-2022	11-07-2022	12-07-2022
4	**Dynamic Programming:**	**8**				
	The principle of optimality		12-07-2022	14-07-2022	12-07-2022	14-07-2022
	, the Knapsack Problem,		14-07-2022	15-07-2022	14-07-2022	15-07-2022
	All pair shortest paths		18-07-2022	19-07-2022	18-07-2022	19-07-2022
	: Warshall's and Floyd's algorithms		19-07-2022	21-07-2022	19-07-2022	21-07-2022
	Making Change,		21-07-2022	22-07-2022	21-07-2022	22-07-2022
	Chained Matrix multiplication		25-07-2022	26-07-2022	25-07-2022	26-07-2022
	Longest Common Subsequence.		26-07-2022	28-07-2022	26-07-2022	28-07-2022
	Longest Common Subsequence.		28-07-2022	29-07-2022	28-07-2022	29-07-2022
5	**Exploring Graphs:**	**5**				
	An introduction using graphs and games		01-08-2022	16-08-2022	01-08-2022	16-08-2022
	Undirected Graph, Directed Graph		02-08-2022	18-08-2022	02-08-2022	18-08-2022
	Traversing Graphs,		16-08-2022	23-08-2022	16-08-2022	23-08-2022
	Depth First Search, Breath First Search,		18-08-2022	25-08-2022	18-08-2022	25-08-2022
	Topological sort.		22-08-2022	26-08-2022	22-08-2022	26-08-2022
6	**Backtracking and Branch and Bound:**	**5**				
	Introduction to Back tracking		23-08-2022	01-09-2022	23-08-2022	01-09-2022
	The Eight queen's problem		25-08-2022	02-09-2022	25-08-2022	02-09-2022
	Branch and Bound:		29-08-2022	06-09-2022	29-08-2022	06-09-2022
	Knapsack problem		30-08-2022	08-09-2022	30-08-2022	08-09-2022
	, Travelling Salesman problem		01-09-2022	09-09-2022	01-09-2022	09-09-2022
7	**Introduction to NP-Completeness:**	**5**				
	The class P and NP, Polynomial reduction		05-09-2022	15-09-2022	05-09-2022	15-09-2022
	NP - Completeness Problem		06-09-2022	16-09-2022	06-09-2022	16-09-2022
	NP-Hard Problems.		08-09-2022	20-09-2022	08-09-2022	20-09-2022

	Introduction to Randomization and Approximation algorithms		15-09-2022	22-09-2022	15-09-2022	22-09-2022
	Introduction to Randomization and Approximation algorithms		20-09-2022	23-09-2022	20-09-2022	23-09-2022

2PARUL INSTITUTE OF ENGINEERING & TECHNOLOGY – FIRST SHIFT
FOURTH SEMESTER INFORMATION TECHNOLOGY STUDENTS HAND-BOOK-2022-23

PIET – Department of InformationTechnology

Academic Year: 2022-23
Name of Faculty: Jayshree Parmar
Subject: Design and Analysis of Algorithm Laboratory
Lab Planning

Sr. No.	Name of Practical	5ITA1	5ITA2	5ITB1	5ITB2	5ITC1	5ITC2	5ITD1	5ITD2
		Planned Date	Planned Date	Planned Date	Planned Date	Planned Date	Planned Date	Planned Date	Planned Date
1	Implementation and Time analysis of Bubble, Selection and Insertion sorting algorithms for best case, average case & worst case	31-05-2022	30-05-2022	03-06-2022	03-06-2022	03-06-2022	31-05-2022	30-05-2022	03-06-2022
2	Implementation and Time analysis of Max-Heap sort algorithm.	07-06-2022	06-06-2022	10-06-2022	10-06-2022	10-06-2022	07-06-2022	06-06-2022	10-06-2022
3	Implementation and Time analysis of Merge Sort algorithms for Best case, Average case & Worst-case using Divide and Conquer.	21-06-2022	13-06-2022	17-06-2022	17-06-2022	17-06-2022	21-06-2022	13-06-2022	17-06-2022
4	Implementation and Time analysis of Quick-Sort algorithms for Best case, Average case & Worst-case using Divide and Conquer.	28-06-2022	04-07-2022	08-07-2022	08-07-2022	08-07-2022	28-06-2022	04-07-2022	08-07-2022
5	Write a program to solve fractional knapsack problem	05-07-2022	11-07-2022	15-07-2022	15-07-2022	15-07-2022	05-07-2022	11-07-2022	15-07-2022
6	Implementation and Time analysis of	19-07-2022	18-07-2022	22-07-2022	22-07-2022	22-07-2022	19-07-2022	18-07-2022	22-07-2022

	Krushkal's Minimum spanning Tree algorithms.								
7	Implementation and Time analysis of Prim's Minimum spanning Tree algorithms	26-07-2022	25-07-2022	29-07-2022	29-07-2022	29-07-2022	26-07-2022	25-07-2022	29-07-2022
8	Write a program to solve 0-1 knapsack problem.	02-08-2022	01-08-2022	05-08-2022	05-08-2022	05-08-2022	02-08-2022	01-08-2022	05-08-2022
9	Implementation and Time analysis of Depth First Search (DFS) Graph Traversal and Breadth First Traversal (BFS) Graph Traversal	23-08-2022	22-08-2022	26-08-2022	26-08-2022	26-08-2022	23-08-2022	22-08-2022	26-08-2022

Parul University – Faculty of Engineering & Technology
At & Po. Limda, Ta Waghodia, Dist. Vadodara
Information Technology Department

Lesson Plan

Academic Year: 2022 – 2023	**Sem.: 5th**
Name of Teacher: Dheeraj Kumar Singh, Tejal Patel	**Name of Department: IT**
Subject: Web Programming	**Hrs./Week: 3**
Theory/Practical: Theory	**Days: Mon, Fri, Sat**

Sr. No	Name of Unit/Topics	Hrs. Allotted	Division A	Division B	Division C	Division D
1	**Introduction of HTML**	**8**				
	The development process, basic HTML, formatting and fonts	1	30/05/22	30/05/22	31/05/22	30/05/22
	commenting code, color, hyperlink, lists	1	02/06/22	01/06/22	01/06/22	01/06/22
	tables, images, simple HTML Forms	1	03/06/22	03/06/22	03/06/22	02/06/22
	web site structure, frames and frame sets	1	06/06/22	06/06/22	07/06/22	06/06/22
	Introduction to HTML5: what is HTML5, Main Structure, basic tags like header, footer, <nav>, article, section	1	09/06/22	08/06/22	08/06/22	08/06/22
	Text, Forms	1	10/06/22	10/06/22	10/06/22	09/06/22
	Video and Audio, Canvas	1	13/06/22	13/06/22	14/06/22	13/06/22
	Drag & Drop, Geolocation	1	16/06/22	13/06/22	14/06/22	13/06/22
2	**Style sheets:**	**8**				
	Introduction to CSS, what is requirement of CSS, basic syntax and structure	1	17/06/22	15/06/22	15/06/22	15/06/22
	CSS Box Model, using CSS, background images, colors and properties	1	20/06/22	17/06/22	17/06/22	16/06/22
	manipulating texts, using fonts, borders and boxes	1	23/06/22	20/06/22	21/06/22	20/06/22
	margins, padding lists, positioning using CSS, CSS2	1	24/06/22	22/06/22	22/06/22	22/06/22
	CSS3: Transparency, Gradients	1	27/06/22	24/06/22	24/06/22	23/06/22
	Backgrounds, Round borders	1	30/06/22	27/06/22	28/06/22	27/06/22
	Typography, Shadows	1	01/07/22	29/06/22	29/06/22	29/06/22
	Transformations, Transitions.	1	04/07/22	01/07/22	01/07/22	30/06/22
3	**JAVA SCRIPT**	**10**				
	Overview of JavaScript, Introduction to ClientSide scripting,	1	07/07/22	04/07/22	05/07/22	04/07/22
	need for JavaScript, how to develop JavaScript,	1	08/07/22	06/07/22	06/07/22	06/07/22
	Simple JavaScript, variables,	1	11/07/22	08/07/22	08/07/22	07/07/22

	Control statements, loops and repetition,	1	14/07/22	11/07/22	12/07/22	11/07/22
	JavaScript arrays, functions, Constructors,	1	15/07/22	13/07/22	13/07/22	13/07/22
	JavaScript objects and user defined objects,	1	15/07/22	15/07/22	15/07/22	14/07/22
	HTML DOM, Browser Object Model,	1	18/07/22	18/07/22	19/07/22	18/07/22
	event handling in JavaScript.	1	18/07/22	20/07/22	20/07/22	20/07/22
	Form validation using JavaScript regular expression, Pop up boxes.	1	21/07/22	22/07/22	22/07/22	20/07/22
	DHTML: Combining HTML, CSS and JavaScript, Events and buttons	1	21/07/22	22/07/22	22/07/22	21/07/22
4	**XML**	**6**				
	Introduction to XML,	1	22/07/22	25/07/22	26/07/22	25/07/22
	uses of XML, simple XML	1	25/07/22	27/07/22	27/07/22	27/07/22
	XML key components	1	28/07/22	29/07/22	29/07/22	28/07/22
	DTD using XML with application	1	28/07/22	29/07/22	29/07/22	28/07/22
	Schemas using XML with application	1	29/07/22	01/08/22	02/08/22	01/08/22
	Transforming XML using XSL and XSLT	1	29/07/22	01/08/22	02/08/22	01/08/22
5	**JSON AND JQUERY**	**4**				
	Introduction of JQuery	1	29/07/22	12/08/22	01/08/22	17/08/22
	Uses of JQuery	1	29/07/22	12/08/22	12/08/22	17/08/22
	Syntax, Selectors and Events	1	01/08/22	17/08/22	12/08/22	18/08/22
	JSON, Use of JSON.	1	01/08/22	17/08/22	16/08/22	18/08/22
6	**PHP**	**6**				
	Environment Setup, Variable Types, Constants,	1	12/08/22	22/08/22	17/08/22	22/08/22
	Operator Types, Decision Making	1	12/08/22	22/08/22	23/08/22	24/08/22
	Arrays, Strings, Web Concepts	1	18/08/22	24/08/22	24/08/22	25/08/22
	File Inclusion, GET & POST,	1	22/08/22	26/08/22	26/08/22	29/08/22
	Functions, Cookies, Sessions	1	25/08/22	26/08/22	26/08/22	29/08/22
	File Uploading, Object Oriented Programming with PHP	1	25/08/22	29/08/22	30/08/22	01/09/22
7	**PHP and MySQL**	**6**				
	Basic commands with PHP examples	1	26/08/22	29/08/22	30/08/22	01/09/22
	Connection to server, creating database	1	29/08/22	02/09/22	02/09/22	05/09/22
	selecting a database, listing database, listing table names	1	01/09/22	02/09/22	02/09/22	05/09/22
	creating a table, inserting data, altering tables	1	02/09/22	05/09/22	06/09/22	07/09/22

	queries, deleting database, deleting data and tables,	1	05/09/22	07/09/22	07/09/22	07/09/22
	PHP my admin and database bugs.	1	06/09/22	07/09/22	07/09/22	08/09/22

2PARUL INSTITUTE OF ENGINEERING & TECHNOLOGY – FIRST SHIFT
FOURTH SEMESTER INFORMATION TECHNOLOGY STUDENTS HAND-BOOK-2022-23

FACULTY OF ENGG. & TECH. - PIET									
LAB PLAN (Practical)									
Academic Year: 2022-2023		**Sem: 5th sem**							
Subject: Web Programming		**Department: IT**							
Name of Teacher: Dheeraj Kumar Singh, Tejal Patel		**Hrs./Week: 02**							
Sr. No.	**Name of Topic**	**Planned Date**							
		Batch A1	**Batch A2**	**Batch B1**	**BatchB2**	**Batch C1**	**Batch C2**	**Batch D1**	**Batch D2**
1	Create a web page illustrating text formatting tags available in HTML.	01/06/22	01/06/22	30/05/22	30/05/22	31/05/22	31/05/22	03/06/22	03/06/22
2	Create a web page to demonstrate working of ordered, unordered and nested list.	01/06/22	01/06/22	30/05/22	30/05/22	31/05/22	31/05/22	03/06/22	03/06/22
3	Create a HTML5 web page which shows the use of Canvas.	08/06/22	08/06/22	06/06/22	06/06/22	07/06/22	07/06/22	10/06/22	10/06/22
4	Create a HTML5 web page which shows the use of Audio & Video.	08/06/22	08/06/22	06/06/22	06/06/22	07/06/22	07/06/22	10/06/22	10/06/22
5	Create a student registration form using the following tags <form>, <input>, <textarea>, <button>, <select>, <option>The registration form must consist of following information: First Name, Middle Name, Last Name, Gender (use radio button), Address, Phone No., email id, Hobbies (use checkbox), City, State, Country, College Name (use dropdown menu)	15/06/22	15/06/22	13/06/22	13/06/22	14/06/22	14/06/22	17/06/22	17/06/22
6	Create a HTML5 web page which shows the use of Geolocation.	22/06/22	22/06/22	20/06/22	20/06/22	21/06/22	21/06/22	24/06/22	24/06/22
7	Apply inline, internal and external style sheet for the student registration form.	29/06/22	29/06/22	27/06/22	27/06/22	28/06/22	28/06/22	01/07/22	01/07/22
8	Implement 2D transformation on Web page.	06/07/22	06/07/22	04/07/22	04/07/22	05/07/22	05/07/22	08/07/22	08/07/22
9	To create an html page to explain the use of various predefined functions in an array & Date object in JavaScript.	13/07/22	13/07/22	11/07/22	11/07/22	12/07/22	12/07/22	15/07/22	15/07/22
10	Write a Program to show use of alert, confirm and prompt box.	20/07/22	20/07/22	18/07/22	18/07/22	19/07/22	19/07/22	22/07/22	22/07/22

11	Write JavaScript to perform the following operations: a. to find highest from given three values b. to calculate factorial of n	20/07/22	20/07/22	18/07/22	18/07/22	19/07/22	19/07/22	22/07/22	22/07/22
12	Write JavaScript to perform the following operations: a. to calculate sum of 1 to n b. to check whether given number is palindrome or not	27/07/22	27/07/22	25/07/22	25/07/22	26/07/22	26/07/22	29/07/22	29/07/22
13	Write a Java Script program to print current date & time.	27/07/22	27/07/22	25/07/22	25/07/22	26/07/22	26/07/22	29/07/22	29/07/22
14	Create CD Catalogue Table in XML and display it using XSL Style Sheet	17/08/22	17/08/22	01/08/22	01/08/22	02/08/22	02/08/22	12/08/22	12/08/22
15	Creating the JavaScript file to handle our json.	17/08/22	17/08/22	01/08/22	01/08/22	02/08/22	02/08/22	12/08/22	12/08/22
16	Write a PHP code to print your personal details.	24/08/22	24/08/22	22/08/22	22/08/22	16/08/22	16/08/22	26/08/22	26/08/22
17	Write a PHP code to shows the use of Decision Making and find out if given number is prime or not prime.	24/08/22	24/08/22	22/08/22	22/08/22	23/08/22	23/08/22	26/08/22	26/08/22
18	Write a PHP code for database connection with MySQL and also perform Insert and Delete.	24/08/22	24/08/22	29/08/22	29/08/22	30/08/22	30/08/22	02/09/22	02/09/22

2PARUL INSTITUTE OF ENGINEERING & TECHNOLOGY – FIRST SHIFT
FOURTH SEMESTER INFORMATION TECHNOLOGY STUDENTS HAND-BOOK-2022-23

FACULTY OF ENGG. & TECH. – PIET						
LECTURE PLAN (Theory)						
Academic Year: 2022-2023						**Sem: 5th sem**
Subject: Theory of Computation						**Department: IT**
Name of Teacher : Ashish Kumar						**Hrs./Week: 03 Hrs /Week**
Sr. No.	**Name of Topic**	**Hrs Allocated**	**Planned Date**			
			IT 5A	**IT 5B**	**IT 5C**	**IT 5D**
1	**Chapter: 1 Introduction**	**4**				
	Alphabet	1	30-May	30-May	01-Jun	30-May
	Languages and grammars	1	31-May	31-May	02-Jun	31-May
	Productions and derivation	1	01-Jun	01-Jun	03-Jun	03-Jun
	Chomsky hierarchy of languages	1	06-Jun	06-Jun	08-Jun	06-Jun
2	**Chapter: 2 Regular languages and finite automata**	**10**				
	Regular expressions and languages	1	07-Jun	07-Jun	09-Jun	07-Jun
	Deterministic finite automata (DFA) and equivalence with regular expressions	2	08-Jun	08-Jun	10-Jun	10-Jun
	Nondeterministic finite automata (NFA) and equivalence with DFA	2	14-Jun	14-Jun	16-Jun	14-Jun
	Regular grammars and equivalence with finite automata	1	20-Jun	20-Jun	17-Jun	14-Jun
	Properties of regular languages	1	21-Jun	21-Jun	22-Jun	20-Jun
	Pumping lemma for regular languages	2	22-Jun	22-Jun	23-Jun	21-Jun
	Minimization of finite automata.	1	28-Jun	28-Jun	29-Jun	27-Jun
3	**Chapter: 3 Grammars**	**13**				
	Context-free grammars (CFG) and languages (CFL)	1	29-Jun	29-Jun	30-Jun	28-Jun
	Chomsky and Greibach normal forms	1	04-Jul	04-Jul	01-Jul	01-Jul
	Nondeterministic pushdown automata (PDA) and equivalence with CFG	2	05-Jul	05-Jul	06-Jul	04-Jul
	Parse trees	1	11-Jul	11-Jul	08-Jul	08-Jul
	Ambiguity in CFG	1	12-Jul	12-Jul	13-Jul	11-Jul
	Pumping lemma for context-free languages	2	13-Jul	13-Jul	14-Jul	12-Jul
	Deterministic pushdown automata	1	19-Jul	19-Jul	20-Jul	18-Jul
	Closure properties of CFLs.	1	20-Jul	20-Jul	21-Jul	19-Jul
	Context-sensitive languages	1	25-Jul	25-Jul	22-Jul	22-Jul

	Context-sensitive grammars (CSG) and languages	1	26-Jul	26-Jul	23-Jul	25-Jul
	Linear bounded automata and equivalence with CSG.	1	27-Jul	27-Jul	27-Jul	26-Jul
4	**Chapter: 4 Turing Machines**	**10**				
	The basic model for Turing machines (TM)	1	01-Aug	01-Aug	28-Jul	29-Jul
	Turing-recognizable (recursively enumerable)	2	16-Aug	16-Aug	29-Jul	01-Aug
	Turing-decidable (recursive) languages and their closure properties	2	22-Aug	22-Aug	12-Aug	12-Aug
	Variants of Turing machines,	1	24-Aug	24-Aug	18-Aug	22-Aug
	Nondeterministic TMs and equivalence with deterministic TMs,	2	29-Aug	29-Aug	24-Aug	23-Aug
	Unrestricted grammars and equivalence with Turing machines,	1	05-Sep	05-Sep	26-Aug	29-Aug
	TMs as enumerators.	1	06-Sep	06-Sep	01-Sep	30-Aug
5	**Chapter: 5 Undecidability**	**7**				
	Church Turing thesis	1	07-Sep	07-Sep	02-Sep	02-Sep
	Universal Turing machine	1	12-Sep	12-Sep	07-Sep	12-Sep
	The universal and Diagonalization languages	2	13-Sep	13-Sep	08-Sep	13-Sep
	Reduction between languages	1	19-Sep	19-Sep	14-Sep	19-Sep
	Rice s theorem	1	20-Sep	20-Sep	15-Sep	20-Sep
	Undecidable problems about languages	1	21-Sep	21-Sep	16-Sep	23-Sep

Academic Regulations

EXAMINATION SYSTEM & EVALUATION:

Each course in the Programme shall be evaluated as follows.

(a) Continuous Evaluation (CE) – 20 Marks. This consists of a maximum of 5 marks for attendance

A student shall have a minimum of 75% attendance in a course to be eligible to appear in the End Semester Examination

(b) Mid Term Examination: 20 marks. This examination shall be conducted bythe course teacher. The maximum duration for the examination shall be two hours

(c) End Semester Examination: The End Semester Examination shall be conducted for 60

A student who fails to secure a minimum of 40% in End Semester Examination may appear for Supplementary Examination in the subject which will be conducted in the immediately succeeding semester.

(d) Continuous Evaluation (CE) in laboratory:

Laboratory work in the subject shall be evaluated in the form of CE & ESE. CE in Laboratory Work shall carry 40% weightage as follows:

Assessment Parameters	Continuous Evaluation (40%)
Day-to-day Laboratory Work & Attendance	20%
Submission of Laboratory Work/Journal	5%
Exam	15%

(e) End Semester Examination (ESE) in laboratory:

ESE in Laboratory Work shall carry 60% weightage as follows:

Assessment Parameters	Continuous Evaluation (60%)
Lab Experiments/ Exercise	30%
Viva- Voce	20%
Certified Record	10%

A minimum of 50% of marks shall be obtained in CE (Internal component) and ESE (External/Final component) separately in a practical head/laboratory work in order to be declared as passed in the practical head/laboratory work and for the award of the grade in that laboratory work.

DETENTION:

A student is said to have been detained and not allowed to appear for End Semester Examination (ESE) at the end of the semester when – The student does not have a minimum 75% attendance or 65% attendance with condonation in all subjects

OR

The student has not scored a minimum of 40% of marks in Internal Examination (Mid-Term Examination plus CE) in each of the courses of Theory and/or for field work of that semester. Such a student shall have to repeat the same semester/course in next academic year subsequently and satisfy the above requirements afresh to becomeeligible to appear for the End Semester Examination (ESE), conducted at the end of thesemester.

1) List of Activities During Semester

Sr. No	Activities	Count
1	Webinar	4
2	Workshop	2
3	Seminar/Expert talk	2
4	Technical Event	2
5	Tinkering Hub Event	2

2) BY Tinkering Hub

Sr.no	Title	Tentative Date	Expert name
1.	One day hands on workshop on iot using Atmega 328 and ESP 8266 development board	2/7/22	Prof Bharat tank
2.	Demonstration of artificial intelligence and deep learning applications	16/7/22	Prof jayveersingh kher

3) CSR/UBA Activity

Sr No	Title	Tentative Date	Expert Name
1	International Yoga Day Celebration	21-06-2022	Prof. Shaleen Shukla
2	Self Defense for Girls	20-07-2022	Prof. Shaleen Shukla
3	Clean India	14-08-2022	Prof. Shaleen Shukla