OP JINDAL UNIVERSITY

Raigarh-Chhattisgarh

Scheme and Syllabus

Of

B. Tech. (01UG020)

Department of

Computer Science and Engineering

School of Engineering

Batch 2022-2026

Scheme for B. Tech (CSE) Programme

Computer Science and Engineering
L: Lecture, T: Tutorial, P: Practical, C: Credit

Scheme of Teaching and Examination
B. Tech (Computer Science and Engineering) Prog. Code- 01UG020

Academic Semester IV

S. No.	Subject Code	Board of Study	SUBJECT	Periods per week			Scheme of Examination and Marks				Credit L+(T+P)/ 2 (L+T+P)
				L	T	P	PRE**		ESE*	Total Marks	
							Mid Sem	TA			
1	SOE-B-CSE-21-401	CSE	Probability and Statistics	3	1	0	30	20	50	100	4
2	SOE-B-CSE-21-402	CSE	Introduction to AI & Machine Learning	3	1	0	30	20	50	100	4
3	SOE-B-CSE-21-403	CSE	Analysis and Design of Algorithm	3	1	0	30	20	50	100	4
4	SOE-B-CSE-21-404	CSE	Compiler Design	3	0	0	20	15	40	75	3
5	SOE-B-CSE-21-405	CSE	Analysis and Design of Algorithm Lab	0	0	4	0	30	20	50	2
6	SOE-B-CSE-21-406	CSE	Web Development Lab II	0	0	4	0	30	20	50	2
7	SOE-B-CSE-21-407	CSE	AI &ML Lab	0	0	8	0	60	40	100	4
8	SOE-B-CSE-21-408	CSE	Professional Development IV	0	0	2	0	25	0	25	1
			Total	**12**	**3**	**18**	**110**	**220**	**270**	**600**	**24**

* End Semester Examination
** Progress Review Examination

Detailed Syllabus

Programme	**:**	**B.Tech.**	**Semester**	**:**	**IV**
Name of the Course:		**Probability and Statistics**	**Course Code:**		**SOE-B-CSE-21-401**
Credits	**:**	**4**	**No of Hours :**		**4 Hrs./week**
Max Marks	**:**	**100**			

Course Description:

The purpose of studying Probability Statistics and Numerical Analysis is to introduce the mind to the scientific method of analysis through which, the practical problems can be identified, explanations generated, and logical solutions selected which in essence are requisites for the development of good engineering sense.

Course Outcomes:

After Completion of the course Students will be able to:

CO Number	Course Outcome
CO1	Numerically estimate the roots of algebraic and transcendental equations.
CO2	Solve the system of linear algebraic equations by direct and iterative methods.
CO3	Obtain the numerical solution of differentiation and integration.
CO4	Obtain the numerical solution of Ordinary Differential Equations.
CO5	Use the mathematical concepts of Discrete and Continuous Probability Distributions to formulate and solve the real life problems.

Syllabus:

Unit–I: Solution of algebraic and transcendental equations:

Roots of Algebraic and Transcendental Equations, Bisection, Regula- Falsi and Newton-Raphson Methods, System of linear algebraic equations, Consistency and Existence of Solutions, Direct Methods: Gauss Elimination and Gauss-Jordan Methods, Iterative Methods: Jacobi's, Gauss-Siedal & Successive Over Relaxation Methods.

Unit-II: Finite Differences and Interpolation:

Finite Differences and Interpolation, Interpolation with equally and unequally spaced points, Interpolation Formulae based on forward, backward, central and divided differences, Lagrange's Interpolation formula, Inverse Interpolation.

Unit-III: Numerical Differentiation and Integration:

Numerical Differentiation, Derivatives using Forward, Backward and Central Difference Formulae, Numerical Integration, Newton-Cote's quadrature formula, Trapezoidal rule, Simpson's rules, Weddle's rule.

Unit-IV: Statistics:

Measure of central tendency: Moments, Expectation, dispersion, skewness, kurtosis, expected value of two dimensional random variable, Linear Correlation, correlation coefficient, rank correlation coefficient, Regression, Bounds on probability, Chebyshev's Inequality.

Unit-V: Probability:

Random variables, Expectation, Mean, Standard Deviation of Discrete & Continuous Random Variables, Probability Distributions, Discrete & Continuous Probability Distributions, Binomial, Poisson and Normal distributions.

Text Books:

- B.S. Grewal,"Higher Engineering Mathematics", (38th edition),Khanna Publishers.
- Dr. B.S. Grewal, "Numerical Methods in Engineering and Science", Khanna Publishers.
- M. K. Jain, S. R. K. Iyengar & R. K. Jain, "Numerical Methods for Scientific and Engineering Computation" Wiley Eastern Limited.

Reference Books:

- Erwin Kreyszig, "Advanced Engineering. Mathematics",(8th edition) – John Wiley & Sons.
- B. V. Rammana, "Higher Engineering Mathematics", Tata McGraw Hill.
- K. Shankar Rao, "Numerical Methods for Scientists and Engineers", Prentice Hall of India.
- S. S. Sastry," Numerical Methods", Prentice Hall Inc. India.

CO-PO & PSO Correlation

Course Name: Probability Statistics and Numerical Analysis												
	Program Outcomes								PSOs			
Course Outcomes	1	2	3	4	5	6	7	8	1	2	3	4
CO1:	1	2	2						2		1	2
CO2:		1	2						1		1	2
CO3:		2	2						1		1	2
CO4:		1	2						2		1	2
CO5:		2	2						2		1	2

Note: 1.: Low 2.: Moderate 3.: High

Programme	**:**	**B.Tech.**	**Semester**	**:**	**IV**
Name of the Course:		**Introduction to AI & Machine Learning**	**Course Code:**		**SOE-B-CSE-21-402**
Credits	**:**	**4**	**No of Hours :**		**4 Hrs./week**
Max Marks	**:**	**100**			

Course Description:

The course will cover both fundamental concepts of Artificial Intelligence and Machine Learning such as search techniques, knowledge representation, supervised and unsupervised learning. This course also covers the applications as well as case studies of both the areas. This course is intended for both students majoring in Computer Science as well as no specialists with the necessary background who wish to acquire a general familiarity with Artificial Intelligence.

Course Outcomes:

After Completion of the course Students will be able to:

CO Number	Course Outcome
CO1	Explore the fundamental issues and challenges in AI and Machine Learning including data and model selection.
CO2	Apply basic principles of AI in solutions that require problem solving, inference, perception, knowledge representation, and learning
CO3	Evaluate the various Supervised Learning algorithms using appropriate Dataset
CO4	Evaluate the various unsupervised Learning algorithms using appropriate Dataset.
CO5	Understand various applications of AI and ML in different domains.

Syllabus:

Unit-I: Overview of Artificial Intelligence and Machine Learning

AI problems, foundation of AI and history of AI intelligent agents, Agents and Environments, Overview of human learning and machine learning, types of machine learning, Data Preparation: Validation, Dimensionality, Missing Values

Unit-II: Knowledge Representation and Search Techniques

Knowledge representation issues, Predicate logic- logic programming, Rule-based systems, Semantic nets, Search Techniques: Uniformed search strategies – Breadth

first search, depth first Search. Search with partial information (Heuristic search) Hill climbing, A*, AO* Algorithms.

Unit-III: Supervised Learning

Bayesian Learning, Naïve Bayes Classifier, K-Nearest Neighbour, Support Vector Machines, Decision Tree classifier, Linear Regression, Logistic Regression, Performance evaluation of a model: basics of confusion metrics, evaluation metrics, Techniques to improve Classification. Accuracy: Cross-validation, Ensemble methods, Bagging, Boosting, Random Forest

Unit-IV: Unsupervised Learning

Supervised vs. Unsupervised Learning, Applications, Clustering, K-Means clustering, agglomerative hierarchical clustering, Density-Based Methods, Evaluation of clustering, Outliers and Outlier detection methods

Unit–V Applications and Case Studies

Case study: Self Driving Cars, Smart Home and IoT Applications, Robotics, Mine Detections, Medical Diagnosis, Personalised medicine, Applications in multiple domains. Smart City, Implications of AI, Predicting the Future and Social Implications

Text Books:

- Kevin Warwick, “Artificial Intelligence by The Basics”
- C.M. Bishop, “Pattern recognition and machine learning”, Springer, 2006
- S. Russel and P. Norvig, “Artificial Intelligence- A Modern Approach”, (Second Edition), Pearson Education,
- R. O. Duda, P. E. Hart and D.G. Stork, “Pattern Classification”, John Wiley, 2001

Reference Books:

- Saikat Dull, S. Chjandramouli, Das, “Machine Learning”, Pearson
- Mark Fenner, “Machine Learning with Python for Everyone”, Pearson
- Anuradha Srinivasaraghavan, Vincy Joseph, “Machine Learning”, Wiley
- David Poole, Alan Mackworth, Randy Goebel, “Computational Intelligence: a logical approach”, Oxford University Press.
- G. Luger, “Artificial Intelligence: Structures and Strategies for complex problem-solving”, Fourth Edition, Pearson Education.
- J. Nilsson, “Artificial Intelligence: A new Synthesis”, Elsevier Publishers.

CO-PO & PSO Correlation

Course Name: Introduction to AI and Machine Learning												
	Program Outcomes								PSOs			
Course Outcomes	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**1**	**2**	**3**	**4**
CO1:	1	1	2	2					1	2	2	
CO2:	3	3	2	2					2	2	2	
CO3:			3								3	
CO4:	1										2	
CO5:	2	1							2			

Note: 1.: Low 2.: Moderate 3.: High

Programme	**:**	**B.Tech.**	**Semester**	**:**	**IV**
Name of the Course:		**Analysis and Design of Algorithm**	**Course Code:**		**SOE-B-CSE-21-403**
Credits	**:**	**4**	**No of Hours :**		**4 Hrs./week**
Max Marks	**:**	**100**			

Course Description

Algorithms are the soul of computing. This course introduces basic methods for the design and analysis of efficient algorithms emphasizing methods useful in practice. Different algorithms for a given computational task are presented and their relative merits evaluated based on performance measures.

Course Outcomes:

After Completion of the course Students will be able to:

CO Number	Course Outcome
CO1	Analyse the performance of algorithms.
CO2	Employ graphs to model engineering problems, when appropriate.
CO3	Implement the design techniques i.e. dynamic programming, greedy algorithm etc. for more complex problems and analyze their performance.
CO4	Understand how the choice of data structures and the algorithm design methods impact the performance of programs.

Syllabus:

Unit-I Introduction:

Algorithm, Properties, Representations of Algorithms and Testing Algorithms, Performance Analysis-Space Complexity, Time Complexity, Asymptotic Notations-Big Oh Notation, Omega Notation, Theta Notation and Little Oh Notation, Limiting Behaviors of Asymptotic Notations, Solving Recurrence Relations-Substitution Method, Master Method and Recursion Tree Methods

Unit-II:

Disjoint Sets, Spanning Trees, Connected and Biconnected Components: Disjoint set operations, Union and find algorithms, spanning trees, connected components and biconnected components.

Unit-III: Divide and Conquer:

General method, Application- Binary Search, Quick Sort, Merge Sort, Strassen's Matrix Multiplication. Greedy Method: General Method, Applications-0/1 Kpsack Problem,

Job Sequencing with Deadlines, Minimum Cost Spanning Trees, Single source shortest path problem

Unit-IV:

Dynamic Programming: General Method, Applications-Matrix Chain Multiplication, Optimal Binary Search Trees, 0/1 Knapsack Problem, all pair shortest path problem, Travelling salesman problem

Unit-V: Backtracking:

General Method, Applications- n – queen's problem, Sum of subsets problem, Graph Coloring, Hamiltonian Cycle Np-Hard and NP-Complete Problems: Basic Concepts, Non-Deterministic Algorithms, NP-Hard and NP-Complete Classes, Cock's Theorem

Text Books:

- Ellis Horowitz, Sartaj Sahni and S. Rajasekharan, "Fundamentals of Computer Algorithms", 2nd Edition, Universities Press.
- T. H. Cormen, C. E. Leiserson, R. L. Rivest, and C. Stein, "Introduction to Algorithms", 3rd Edition, PHI.
- P. H. Dave, H.B. Dave, "Design and Analysis of Algorithms", 2nd edition, Pearson Education.

Reference Text Books:

- M. T. Goodrich and R. Tomassia, "Algorithm Design: Foundations, Analysis and Internet examples", John Wiley and sons.
- S. Sridhar, "Design and Analysis of Algorithms", Oxford Univ. Press.
- Aho, Ullman and Hopcroft, "Design and Analysis of algorithms", Pearson Education.
- R. Neapolitan and K. Imipour, "Foundations of Algorithms", 4th edition, Jones and Bartlett Student edition.

CO-PO & PSO Correlation

Course Name: Analysis and Design of Algorithm												
	Program Outcomes								PSOs			
Course Outcomes	1	2	3	4	5	6	7	8	1	2	3	4
CO1:	2	3							3	3	2	1
CO2:	2	2							3	2	2	2
CO3:	2	2	2						3	2	2	2
CO4:	2	2	2						3	2	2	2

Note: 1: Low 2.: Moderate 3: High

Programme	**:**	**B.Tech.**	**Semester**	**:**	**IV**
Name of the Course:		**Compiler Design**	**Course Code:**		**SOE-B-CSE-21-404**
Credits	**:**	**3**	**No of Hours**	**:**	**3 Hrs./ week**
Max Marks	**:**	**75**			

Course Description

The aim of this course is to learn how to design and implement a compiler and also to study the underlying theories. The main emphasis is for the imperative languages. This study explains the principles, techniques and tools required in developing compilers in a systematic way; To gain an understanding on different theoretical and systems concepts from computer science coming together in building a compiler.

Course Outcomes:

After Completion of the course Students will be able to:

CO Number	Course Outcome
CO1	Design and implement of a prototype compiler.
CO2	Define a grammar for a language and validation.
CO3	Generate Three address code of a grammar.
CO4	Learn about storage allocation.
CO5	Apply various optimization techniques to produce efficient code.

Syllabus:

Unit-I Introduction to Compiler

Single and Multi-Pass Compilers, Translators, Phases of Compilers, Compiler writing tools, Bootstrapping, Back patching. Finite Automata and Lexical Analysis: Role of Lexical Analyzer, Specification of tokens, Recognition of tokens, Regular expression, Finite automata from regular expression to finite automata, transition diagrams, Implementation of lexical analyzer, Tool for lexical analyzer – LEX, Error reporting.

Unit-II Syntax Analysis and Parsing Techniques:

Context free grammars, Bottom-up-parsing and top down parsing, Top down parsing: elimination of left recursion, recursive descent parsing, Predictive parsing; Bottom Up Parsing: Operator precedence parsing, LR parsers, Construction of SLR, canonical LR and LALR parsing tables, Construction of SLR parse tables for ambiguous grammar, the parser generator – YACC, error recovery in top down and bottom up parsing.

Unit-III Syntax Directed Translation & Intermediate code generation:

Synthesized and inherited attributes, dependency graph, Construction of syntax trees, bottom up and top down evaluation of attributes, S-attributed and L-attributed

definitions. Postfix notation; Three address code, quadruples, triples and indirect triples, Translation of assignment statements, control flow, Boolean expressions and Procedure Calls.

Unit-IV Runtime Environment:

Storage organization, activation tree, activation record, allocation strategies, Parameter passing, symbol table, dynamic storage allocation.

Unit-V Code Optimization & Code Generation:

Basic blocks and flow graphs, Optimization of basic blocks, Loop optimization, Global data flow analysis, Loop invariant computations. Issues in the design of Code generator, register allocation, the target machine and a simple code generator.

Text Books:

- Alfred V.Aho, Ravi Sethi and J. D. Ullman, "Compiler-Principles, Techniques and Tools", Addison Wesley.
- Alfred V.Aho and J.D.Ullman, "Principles of Compiler Design", Narosa Publication.

Reference Books:

- A.C. Holub, "Compiler Design in C", Prentice Hall of India.
- A.Barret William and R.M.Bates, "Compiler Construction (Theory and Practice) ", (Galgotia Publication)
- Kakde, "Compiler Design", Galgotia Publication.

CO-PO & PSO Correlation

Course Name: Compiler Design												
	Program Outcomes								PSOs			
Course Outcomes	1	2	3	4	5	6	7	8	1	2	3	4
CO1:	3	2	1						2	2	1	
CO2:		2	2						2	1	2	1
CO3:	2								2		2	1
CO4:	1	2							2	2	1	1
CO5:	2	2							2		2	1

Note: 1: Low 2.: Moderate 3: High

Programme	**:**	**B.Tech.**	**Semester**	**:**	**IV**
Name of the Course	**:**	**Analysis and Design of Algorithm Lab**	**Course Code:**		**SOE-B-CSE-21-405**
Credits	**:**	**2**	**No of Hours :**		**2 Hrs./ week**
Max Marks:	**:**	**50**			

Course Description:

The lab experiment in this course is designed to introduce the principle techniques and practices required to understand the given problem and design the algorithm for solving the problem. It includes the study of various algorithmic design aspects to design algorithm in an efficient manner.

Course Outcomes:

After Completion of the course Students will be able to:

CO Number	Course Outcome
CO1	Analyze and estimate the time and space complexities of the algorithm.
CO2	Identify the computational issues and apply suitable algorithms to solve it effectively.
CO3	Conceptualize and design efficient and effective algorithmic solutions for different real-world problems.
CO4	To learn use of divide and conquer techniques and their application to solve the problems.
CO5	To learn use of greedy and dynamic programming techniques and their application in the field of computer science to solve problems.

The following concepts will be covered in the lab:

- Provide algorithms and programs to implement the following searching procedures.
  - Linear search
  - Binary search
  - Discuss the detailed analysis of the developed algorithm.
- Implementation of Sorting algorithm like Quick sort, Heap Sort, Merge sort etc. and computation of its time complexity. Run the program for varied values of n> 5000, and record the time taken to sort. Plot a graph of the time taken versus non graph sheet. The elements can be read from a file or can be generated using the random number generator.

- Implementation of divide-and-conquer method works along with its time complexity analysis: worst case, average case and best case.
- Implementation of ,0/1 Knapsack problem using (a) Dynamic Programming method (b) Greedy method.
- Implementation of Dijkstra's algorithm to find shortest paths from a given vertex in a weighted connected graph.
- Implementation of finding Minimum Cost Spanning Tree of a given connected undirected graph using Kruskal'salgorithm.
- Implementation of Prim's algorithm to find Minimum Cost Spanning Tree of a given connected undirected graph.
- Implementation of All-Pairs Shortest Paths problem using Floyd's algorithm.
- Implementation of Travelling Sales Person problem using Dynamic programming.
- Implementation of finding all Hamiltonian Cycles in a connected undirected Graph G of n vertices using backtracking principle.

Text Books:

- T. H. Cormen, C. E. Leiserson, R. L. Rivest, and C. Stein, "Introduction to Algorithms", 3rd Edition, PHI.
- P. H. Dave, H.B. Dave, "Design and Analysis of Algorithms", 2nd edition, Pearson Education.

Reference Text Books:

- M. T. Goodrich and R. Tomassia, "Algorithm Design: Foundations, Analysis and Internet examples", John Wiley and sons.
- S. Sridhar, "Design and Analysis of Algorithms", Oxford Univ. Press.
- Aho, Ullman and Hopcroft, "Design and Analysis of algorithms", Pearson Education.
- R. Neapolitan and K. Imipour, "Foundations of Algorithms", 4th edition, Jones and Bartlett Student edition.

CO-PO & PSO Correlation

Course Name: Analysis and Design of Algorithm Lab												
	Program Outcomes								**PSOs**			
Course Outcomes	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**1**	**2**	**3**	**4**
CO1:	1	1	2	2					1	2	2	
CO2:	2	2	2	2					2	2	2	
CO3:			1					1			3	
CO4:	1				2			2			2	

Note: 1.: Low 2.: Moderate 3.: High

Programme	**:**	**B.Tech.**	**Semester**	**:**	**IV**
Name of the Course:		**Web Development Lab II**	**Course Code:**		**SOE-B-CSE-21-406**
Credits	**:**	**2**	**No of Hours :**		**2 Hrs./week**
Max Marks:	**:**	**50**			

Course Descriptions:

This course is designed as a programming intensive introduction to web technologies. We will study and build software programs using several different programming languages, markup languages and meta- markup languages. We will consider and work with two styles of client side programming - programming within the browser and programming standalone clients. On the server, we will program using NodeJS,

Course Outcomes:

After Completion of the course Students will be able to:

CO Number	Course Outcome
CO1	Develop Static web based application.
CO2	Implement client side scripting.
CO3	Implement server side scripting.
CO4	Develop dynamic web based application.

The following concepts will be covered in the lab:

- Introduction to React JS, its templates, components, state and props
- Concepts related to Lifecycle of components, rendering list and portals
- Error handling in React JS, Routers, Redux and Redus Saga
- Service side rendering and unit testing in React JS
- Revisit the concepts of NodeJS from web development lab -I
- Introduction to Angular JS with various examples
- Concepts related to data binding, controller, 2-way data binding and filters in Angular JS
- Form and input validation in Angular JS
- Introduction to MongoDB and migration of Data into MongoDB
- Concepts of SQL and NoSql
- MongoDB with PHP, MongoDB with NodeJS
- Programs depicting Services Offered by MongoDB
- Python installation and configuration
- Developing a Python application

- Connection of MongoDB with Python
- Concepts of VCS: version control with Git

Text Books:

- HTML5 : Cover CSS 3, JavaScript, XML ,XHTML,Ajazx,Jquery :Black Book , Second Edition, Dreamtech .
- Brad Dayley, "Node.js, MongoDB, and AngularJS Web Development", Addison-Wesley Professional

Reference Books:

- Achyt S Godbole &Atul Kahate,"Web Technologies TCP/IP Architecture and Java Programming", ,2nd Edition, TMH.
- Uttam K. Roy, "Web Technologies", Oxford.

CO-PO & PSO Correlation

Course Name : Web Technology Lab II												
	Program Outcomes								PSOs			
Course Outcomes	1	2	3	4	5	6	7	8	1	2	3	4
CO1:	1	2							1	2	1	
CO2:	1	3	1						1	2	1	
CO3:	1	3	1						1	2	1	
CO4:	1	3	2						1	2	1	

Note: 1.: Low 2.: Moderate 3.: High

Programme	**:**	**B.Tech.**	**Semester**	**:**	**IV**
Name of the Course:		**AI and ML Lab**	**Course Code:**		**SOE-CSE-21-407**
Credits	**:**	**4**	**No of Hours :**		**4 Hrs./week**
Max Marks	**:**	**100**			

Course Descriptions:

The laboratory augments the lecture course in Artificial Intelligence (AI) and Machine Learning (ML) by providing experience with different programming techniques. The laboratory introduces Commonly used AI and ML algorithms for various application domains.

Course Outcomes:

After Completion of the course Students will be able to:

CO Number	Course Outcome
CO1	Explain artificial intelligence, its characteristics and its application areas
CO2	Select and apply appropriate algorithms and AI techniques to solve complex problems
CO3	Solve different classification and regression problems using various supervised learning algorithms
CO4	Apply clustering algorithms to real life datasets

The following concepts will be covered in the lab:

- Implementation of DFS for water jug problem
- Implementation of BFS for tic-tac-toe problem using
- Implementation of TSP using heuristic approach
- Implementation of Simulated Annealing Algorithm
- Implementation of Hill-climbing to solve 8- Puzzle Problem
- Implementation of Data classification using Naïve Bayes classifier
- Implementation of Data classification using K-Nearest Neighbor classifier
- Implementation of K-Means Clustering Algorithm
- Implementation of Hierarchical Clustering Algorithm
- Implementation of Linear Regression

Text Books:

- Kevin Warwick, Artificial Intelligence: The Basics
- S. Russel and P. Norvig, "Artificial Intelligence – A Modern Approach", Second Edition, Pearson Education
- Mark Fenner, "Machine Learning with Python for Everyone", Pearson

Reference Books:

- David Poole, Alan Mackworth, Randy Goebel, "Computational Intelligence: a logical approach", Oxford University Press.
- Saikat Dull, S. Chjandramouli, Das, "Machine Learning", Pearson
- R. O. Duda, P. E. Hart and D.G. Stork, "Pattern Classification", John Wiley, 2001
- G. Luger, "Artificial Intelligence: Structures and Strategies for complex problem-solving" , Fourth Edition, Pearson Education.
- J. Nilsson, "Artificial Intelligence: A new Synthesis", Elsevier Publishers.

CO-PO & PSO Correlation

Course Name: AI &ML Lab												
	Program Outcomes								PSOs			
Course Outcomes	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**1**	**2**	**3**	**4**
CO1:	1	1	2	2					1	2	2	
CO2:	3	3	2	2					2	2	2	
CO3:			3								3	
CO4:	1							2			2	

Note: 1.: Low 2.: Moderate 3.: High

Programme	**:**	**B.Tech.**	**Semester**	**:**	**IV Semester**
Name of the Course:		**Professional Development -IV**	**Course Code:**		**SOE-B-CSE-21-408**
Credits	**:**	**1**	**No of Hours :**		**1 Hr. / week**
Max Marks	**:**	**25**			

Course Description

'Effective Speaking Skills' course is designed to teach students to apply theories and principles of effective interpersonal and public speaking. This course provides instruction and experience in preparation and delivery of speeches within a public setting and group discussion. Emphasis is on research, preparation, delivery, and evaluation of informative, persuasive, and special occasion public speaking. Upon completion, students should be able to prepare and deliver well-organized speeches and participate in group discussion with appropriate audiovisual support. Students should also demonstrate the speaking, listening, and interpersonal skills necessary to be effective communicators in academic settings, in the workplace, and in the community.

Course Objectives

After Completion of the course Students will be able to:

CO Number	Course Outcome
CO1	Students will understand the importance of Public speaking in securing job and move ahead in career.
CO2	Students will be able to Combat Stage Fright, able to deliver Different Types of Speeches
CO3	Students will be able to give professional presentation using Power point and create impression in professional environment
CO4	Students will able to give opinions in group discussion and will be able to conduct outcome based discussion.
CO5	Students will be able to understand Interview process and handle the basic HR Interview questions confidently.

Course Content

UNIT- I: Speaking: An Overview

Speaking: An Overview, Listening Effectively, Non-Verbal Communication, Art of Persuasion.

UNIT- II: Dynamics Of Professional Speaking

Introduction, Combating Stage Fright, Describing Objects/Situations/People, Delivering Just-a-minute Sessions, Delivering Different Types of Speeches.

UNIT- III: Professional Presentations

Planning of a Presentation, designing of a Presentation, Preparing Power Point Slides for Presentations, Individual and Group Presentations, Making Presentation.

UNIT- IV: Group Discussions

Introduction, GD and Debate, Types of GD, Personality Traits to be evaluated, Dynamics of Group Behaviour, DOs and DON'Ts of GD.

UNIT –V: Job Interviews

Introduction, Process, Stages in Job Interviews, Types, Desirable Qualities, Preparation, Tips for Success

Text Books

- Jeff Butterfield, "Soft Skills for Everyone", CENAGE LEARNING, Delhi, 2014
- Sanjay Kumar and Pushp Lata, "Communication Skills", New Delhi: Oxford University Press, 2011
- Pushp Lata and Sanjay Kumar, "Communicate or Collapse: A Handbook of Effective Public Speaking, Group Discussion and Interviews", New Delhi: Prentice Hall of India, 2007
- Dale Carnegie, "The Art of Public Speaking", New Delhi: Ocean Paperbacks, 2016

Reference Books

- Stephen E. Lucas, "The Art of Public Speaking", Third Edition, Singapore: McGraw-Hill, 1989
- Sonya Hamlin, "How to Talk so People Listen", New York: Throson, 1993
- Jeff Davidson, "The Complete Guide to Public Speaking", Manjul Books PVT. Bhopal, 2006
- Turk, Cristopher, "Effective Speaking, Second Indian Reprint", Taylor and Francis Group, Delhi, 2010

CO-PO & PSO Correlation

Course name: Professional Development (IV)												
	Program Outcomes								PSOs			
Course Outcomes	1	2	3	4	5	6	7	8	1	2	3	4
CO1:		2		3		1	2					1
CO2:		1		2		1	1					
CO3:				3		2	2					1
CO4:				1		1	1					
CO5:				1		1	1					1

Note: 1: Low 2.:Moderate 3: High