
***Faculty of Information
Technology***

***First Semester, 2023-2024
Course Handout***

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The ICFAI University, Raipur

Faculty of Information Technology

First Semester, 2023-2024

Course Handouts

Course Code	Course Title	L	P	U
CA112	Information Technology Trends	3	0	3

Instructor-in-charge: Mr. NAVEEN KUMAR VAISHNAV

Scope & Objective of the Course:

After successful completion of the course student will be able to:

1. Understand the basics of Information technology trends, Digital Systems, Basics of computer Network and the new trends in Computer Science Field.
2. The fundamentals of how computers works and performs operations, a basic understanding of advanced devices.
3. Expose to the basic tools and applications used in Latest information technology trends

Textbook T1	P.K. Sinha, Priti Sinha –Computer fundamentals, BPB Publication
Reference Book(s) R1	M.N. Doja — Fundamentals Of Computers And Information Technology, Deep & Deep publication, 2005
NPTEL	https://nptel.ac.in/courses/106/106/106106092/
SWAYAM	https://onlinecourses.swayam2.ac.in/cec19_cs06/preview

Lecture wise plan:

Lecture Nos.	Learning Objective	Topics to be covered	Reference (chapter/sec./Page No.s of Text/Ref. Books)
1-3	Introduction to Computers	Characteristics of Computers, Generations of Computer	T1: Pg 1-12
4-6	Basic Computer Organization	Input, Output, Storage Units. Memory, CPU, Types of Computers	T1: Pg 19-22
7-10	Software	Types of Software, Operating System and Types	T1: Pg 180-185
11-15	Web Development	HTML tags, images, hyperlinks, tables	T1: Pg 386
16-22	Number System	Types of Programming Languages, Number System conversion	T1: Pg 23-35

23-25	Logic Circuit	Logic Gates and their truth tables	T1 : Pg 80-83
26-28	Computer Languages	Machine Language, Assembly Language, High level languages	T1: Pg 220- 250
29-33	Computer Network	Communication, Network, Types of Network, Client Server Model, Types of Network Address	T1: Pg 346- 250
34-36	Web Terminologies	Web Browser, DNS, Search Engine	T1: Pg 383- 388
37-38	Multimedia	Text, Graphics, Animation, Audio, Video	T1: Pg 392- 400
39-40	Advanced technologies	Introduction to Big Data, Cloud Computing, Machine Learning, Deep Learning	Class Notes

Evaluation Scheme:

Student evaluation is based on the series of Tests and Quizzes conducted during the course of semester followed by a comprehensive examination.

Component	Duration	Weightage (%)	Date	Syllabus (Lecture No)	Remarks
Test 1	60 Minutes	16	11-09-2023	1-15	CB
Test 2	60 Minutes	17	16-10-2023	16- 28	OB
Test 3	60 Minutes	17	20-11-2023	29-40	CB
Lab	2 Hours	10	**	**	CB
Comprehensive Exam	3 Hours	40	11-12-2023	1- 40	CB

** To be announced in the class

OB* = Open Book

CB = Closed Book

Make-up Policy: Make up will be given only under genuine circumstances for Tests Only. However prior and proper intimation to the concerned instructor is must.

General: It shall be the responsibility of individual students to attend all sessions, to take prescribed Assessment Tests, Tests and Comprehensive Examinations, etc.

Date: 02/08/2023

**Mr.NAVEEN KUMAR VAISHNAV
Instructor-in-charge**

The ICFAI University, Raipur

Faculty of Information Technology

First Semester, 2023-2024

Course Handouts

Course Code	Course Title	L	P	U
EGL111	English Language Skills I	3	0	3

Instructor-in-charge: Dr.SHUBHRA TIWARI

The course aims at familiarizing students with basic English sound system to enhance their power of articulation. It provides intensive practice and extensive exposure to listening, speaking, reading and writing Skills. It would enhance not only their comprehensive knowledge of vocabulary but also strengthens their all four skills. The design and content of the course are aimed at making students gain language proficiency and also improve their communication skills.

Textbook(s) T1	English Language Skills - I, Dr. K Aruna, ICFAI Press, 2007.
Work Book W1	Words are Your Friends-I, Dr. K.Aruna, ICFAI Press, 2007.
Reference book(s) R1	Dictionary - Latest Publication, A.S. Hornby.
R2	Cambridge English Pronouncing Dictionary, Daniel Jones, Cambridge University Press

Lecture wise plan:

Lecture Nos.	Learning Objective	Topics to be covered	Reference (Ch./Sec./ Page Nos.of Text Book)
1	To know the distinction between letters and sounds, to know consonant and vowel sounds and to learn some principles for pronunciation.	English Sound System Classification of English Sounds	Ch.1 pp.1— 27 Ref. book: Dictionary
2-3	To acquire correct pronunciation of English Sounds. To practice pronunciation of words. To make one's speech nationally and internationally intelligible to the listener. To develop confidence in articulation of sounds.	Description of sounds. Different spellings for the same sound. Syllable structure. Suggestions of pronunciation.	Chap.1 Ref. book, Dictionary
4	To be aware of silent letters in English Language	Silent Letters	Ch.2 pp.28 — 34 Ref. book, Dictionary

5-6	To acquire effective pronunciation To avoid semantic confusions. To give practice in Vocabulary Expansion	Lessons 1 to 3 and Review - 1	Work- Book; "Words are Your Friends"
7	To understand the various uses of Dictionary. To learn various methods for clarifying the meaning of a word.	Dictionary: Its use	Ch.3 pp.35—47 Ref. book, Dictionary
8-9	To know various English words. To identify specific uses.	Vocabulary Extension synonyms, antonyms, one word substitutes	Ch .4 pp.48-64 Annexure - B

Evaluation Scheme:

Student evaluation is based on the series of Tests and Quizzes conducted during the course of semester followed by a comprehensive examination.

Component	Duration	Weightage (%)	Date	Syllabus (Lecture No)	Remarks
Test 1	60 Minutes	16	11-09-2023	1-15	CB
Test 2	60 Minutes	17	16-10-2023	16- 28	OB
Test 3	60 Minutes	17	20-11-2023	29-40	CB
Lab	2 Hours	10	**	**	CB
Comprehensive Exam	3 Hours	40	11-12-2023	1- 40	CB

** To be announced in the class

OB* = Open Book

CB = Closed Book

Make-up Policy: Make up will be given only under genuine circumstances for Tests Only. However prior and proper intimation to the concerned instructor is must.

General: It shall be the responsibility of individual students to attend all sessions, to take prescribed Assessment Tests, Tests and Comprehensive Examinations, etc.

Date: 03/08/2023

Dr.SHUBHRA TIWARI
Instructor-in-charge

The ICFAI University, Raipur

Faculty of Information Technology

First Semester, 2023-2024

Course Handouts

Course Code	Course Title	L	P	U
MATH113	Mathematics-I	3	0	3

Instructor-in-charge: Ms.YOGITA CHANDRARKAR

Scope & Objective of the course:

The course is designed to provide basic concepts of Linear algebra and an introduction to the Complex number and also introduce to differentiation and integration, both are major concepts of Calculus.

Textbook(s) T1	Linear Algebra by Kenneth Hoffmann, Ray Kunze.
T2	Complex Analysis and Applications by J.W. Brown, R.V. Churchill; Mc Graw-Hill.
T3	Essential Calculus Skill by Chris McMullen.
Reference book(s) R1	Schaum's Outline of Linear Algebra by Seymour Lipschutz, Marc Lipson; McGraw Hill.
Reference book(s) R2	Complex Analysis for Mathematics and Engineering, John H. Mathews & Russel W. Howell, Jones & Bartlett Publishers,2001.

Lecture wise plan:

Lecture No.	Learning Objective	Topics to be covered	Reference (Ch/ Sec/ Pg Nos of Text Book)
1-6	Complex Numbers and Quadratic Equations	Introduction, Need for Complex numbers, especially $\sqrt{-1}$, to be motivated by the inability to solve some of the quadratic equations, Algebraic properties of Complex numbers, The Modulus and the conjugate of a Complex number, Argand plane, Polar representation, Quadratic Equations.	Ch1/1-14/TB2
7-14	Differentiation	Differential coefficient or Derivative of a function, Geometrical interpretation of the derivative of a function, Notation, Properties of derivatives, Derivatives of some important functions, Product rule, Quotient rule, Chain rule, double differentiation, Maximum and Minimum values of a function, Maxima, Minima.	Ch1,Ch2,Ch3,Ch4 ,Ch5/TB3

15-25	Integration	Integral of a function, Properties of Indefinite Integral, Standard formulae for Integration, Definite Integral of a function, Algebraic method to evaluate Definite Integral, Properties of Definite Integral, Rule of substitution, Geometrical Significance of a Definite Integral, Geometrical method to evaluate Definite Integral.	Ch9, Ch10, Ch11,Ch12,Ch13,Ch14 ,Ch15/TB3
26-32	Matrices	Introduction, Notation, Order, Equality, Types of Matrices, Zero and Identity Matrix, Transpose of a Matrix, Symmetric and Skew-Symmetric Matrices, Operation on Matrices, Addition and Multiplication and Multiplication with a scalar, Simple properties of Addition, Multiplication and scalar multiplication, On commutativity of multiplication of matrices and the existence of non-zero matrices whose product is the zero matrix (restrict to square matrices of order 2), Invertible matrices and proof of the uniqueness of inverse, if it exists; (Here all matrices will have real entries).	Ch1/1-15/TB1
33-40	Determinants	Determinant of a square matrix (up to 3 x 3 matrices), Minors, Co-factors and applications of Determinants in finding the area of a triangle, Adjoint and Inverse of a square matrix, Consistency, Inconsistency and number of solutions of system of linear equations by examples, Solving system of linear equations in two or three variables (having unique solution) using Inverse of a matrix.	Ch2/18-35/TB1

Evaluation Scheme:

Student evaluation is based on the series of Tests and Quizzes conducted during the course of the semester followed by a comprehensive examination.

Evaluation Component	Duration	Weightage	Date	Syllabus (Lec. No.)	Remarks
Test 1	60 Minutes	16	12-09-2023	01-10	CB
Test 2	60 Minutes	17	17-10-2023	11-21	OB
Test 3	60 Minutes	17	21-11-2023	22- 33	CB
Quizzes (2)	20 minutes	10	**	**	CB
Comprehensive Exam	3 Hours	40	15-12-2023	01-40	CB

** To be announced in the class

Make-up Policy: Make up will be given only under genuine circumstances for Tests Only. However prior and proper intimation to the concerned instructor is must.

General: It shall be the responsibility of individual students to attend all sessions, to take prescribed Assessment Tests, Tests and Comprehensive Examinations, etc.

Date: 04/08/2023

Ms.YOGITA CHANDRAKAR
Instructor-in-charge

The ICFAI University, Raipur

Faculty of Information Technology

First Semester, 2023-2024

Course Handouts

Course Code	Course Title	L	P	U
MATH114	Probability and Statistics	3	0	3

Instructor-in-charge: Ms.YOGITA CHANDRAKAR

Scope & Objective of the course:

To introduce the fundamentals of Mathematics & Statistics, its operation and logical features. This course takes a bottom-up approach to introduce different areas of Mathematics & Statistics. The probability theory is very much helpful for making predictions. Estimates and predictions from an important part of research investigation. With the help of statistical methods, we make estimates for further analysis. Thus, statistical methods are largely dependent on the theory of probability.

Textbook(s) T1	Probability and Statistics, by Hari Arora.
Reference Book(s) R1	Business Mathematics and Statistics, by N.G. Das, J. K. Das.
Reference Book(s) R2	Mathematical Statistics, by H.C. Saxena and J.N. Kapur.

Lecture wise plan:

Lecture No.	Learning Objective	Topics to be covered	Reference (Ch/Sec/Pg Nos of Text Book)
1-6	Statistics and Measure of Central Tendency	Statistics, data, types of data, Series (individual, discrete, Continuous), Measures of Central Tendency (Averages): Concept of Central Tendency Requirements of good statistical average Arithmetic Mean: Definition, Properties of A.M.(without proof), Combined mean.	Ch-4/186-201/T1
7-10	Mean, Median, Mode	The empirical relation between Mean, Median and Mode, Merits and Demerits of Mean, Median and Mode. Numerical examples.	Ch-4/202-231/T1
11-15	Correlation	Analysis of Bivariate data: Correlation: Concept and Types of correlation, Methods of studying correlation, Scatter Diagram.	Ch-4/283-285/T1

16-20	Correlation Coefficients	Karl Pearson's correlation coefficient (r), Spearman's rank correlation coefficient(R) Computation of r for ungrouped data, Computation. Interpretation of $r = -1$, $r = 0$, $r = +1$.	Ch-4/285-310/T1
21-25	Regression and Regression Coefficients	Regression: Concept of regression, Lines of regression, Regression Coefficients, Relation between correlation coefficient and regression coefficients, Numerical examples on correlation and regression.	Ch-4/311-352/T1
26-30	Probability and Probability Distributions	Probability and Probability Distributions: Probability: Trial, Sample Space, Events, Classical definition of Probability, Addition and Multiplication laws of Probability (without proof), Examples without use of permutations and computations.	Ch-1/1-21/T1
31-34	Binomial Distribution	Binomial Distribution: Mean and Variance (without proof), Simple examples to find probabilities and parameters.	Ch-1/44-47/T1
35-40	Normal Distribution	Normal Distribution: Definition of Standard Normal Variate and its p.d.f. Properties of normal curve, Examples to find probabilities for given area under standard normal curve.	Ch-1/116-121/T1

Evaluation Scheme:

Student evaluation is based on the series of Tests and Quizzes conducted during the course of semester followed by a comprehensive examination.

Evaluation Component	Duration	Weightage	Date	Syllabus (Lec. No.)	Remarks
Test 1	60 Minutes	16	12-09-2023	01-10	CB
Test 2	60 Minutes	17	17-10-2023	11-21	OB
Test 3	60 Minutes	17	21-11-2023	22- 33	OB
Quizzes (2)	20 minutes	10	**	**	CB
Comprehensive Exam	3 Hours	40	13-12-2023	01-40	CB

** To be announced in the class

Make-up Policy: Make up will be given only under genuine circumstances for Tests Only. However prior and proper intimation to the concerned instructor is must.

General: It shall be the responsibility of individual students to attend all sessions, to take prescribed Assessment Tests, Tests and Comprehensive Examinations, etc.

Date: 04/08/2023

Ms.YOGITA CHANDRAKAR
Instructor-in-charge

The ICFAI University, Raipur

Faculty of Information Technology

First Semester, 2023-2024

Course Handouts

Course Code	Course Title	L	P	U
MGT115	Principles of Management	3	0	3

Instructor-in-charge: Dr.SHWETA DEWANGAN

Learning Outcomes:

After successful completion of the course student will be able to know

1. About the Knowledge in Concepts and Theory of Principles of Management.
2. Exercise the strategies and policies of planning
3. Will learn about the different theories of planning.
4. Will learn about the different techniques of controlling.
5. Get knowledge about the types of control.

Text Book T	Management Concepts & Practices(Himalaya Publishing hous
Reference book(s) R1	Introduction to management IUP
Reference book(s) R2	Management Principles and Practices
Website	www.investopedia.com/terms/s/swot.asp , https://businessnewsdaily.com/4245-swot-analysis.html

Lecture wise plan:

Lecture Nos.	Learning Objective	Topics to be covered	Reference (Chapter/Sec./Page Nos. of Text/Ref. Books)
1-2	General introduction of management	Concept of management- Definition, Functions and Responsibilities of Management	T1-Pg no 3-11, R1-Pg no 3-10
3-4	Concept of managers	Levels of Management, Management Thought and Thinkers	T1-175-186 R1-11-23
5-7	Principles of management	Robert Owen, F.W.Taylor, Henry Fayol etc. Neo Classical Theories	T1-63-105
8-9	Planning	Planning: Objective, types and level of planning	T1-297-314,315-344 R1-37-49

9-10	How to implement planning	Strategies and Policies	R1-50-61
11-12	Analysis of self	SWOT analysis	T1 & R2
13-14	Decision making	Decision Making-Meaning, Importance	R1-62-70
15-16	Organizing process	Organizing: Nature and purpose of organizing,	T1-361-380 R1-74
17-18	Manpower planning	Nature & Scope of Staffing, Manpower Planning Organization structure	T1-727-754 R1-113-114,
19-20	Staff authority	organization -Line and Staff authority	T1-423-458 R1-88-92
21-23	Direction for employee	Delegation of authority Directing: Creativity	T1-411-422 R1-93-94
24-26	Motivation theories	Innovation Motivation-Motivation Theories	T1-615-651 R1-123-129
27-29	Leadership authority	Leadership, Leadership theories	T1-652-673 R1-131-139
30-32	Organization culture	Communication, Organization Culture- Managing cultural diversity	T1-693-726 R1-141-147,75-78
33-36	Controlling power	Controlling: Meaning, Process and Control Techniques	T1-573-591 R1152-172
37-40	Quality control	Types of control- Maintenance Control, Quality Control, Managing Productivity, Cost Control.	T1-824-849 R1-167-172

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Evaluation Component	Duration	Weightage	Date	Syllabus (Lec.No.)	Remarks
Test 1	60 Minutes	16	13-09-2023	1-10	CB
Test 2	60 Minutes	17	18-10-2023	11-20	OB
Test 3	60 Minutes	17	22-11-2023	21-32	CB
Quiz (1) Assignment(1)	20 Minutes each	10	**	**	CB
Comprehensive Exam	3 Hours	40	18-12-2023	1-40	CB

** To be announced in the class Exam

OB* = Open Book Exam

CB = Closed Book

Make-up Policy: Make –up will be given only under genuine circumstances for Tests Only. However prior and proper intimation to the competent authority is required.

General: It shall be the responsibility of individual students to attend all sessions, to take prescribed Assessment Tests, Tests and Comprehensive Examinations, etc. The student is required to refer the books and journals in the library and attend all presentation sessions and submit assignments to enhance the subject knowledge.

Date: 04/08/2023

Dr.SHWETA DEWANGAN
Instructor-in-charge

The ICFAI University, Raipur

Faculty of Information Technology

First Semester, 2023-2024

Course Handouts

Course Code	Course Title	L	P	U
TA116	Computer Programming I	3	0	3

Instructor-in-charge: Dr.RAVI KIRAN PATNAIK

Learning Outcomes:

1. Learn fundamental knowledge of computer hardware and number systems
2. Learn basic terminology used in computer programming
3. Develop ability to write, compile and debug programs in C language
4. Design programs involving decision structures, loops and functions
5. Understand the dynamics of memory by the use of pointers

Textbook(s) T1	1. C programming By Ritchie & Kernighan 2. C Programming By Bala Guruswamy
Reference book(s) R1	Programming with C By Gottfried
R2	C Programming By Yashwant Kanetkar
Laboratory work:	To implement Programs for various kinds of programming constructs in C Language.

Lecture wise plan:

Lecture Nos.	Learning Objective	Topics to be covered	Reference (Ch./Sec./Page Nos. of Text Book)
1-5	Computers Fundamentals	Classification of Computers, Application of Computers, Basic organization of computer, Input and Output Devices, Binary Number System, Computer memory, Computer Software.	On Board
6-10	Algorithms and Programming Languages	Algorithm, Flowcharts, Pseudo code, Generation of Programming Languages.	
11-20	C Language	Structure of C Program, Life Cycle of Program from Source code to Executable, Compiling and Executing C Code, Keywords, Identifiers, Primitive Data types in C, variables, constants, input/output statements in	Text-1, Ch,1,2

		C, operators, type conversion and type casting. Conditional branching statements, iterative statements, nested loops, break and continue statements.	
21-30	Functions:	Declaration, Definition, Call and return, Call by value, Call by reference, showcase stack usage with help of debugger, Scope of variables, Storage classes, Recursive functions, Recursion vs Iteration.	Text-1, Ch 3
31-40	Arrays, Strings and Pointers	One-dimensional, Two-dimensional and Multi-dimensional arrays, operations on array: traversal, insertion, deletion, merging and searching, Inter-function communication via arrays: passing a row, passing the entire array, matrices. Reading, writing and manipulating Strings, Understanding computer memory, accessing via pointers, pointers to arrays, dynamic allocation, drawback of pointers.	Text-1 Ch 4, 5, 6

Evaluation Scheme:

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Evaluation Component	Duration	Weightage	Date	Syllabus (Lec. No.)	Remarks
Test 1	60 Minutes	16	13-09-2023	1-10	CB
Test 2	60 Minutes	17	18-10-2023	11-4	OB
Test 3	60 Minutes	17	27-11-2023	5-6	CB
LAB	Through out	10	**	**	CB
Comprehensive Exam	3 Hours	40	20-12-2023	1-8	CB

** To be announced in the class

Make-up Policy: Make up will be given only under genuine circumstances for Tests Only. However prior and proper intimation to the concerned instructor is must.

General: It shall be the responsibility of individual students to attend all sessions, to take prescribed Assessment Tests, Tests and Comprehensive Examinations, etc.

Date: 03/08/2023

Dr.RAVI KIRAN PATNAIK
Instructor-in-charge

The ICFAI University, Raipur

Faculty of Information Technology

First Semester, 2023-2024

Course Handouts

Course Code	Course Title	L	P	U
CA211	Computer System Architecture	3	0	3

Instructor-in-charge: Dr.RAMESH KUMAR YADAV

Learning Outcomes:

The learning objectives of this course are to: This course aims to as to introduce variety of new software used by analysts, designers to manage projects, analyze and document systems, design new systems and implement their plans. It introduces also a recent coverage of UML, wireless technologies and ERP; web based systems for e-commerce and expanded coverage on RAD and GUI design.

Text Book	Title: Systems Analysis and Design Author(s): Kenneth E. Kendall and Julie E. Kendall Publisher: Prentice Hall PTR, 5th Edition, 2001
Reference book	Essentials of Systems Analysis and Design. Author: Valacich; Edition: 6th; ISBN: 9780133546231

Lecture-wise-plan:

Lecture Nos.	Learning Objective	Topics to be covered	Reference (chapter/sec./Page Nos of Text/Ref. Books)
1-7	To understand the basics of SAD	Introduction to SAD and Data and Information, Systems Analysis, Properties of a System, Elements of a System, Types of Systems, Categories of Information	T1 Ch-1 1.1,1.3
8-15	To learn the concepts of SDLC	Systems Analysis and Design Life Cycle Phases of SDLC Life Cycle of System Analysis and Design Role of System Analyst, Attributes of a Systems Analyst	T1 Ch-2 2.1,2.4,2.7,2.9
16-20	To learn the concepts of FA	Information gathering – strategies – methods, Feasibility analysis, Steps Involved in Feasibility Analysis Types of Feasibilities	T1 Ch-3 3.2,3.5 5.5,3.8
21-23	To learn the concepts of System Tool	Structured Analysis Tools for systems analysts Data Flow Diagrams (DFD) or Bubble Chart Data Dictionary Decision Trees,	T1 Ch-4 4.2, 4.6 4.5,4.10

24-25	To understand concept of procedure specifications in structured	Structured systems analysis and design, Types of DFD, Decision Tables Pseudo code	T1 Ch-5 5.4,5.8
26-30	To understand concept of ER-diagram	Data oriented systems design, ER Diagram Use of ER-Diagram, Concept	T1 Ch-5 5.3,5.5
31-40	To learn the concepts of Input Data Design and output Report	Data input and output methods Inputs to System Design Outputs for System Design File Organization	T1 Ch-5,Ch6 5.9, 6.4,7.1 T1 Ch6 6.8,7.4,7.9

Evaluation Scheme:

Student evaluation is based on the series of Tests and Quizzes conducted during the course of semester followed by a comprehensive examination.

Evaluation Component	Duration	Weightage	Date	Syllabus (Lec.No.)	Remarks
Test 1	60 Minutes	17	06-09-2022	1-15	CB
Test 2	60 Minutes	17	17-10-2022	16- 25	CB
Test 3	60 Minutes	16	17-11-2022	26- 40	CB
Quizzes (2)	20 Minutes each	10	**	**	CB
Comprehensive Exam	3 Hours	40	12-12-2022	1- 40	CB

Date: 03/08/2023

Dr.RAMESH KUMAR YADAV
Instructor-in-charge

The ICFAI University, Raipur

Faculty of Information Technology

First Semester, 2023-2024

Course Handouts

Course Code	Course Title	L	P	U
CA212	Database Management Systems	3	0	3

Instructor-in-charge: Dr.BHARTI PATEL

Scope & Objective of the Course:

After successful completion of the course student will be able to:

1. To understand basic concepts and implementation issues of Database System.
2. To learn ER-modeling, Data models, Normalization and Functional dependencies, Relational Algebra, Implementation and Advanced Concepts.
3. To learn the hands-on database operations in SQL interface

Textbook T1	Database System Concepts, Silberschatz A, Korth HF, and SudarshanS, TMH, 2002
Reference book(s) R1	Database Management Systems, Ramakrishna R.& Gehrke J, 3 rd Edition, Mc-GrawHill, 2002
R2	Database Systems-The Complete book, HectorG Molina, Jeffrey D.Ullman and Jennifer Widom, Pearson Education, 2002
NPTEL	https://nptel.ac.in/courses/106/105/106105175/
SWAYAM	https://onlinecourses.swayam2.ac.in/cec19_cs05/preview

Lecture wise plan:

Lecture Nos.	Learning Objective	Topics to be covered	Reference (chapter/sec./Page No.s of Text/Ref. Books)
1-3	Introduction to Database Systems	Course overview, Overview of modern DBMS, Database Architecture	T1: 1.1-1.13
4-8	About Database	Data Independence, Data Dictionary, Types of Keys	T1: 2.1-2.13
8-11	Data modeling	Basic elements of ER model, Attributes, Types of Relationship	T1: 7.1-7.10
12-16	Introduction to SQL constructs	DDL & DML Commands	T1: 3.1-3.9
17-19	Types of Operators and Functions	In, Between, Like, Aggregate Functions	T1: 5.1
20-25	Understanding additional SQL structures	Insert, Delete, Update, View Definition And Use, Temporary Tables, Nested Queries	T1: 4.1-4.5

26-29	Database design through Functional Dependencies & Normalization	Functional dependencies, Normal Forms: 1NF,2NF, 3NF, BCNF, Multi-valued dependencies:4NF,5NF	T1: 8.1-8.9
30-32	Formal Query Languages	Relational algebra operators, Relational algebra queries	T1: 6.1.-6.4
33-35	Integrity constraints	Integrity constraints: Not null, unique, check, primary key, foreign key, references, Triggers.	T1: 4.4-4.5
36-38	B Tree, B+Tree	Introduction and operations of B Tree, B+ Tree	T1: 12.1-12.8
39-40	Latest Technologies	Introduction to Hadoop, Big-Data, Data warehouse	T1: 14.1-14.10

Evaluation Scheme:

Student evaluation is based on the series of Tests and Quizzes conducted during the course of semester followed by a comprehensive examination.

Component	Duration	Weightage (%)	Date	Syllabus (Lecture No)	Remarks
Test 1	60 Minutes	16	11/09/2023	1-16	CB
Test 2	60 Minutes	17	16/10/2023	17- 29	OB
Test 3	60 Minutes	17	20/11/2023	30-40	CB
Lab	2 Hours	10	**	**	CB
Comprehensive Exam	3 Hours	40	11/12/2023	1- 40	CB

** To be announced in the class

OB* = Open Book

CB = Closed Book

Make-up Policy: Make up will be given only under genuine circumstances for Tests Only. However prior and proper intimation to the concerned instructor is must.

General: It shall be the responsibility of individual students to attend all sessions, to take prescribed Assessment Tests, Tests and Comprehensive Examinations, etc

Date: 01/08/2023

**Dr.BHARTI PATEL
Instructor-in-charge**

The ICFAI University, Raipur

Faculty of Information Technology

First Semester, 2023-2024

Course Handouts

Course Code	Course Title	L	P	U
CA213	Data Structures and Algorithms	3	0	3

Instructor-in-charge: Mr.ASHISH KUMBHARE

Learning Outcomes:

This course introduces the core principles and techniques for Data structures. Students will gain experience in how to keep a data in an ordered fashion in the computer. Students can improve their programming skills using Data Structures Concepts. After successful completion of the course student will be able to

1. Explore basic data structures such as stacks and queues.
2. Introduce a variety of data structures such as Linked list, Trees, search trees, Graphs
3. Introduce sorting and searching algorithms.

Textbook(s)T1	Fundamentals of Data Structures by Ellis Horowitz & Sartaj Sahni, Computer Science press.
Reference Book(s) R1	Data Structures using C by A. K. Sharma, Pearson Education
Reference Book R2	Data structures and Algorithm Analysis in C, 2nd edition, M.A.Weiss, Pearson.
Reference Book R3	Data structures and Program Design in C, 2nd edition, R.Kruse, C.L.Tondo and B.Leung, Pearson
NPTEL Link	https://nptel.ac.in/courses/106/102/106102064/
SWAYAM Link	https://onlinecourses.swayam2.ac.in/cec19_cs04/preview

Lecture wise plan:

Lecture Nos.	Learning Objective	Topics to be covered	Reference (Ch./Sec./Page Nos.ofTextBook)
1-3	To learn Introduction of Data structure and its types	Introduction of Data structure, Data types: primitive, non-primitive data types, Linear and non linear data structure.	T1 CH-1 1.1, 1.3, 1.4
4-6	To learn application of array and various searching techniques	Array concept (one dimension, two dimension), Linear and Binary Search Algorithms,	T1 CH-2 2.4
6-7	To learn various sorting techniques	Sorting Algorithms: Bubble Sort, Insertion Sort, Selection Sort	T1 CH-7 7.1, 7.2

8-10	To learn various sorting techniques using Divide and Conquer strategy.	Quick Sort, Merge Sort & Radix sort	T1 CH-7 7.3, 7.4, 7.5
11	To learn introduction to linear data structure stack.	Stack concept	T1 CH-3 3.1
12-13	To learn various stack operations.	Operations PUSH, POP, TRAVERSE, Isfull, Isempty.	T1 CH-3 3.1, 3.2
14-17	To learn Applications of stack	Infix, Prefix, Postfix representation, Conversion using stack	T1 CH-3 3.3
18-19	To learn introduction to linear data structure Queue and its types.	Introduction, and Types of Queues, Priority Queue, Circular queue, Double Ended Queue,	T1 CH-3 3.1
20	To learn various Queue operations.	Operations (INSERT, DELETE, TRAVERSE)	T1 CH-3 3.1, 3.2
21-22	To learn introduction to linear data structure Linked list and its types.	Linked List, Singly and Doubly Linear link lists, Singly and doubly circular linked list	T1 CH-4 4.1
23-24	To learn various linked List operations	Operations on linked lists insert, delete, Applications of linked lists.	T1 CH-4 4.8,4.9
25-26	To learn introduction to Nonlinear data structure Tree and its types.	Definition of trees and their types, Binary trees, Properties of Binary trees,.	T1 CH-5 5.1, 5.2
27-30	To learn various operations and traversal technique.	Insertion, deletion, Searching and traversal algorithm, Preorder, post order, in-order traversal) , BFS, DFS	T1 CH-5 5.3, 5.4, 5.5
31-32	To learn various applications of tree	Binary Search Trees, Implementations, AVL Trees, B tree,	T1 CH-5 5.6, 5.7
33	To learn introduction to Nonlinear data structure Graph and its types.	Definition of Graph and their types	T1 CH-6 6.1
34-35	To learn various applications of Graph	Adjacency and incident (matrix & linked list) representation of graphs, Weighted Graphs,	T1 CH-6 6.2
36-38	To learn various operations and traversal technique.	Shortest path Algorithm, Spanning tree, Minimum Spanning tree,	T1 CH-6 6.3, 6.4
39-42	To learn various operations and traversal technique.	Kruskal and prims algorithms.	T1 CH-6 6.3, 6.4

Evaluation Scheme:

Student evaluation is based on the series of Tests and Quizzes conducted during the course of semester followed by a comprehensive examination.

Evaluation Component	Duration	Weightage	Date	Syllabus (Lec. No.)	Remarks
Test 1	60 Minutes	17	12-09-2023	1-12	CB
Test 2	60 Minutes	17	17-10-2023	13- 26	OB
Test 3	60 Minutes	16	23-11-2023	27- 42	CB
Quizzes (2)	20 Minutes each	10	**	**	CB
Comprehensive Exam	3 Hours	40	15-12-2023	1- 42	CB

** To be announced in the class

Make-up Policy: Make up will be given only under genuine circumstances for Tests Only. However prior and proper intimation to the concerned instructor is must.

General: It shall be the responsibility of individual students to attend all sessions, to take prescribed Assessment Tests, Tests and Comprehensive Examinations, etc.

Date: 02/08/2023

Mr.ASHISH KUMBHARE
Instructor-in-charge

The ICFAI University, Raipur

Faculty of Information Technology

First Semester, 2023-2024

Course Handouts

Course Code	Course Title	L	P	U
CA214	Object Oriented Programing	3	0	3

Instructor-in-charge: Mr.ASHISH KUMBHARE

Learning Outcomes:

After successful completion of the course student will be able to

1. Isolate and fix common errors in C++ programs
2. Manipulate various C/C++ Data types, such as arrays, strings, and pointers
3. Use memory appropriately, including proper allocation/de allocation procedures
4. Apply object-oriented approaches to software problems in C++
5. Understand and use the basic programming constructs of C/C++
6. Write small-scale C++ programs using the above skills

Lecture wise plan:

Lecture Nos.	Learning Objective	Topics to be covered	Reference (chapter/sec./Page Nos of Text/Ref. Books)R1
1	To learn the OOPs fundamentals	What is OOPs? Procedure Oriented Programming vs. Object Oriented Programming.	255
2-4	To learn the OOP's principles	Abstraction Encapsulation, Polymorphism and Inheritance	257-260
5-7	To learn about Classes and Objects	Objects and Instances Class Members	289
8-9	To know about Language Constructs	Programming basics, data type, loops and decisions, Control statements	70-88
10-13	To Learn about Class Member functions and Objects	Classes and Member functions Constructors and destructors	289-324
14-16	To learn about Strings Objects	Creation and Manipulation of Strings String I/O	683-693
17-19	To define and use operators for user defined types	Operator Overloading and multiple overloading with type conversion	384-414
20-23	To learn about Inheritance	Class Single and Multiple Inheritance,	417-425
24-25	To learn about Inheritance	Member Specifiers Derived classes	426-430

26-29	To learn about Polymorphism and need and importance of Virtual Functions	Virtual Function, function call binding, late binding	444-447
30-32	To learn about Polymorphism and need and importance of Virtual Functions	Friend and static function, this operator	332,310-315,297-302
33-34	To learn about handling the file Object	Creating and Manipulating File and Streams	488
35-36	To learn about handling the file Object	Mechanism, try, throw and catch	494
37-38	To learn about handling the file Object	Catching all Exceptions, Multiple catches	495
39-42	To learn about handling the file Object	Programs related to exception handling	506

Object Oriented Programming Lab:

SN	List of Practical
1.	Write a C++ program to demonstrate conditional statements.
2.	Write a C++ program to demonstrate looping statements.
3.	Write a C++ program to demonstrate Class and Object.
4.	Write a C++ program to demonstrate constructor.
5.	Write a C++ program to demonstrate Friend function.
6.	Write a C++ program to demonstrate function overloading.
7.	Write a C++ program to demonstrate Operator overloading.
8.	Write a C++ program to demonstrate Single and Multiple Inheritance.
9.	Write a C++ program to demonstrate Multilevel and Hierarchical Inheritance.
10.	Write a C++ program to demonstrate Exception Handling.

Evaluation Scheme:

Student evaluation is based on the series of Tests and Quizzes conducted during the course of semester followed by a comprehensive examination.

Evaluation Component	Duration	Weightage	Date	Syllabus (Lec. No.)	Remarks
Test 1	60 Minutes	17	13-09-2023	1-12	CB
Test 2	60 Minutes	17	18-09-2023	13- 26	OB
Test 3	60 Minutes	16	24-11-2023	27- 42	CB
Lab	60 Minutes	10		**	CB
Comprehensive Exam	3 Hours	40	12-12-2023	1- 42	CB

** To be announced in the class

Make-up Policy: Make up will be given only under genuine circumstances for Tests Only. However prior and proper intimation to the concerned instructor is must.

General: It shall be the responsibility of individual students to attend all sessions, to take prescribed Assessment Tests, Tests and Comprehensive Examinations, etc

Date: 03/08/2023

Mr.ASHISH KUMBHARE
Instructor-in-charge

The ICFAI University, Raipur

Faculty of Information Technology

First Semester, 2023-2024

Course Handouts

Course Code	Course Title	L	P	U
CA216	E-Commerce	3	0	3

Instructor-in-charge: Dr.BHARATI PATEL

Learning Outcomes:

1. Understand the basic concepts of E-commerce
2. Demonstrate an retailing in E-commerce by using the effectiveness of market research
3. Describe Internet trading relationships including Business to Consumer, Business-to-Business, Intra organizational

Text Book T1	E-commerce Concepts, Models, Strategies, C.S.V. Murthy,
Reference Book(s) R1	E- Commerce An Indian Perspective, P.T. Joseph, S.J.
Reference Book(s) R2	Indian Banking in Electronic Era, SS Kaptan & NS Choubey

Lecture-wise-plan:

Lecture Nos.	Learning Objective	Topics to be covered	Reference (Chapter/Sec./Page Nos. of Text/Ref. Books)
1	To understand the basics of E commerce	Unit – I: Introduction to E-Commerce	T1 Ch1- Page 3-7
2-3	To understand the Meaning of E commerce	E – Commerce: Meaning, definition,	T1 Ch2- Page 8-39
4-5	To understand the features and scope of E commerce	Features, Scope	T1 Ch2- Page 8-39
6-7	To understand the merits and demerits of E commerce	Advantages and Disadvantages of E commerce	T1 Ch2- Page 8-39
8-9	To understand the various business models of E commerce.	Unit – II: Business Modesl: B2B, B2C, C2C, C2B, B2G.	T1 Ch3- Page 40-97
10-11	To understand the meaning and risks in E payments.	E-payment systems: Meaning, Risks,	T1 Ch21-625-664
12	To understand the designing of secured E payments system.	Designing Electronic Payment systems	T1 Ch21- Page 625-664

13-14	To understand the various types of E payments system.	Types Of E-Payment Systems: Credit card, Debit card, Smart card, E-Money, Internet, Mobile payments	T1 Ch21- Page 625-664
15-16	To understand the various types of E payments system.	Financial Service Kiosks, Television Set-Top Boxes and Satellite Receiver, Biometric Payments, Person-to-Person, Micro Payment System.	T1 Ch21- Page 625-664
17-18	To understand the digital token based system of E payments.	DIGITAL TOKEN BASED PAYMENT SYSTEM: Types, Issues and benefits.	T1 Ch21-625-664
19-20	To understand the security issues in E commerce.	Unit III: E-Security: Concept of E-Security, Commune E-Commerce pitfalls,	T1 Ch22- Page 665-705
21	To understand the E security tools.	E-Security tools,	T1 Ch22- Page 665-705
22	To understand the fundamentals of computer security.	Fundamentals of computer security,	T1 Ch22- Page 665-705
23	To understand Measures to ensure security.	Measures to ensure security,	T1 Ch22- Page 665-705
24	To understand Stages in E-Security design	Stages in E-Security design,	T1 Ch22- Page 665-705
25-26	To understand Types of risks, Measures to protect.	Types of risks, Measures to protect.	T1 Ch22- Page 665-705
27-28	To understand the basics of M Commerce	Mobile Commerce: Meaning and definition, Characteristics,	R1 Ch10- Page 412-420
29-31	To understand the application, merits and demerits of M Commerce	Applications of m-commerce, Advantages of m-commerce, Disadvantages of m-commerce,	R1 Ch10- Page 412-420
32	To understand the challenges of M Commerce	Challenges Faced by E-Commerce in India.	R1 Ch10- Page 412-420
33-36	To understand the basics of E banking	Unit-IV: E: Banking: Meaning of E-banking, Functions of E-banking, Description of Services, Importance of E-Banking , Advantages of E-banking, Traditional V/S E-Banking.	R1 Ch6- Page 297-303
37-40	To understand the basics of E Trading	E-Trading: Meaning of E-Trading, Importance and advantages of E-Trading.	R1 Ch6- Page 297-303

Evaluation Scheme:

Student evaluation is based on the series of Tests and Quizzes conducted during the course of semester followed by a comprehensive examination.

Evaluation Component	Duration	Weightage	Date	Syllabus (Lec.No.)	Remarks
Test 1	60 Minutes	16	12-09-2023	1-7	CB
Test 2	60 Minutes	17	16-10-2023	8-18	CB
Test 3	60 Minutes	17	20-11-2023	19-32	OB*
Quiz (1)Assignment(1)	20 Minutes each	10	**	**	CB
Comprehensive Exam	3 Hours	40	08-14-2023	1-40	CB

** To be announced in the class OB* = Open Book Exam CB = Closed Book Exam

Make-up Policy: Make –up will be given only under genuine circumstances for Tests Only. However prior and proper intimation to the competent authority is required..

General: It shall be the responsibility of individual students to attend all sessions, to take prescribed Assessment Tests, Tests and Comprehensive Examinations, etc. The student is required to refer the books and journals in the library and attend all presentation sessions and submit assignments to enhance the subject knowledge.

Date: 03/08/2023

Dr.BHARATI PATEL
Instructor-in-charge

The ICFAI University, Raipur

Faculty of Information Technology

First Semester, 2023-2024

Course Handouts

Course Code	Course Title	L	P	U
SS215	Soft Skills	3	0	3

Instructor-in-charge: Dr.SHUBHRA TIWARI

Learning Outcomes:

After successful completion of the course student will be able to

1. Understand the meaning, concept, importance and types of communication.
2. Learn the usage of effective communication and work as a team.
3. Explore skills and ability to effectively participate in Group discussion and clear interview.
4. Understanding and develop inter personal and goal setting skills.
5. Understand and develop time management skills.

Text books T1	Soft Skills by Prashant Sharma
Reference Books R1	Books by DaleCarnegie, Geoffrey. A Dudley etc.
R2	Business Vocabulary in Use-Bill Mascoll – Cambridge University Press
R3	Soft Skills- K.Alex
R4	Soft skills lab-Institution Material

Lecture wise Plan:

Lecture Nos	Learning Objective	Topics to be covered	Reference
1	Understanding verbal & non-verbal comm	Verbal and Non-Verbal Communication Skills: Introduction	R1, R2, R3
2,3	Understanding different communication skills with special focus on listening.	Listening to customers, team members and managers; listening to electronic media; communication with customers.	R1, R2, R3

4	Communication in group	Communication with team members and managers, referencing for verbal communication	R1, R2, R3, PRACTICAL EXAMPLES FROM CONTEMPORARY WORLD
5-9	Career preparation CV, GD& PI	Introduction; SOP; career objective; educational qualification; achievements and interests; Introduction to GD; foundation skills in GD; Introduction to PI; foundation skills in PI.	R1, R2, R3, SAMPLE CVs, SAMPLE INTERVIEWS FROM CORPORATE INDUSTRY
10-11	Executive Skills: Interpersonal skills	Definition; understanding, analysis and response to the needs, requirements and capabilities of people at different levels.	R1, R2, R3, BIOGRAPHIES OF BUSINESS MEN & WOMEN
12	Goal Setting Skills	Introduction; SWOT	R1, R2, R3
13		Students SWOT analysis	
14		relevance of SWOT on goal setting	R1, R2, R3
15		setting career goal	R1, R2, R3, Biographies of achievers
16		action plan	R1, R2, R3
17		measures to achieve career goal	R1, R2, R3
18-19		corporate role models	R1, R2, R3 examples from current time.
20-21		three to five years career roadmap	Students' self-goal setting
22-23		competitive work environment and realization of goals;	R1, R2, R3 examples & case study
24		anticipating challenges and utilizing opportunities	R1, R2, R3 examples & case study
25	Time Management Skills	Understanding the concept & planning,	R1, R2, R3
26		Scheduling, Prioritizing;	R1, R2, R3
27-29		multitasking	R1, R2, R3 & practical

30-31		Corporate Etiquette	R1, R2, R3
32		Customer interaction etiquette	R1, R2, R3 & examples from contemporary time
33-34		office etiquette	R1, R2, R3 & ppt
35-38		Meeting etiquette; : telephone etiquette; presentation etiquette.	R1, R2, R3 & audio-visual
39-40	Practical presentation	Project Work & Presentation	Practical session

Class Room Practical:

S.No	Name of the Practical
1	Group Discussion & Mock interview
2	Preparation and Presentation on subject based and current topic
3	Time management-based activities
4	LSRW based activities

Evaluation Scheme:

Student evaluation is based on the series of Tests and Lab Tests conducted during the course of semester followed by a comprehensive examination.

Evaluation Component	Duration	Weightage	Date	Syllabus (Lec.No.)	Remarks
Test 1	60 Minutes	16	13-09-2023	1-9	CB
Test 2	60 Minutes	17	18-10-2023	10- 24	OB
Test 3	60 Minutes	17	22-11-2023	25- 40	CB
Practical	Throughout the Semester	10	**	---	---
Comprehensive Exam	3 Hours	40	20-12-2023	1- 40	CB

** To be announced in the class

Make-up Policy: Make –up will be given only under genuine circumstances for Tests Only. However prior and proper intimation to the concerned instructor is must.

General: It shall be the responsibility of individual students to attend all sessions, to take prescribed Assessment Tests, Tests and Comprehensive Examinations, etc.

Date: 03/08/2023

Dr.SHUBHRA TIWARI
Instructor-in-charge

The ICFAI University, Raipur

Faculty of Information Technology

First Semester, 2023-2024

Course Handouts

Course Code	Course Title	L	P	U
CA311	Data Communication and Computer Networks	3	0	3

Instructor-in-charge: Dr.RAMESH KUMAR YADAV

Learning Outcomes:

After successful completion of the course student will be able to:

Data communication and networking are changing the way we live and do the things today. They rely on computer networks and internetworks. This course focuses on networking fundamentals, standards and various underlying protocols to make the network connected for text, audio, video and a conglomerate of them. The security aspect of network is also emphasized. As a result, the technology advances make it possible to communicate faster and offer more services thru IEEE standards and TCI/IP and other protocols

Textbook(s) T1	Data Communication and Computer Networking, B. A. Forouzan , TMH , 2006
Reference book(s) R1	Computer Networks, A. S. Tanenbaum, Pearson Education / Prentice Hall of India, 4th Edition, 2004.
R2	Data Communications, Computer Networks and Open Systems, Halsall Fred, Addition-Wesley, 4th Edition, 2004.
R3	An Engineering Approach to Computer Networks, S. Kesha, Pearson Education, (2004)

Lecture wise plan:

Lecture No.	Learning Objective	Topics to be covered	(Ch./Sec./Text Book)
1-3	To Understand network concept	OSI MODEL, TCP/IP and other networks models, Arpanet,	T1: 1.1,T1: 3.1,3.2,3.3: T:2.3
4-6	To understand the network topologies	Network Topologies InternetWAN, LAN, MANPhysical Layer:Transmission media copper,	T1:1.2.1.3 T1: 7.1,7.2,7.3
7-10	To understand the concept of ISDN and physical layer	Twisted pair wirelessSwitching and encoding asynchronous communications;Broad band ISDN	T1:1.2.1.3,1.4 T1: 7.1,7.2,7.3

Lecture No.	Learning Objective	Topics to be covered	(Ch./Sec./Text Book)
11-13	To know the concept of ATM & detection methods	ATM Framing, error detection and correction	T1: 10.1,10.2,10.3
14-15	To understand the different flow control techniques	Elementary Protocol-stop and wait, sliding window	T1: 10.4,10.5
16-17	To know the concept protocols	DHCP, – EthernetData link layer in HDLC	T1:11.1,11.2
18-19	To understand MAPs	Multiple Access ProtocolsLink Layer Addressing – ARP	T1:12.1,12.2,12.3
20-21	To know the concept network components	Hubs, Bridges, Switches., Topology	T1:12.1,12.2,12.3
22-24	Different types of multiple access control protocols	Medium Access sub layer: ALOHAMAC addresses	T1:12.1,12.2,12.3
25-28	To understand IEEE 802.x concepts	IEEE 802.X Standard Ethernetwireless	T1:15.1,15.2
29	To know the network service models	Forwarding and Routing, Network Service Models	T1: 18.5
30	To know IP concepts	Virtual Circuit, Mobile IP – IP	T1:18.1,18.2,18.3,18.4
31-33	To understand the different IPv4, IPv6	Internet IPv4 and IPv6 Link State Routing, Distance Vector Routing	T1:18.1,18.2,18.3,18.4
34-35	To understand the network layers	Transport Layer Services – Multiplexing and Demultiplexing –	T1:18.1,18.2,18.3,18.4
36-37	To understand data transfer techniques	Reliable Data Transfer – GoBack-N Selective Repeat	T1: 17.1,17.2,17.3

Lecture No.	Learning Objective	Topics to be covered	(Ch./Sec./Text Book)
38	To understand TCP structure & operation	TCP – Segment Structure – RTT estimation –	T1: 24.1,24.2,24.3
39	To understand TCP structure & operation	Flow Control – Connection Management	T1: 24.1,24.2,24.3
40	To understand TCP structure & operation	Congestion Control – TCP Delay Modeling	T1: 24.1,24.2,24.3

Evaluation Scheme:

Student evaluation is based on the series of Tests and Quizzes conducted during the course of semester followed by a comprehensive examination.

Evaluation Component	Duration	Weightage	Date	Syllabus (Lec. No.)	Remarks
Test 1	60 Minutes	16	12-09-23	01-10	CB
Test 2	60 Minutes	17	17-10-23	11-20	OB
Test 3	60 Minutes	17	21-10-23	31- 40	CB
Quiz	Through out	10		**	CB
Comprehensive Exam	3 Hours	40	13-12-23	01-40	CB

** To be announced in the class

Make-up Policy: Make up will be given only under genuine circumstances for Tests Only. However prior and proper intimation to the concerned instructor is must.

General: It shall be the responsibility of individual students to attend all sessions, to take prescribed Assessment Tests, Tests and Comprehensive Examinations, etc.

Date: 01/08/2023

Dr.RAMESH KUMAR YADAV
Instructor-in-charge

The ICFAI University, Raipur

Faculty of Information Technology

First Semester, 2023-2024

Course Handouts

Course Code	Course Title	L	P	U
CA321	Do Net Technologies	3	0	3

Instructor-in-charge: Ms.Divya Soni

Learning Outcomes:

The learning objectives of this course are to:

1. Gain a thorough understanding of the philosophy and architecture of Web a Publications using ASP.NET
2. Acquire a working knowledge of Web a Publication development using Web Forms and Visual Studio 2008
3. Optimize an ASP.NET Web a Publication using configuration, security, and caching
4. Access databases using ADO.NET and LINQ
5. More recent ASP .NET features
6. Implement rich client a Pglications using ASP.NET AJAX
7. Customize Web a Pglications through the use of HTTP handlers and modules

Text Book T1	C# 6.0 and the .NET 4.6 Framework
Text Book T2	by Andrew Troelsen and Philip Japikse
Reference book(s) R1	Programming Entity Framework by Julia Lerman

Lecture wise Plan:

Lecture Nos.	Learning Objective	Topics to be covered	Reference (chapter/sec./Page Nos of Text/Ref. Books)
1-5	To understand the basics of .NET	Introduction to ASP.NET From ASP to ASP.NET Web Forms Web Services ASP.NET Feature	T 1 Ch-1 1.4,1.5, T2,Ch1.6,1.9
6-10	To learn the concepts of web form architecture	Web Forms Architecture Page Class Web Forms Life Cycle Web Forms Event Mode	T2 Ch-2 2.1,2.4,2.7,2.9

16-20	To learn the concepts of HTTP Class	ASP.NET and HTTP Request/Response Programming Request Class HTTP Collections Http Response Class Redirection ,Http Utility Class	T1 Ch-3 3.1,3.7 T2 Ch3 5.6,3.8
21-23	To learn the concepts of web a Publication	Web A Publications Using Visual Studio Using Visual Web Developer Visual Studio Forms Designer Using Components Shadow Copying Using the Global. asax File Data Binding	T1 Ch-4 4.7, 4.4 T2 Ch4 4.8,4.10
24-25	To understand concept of session state	State Management and Web A Publications Session StateA Publication State Multithreading Issues, Cookies	T1 Ch-5 5.5,5.9
26-30	To understand concept of server controls	Server Controls HTML Server Controls Web Forms Server Controls Rich Controls Validation Controls User Control	T2 Ch-5 5.3,5.7
31-40	To learn the concepts of caching and its uses	Caching in ASP.NET What Is Caching Page-Level Caching Page Fragment Caching Optimizing Your ASP.NET APglication APublication Caching	T1 Ch-5,Ch6 5.7, 6.4,7.2 T2 Ch6 6.9,7.4,7.9

Evaluation Scheme: Student evaluation is based on the series of Tests and Quizzes conducted during the course of semester followed by a comprehensive examination.

Evaluation Component	Duration	Weightage	Date	Syllabus (Lec.No.)	Remarks
Test 1	60 Minutes	16	12-09-2023	1-10	CB
Test 2	60 Minutes	17	17-10-2023	11- 20	OB
Test 3	60 Minutes	17	17-10-2023	21- 30	CB
Quizzes (2)	20 Minutes each	10	**	**	CB
Comprehensive Exam	3 Hours	40	15-12-2023	1- 40	CB

** To be announced in the class

Make-up Policy: Make up will be given only under genuine circumstances for Tests Only. However prior and proper intimation to the concerned instructor is must.

General: It shall be the responsibility of individual students to attend all sessions, to take prescribed Assessment Tests, Tests and Comprehensive Examinations, etc

Date: 02/08/2023

**Ms.DIVYA SONI
Instructor-in-charge**

The ICFAI University, Raipur

Faculty of Information Technology

First Semester, 2023-2024

Course Handouts

Course Code	Course Title	L	P	U
CA408	Advance Java Programming	3	0	3

Instructor-in-charge: Dr.MANJU LATA SAHU

Learning Outcomes:

After successful completion of the course student will be able to

1. To develop the student with the fundamentals of JDBC and using the different interfaces in the JDBC API.
2. To learn the concept how JSPs can help to separate Web logic and functionality from page layout. Explore how to make JSPs smaller and more powerful with JSTL, custom tags and expression language.
3. To understand the strategies in the exchange of data between Web pages (views) and business processing (model). Learn the meaning and importance of MVC.

Textbook(s)	Naughton and H.Schildt, (2007), "Java 2-The complete reference", Fifth Edition McGraw Hill.
Reference Book(s) R1	Jim Keogh, (2002), "The Complete Reference J2EE", Tata McGraw Hill Edition, New Delhi.
R2	Marty Hall, Larry Brown, (2004), "Core Servlets and Java Server Pages", 2nd Edition, Pearson Education

Lecture wise plan:

Lecture Nos.	Learning Objective	Topics to be covered	Reference (Ch./Sec./ PageNos. of Text Book)
1	To learn overview of java	Features of Java, Byte-code & JVM,	T1: 11,12, 18
2-3		Java data-types, Variables & Array, Java Control statements, Java Function,	T1:41
5-6		garbage collection & finalize () method, this, Inheritance, method overriding,	T1:150-219

7-9		Dynamic method dispatching, super, final, package, Interface, Abstract class, Class path, String Class.	T1:189, 208
10	To understand the Exception and Multi threads	Exception-type, Uncaught Exception,	T1:251
11-12		Using trycatch, throw, throws, finally, Throwable class and object,	T1:251-263
13-14		Exception classes, Create own exception subclass. Creating multiple threads, isAlive(), join(),	T1:265, 286
15-16		Thread priorities, synchronization, - Deadlock, wait(), notify(), notify All() methods, Inter-Thread Communication, suspend, resume & stop the threads.	T1:275
17-18	To understand the Stream and Socket	Stream and Socket: I/O classes & Interfaces, File, The Stream Classes, Network basics,	T1:538
18-19		The Byte stream (InputStream, OutputStream, FileInputStream, File Output Stream), Serialization,	T1:546, 577
20-21	To understand the concept of Networking classes and PCT/IP model for java program	Networking classes and Interfaces, InetAddress,	T1:587
22-23		TCP/IP Client/Server socket, URL, URL Connection, Datagram, RMI.	T1:594
24-25	To understand the concept of Event handling and AWT class	Event handling & working with windows: Delegation event model, event classes, Event listener interface,	T1:653,669
26-27		AWT Classes, Window fundamental, AWT Controls, Layout managers, Menus	T1:687, 735
28-29	To understand the concept of Swing	Swings:- benefits of swing over AWT ,	T1:921
30-31		Frames panels and borders ,labels and buttons , tabbed panes ,	T1:927
32-33		scrolling panes, split panes , combo boxes , list boxes , text component, menu,.	T1:930
34-35		toolbar and actions , progress bars, sliders and scrollbars , dialogs	T1:939
36-37	To understand the concept of web development through java	Web development: The Applet class, Applet Architecture, Applet skeleton,	T1:627-635
38		HTML APPLET Tag, Passing parameter to Applet, get Document Base (),	T1:643

39		get Code Base (), Applet Context, show Document().	T1:648
40		A simple servlet, Javax. servlet package, Reading servlet parameter, web/application server	T1:949-960

Evaluation Scheme:

Student evaluation is based on the series of Tests and Quizzes conducted during the course of semester followed by a comprehensive examination.

Evaluation Component	Duration	Weightage	Date	Syllabus (Lec. No.)	Remarks
Test 1	60 Minutes	16	13-09-2023	1-10	CB
Test 2	60 Minutes	17	18-10-2023	11- 24	CB
Test 3	60 Minutes	17	27-11-2023	25- 40	OB
Lab	Continuous	10	**	**	CB
Comprehensive Exam	3 Hours	40	20-12-2023	1- 42	CB

** To be announced in the class OB* = Open Book Exam CB = Closed Book Exam

Make-up Policy: Make up will be given only under genuine circumstances for Tests Only. However prior and proper intimation to the concerned instructor is must.

General: It shall be the responsibility of individual students to attend all sessions, to take prescribed Assessment Tests, Tests and Comprehensive Examinations, etc.

Date: 02/08/2023

Dr.MANJU LATA SAHU
Instructor-in-charge

The ICFAI University, Raipur

Faculty of Information Technology

First Semester, 2023-2024

Course Handouts

Course Code	Course Title	L	P	U
CA414	Software Testing and Quality Management	3	0	3

Instructor-in-charge: Dr.BHARTI PATEL

Learning Outcomes:

The learning objectives of this course are to:

It provides a holistic view of managing software quality from the perspective of programmer to quality manager. While in Software Project Management, much of the attention is on planning, risk management, scheduling and tracking of project activities, in Software Quality Management greater emphasis is placed on planning of quality assurance activities like testing, reviews, audits and organizational Quality Management Systems (QMS) compliant with ISO 9000/CMMi models.

Text Book T1	Software Quality Engineering – Jeff Tian, Wiley India, 2015
Text Book T2	Software Testing – A Craftsman’s Approach – Paul C. Jorgensen, 4 th Edition, CRC Press, 2014
Reference book(s) R1	Software Engineering: A Practitioner’s Approach – Roger S. Pressman, 7 th Edition, McGraw Hill, 2010

Lecture wise plan:

Lecture Nos.	Learning Objective	Topics to be covered	Reference (chapter/sec./Page Nos of Text/Ref. Books)
1-5	Software Quality Management – An Overview	Software Quality Management – An Overview This introductory module gives an overview of Software Quality by illustrating its role in Software Engineering. § Quality - a technical definition § Quality Concepts, Tools and Techniques	T1 Ch-1 1.4,1.5, T2,Ch1.6,1.9

Lecture Nos.	Learning Objective	Topics to be covered	Reference (chapter/sec./Page Nos of Text/Ref. Books)
6-12	Demystifying Quality Concepts	This module demystifies various terms associated with quality-QA, QC, QM, Quality Engineering-as well as the role of process frameworks, methodologies and tools adopted for Software Quality Engineering. Also highlights formal definitions of Quality by Standards groups of IEEE/ISO	T1 Ch-2 2.1,2.4,2.7,2.9
13-20	SQA Activities	This module highlights the difference between defect prevention and defect detection activities. Presents the big picture of SQA encompassing Quality Planning and Continuous Improvement by giving formal definition of 'defect', 'error/bug' and the role of defect measurement.	T1 Ch-3 3.1,3.7 T2 Ch3 5.6,3.8
21-26	Software Testing	This module highlights various Testing strategies-white-box and black-box testing-introducing Usage Based Testing and Coverage Based Testing. Also discussed is the issue of 'when to stop testing and start delivering'.	T2 Ch-4 4.7, 4.4 T2 Ch4 4.8,4.10
27-33	Reviews & Inspections	"Prevention of defects is better than Testing for defects later" – is the spirit behind Reviews, Inspections and Walkthroughs. This modules highlight these important SQA activities-from formal reviews/inspections to little informal code-walkthroughs-adopted as part of most formal software development methodologies.	T1 Ch-5 5.5,5.9
34-40	Quality Management Systems	Quality Metrics and Base lining, Software Product Metrics & Defect Propagation, Quality Management Systems	T2 Ch-5 5.3,5.7

Evaluation Scheme:

Student evaluation is based on the series of Tests and Quizzes conducted during the course of semester followed by a comprehensive examination.

Evaluation Component	Duration	Weightage	Date	Syllabus (Lec.No.)	Remarks
Test 1	60 Minutes	17	13-09-2023	1-12	CB
Test 2	60 Minutes	17	18-10-2023	13- 26	OB
Test 3	60 Minutes	16	24-11-2023	27- 40	CB
Quizzes (2)	20 Minutes each	10	**	**	CB
Comprehensive Exam	3 Hours	40	18-12-2023	1- 40	CB

Make-up Policy: Make up will be given only under genuine circumstances for Tests Only. However prior and proper intimation to the concerned instructor is must.

General: It shall be the responsibility of individual students to attend all sessions, to take prescribed Assessment Tests, Tests and Comprehensive Examinations, etc.

Date: 03/08/2023

Dr.BHARTI PATEL
Instructor-in-charge

The ICFAI University, Raipur

Faculty of Information Technology

First Semester, 2023-2024

Course Handouts

Course Code	Course Title	L	P	U
CA422	Network Programing	3	0	3

Instructor-in-charge: Mr.ASHISH KUMBHARE

Learning Outcomes:

The objective of this course is to teach the concepts of securing computer network protocols, based on the application of cryptography techniques. This course covers the underlying principles and techniques for network and communication security. The course also gives a survey of cryptographic tools and explains how they can be utilized in protocols and applications, for example how to provide secure user authentication over a public network. Students have a good understanding of how applications can communicate securely and what tools and protocols exist in order to offer different levels of security.

Textbook(s) T1	Cryptography And Network Security – Principles and Practices, William Stallings, Prentice Hall of India, Fifth Edition, 2011
Reference Book(s) R1	Cryptography and Network Security Atul Kahate, Tata McGrawHill, 2003.
Reference Book(S)2	Security in Computing Charles B. P fleeger, Shari Lawrence Pfleeger, Third Edition, Pearson Education, 2003.
NPTEL Link	https://nptel.ac.in/courses/106/105/106105031/

Lecture wise plan:

Lecture Nos.	Learning Objective	Topics to be covered	Reference(Ch./Sec./Page Nos.ofTextBook)
1	To learn Introduction of Network Security	Introduction of Network Security,	T1 CH-1 1.1, 1.2
2-3	To learn Need for Security	Need for Security – Concept & Types of Attacks, Types of Services and Mechanisms	T1 CH-1 1.3, 1.4,1.5
4-5	To learn concept of encryption	Introduction to encryption, Classical encryption Techniques	T1 CH-2 2.1,2.2
6-8	To learn various encryption standards	Block ciphers standard, Data encryption standard, Advanced encryption standard	T1 CH-3 3.1,3.2
9-11	To learn symmetric cipher encryption DES algorithm	Symmetric ciphers- triple DES concept, DES- Modes of operation	T1 CH-3 3.4,3.5

Lecture Nos.	Learning Objective	Topics to be covered	Reference(Ch./Sec./Page Nos.ofTextBook)
12-13	To learn public key cryptography	Confidentiality using Symmetric Encryption, Public key cryptography	T1 CH-8 8.1,8.2
14-15	To learn public key cryptography RSA Algorithm	Concept and working of RSA	T1 CH-9 9.1,9.2
16-17	To learn Key management and distribution technique	Key management Techniques, Key Distribution Techniques	T1 CH-10 10.1,10.2
18	To learn public Key Cryptosystems	Other public Key Cryptosystems – Diffie Hellmen Inroduction	T1 CH-10 10.2
19	To learn Diffie Hellmen Algorithm	Diffie Hellmen working Concept	T1 CH-10 10.2,10.3
20-21	To learn concept of Hash Function	Cryptographic Hash functions – concept, uses, Cryptographic Hash functions –SHA	T1 CH-11 11.1,11.2
22	To learn Message authentication Codes	Introduction to Message authentication Codes (MAC),	T1 CH-11 11.3
23-26	To learn different MAC algorithm	Message authentication Codes (MAC) – HMAC, Message authentication Codes (MAC) – DAA, Hash and MAC algorithms – MD5	T1 CH-12 12.1,12.3,12.4
27	To learn concept of Digital Signature	Introduction to Digital signatures	T1 CH-13 13.1
28-29	To learn Digital Signature technique	Digital signatures – DSS, Digital signatures –DSA,	T1 CH-13 13.2,13.3
30-32	To learn Authentication principles	Application of X.509 Certificates. Authentication principles, Authentication applications- Kerberos V4 & V5	T1 CH-14 14.1,14.2
33-34	To learn Web security concept	Introduction to Web security, Working concept of Web security	T1 CH-17 17.1,17.2
35	To learn Web security	Web security - Secure Electronic Transaction	T1 CH-17 17.3
36-37	To learn E-Mail security	Introduction E-Mail security, Working concept of E-Mail security	T1 CH-15 15.2

Lecture Nos.	Learning Objective	Topics to be covered	Reference(Ch./Sec./Page Nos.ofTextBook)
38-39	To learn IP Security	Introduction to IP Security, Working concept of IP Security	T1 CH-16 16.1,16.2
40-42	To learn Application of IP Security	Application of IP Security, PGP (Pretty_Good_Privacy) Cocept	T1 CH-15 15.1

Evaluation Scheme:

Student evaluation is based on the series of Tests and Quizzes conducted during the course of semester followed by a comprehensive examination.

Evaluation Component	Duration	Weightage	Date	Syllabus (Lec. No.)	Remarks
Test 1	60 Minutes	17	11-09-2023	1-11	CB
Test 2	60 Minutes	17	16-10-2023	12- 26	OB
Test 3	60 Minutes	16	20-11-2023	27- 42	CB
Quiz	20 Minutes	10	**	**	CB
Comprehensive Exam	3 Hours	40	08-12-2023	1- 42	CB

Date: 04/08/2023

Mr.Ashish Kumbhare
Instructor-in-charge

The ICFAI University, Raipur

Faculty of Information Technology

First Semester, 2023-2024

Course Handouts

Course Code	Course Title	L	P	U
CA429	Image Processing	3	0	3

Instructor-in-charge: Dr.K NAGAI AH

Scope and Objective

This is a basic course in digital image processing and aims at providing an understanding of some of the fundamental concepts involved. It shall deal with the fundamentals of images. The various discrete transforms that are used extensively in image processing and their application to data compression are dwelt with. In addition, the course covers some basic enhancement and restoration techniques and coding. The course also briefly covers image understanding, image classification and recognition along with some neural networks.

Textbook(s) T1	Digital Image Processing, Rafael C. Gonzalez & Richard E. Woods, Pearson Education Asia, Second Ed., 5th. Indian reprint 2003.
T2	Digital Image Processing Using MATLAB, Rafael C. Gonzalez & Richard E. Woods, Steven L. Eddins, Pearson Education Asia, Second Ed., 3rd . Indian reprint 2005.
Reference book(s) R1	Digital Image Processing, Anil K. Jain, PHI, 1998, Indian reprint 2003
R2	Digital Image Processing and Analysis, Bhabatosh Chanda & Dwijesh Dutta Majumdar, PHI, 2002
R3	Fundamentals of Electronic Image Processing, Arthur R. Weeks, PHI, 1999, Indian reprint 2003.

Lecture wise Plan:

Lecture No.	Learning Objective	Topics to be covered	(Ch./Sec./Text Book)
1	Introduction	Introduction to digital image processing and systems	TB:2.2
2-3	Digital Image Fundamentals	Image Sampling and Quantization	TB: 2.3.4- 2.4.5
4-6	Image Enhancement in Frequency Domain	Fourier Transform, DFT and its properties	TB: 4.2.1-4.2.2
7-8	Implementation	2D convolution	TB: 4.6.3-4.6.4

Lecture No.	Learning Objective	Topics to be covered	(Ch./Sec./Text Book)
9	Implementation	Fast Fourier Transform	TB: 4.6.6
10	Image enhancement in spatial domain	Introduction to Image Enhancement	TB: 3.1
11-12	Basics of gray level transformations	Image enhancement-gray level transformations	TB: 3.21-3.2.4
13-14	Histograms	Image enhancement- histogram processing	TB:3.3-3.3.3
15-16	Basics of spatial filtering	Image enhancement by spatial filtering	TB: 3.5.-3.6.1 3.7.1-3.7.3
17-18	Filtering of images	Image enhancement-filtering in frequency	TB: 4.2.3-4.4.3
19	Image degradation models, noise models	Image restoration-image degradation models	I TB: 5.1-5.2.2; 5.5
20-21	Estimation of degrading function	Image restoration-removal of linear motion blur	TB: 5.6.3
22-23	Image restoration - filters	Image restoration-Inverse filtering, constrained least squares	TB: 5.7 - 5.9
24-25	Fundamentals and models of image compression	Fundamentals of image compression	TB: 8.1-8.2
26-27	Information theory for image compression	Elements of information theory for compression	TB: 8.3.1-8.3.2
28-30	Coding theorems	Fundamentals of image coding	TB: 8.3.3-8.3.4
31-33	Error-free image compression	Error-free image compression	TB: 8.4.1-8.4.4
34-36	Lossy image compression, compression standards	Lossy image compression, compression standards	TB: 8.5.1-8.5.2 8.6.1-8.6.2
37-38	Image segmentation	Image segmentation	TB:10.1-10.1.3 10.3.1-10.3.3
39-40	Image representation	Representation	TB:11.1

Evaluation Scheme:

Student evaluation is based on the series of tests and quizzes conducted during the course of semester followed by a comprehensive examination.

Component	Duration	Weight age(%)	Date	Syllabus for each Test (L.No)	Remarks
Test 1	60 Minute	16	11-09-2023	1-10	CB
Test 2	60 Minute	17	16-10-2023	11-22	OB
Test 3	60 Minute	17	21-11-2023	23-35	CB
Lab		10	**	**	CB
Comprehensive Exam	3hours	40	11-12-2023	1-40	CB

** To be announced

Make-up Policy: Make-up will be given only under genuine circumstances. However prior and proper Intimation to the concerned instructor is a must.

General: All students are advised to attend classes regularly and strictly maintain a minimum attendance of 75%. Students failing to maintain the required percentage of theory/practical attendance will not be permitted to appear for the tests and examinations

Date: 02/08/2023

**Dr.K NAGAI AH
Instructor-in-charge**

The ICFAI University, Raipur

Faculty of Information Technology

First Semester, 2023-2024

Course Handouts

Course Code	Course Title	L	P	U
MCA111	Object Oriented Programming Language	3	2	4

Instructor-in-charge: Mr.ASHISH KUMBHARE

Learning Outcome:

After successful completion of the course student will be able to

1. Isolate and fix common errors in C++ programs
2. Manipulate various C/C++ Data types, such as arrays, strings, and pointers
3. Use memory appropriately, including proper allocation/deallocation procedures
4. Apply object-oriented approaches to software problems in C++
5. Understand and use the basic programming constructs of C/C++
6. Write small-scale C++ programs using the above skills

TextBook T1	E. Balagurusamy – Object Oriented Programming with C++, Fifth edition, Tata McGraw Education Hill, 2011.
T2	Ashok N. Kamthane, Object oriented Programming with ANSI & Turbo C++, First Edition, Pearson India
Reference Book(s) R1	Herbert Schildt , The complete reference C++Fourth Edition Tata McGraw- Hill

Lecture wise plan:

Lecture Nos.	Learning Objective	Topics to be covered	Reference (chapter/sec./Page Nos of Text/Ref. Books)R1
1	To learn the OOPs fundamentals	What is OOPs? Procedure Oriented Programming vs. Object Oriented Programming.	255
2-4	To learn the OOP's principles	Abstraction Encapsulation, Polymorphism and Inheritance	257-260
5-7	To learn about Classes and Objects	Objects and Instances Class Members	289
8-9	To know about Language Constructs	Programming basics, data type, loops and decisions, Control statements	70-88
10-13	To Learn about Class Member functions and Objects	Classes and Member functions Constructors and destructors	289-324

Lecture Nos.	Learning Objective	Topics to be covered	Reference (chapter/sec./Page Nos of Text/Ref. Books)R1
14-16	To learn about Strings Objects	Creation and Manipulation of Strings String I/O	683-693
17-19	To define and use operators for user defined types	Operator Overloading and multiple overloading with type conversion	384-414
20-23	To learn about Inheritance	Class Single and Multiple Inheritance,	417-425
24-25	To learn about Inheritance	Member Specifies Derived classes	426-430
26-29	To learn about Polymorphism and need and importance of Virtual Functions	Virtual Function, function call binding, late binding	444-447
30-32	To learn about Polymorphism and need and importance of Virtual Functions	Friend and static function, this operator	332,310-315,297-302
33-34	To learn about handling the file Object	Creating and Manipulating File and Streams	488
35-36	To learn about handling the file Object	Mechanism, try, throw and catch	494
37-38	To learn about handling the file Object	Catching all Exceptions, Multiple catches	495
39-42	To learn about handling the file Object	Programs related to exception handling	506

Objected Oriented Programming Lab:

SN	List of Practical
1.	Write a C++ program to demonstrate conditional statements.
2.	Write a C++ program to demonstrate looping statements.
3.	Write a C++ program to demonstrate Class and Object.
4.	Write a C++ program to demonstrate constructor.
5.	Write a C++ program to demonstrate Friend function.
6.	Write a C++ program to demonstrate function overloading.
7.	Write a C++ program to demonstrate Operator overloading.
8.	Write a C++ program to demonstrate Single and Multiple Inheritance.
9.	Write a C++ program to demonstrate Multilevel and Hierarchical Inheritance.
10.	Write a C++ program to demonstrate Exception Handling.

Evaluation Scheme:

Student evaluation is based on the series of Tests and Quizzes conducted during the course of semester followed by a comprehensive examination.

Evaluation Component	Duration	Weightage	Date	Syllabus (Lec. No.)	Remarks
Test 1	60 Minutes	17	13-09-2023	1-12	CB
Test 2	60 Minutes	17	18-10-2023	13- 26	OB
Test 3	60 Minutes	16	24-11-2023	27- 42	CB
Lab	60 Minutes	10	**	**	CB
Comprehensive Exam	3 Hours	40	18-12-2023	1- 42	CB

** To be announced in the class

Make-up Policy: Make up will be given only under genuine circumstances for Tests Only. However prior and proper intimation to the concerned instructor is must.

General: It shall be the responsibility of individual students to attend all sessions, to take prescribed Assessment Tests, Tests and Comprehensive Examinations, etc.

Date: 04/08/2023

MR.ASHISH KUMBHARE
Instructor-in-charge

The ICFAI University, Raipur
Faculty of Information Technology
First Semester, 2023-2024
Course Handouts

Course Code	Course Title	L	P	U
MCA112	Data Base Management System	3	2	4

Instructor-in-charge: Dr. BHARATI PATEL

Scope & Objective of the Course:

After successful completion of the course student will be able to:

1. To understand basic concepts and implementation issues of Database System.
2. To learn ER-modeling, Data models, Normalization and Functional dependencies, Relational Algebra, Implementation and Advanced Concepts.
3. To learn the hands-on database operations in SQL interface.

Textbook T1	Database System Concepts, Silberschatz A, Korth HF, and SudarshanS, TMH, 2002
Reference book(s) R1	Database Management Systems, Ramakrishna R. & Gehrke J, 3 rd Edition, Mc-GrawHill, 2002
R2	Database Systems-The Complete book, Hector G Molina, Jeffrey D. Ullman and Jennifer Widom, Pearson Education, 2002
NPTEL	https://nptel.ac.in/courses/106/105/106105175/
SWAYAM	https://onlinecourses.swayam2.ac.in/cec19_cs05/preview

Lecture Wise Plan:

Lecture Nos.	Learning Objective	Topics to be covered	Reference (chapter/sec./Page No.s of Text/Ref. Books)
1-3	Introduction to Database Systems	Course overview, Overview of modern DBMS, Database Architecture	T1: 1.1-1.13
4-8	About Database	Data Independence, Data Dictionary, Types of Keys	T1: 2.1-2.13
8-11	Data modeling	Basic elements of ER model, Attributes, Types of Relationship	T1: 7.1-7.10
12-16	Introduction to SQL constructs	DDL & DML Commands	T1: 3.1-3.9
17-19	Types of Operators and Functions	In, Between, Like, Aggregate Functions	T1: 5.1
20-25	Understanding additional SQL structures	Insert, Delete, Update, View Definition And Use, Temporary Tables, Nested Queries	T1: 4.1-4.5

Lecture Nos.	Learning Objective	Topics to be covered	Reference (chapter/sec./Page No.s of Text/Ref. Books)
26-29	Database design through Functional Dependencies & Normalization	Functional dependencies, Normal Forms: 1NF,2NF, 3NF, BCNF, Multi-valued dependencies:4NF,5NF	T1: 8.1-8.9
30-32	Formal Query Languages	Relational algebra operators, Relational algebra queries	T1: 6.1.-6.4
33-35	Integrity constraints	Integrity constraints: Not null, unique, check, primary key, foreign key, references, Triggers.	T1: 4.4-4.5
36-38	B Tree, B+Tree	Introduction and operations of B Tree, B+ Tree	T1: 12.1-12.8
39 - 40	Latest Technologies	Introduction to Hadoop, Big-Data, Data warehouse	T1: 14.1-14.10

Evaluation Scheme:

Student evaluation is based on the series of Tests and Quizzes conducted during the course of semester followed by a comprehensive examination

Component	Duration	Weightage (%)	Date	Syllabus (Lecture No)	Remarks
Test 1	60 Minutes	16	11/09/2023	1-16	CB
Test 2	60 Minutes	17	16/10/2023	17- 29	OB
Test 3	60 Minutes	17	20/11/2023	30-40	CB
Lab	2 Hours	10	**	**	CB
Comprehensive Exam	3 Hours	40	11/12/2023	1- 40	CB

. ** To be announced in the class

OB* = Open Book

CB = Closed Book

Make-up Policy: Make up will be given only under genuine circumstances for Tests Only. However prior and proper intimation to the concerned instructor is must.

General: It shall be the responsibility of individual students to attend all sessions, to take prescribed Assessment Tests, Tests and Comprehensive Examinations, etc.

Date: 01/08/2023

**Dr.BHARATI PATEL
Instructor-in-charge**

The ICFAI University, Raipur

Faculty of Information Technology

First Semester, 2023-2024

Course Handouts

Course Code	Course Title	L	P	U
MCA113	Operating Systems	3	0	3

Instructor-in-charge: Dr.PALAK KESHWANI

Learning Outcome –

After successful completion of the course student will be able to:

1. To understand the basic concepts and functions of operating systems.
2. To understand Process and Threads
3. To analyze Scheduling algorithms.
4. To understand the concept of Deadlocks.
5. To analyze various memory management schemes.
6. To understand I/O management and File systems

Textbook (S) T1	Operating System Concepts, Silberschatz, A and Galvin, P.B 7 th edition, Addison, Wesley, 1998
T2	Operating Systems A Concept bases approach, Dhamdhare, D.M. 2 nd edition, TMH 2006
Reference book (S) R1	Operating Systems, Stallings W, 4 th edition, PHI, 2001
R2	The Design of the Unix Operating System, Bach M.J PHI, 1986
R3	Modern Operating Systems, Tanebaum A.S, PHI, 1996
NPTEL	https://nptel.ac.in/courses/106/105/106105214/

Lecture-wise plan:

Lecture Nos.	Learning Objective	Topics to be covered	Reference (Ch./Sec./ Page Nos.of Text Book)
1	To understand operating system, functions and its types	Overview	T1 CH-1
2		Operation System objectives and functions	T1 CH-1
3		The Evolution of operating Systems	T1 CH-1
4		Batch, interactive time sharing and real time systems	T1 CH-1
5		Operating System Structure, operating system service,	T1 CH-3

Lecture No	Learning Objective	Topics to be Covered	Reference (Ch./Sec./Page No.of Text Book)
6	To understand the concept of process and its various states	Process overview (State, PCB)	T1 CH-4
7-8		Process Scheduling	T1 CH-4
9		Threads	T1 CH-5
10		Inter Process Communication(IPC)	T1 CH-5
11	To know what is scheduling and its importance	CPU Scheduling Overview	T1 CH-6
12-13		Scheduling Algorithms	T1 CH-6
14	To understand the problem of Critical Section and its solution	Critical Section Problem	T1 CH-7
15		Multi Process Solution	T1 CH-7
16		Semaphores	T1 CH-7
17		Classical Problems of Synchronization	T1 CH-7
18-20	To know what is deadlock and its handling	Deadlock Handling	T1 CH-8
21	To understand various memory management schemes and their relative advantages and disadvantages	Memory Management Overview	T1 CH-9
22-23		Paging	T1 CH-9
24		Segmentation	T1 CH-9
25		Segmentation with Paging	T1 CH-9
26		Virtual Memory	T1 CH-10
27		Demand Paging	T1 CH-10
28		Page Replacement	T1 CH-10
29		Page Replacement Algorithms	T1 CH-10
30		Thrashing	T1 CH-10

Lecture No	Learning Objective	Topics to be Covered	Reference (Ch./Sec./Page No.of Text Book)
31	To understand concept of files and brief introduction to distributive O.S	File Operations	T1 CH-11
32-33		Directory and File system Structure	T1 CH-11
34-35		Allocation Methods,	T1 CH-12
36-38		Disk Scheduling	T1 CH-12
39-40		Types, features and uses of distributive O.S	T1 CH-12

Evaluation Scheme:

Student's evaluation is based on the series of Tests and Presentations conducted during the course of semester followed by a comprehensive examination.

Evaluation Component	Duration	Weightage	Date	Syllabus (Lec. No.)	Remarks
Test 1	60 Minutes	16	11-09-2023	1-10	CB
Test 2	60 Minutes	17	16-10-2023	11- 20	OB
Test 3	60 Minutes	17	20-11-2023	21- 30	CB
Quiz	20 Minutes	10	**	**	CB
Comprehensive Exam	3 Hours	40	08-12-2023	1- 40	CB

Date: 01/08/2023

Dr.PALAK KESHWANI
Instructor-in-charge

The ICFAI University, Raipur
Faculty of Information Technology
First Semester, 2023-2024
Course Handouts

Course Code	Course Title	L	P	U
MCA114	Mathematical Foundation of Computer Science	3	0	3

Instructor-in-charge: Dr.ANIMESH KUMAR SHARAMA

Learning Outcomes:

After successful completion of the course student will be able to

1. Logical structure of statement, Boolean Algebra and it's a Publications
2. Concepts of relations and functions
3. Cartesian product of sets and grammars
4. Concept of graph theory and its matrix representation

Text Book (T1)	A Textbook of Discrete Mathematics, 9th Edition S. Chand Company Ltd. Author : Dr. Swaipan Kumar Sarkar
Reference book(s) R1	Discrete Mathematics , Pearson publication ,Author Babu Ram 2012 Edition
Reference book(s) R2	Advanced Discrete Mathematics by Dr. H.K. Pathak & J.P. Chauhan, Shree Shiksha Sahitya Prakashan, Meerut, 2021 Edtion

Lecture Wise Plan:

Lecture Nos.	Learning Objective	Topics to be covered	Reference (chapter/sec./Page Nos of Text/Ref. Books)
1-4	Mathematical logic	Propositions statements, Compound propositions, propositions and truth tables, Algebra of propositions, Conditional propositions	T 1 Ch-2 6-25
5-8	Boolean Algebra	Normal forms, Boolean algebra, Boolean functions, De-Morgan's Theorem, Simplification of Boolean expression by algebraic method,	T 1 Ch-3 70-90
9-11	Switching Circuits and logical Circuits	Applications of Boolean algebra in switching circuits, logical circuits	T 1 Ch-3 91-101
12-14	Relations	Relation on sets , Operations on Relations, Types of relations in a set , Properties of relations	T 1 Ch-7 260-277

Lecture Nos.	Learning Objective	Topics to be covered	Reference (chapter/sec./Page Nos of Text/Ref. Books)
15-17	Functions	Classification of functions, Types of functions , Composition of functions, Partially Ordered Sets	T 1 Ch-8 302-315
18-21	Language and Grammars	Strings, Languages, Regular Expressions, Grammars, Finite State Machine	T1 Ch-17 702-716
22-24	Graph Theory-I	Basic Concept, Types, Simple and Multi Graph, Psuedograph, Subgraph and Isomorphic Graphs,	T1 Ch-14 523-540
25-27	Graph Theory - II	Operations on Graphs, Paths, Cycles, Eulerian and Hamiltonian Graph, Shortest Path Problems	T1 Ch-15 541-554
28-31	Group Theory	Binary operations, Group, Groupoid, Monoid, Semigroup, Sub-Group, Cyclic Group	T 1 Ch-12 444-466
32-36	Group Theory	Permutation group, Homorphism of groups, Isomorphism of groups	T 1 Ch-12 468-478
37-41	Group Theory	Cosets, Lagrange's Theorem, Elements of Coding theory	T 1 Ch-13 479-498

Evaluation Scheme:

Student evaluation is based on the series of Tests and Quizzes conducted during the course of semester followed by a comprehensive examination.

Evaluation Component	Duration	Weightage	Date	Syllabus (Lec. No.)	Remarks
Test 1	60 Minutes	17	12-09-2024	1-11	CB
Test 2	60 Minutes	17	17-10-2024	12- 21	OB
Test 3	60 Minutes	16	23-11-2024	22- 31	CB
Quizzes (2)	20 Minutes each	10	**	**	CB
Comprehensive Exam	3 Hours	40	15-12-2024	1- 41	CB

** To be announced in the class

Make-up Policy: Make up will be given only under genuine circumstances for Tests Only. However prior and proper intimation to the concerned instructor is must.

General: It shall be the responsibility of individual students to attend all sessions, to take prescribed Assessment Tests, Tests and Comprehensive Examinations, etc

Date: 03/08/2023

Dr.ANIMESH KUMAR SHARMA
Instructor-in-charge

The ICFAI University, Raipur

Faculty of Information Technology

First Semester, 2023-2024

Course Handouts

Course Code	Course Title	L	P	U
MCA115	Fundamental of Computer Science	3	0	3

Instructor-in-charge: Dr.RAMESH KUMAR YADAV

Course Educational Objectives(CEO's):

1. To understand the basic concepts of computer and organization of a computer
2. To understand the basic concepts of computer programming languages.
3. To make the students aware about the data representation, digital components of the computer hardware.
4. To make the students aware about the Combinational Circuit.
5. To understand the basic concepts of Principles of Computer Design

Text Books T1	Computers Today, S.K. Basadra, Gialgotia Publication. 2 nd edition.
T2	Internet for Every One, Alexis Leon and Mathews Leon, Tech World. 2008 print
T3	Computer System Architecture, Morris Mano, PHI, 3 rd Edition
T4	Computer Organization and Architecture, William Stalling (PHI), 2000.
Reference Books	Introduction to computers, P.K Sinha, BPB Publication, 6 th Edition
R2	Fundamentals of Computers, V.Rajaraman , Prentice Hall of India, 4 th edition
R3	Computer organization and Architecture, J.P.Hayes (TMH), 3 rd Edition
R4	Computer System Architecture and organization, Dr.M.Usha, T.S. Shrikant , Wiley publication

Learning Wise Plan:

Lecture No.	Learning Objective	Topics to be covered	Reference (Ch./Sec./Page Nos.ofText Book)
1	Introduction to computer and hardware	Introduction to computers	T1CH-1
2		Disks, Types of Disks	T1CH-1
3		Memory, Types Of memory	T1CH-1

Lecture No.	Learning Objective	Topics to be covered	Reference (Ch./Sec./Page Nos.ofText Book)
4		Operating System, Compiler	T1CH-1
5		Basic computer organization, Block diagram of computer	T1CH-2
6		Input Devices, Output Devices	T1CH-2
7		Storage Devices and File organization system	T1CH-2
8		Storage device: Data storage,	T1CH-2
9		Storage devices-magnetic tape, magnetic disks, hard disk drives,	T1CH-3
10		Concept of Data processing and information.	T1CH-3
11		History of Computers	T1CH-3
12	Data Representation and Digital Components	Number Systems and their conversions	T1CH-4
13		Number Systems and their conversions	T1CH-4
14		BCD, Octal, Hexa decimal, R&R- 1's Complement	T1CH-4
15		Fixed and floating point representation	T1CH-4
16		Binary Codes:Excess-3,ASCII,	T1CH-5
17		Binary Codes:Excess-3,ASCII, EBCDIC, Error detection Codes	T1CH-5
18		Boolean Algebra, Map Simplification.	T1CH-6
19		Logic Gates.	T1CH-6
20	Programming Concepts	Programming Languages, Introduction to Programming	T1CH-7
21		Idea of Algorithm: Steps to solve logical and numerical problems	T1CH-7
22		Representation of Algorithm: flow chart, Pseudo code, source code with example	T1CH-8
23			T1CH-8

Lecture No.	Learning Objective	Topics to be covered	Reference (Ch./Sec./Page Nos.ofText Book)
24		Syntax and logical error in compilation	T1CH-9
25		Object and Executable code	T1CH-9
26	Combinational Circuit	Combinational circuit: Half and Full Adder	T1CH-10
27		Decoder and Multiplexer	T1CH-11
28		Sequential Circuit: Flip-Flop, (SR, D,JK, Master-Slave)	T1CH-12
29		Registers, Computer Registers	T1CH-12
30		Counter, Register Transfer Language(RTL)	T1CH-12
31		Micro-operations: Arithmetic, Logic	T1CH-13
32			T1CH-13
33	Principles of computer Design	Principles of computer Design: Computer instructions	T1CH-14
34		Timing and control	T1CH-14
35		Instruction Cycle and interrupt Cycle	T1CH-15
36		Memory reference instructions	T1CH-15
37		Input-output and Interrupt	T1CH-15
38		Design of basic Computer	T1CH-16
39		Instruction format	T1CH-16
40		Addressing Modes	T1CH-16

Evaluation Scheme:

Student evaluation is based on the series of Tests and Quizzes conducted during the course of semester followed by a comprehensive examination.

Evaluation Component	Duration	Weightage	Date	Syllabus (Lec.No)	Remarks
Test 1	60 Minutes	16	12-09-2023	1-10	CB
Test 2	60 Minutes	17	17-10-2023	11-24	CB
Test 3	60 Minutes	17	21-11-2023	24-40	OB
Assignment	Continuous	10	**	**	CB
Comprehensive Exam	3 Hours	40	13-12-2023	1-40	CB

*To be Announced in the Class

OB= Open Book

CB= Closed Book Exam

Make- up-Policy: Make up will be given only under genuine circumstances for Tests Only. However Prior and proper intimation to the concerned instructor is must.

General: It shall be the responsibility of individual students to attend all sessions to take prescribed Assessment Tests, Tests and Comprehensive Examinations, etc.

Date: 04/08/2023

Dr.RAMESH KUMAR YADAV
Instructor-in-charge

The ICFAI University, Raipur

Faculty of Information Technology

First Semester, 2023-2024

Course Handouts

Course Code	Course Title	L	P	U
MCA211	Computer Graphics	3	2	4

Instructor-in-charge: Dr.PALAK KESHWANI

Learning Objective:

After successful completion of the course student will be able to:

1. Understand the concepts of computer graphics through theoretical, algorithmic and advanced modeling aspects along with, applications in 3D graphics and visualization in 3D.
2. To apply the concepts and techniques to various problem domain and visualization of data-sets and processes.

Textbook(s)TI	Computer Graphics, James D. Foley, A. Van Dam, S.K. Ferrier, and J.F. Hughes, Principles and Practice, 2nd Edition in C, Addition-Wesley , 1996.
Reference book(s)R1	Mathematical Elements of Computer Graphics, Rogers B. McGraw Hill, 1989.
R2	Computer Graphics, D. Hearn and M.P. Baker, PHI, 1994.
R3	Introduction to Computer Graphics, N Krishnamurthy, 1st Edition, TMH, 2002.

Lecture-wise-plan:

Lecture Nos.	Learning Objective	Topics to be covered	Reference (Ch./Sec./ Page Nos. of Text Book)
01–02	What, Why & Where about Graphics,	Overview of graphics systems – What, Why & Where about Graphics, Hardware & Software, Input & Output Technology, Mathematical complexity involved - Demonstration through some examples	Ch 1 Ch 4
03-05	Algorithms for Drawing 2D objects Line, Circle & Ellipse.	Raster Graphics Algorithms for Drawing 2D objects: Line, Circle & Ellipse.	Ch 3

Lecture Nos.	Learning Objective	Topics to be covered	Reference (Ch./Sec./ Page Nos. of Text Book)
06-10	Manipulation of objects	Introduction to 2D & 3D Geometry, Scaling, Translation, Rotation, Shear, Reflection, Projection and Composite Transformations	Ch 5
11-13	Mapping of 2D from world to screen	Viewing & Clipping in 2D (Cohen's and Parametric Line Methods)	Ch 5 Ch 3
14-17	Mapping of 3D from world to screen	Viewing & Clipping in 3D (Perspective & Parallel projection, Clipping against a Canonical View Volume, Clipping in Homogeneous Coordinates, and Mapping into a Viewport	Ch 6
18-22	Drawing Smooth Curves & Surfaces	Hermit, Bezier, Continuities, B-spline Curves, Parametric Bi Cubic Surfaces, Quadric Surfaces	Ch 11
23-27	Representation of Solid objects	Solid Modeling (Representations, Operations, Geometry, and Interface)	Ch 12
28-31	Detection of hidden portions	Visible Surface Detection (Need & Algorithms, Ray Tracing) and Hidden Line elimination	Ch 15
32-35	How to shade surfaces and solids	Rendering (Models, Physics, Shading Polygons & Surface, & Shadows)	Ch 16
36-40	How to show graphics in motion	Animation (Languages, Techniques, Control, Basic Rules & Problems)	Ch 21

List of Programs

1. Write a program to draw a line using DDA algorithm.
2. Write a program to draw a line using Bresenham's algorithm.
3. Write a program to draw a circle using midpoint algorithm.
4. Write a program to draw a circle by normal formula.
5. Write a program to draw a circle using Bresenham's algorithm.
6. Write a program to perform 2D Transformations on a line.
7. Write a program for performing the basic 2D transformations such as translation, Scaling, Rotation, shearing and reflection for a given 2D object.

8. Write a program for performing the basic transformations such as translation, Scaling, Rotation for a given 3D object?
9. Write a program to draw a cube using in build library function and perform 3D Transformations
 - i) Translations in x, y, z directions
 - ii) Rotation by angle 45° about z axis, rotation by 60° about y-axis in succession.
 - iii) Scaling in x-direction by a factor of 2, scaling in y- direction by a factor of 3.
10. Write a program to implement line clipping (Cohen Sutherland algorithm).
11. Write a program for making Bezier curve.

Evaluation Scheme:

Student's evaluation is based on the series of Tests and presentation conducted during the course of semester followed by a comprehensive examination.

Evaluation Component	Duration	Weightage	Date	Syllabus (Lec. No.)	Remarks
Test 1	60 Minutes	16	12-09-2023	1-10	CB
Test 2	60 Minutes	17	17-10-2023	11- 20	OB
Test 3	60 Minutes	17	22-11-2023	21- 30	CB
Lab	Throughout	10	**	**	
Comprehensive Exam	3 Hours	40	13-12-2023	1- 40	CB

** To be announced in the class

Make-up Policy: Make up will be given only under genuine circumstances for Tests Only. However prior and proper intimation to the concerned instructor is must.

General: It shall be the responsibility of individual students to attend all sessions, to take prescribed Assessment Tests, Tests and Comprehensive Examinations, etc.

Date: 01/08/2023

Dr.PALAK KESHWANI
Instructor-in-charge

The ICFAI University, Raipur

Faculty of Information Technology

First Semester, 2023-2024

Course Handouts

Course Code	Course Title	L	P	U
MCA212	Cryptography	3	0	3

Instructor-in-charge: Mr.ASHISH KUMBHARE

Learning Outcomes:

The objective of this course is to teach the concepts of securing computer network protocols, based on the application of cryptography techniques. This course covers the underlying principles and techniques for network and communication security. The course also gives a survey of cryptographic tools and explains how they can be utilized in protocols and applications, for example how to provide secure user authentication over a public network. Students have a good understanding of how applications can communicate securely and what tools and protocols exist in order to offer different levels of security.

Text Book(s) T1	Cryptography And Network Security – Principles and Practices, William Stallings, Prentice Hall of India, Fifth Edition, 2011
Reference	Cryptography and Network Security Atul Kahate, Tata McGrawHill, 2003.
R2	Security in Computing Charles B. Pfleeger, Shari Lawrence Pfleeger, Third Edition, Pearson Education, 2003.
NPTEL Link	https://nptel.ac.in/courses/106/105/1061050031/

Textbook(s) T1	Cryptography And Network Security – Principles and Practices, William Stallings, Prentice Hall of India, Fifth Edition, 2011
Reference book(s) R1	Cryptography and Network Security Atul Kahate, Tata McGrawHill, 2003.
R2	Security in Computing Charles B. Pfleeger, Shari Lawrence Pfleeger, Third Edition, Pearson Education, 2003.
NPTEL Link	https://nptel.ac.in/courses/106/105/106105031/

Lecture-wise-plan:

LectureNos.	Learning Objective	Topics to be covered	Reference (Ch./Sec./Page Nos.ofTextBook)
1	To learn Introduction of Network Security	Introduction of Network Security,	T1 CH-1 1.1, 1.2
2-3	To learn Need for Security	Need for Security – Concept & Types of Attacks, Types of Services and Mechanisms	T1 CH-1 1.3, 1.4,1.5
4-5	To learn concept of encryption	Introduction to encryption, Classical encryption Techniques	T1 CH-2 2.1,2.2
6-8	To learn various encryption standards	Block ciphers standard, Data encryption standard, Advanced encryption standard	T1 CH-3 3.1,3.2
9-11	To learn symmetric cipher encryption DES algorithm	Symmetric ciphers- triple DES concept, DES- Modes of operation	T1 CH-3 3.4,3.5
12-13	To learn public key cryptography	Confidentiality using Symmetric Encryption, Public key cryptography	T1 CH-8 8.1,8.2
14-15	To learn public key cryptography RSA Algorithm	Concept and working of RSA	T1 CH-9 9.1,9.2
16-17	To learn Key management and distribution technique	Key management Techniques, Key Distribution Techniques	T1 CH-10 10.1,10.2
18	To learn public Key Cryptosystems	Other public Key Cryptosystems – Diffie Hellmen Inroduction	T1 CH-10 10.2
19	To learn Diffie Hellmen Algorithm	Diffie Hellmen working Concept	T1 CH-10 10.2,10.3
20-21	To learn concept of Hash Function	Cryptographic Hash functions – concept, uses, Cryptographic Hash functions –SHA	T1 CH-11 11.1,11.2
22	To learn Message authentication Codes	Introduction to Message authentication Codes (MAC),	T1 CH-11 11.3
23-26	To learn different MAC algorithm	Message authentication Codes (MAC) – HMAC, Message authentication Codes (MAC) – DAA, Hash and MAC algorithms – MD5	T1 CH-12 12.1,12.3,12.4
27	To learn concept of Digital Signature	Introduction to Digital signatures	T1 CH-13 13.1
28-29	To learn Digital Signature technique	Digital signatures – DSS, Digital signatures –DSA,	T1 CH-13 13.2,13.3

30-32	To learn Authentication principles	Application of X.509 Certificates. Authentication principles, Authentication applications- Kerberos V4 & V5	T1 CH-14 14.1,14.2
33-34	To learn Web security concept	Introduction to Web security, Working concept of Web security	T1 CH-17 17.1,17.2
35	To learn Web security	Web security - Secure Electronic Transaction	T1 CH-17 17.3
36-37	To learn E-Mail security	Introduction E-Mail security, Working concept of E-Mail security	T1 CH-15 15.2
38-39	To learn IP Security	Introduction to IP Security, Working concept of IP Security	T1 CH-16 16.1,16.2
40-42	To learn Application of IP Security	Application of IP Security, PGP (Pretty_Good_Privacy) Cocept	T1 CH-15 15.1

Evaluation Scheme:

Student evaluation is based on the series of Tests and Quizzes conducted during the course of semester followed by a comprehensive examination.

Evaluation Component	Duration	Weightage	Date	Syllabus (Lec. No.)	Remarks
Test 1	60 Minutes	17	12-09-2023	1-11	CB
Test 2	60 Minutes	17	17-10-2023	12- 26	OB
Test 3	60 Minutes	16	23-11-2023	27- 42	CB
Quiz	20 Minutes	10	**	**	CB
Comprehensive Exam	3 Hours	40	13-12-2023	1- 42	CB

** To be announced in the class

Make-up Policy: Make up will be given only under genuine circumstances for Tests Only. However prior and proper intimation to the concerned instructor is must.

General: It shall be the responsibility of individual students to attend all sessions, to take prescribed Assessment Tests, Tests and Comprehensive Examinations, etc.

Date: 02/08/2023

**Mr.ASHISH KUMBHARE
Instructor-in-charge**

The ICFAI University, Raipur
Faculty of Information Technology
First Semester, 2023-2024
Course Handouts

Course Code	Course Title	L	P	U
MCA213	Dot Net Technologies	3	0	3

Instructor-in-charge: Ms.SNEHAL YADAV

Learning Outcomes:

The learning objectives of this course are to:

1. Gain a thorough understanding of the philosophy and architecture of Web a Publications using ASP.NET
2. Acquire a working knowledge of Web a Publication development using Web Forms and Visual Studio 2008
3. Optimize an ASP.NET Web a Publication using configuration, security, and caching
4. Access databases using ADO.NET and LINQ
5. More recent ASP .NET features
6. Implement rich client a Publications using ASP.NET AJAX
7. Customize Web a Publications through the use of HTTP handlers and modules

Text Book T1	C# 6.0 and the .NET 4.6 Framework
Text Book T2	by Andrew Troelsen and Philip Japikse
Reference book(s) R1	Programming Entity Framework by Julia Lerman

Lecture-wise-plan:

Lecture Nos.	Learning Objective	Topics to be covered	Reference (chapter/sec./Page Nos of Text/Ref. Books)
1-5	To understand the basics of .NET	Introduction to ASP.NET From ASP to ASP.NET Web Forms Web Services ASP.NET Feature	T1 Ch-1 1.4,1.5, T2,Ch1.6,1.9
6-10	To learn the concepts ofweb form architecture	Web Forms Architecture Page Class Web Forms Life Cycle Web Forms Event Mode	T2 Ch-2 2.1,2.4,2.7,2.9

Lecture Nos.	Learning Objective	Topics to be covered	Reference (chapter/sec./Page Nos of Text/Ref. Books)
16-20	To learn the concepts of HTTP Class	ASP.NET and HTTP Request/Response Programming tp Request Class HTTP Collections Http Response Class Redirection ,Http Utility Class	T1 Ch-3 3.1,3.7 T2 Ch3 5.6,3.8
21-23	To learn the concepts of web a Publication	Web A Pglications Using Visual Studio Using Visual Web Developer Visual Studio Forms Designer Using Components Shadow Copying Using the Global. asax File Data Binding	T1 Ch-4 4.7, 4.4 T2 Ch4 4.8,4.10
24-25	To understand concept of session state	State Management and Web A Publications Session State A Publication State Multithreading Issues, Cookies	T1 Ch-5 5.5,5.9
26-30	To understand concept of server controls	Server Controls HTML Server Controls Web Forms Server Controls Rich Controls Validation Controls User Control	T2 Ch-5 5.3,5.7
31-40	To learn the concepts of caching and its uses	Caching in ASP.NET What Is Caching Page-Level Caching Page Fragment Caching Optimizing Your ASP.NET A Publication A Publication Caching	T1 Ch-5,Ch6 5.7, 6.4,7.2 T2 Ch6 6.9,7.4,7.9

Evaluation Scheme: Student evaluation is based on the series of Tests and Quizzes conducted during the course of semester followed by a comprehensive examination.

Evaluation Component	Duration	Weightage	Date	Syllabus (Lec.No.)	Remarks
Test 1	60 Minutes	16	11-09-2023	1-10	CB
Test 2	60 Minutes	17	17-10-2023	11- 20	CB
Test 3	60 Minutes	17	23-11-2023	21- 30	CB
Quizzes (2)	20 Minutes each	10	**	**	CB
Comprehensive Exam	3 Hours	40	15-12-2023	1- 40	CB

** To be announced in the class

Make-up Policy: Make up will be given only under genuine circumstances for Tests Only. However prior and proper intimation to the concerned instructor is must.

General: It shall be the responsibility of individual students to attend all sessions, to take prescribed Assessment Tests, Tests and Comprehensive Examinations, etc.

Date: 01/08/2023

Ms.SNEHAL YADAV
Instructor-in-charge

The ICFAI University, Raipur

Faculty of Information Technology

First Semester, 2023-2024

Course Handouts

Course Code	Course Title	L	P	U
MCA214	Big Data Analytics	3	0	3

Instructor-in-charge: Dr.RAVI KIRAN PATNAIK

Learning Outcomes:

1. Provide the essential knowledge for the students to understand big data computer system, storage, management, processing, and visualization
2. Provide training in state-of-the-art big data processing frameworks
3. Provide training in big data applications
4. Provide the students with prerequisite for graduate level study in computer science
5. Prepare the students for industrial career.

Textbook(s) T1	Title: Big Data Fundamentals: Concepts, Drivers & Techniques Author: Wajid Khattak, Paul Buhler, Thomas Erl Publisher: John Wiley & Sons, Inc ISBN: 13: 9780134291079
Reference Book(s) R1	BIG DATA and ANALYTICS, Seema Acharya, Subhasinin Chellappan, Wiley publications
Reference Book(s) R2	BIG DATA, Black BookTM , DreamTech Press, 2015 Edition

Lecture Wise Plan:

Lecture Nos.	Learning Objective	Topics to be covered	Reference(Ch./Sec./Page Nos. of Text Book)
1-6	Understanding Big Data	Concepts and Terminology Datasets Data Analysis Data Analytics Descriptive Analytics Diagnostic Analytics Predictive Analytics Prescriptive Analytics Business Intelligence (BI) Key Performance Indicators (KPI) Big Data Characteristics Different Types of Data Structured Data Unstructured Data Semi-structured Data Metadata Background History Technical Infrastructure and Automation Environment Business Goals and Obstacles	T1:- Chpt 1

7-13	Business Motivations and Drivers for Big Data Adoption	Marketplace Dynamics Business Architecture Business Process Management Information and Communications Technology Data Analytics and Data Science Digitization Affordable Technology and Commodity Hardware Social Media Hyper-Connected Communities and Devices Cloud Computing Internet of Everything (IoE)	T1:- Chpt 2
14-20	Big Data Adoption and Planning Considerations	Privacy Security Provenance Limited Real time Support Distinct Performance Challenges Distinct Governance Requirements Distinct Methodology Clouds Big Data Analytics Lifecycle Business Case Evaluation Data Identification Data Acquisition and Filtering Data Extraction Data Validation and Cleansing Data Aggregation and Representation Data Analysis Data Visualization Utilization of Analysis Results	T1:- Chpt 3
21-26	Enterprise Technologies and Big Data Business Intelligence	Online Transaction Processing (OLTP) Online Analytical Processing (OLAP) Extract Transform Load (ETL) Data Warehouses Data Marts Traditional BI Ad-hoc Reports Dashboards Big Data BI	T1:- Chpt 4
27-32	Big Data Storage Concepts	Clusters File Systems and Distributed File Systems NoSQL Sharding Replication	T1:- Chpt 5
33-36	Big Data Processing Concepts	Parallel Data Processing Distributed Data Processing Hadoop Processing Workloads Batch Transactional Cluster Processing in Batch Mode Batch Processing with MapReduce Map and Reduce Tasks	T1:- Chpt 6
37-40	Big Data Storage Technology	On-Disk Storage Devices Distributed File Systems RDBMS Databases NoSQL Databases Characteristics	T1:- Chpt 7
41-42	Big Data Analysis Techniques	Quantitative Analysis Qualitative Analysis Data Mining Statistical Analysis A/B Testing Correlation Regression Machine Learning	T1:- Chpt 8

Evaluation Scheme:

Student evaluation is based on the series of Tests and Quizzes conducted during the course of semester followed by a comprehensive examination.

Evaluation Component	Duration	Weightage	Date	Syllabus (Lec. No.)	Remarks
Test 1	60 Minutes	16	12-09-2023	1-13	CB
Test 2	60 Minutes	17	16-10-2023	14-26	OB
Test 3	60 Minutes	17	21-11-2023	27-36	CB
LAB	Through out	10	**	**	CB
Comprehensive Exam	3 Hours	40	11-12-2023	1-42	CB

** To be announced in the class

Make-up-Policy: Make up will be given only under genuine circumstances for Tests Only. However prior and proper intimation to the concerned instructor is must.

General: It shall be the responsibility of individual students to attend all sessions, to take prescribed Assessment Tests, Tests and Comprehensive Examination, etc.

Date: 01/08/2023

Dr.RAVI KIRAN PATNAIK
Instructor-in-charge

The ICFAI University, Raipur

Faculty of Information Technology

First Semester, 2023-2024

Course Handouts

Course Code	Course Title	L	P	U
MCA215	Blockchain Technology	3	0	3

Instructor-in-charge: Mrs.SNEHAL YADAV

Learning Outcomes:

The learning objectives of this course are to:

- 1.Enhance/develop students' ability to understand Blockchain Technology, Ethereum, Hyperledger Fabric, Distributed Application Development(smart contracts development, API)
2. By the end of the course, students will be able to Understand how blockchain systems (mainly Bitcoin and Ethereum) work, Design, build, and deploy smart contracts and distributed applications, Integrate ideas from blockchain technology into their own projects

Text Book T1	Arvind Narayanan, Joseph Bonneau, Edward Felten, Andrew Miller and Steven Goldfeder, Bitcoin and Cryptocurrency Technologies: A Comprehensive Introduction, Princeton University Press (July 19, 2016).
Text Book T2	Blockchain Explained: A Pragmatic Approach by Srihari Kapu
Reference book(s) R1	Mastering Blockchain by Imran Bashir

Lecture-Wise-Plan:

Lecture Nos.	Learning Objective	Topics to be covered	Reference (chapter/sec./Page Nos of Text/Ref. Books)
1-7	Overview of Blockchain Technology	Defining Blockchain and Distributed Ledger, Blockchain Properties Decentralized, Transparent, Immutable and secure. Blockchain Applications. Types of Blockchain: Public, private, and consortium based blockchain, Why to use Blockchain, History of Blockchain.	T1 Ch-1 1.4,1.5,1.6,1.9 Notes/PDF
8-13	Introduction to computing models and P2P networking	Centralized, Decentralized and Distributed Systems, Decentralization vs distributed, P2P systems, properties of P2P systems, P2P communication architecture. P2P network applications: File sharing, P2P network for blockchain	T2 Ch-2 2.1,2.2,2.3,2.9 Notes/PDF

14-19	Foundational Concepts Blockchain Data Structure	Cryptographic Hash Functions, Digital Signatures, Public Keys as Identities, Decentralized Identity management, Hash Pointers, Hash chain and Merkel tree.	T1 Ch-3 3.2,3.4 T2 Ch3 3.6,3.8 Notes/PDF
20-25	Consensus Mechanisms	Consensus Mechanisms – POW, POS and other Consensus Mechanisms - Proof of storage and so on. Transactions incentivizing and mining.	T1 Ch-5 5.7,5.8 Notes/PDF
26-30	Blockchain & Cryptocurrency	Cryptocurrency as the first blockchain application. Mechanics of Bitcoin, Storing and Using Bitcoins, Mining in Bitcoin, Limitations of Bitcoin and alternative cryptocurrencies.	T1 Ch-4 4.5, 4.6 T2 Ch4 4.8,4.10 Notes/PDF
31-36	Smart Contracts and Ethereum	History, Purpose and types of smart contracts, Introduction to Ethereum, bitcoin vs Ethereum stack. P2P network in Ethereum, consensus in Ethereum, Concept - Smart contracts, Developing and executing smart contracts in Ethereum. State and data structure in Ethereum. Ethereum Virtual Machine.	T2 Ch-5 5.4,5.8 Notes/PDF
37-40	Private and Consortium based Blockchain: Hyperledger	Need for the consortium. Hyperledger stack, Multichain blockchain. Innovation in Hyperledger, distributed applications in hyperledger.	T1 Ch-5,Ch6 5.9, 6.4,7.1 T2 Ch6 6.8,7.4,7.9 Notes/PDF

Evaluation Scheme:

Student evaluation is based on the series of Tests and Quizzes conducted during the course of semester followed by a comprehensive examination.

Evaluation Component	Duration	Weightage	Date	Syllabus (Lec.No.)	Remarks
Test 1	60 Minutes	16	13-09-2023	1-13	CB
Test 2	60 Minutes	17	18-10-2023	14- 25	OB
Test 3	60 Minutes	17	22-11-2023	26- 40	CB
Quizzes (2)	20 Minutes each	10	**	**	CB
Comprehensive Exam	3 Hours	40	18-12-2023	1- 40	CB

** To be announced in the class

Make-up Policy: Make up will be given only under genuine circumstances for Tests Only. However prior and proper intimation to the concerned instructor is must.

General: It shall be the responsibility of individual students to attend all sessions, to take prescribed Assessment Tests, Tests and Comprehensive Examinations, etc.

Date: 01/08/2023

Mrs.SNEHAL YADAV
Instructor-in-charge

The ICFAI University, Raipur
Faculty of Information Technology
First Semester, 2023-2024
Course Handouts

Course Code	Course Title	L	P	U
PGDCA111	Introduction to Software Organization	3	0	3

Instructor-in-charge: Ms.DIVYA SONI

Learning Outcomes:

The learning objectives of this course :

The content of this course is basically selected to give the knowledge of Computer and software organization and their publications.

Text Book T1	Computer fundamentals, P.K. Sinha, BPB
Reference book(s) R1	Computer today by S.K. Basandra Galgotia Publications.

Lecture-wise-plan:

Lecture Nos.	Learning Objective	Topics to be covered	Reference (chapter/sec./Page Nos of Text/Ref. Books)
1-5	To understand the basics of Computer	Introduction to Computer and Information Technology Computer system characteristics. Capabilities and limitations block diagram of computer Brief history of development of computer & generations of computer	T1 Ch-1 1.2,1.3,1.6,1.9
6-12	To learn the different types of computer concepts	Types of computer-Analog, Hybrid, digital, micro mini, mainframe, super computer Personal computer, types of PCs desktop, laptop, notebook, palmtop INPUT devices: keyboard, mouse monitor, trackball, joystick, digitizing table, scanners, digital cameras	T1 Ch-2 2.1,2.4,2.5,2.9
13-20	To learn the concepts of output Devices	MICR, OCR, OMR, Bar-code reader Printer Voice recognition, light pen, touches screen, devices, and plotter. Storage device: Data storage, Memory Chart	T1 Ch-3 3.2,3.4 Ch3 3.7,3.8

Lecture Nos.	Learning Objective	Topics to be covered	Reference (chapter/sec./Page Nos of Text/Ref. Books)
21-23	To learn the concepts and working of output devices	storage devices-magnetic tape, magnetic disks, hard disk drives floPgy disks, optical disks-CD, VCD, CDR, CDRW, DVD	T1 Ch-4 4.1, 4.5 T1 Ch4 4.8,4.10
24-25	To understand concept of software and its type	Computer software: types of software utility program, assemblers, compilers and interpreter	T1 Ch-5 5.1,5.9
26-30	To understand concept of OS and its type and aPplication	Operating system, functions, Types - batch, single user, multi user, multiprogramming, multiprocessing	T1 Ch-5 6.2,6.8
31-40	To learn the concepts of computer languages and its type	Programming languages, machine, assembly, high level Computer virus types of virus Antivirus Types of network LAN, WAN, MAN	T1 Ch-7,Ch8 5.9, 6.4,7.1

Evaluation Scheme:

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Evaluation Component	Duration	Weightage	Date	Syllabus (Lec.No.)	Remarks
Test 1	60 Minutes	17	11-09-2023	1-12	CB
Test 2	60 Minutes	17	16-10-2023	13- 25	OB
Test 3	60 Minutes	16	20-11-2023	26- 40	CB
Quizzes (2)	20 Minutes each	10	**	**	CB
Comprehensive Exam	3 Hours	40	08-12-2023	1- 40	CB

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General: It shall be the responsibility of individual students to attend all sessions, to take prescribed Assessment Tests, Tests and Comprehensive Examinations, etc

Date: 02/08/2023

**Ms.DIVYA SONI
Instructor-in-charge**

The ICFAI University, Raipur
Faculty of Information Technology
First Semester, 2023-2024
Course Handouts

Course Code	Course Title	L	P	U
PGDCA112	Computer in Office-I	3	0	3

Instructor-in-charge: Dr.RAVI KIRAN PATNAIK

Learning Outcomes:

1. To learn about Basics of Computers
2. To learn about basics of Hardware Components
3. To learn about basics of Operating System Software
4. To learn about basics of Application System Software
5. To practice handful exercises on Documentation, Spreadsheet, Presentation

Textbook(s) T1	Title: 1. Fundamentals of Computers by Reema Thareja, Second Edition, Publishers 2. Oxford University Press, India, ISBN:9780199499274
Reference book(s) R1	Fundamental of Information Technology Including Lab work by Vinod Babu Bandari, Publishers : Pearson
R2	Fundamentals of Computers by V.Raja Raman, Publishers: PHI
R3	Microsoft Office 2010 Bible by John Walkenbach, Hearb Tyson, Michael R. Groh and Faithe Wempen, Publishers : Wiley

Lecture-wise-plan:

Lecture Nos.	Learning Objective	Topics to be covered	Reference(Ch./Sec./Page Nos. of Text Book)
1-5	Basics of Computers	Definition of a Computer-Characteristics and Applications of Computers-Block Diagram of a Digital Computer-Classification of Computers based on size and working-Central Processing Unit-I/O Devices	Unit - I
6-10		Primary, Auxiliary and Cache Memory-Memory Devices, Software, Hardware, Firmware and People ware-Definition and Types of Operating System-Functions of an Operating System-MS-DOS-MS Windows-Desktop, Computer, Documents, Pictures, Music, Videos, Recycle Bin, Task Bar-Control Panel.	Unit - II

11-20	MS-Word	Features of MS-Word-MS-Word Window Components-Creating, Editing, Formatting and Printing of Documents- Headers and Footers-Insert/Draw Tables, Table Auto format-Page Borders and Shading- Inserting Symbols, Shapes, Word Art, Page Numbers, Equations-Spelling and Grammar-Thesaurus-Mail Merge	Unit - III
21-30	MS-PowerPoint	Features of PowerPoint-Creating a Blank Presentation-Creating a Presentation using Template-Inserting and Deleting Slides in a Presentation-Adding Clip Art/Pictures-Inserting Other Objects, Audio, Video-Resizing and Scaling of an Object-Slide Transition-Custom Animation	Unit - IV
31-40	MS-Excel	Overview of Excel features-Creating a new worksheet, Selecting cells, Entering and editing Text, Numbers, Formulae, Referencing Cells-Inserting Rows/Columns-Changing column widths and row height, auto format, changing font sizes, colors, shading.	Unit - V

Evaluation Scheme:

Student evaluation is based on the series of Tests and Quizzes conducted during the course of semester followed by a comprehensive examination.

Evaluation Component	Duration	Weightage	Date	Syllabus (Lec. No.)	Remarks
Test 1	60 Minutes	16	11-09-2023	1-5	CB
Test 2	60 Minutes	17	16-10-2023	6-10	OB
Test 3	60 Minutes	17	21-11-2023	11-30	CB
LAB	Through out	10	**	**	CB
Comprehensive Exam	3 Hours	40	11-12-2023	1-40	CB

** To be announced in the class

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General: It shall be the responsibility of individual students to attend all sessions, to take prescribed Assessment Tests, Tests and Comprehensive Examinations, etc.

Date: 01/08/2023

Dr.RAVI KIRAN PATNAIK
Instructor-in-charge

The ICFAI University, Raipur
Faculty of Information Technology
First Semester, 2023-2024
Course Handouts

Course Code	Course Title	L	P	U
PGDCA113	Programming in “C” Language	3	2	4

Instructor-in-charge: Mrs.NISHA THAKUR

Learning Outcomes:

After successful completion of the course student will be able to

1. Use and differentiate between basic concepts of computer hardware and software.
2. Use data representation for the fundamental data types in C and perform conversions between binary-hexadecimal decimal date representations.
3. Read, understand and trace the execution of programs written in C language
4. Analyze problems and design algorithms in pseudo code.
5. Write C program for a given algorithm using modular approach

Textbook(s) T1	Programming in ANSI C, E. Balagurusamy , Sixth edition, MC Graw Hill
Reference Book(s) R1	“C Programming Laboratory Handbook For Beginners” by Sidnal, Wiley India.
Reference Book(s)R2	“Programming in C” by Stephen G. Kochan, 3/e Pearson, 2000

Lecture-wise-plan:

Lecture Nos.	Learning Objective	Topics to be covered	Reference (chapter/sec./Page Nos of Text/Ref. Books)
1-2	To learn the concept of Introduction to Programming Language	Introduction, Computer System, Hardware & Software concepts.	T1 Ch 1, 1-10
3-4	To learn the concept of Flowchart and algorithm	Problem Solving: Algorithm/Pseudo code, flowchart, program development Steps.	T1 Ch 1, 1-10
5-6	To learn the concept of high Level and Low level Language	Computer language : Machine, Symbolic, and high – level language, creating and running programs.	T1 Ch 1, 1-10
7	To learn the concept of Compiling and executing the code	Writing, editing, compiling, linking and executing.	T1 Ch 1, 14-17
8-10	To learn the concept of C programs	Basics of C: Structure of a C program, identifiers, basic data types and sizes.	T1 Ch 1, 12

11-13	To learn the concept of Data types and operators	Constants, variables, arithmetic, relational and logical operators, increment and decrement operators, conditional operator, assignment operators.	T1 Ch 3, 52-63
14-17	To learn the concept of expressions	Expressions, type conversions, conditional expressions, precedence and order of evaluation, Sample programs.	T1 Ch 3, 68-73
18-19	To learn the concept of operators	Logical, shift, rotation, masks.	T1 Ch 3, 68-73
20-24	To learn the concept of Decision Making	Selection: Making Decision: Two way selection: if- else	T1 Ch 5, 112-119
25-27	To learn the concept of Decision Making	Nested if, null else	T1 Ch 5, 120-123
28-30	To learn the concept of switch statement	Multi way selection: Switch, else if , examples	T1 Ch 5, 124-126
31-33	To Learn the concept of Strings	String: Concepts, C strings	
34-35	To Learn the concept of Loops	Iterative Loops: while, do- while and for statement	T1 Ch 6, 151-158
36-37	To Learn the concept of Break And Continue	Break, Continue, initialization and updating, event and counter controlled loops	T1 Ch 6, 151-158
38	To Learn the concept of Looping with examples	Looping applications: Summation, powers, smallest and largest	Revision Programs
39	To Learn the concept of Array	Array Concepts, declaration, defining, accessing elements, storing elements.	T1 Ch8, 237-239
40	To Learn the concept of String manipulation	Strings and string manipulation, 1D arrays	T1 Ch8, 245-261

Evaluation Scheme:

Student evaluation is based on the series of Tests and Quizzes conducted during the course of semester followed by a comprehensive examination.

Evaluation Component	Duration	Weightage	Date	Syllabus (Lec.No.)	Remarks
Test 1	60 Minutes	16	12-09-2023	1-10	CB
Test 2	60 Minutes	17	17-10-2023	11- 24	OB
Test 3	60 Minutes	17	21-11-2023	25- 42	CB
Assignments	Continuous	10	**	**	CB
Comprehensive Exam	3 Hours	40	13-12-2023	1- 40	CB

** To be announced in the class OB* = Open Book Exam CB = Closed Book Exam

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Date: 01/08/2023

Mrs.NISHA THAKUR
Instructor-in-charge

The ICFAI University, Raipur

Faculty of Information Technology

First Semester, 2023-2024

Course Handouts

Course Code	Course Title	L	P	U
PGDCA114	Internet and Web Designing	3	2	4

Instructor-in-charge: Mr.NAVEEN KUMAR VAISHNAV

Scope & Objective of the Course:

After successful completion of the course student will be able to:

1. Understand the basics involved in publishing content on the World Wide Web. This includes the 'language of the Web' – HTML, the fundamentals of how the Internet and the Web function, a basic understanding of graphic production with a specific stress on creating graphics for the Web.
2. Understand a general grounding introduction to more advanced topics such as programming and scripting. Expose to the basic tools and applications used in Web publishing

Textbook T1	Deitel, Deitel, Goldberg, "Internet & World Wide Web How to Program", Third Edition, Pearson Education, 2006.
Reference books R1	Achyut Godbole, Atul Kahate "Web Technologies: TCP/IP, Web/Java Programming, and Cloud Computing", Third Edition, McGraw Hill Education.
R2	Raj Kamal, "Internet and Web Technologies", Tata McGraw-Hill. 4.
NPTEL	https://nptel.ac.in/courses/106/105/106105084/
Swayam	https://onlinecourses.swayam2.ac.in/nou20_cs05/preview

Lecture-Wise-Plan:

Lecture	Learning Objective	Topics to be covered	Reference (chapters)
1-4	Internet Concept:	Fundamental of Web, History of Web, Web development overview, Domain Name System (DNS)	T1: 1.5-1.6
5-8	Functionality of Internet	DHCP and SMTP and other servers ,Internet service provider (ISP), Concept of IP Address,	T1: 1.8, 2.1
9-12	Protocols and Components of internet	Internet Protocol, TCP/IP Architecture, Web Browser and Web Server.	T1: 2.1, 2.7

13-18	HTML and DHTML:-	HTML Tag, Rules of HTML, Text Formatting and Style, List, Adding Graphics to Html Document,	T1: 4.1- 4.9
19-23	HTML Tables and Frames	Tables and Layout , Linking Documents, Frame, Forms, Project in HTML	T1: 4.10 - 4.11
24-28	DHTML & CSS	Introduction to DHTML, CSS, Class and DIV, External Style Sheet.	T1: 5.1 - 5.8
29-33	Java Script	JavaScript(JS) in Web Page, Advantage of Java Script ,JS object model and hierarchy	T1: 6.1 – 6.5
34-36	Java Script Functions	JS Function, Client side JS Vs. Server side JS, JS security,	T1: 9.1 – 9.11
37-40	Google Sites	Designing drag and drop website using Google Sites	T1: 14.1

Practical list:

S.No	Name of the Experiment
1	HTML page to print Hello World.
2	Web page illustrating text formatting tags available in HTML. (i.e. <h1>, , <u>, <i>).
3	Web page to illustrate three types of lists in HTML.
4	HTML page which displays 3 images at LEFT, RIGHT and CENTER respectively.
5	HTML Code for Table
6	CSS Colors Code
7	Student registration form using <form> tag
8	Web page using CSS Inline style.
9	Web page using CSS Internal style.
10	Web page using CSS External style.

Evaluation Scheme:

Student evaluation is based on the series of Tests and Quizzes conducted during the course of Semester followed by a comprehensive examination.

Component	Duration	Weightage	Date	Syllabus (Lecture No)	Remarks
Test 1	60 Minutes	16	12/09/2023	1-18	CB
Test 2	60 Minutes	17	17/10/2023	19- 28	OB*
Test 3	60 Minutes	17	21/11/2023	29-40	MCQs
Lab	2 Hours	10	**	**	CB
Comprehensive Exam	3 Hours	40	15/12/2023	1- 40	CB

** To be announced in the class

OB* = Open Book

CB= Closed Book

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Date: 02/08/2023

Mr.NAVEEN KUMAR VAISHNAV
Instructor-in-charge