IV B.Tech I Semester (CSE)

S.No	Course Code	Title	L	T	P	Credits
1	23CST24	Deep Learning	2	1	0	3
2	23MBTU4a 23MBTU4b 23MBTU4c	**Management Course- II** 1.Business Ethics and Corporate Governance 2.E-Business 3.Management Science	2	0	0	2
3	23CST29a 23CST29b 23CST29c 23CST23d 23CST23e	**Professional Elective-IV** 1. Software Architecture & Design Patterns 2. Blockchain Technology 3. Augmented Reality & Virtual Reality 4. Internet of Things 5. Agentic AI Engineering	3	0	0	3
4	23CST30a 23CST30b 23CST28 23CST30c 23CST30d	**Professional Elective-V** 1. Agile Methodologies 2. Metaverse 3. Computer Vision 4. Cyber Physical Systems 5. AI Powered Application Development	3	0	0	3
5	23BST33	Employability Skills	3	0	0	3
6	23BST40	Advanced Aptitude and Critical Thinking	3	0	0	3
7	23CSP18	**Skill Enhancement Course** Prompt Engineering	0	1	2	2
8	23BST39	**Audit Course** Gender Sensitization	2	0	0	-
9	23CSEII	Evaluation of Industry Internship	-	-	-	2
		Total	**18**	**2**	**02**	**21**

Open Elective – III

S.No	Course Code	Course Name	Offered by the Dept.
1	23CET24	Building Materials and Services	CIVIL
2	23CET25	Environmental Impact Assessment	
3	23EET22	Smart Grid Technologies	EEE
4	23MET23	3D Printing Technologies	ME
5	23ECT12	Microprocessors and Microcontrollers	ECE
6	23BST30	Wavelet transforms and its Applications	Mathematics
7	23BST31	Smart Materials And Devices	Physics
8	23BST34	Introduction to Quantum Mechanics	
9	23BST32	Green Chemistry And Catalysis For Sustainable Environment	Chemistry
10	23BST33	Employability Skills	Humanities

Open Elective – IV

S.No	Course Code	Course Name	Offered by the Dept.
1	23CET26	Geo-Spatial Technologies	CIVIL
2	23CET27	Solid Waste Management	
3	23EET25	Electric Vehicles	EEE
4	23MET24	Total Quality Management	ME
5	23ECT29	Transducers and Sensors	ECE
6	23BST35	Financial Mathematics	Mathematics
7	23BST36	Sensors And Actuators For Engineering Applications	Physics
8	23BST37	Chemistry Of Nanomaterials and Applications	Chemistry
9	23BST38	Literary Vibes	Humanities
10	23BST40	Advanced Aptitude and Critical Thinking	Humanities

IV B.Tech II Semester (CSE)

S.No.	Course code	Title	Category	L	T	P	Credits
1	23CSIAP	Internship		-	-	24	4
		Project					8
Total							**12**

IV B.Tech I Semester

23CST24	DEEP LEARNING	L	T	P	C
		2	1	0	3

Course Objectives:

- Demonstrate the major technology trends driving Deep Learning
- Build, train, and apply fully connected deep neural networks
- Implement efficient (vectorized) neural networks
- Analyse the key parameters and hyper parameters in a neural network's architecture

Course Outcomes:

After completion of the course, students will be able to

- Demonstrate the mathematical foundation of neural network
- Describe the machine learning basics
- Differentiate architecture of deep neural network
- Build a convolutional neural network
- Build and train RNN and LSTMs

UNIT-I Lecture 8Hrs

Linear Algebra: Scalars, Vectors, Matrices and Tensors, Matrix operations, types of matrices, Norms, Eigen decomposition, Singular Value Decomposition, Principal Components Analysis.
Probability and Information Theory: Random Variables, Probability Distributions, Marginal Probability, Conditional Probability, Expectation, Variance and Covariance, Bayes' Rule, Information Theory. Numerical Computation: Overflow and Underflow, Gradient-Based Optimization, Constrained Optimization, Linear Least Squares.

UNIT-II Lecture 9Hrs

Machine Learning: Basics and Under fitting, Hyper parameters and Validation Sets, Estimators, Bias and Variance, Maximum Likelihood, Bayesian Statistics, Supervised and Unsupervised Learning, Stochastic Gradient Descent, Challenges Motivating Deep Learning. Deep Feed forward Networks: Learning XOR, Gradient-Based Learning, Hidden Units, Architecture Design, Back-Propagation and other Differentiation Algorithms.

UNIT-III Lecture 8Hrs

Regularization for Deep Learning: Parameter Norm Penalties, Norm Penalties as Constrained Optimization, Regularization and Under-Constrained Problems, Dataset Augmentation, Noise Robustness, Semi-Supervised Learning, Multi-Task Learning, Early Stopping, Parameter Tying and Parameter Sharing, Sparse Representations, Bagging and Other Ensemble Methods, Dropout, Adversarial Training, Tangent Distance, Tangent Prop and Manifold Tangent Classifier. Optimization for Training Deep Models: Pure Optimization, Challenges in Neural Network Optimization, Basic Algorithms, Parameter Initialization Strategies, Algorithms with Adaptive Learning Rates, Approximate Second-Order Methods, Optimization Strategies and Meta-Algorithms.

UNIT-IV Lecture 9Hrs

Convolutional Networks: The Convolution Operation, Pooling, Convolution, Basic Convolution Functions, Structured Outputs, Data Types, Efficient Convolution Algorithms, Random or Unsupervised Features, Basis for Convolutional Networks.

UNIT V Lecture 8Hrs

Sequence Modeling: Recurrent and Recursive Nets: Unfolding Computational Graphs, Recurrent Neural Networks, Bidirectional RNNs, Encoder-Decoder Sequence-to-Sequence Architectures, Deep Recurrent Networks, Recursive Neural Networks, Echo State Networks, LSTM, Gated RNNs, Optimization for Long-Term Dependencies, Auto encoders, Deep Generative Models.

Text books:

1. Ian Good fellow, Yoshua Bengio, Aaron Courville, "Deep Learning", MIT Press,2016.
2. Josh Patterson and Adam Gibson, "Deep learning: A practitioner's approach", O'Reilly Media, First Edition,2017.

Reference Books:

1. Fundamentals of Deep Learning, Designing next-generation machine intelligence algorithms, Nikhil Buduma, O'Reilly, Shroff Publishers,2019.
2. Deep learning Cook Book, Practical recipes to get started Quickly, Douwe Osinga, O'Reilly, Shroff Publishers,2019.

Online Learning Resources:

1. https://keras.io/datasets/
2. http://deeplearning.net/tutorial/deeplearning.pdf
3. https://arxiv.org/pdf/1404.7828v4.pdf
4. https://www.cse.iitm.ac.in/~miteshk/CS7015.html
5. https://www.deeplearningbook.org
6. https://nptel.ac.in/courses/106105215

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(Common for all B.Tech Branch)

Course Code	MANAGEMENT SCIENCE	L	T	P	C
23MBTU4c		2	0	0	2
	Semester	IV-I			

Course Objectives:

1. To provide fundamental knowledge on Management, Administration, Organization & its concepts.
2. To make the students understand the role of management in Production
3. To impart the concept of HRM in order to have an idea on Recruitment, Selection, Training & Development, job evaluation and Merit rating concepts
4. To create awareness on identify Strategic Management areas & the PERT/CPM for better Project Management
5. To make the students aware of the contemporary issues in modern management

Course Outcomes (CO): Student will be able to

- Remember the concepts & principles of management and designs of organization in a practical world
- Understand the knowledge of Work-study principles & Quality Control techniques in industry
- Apply the process of Recruitment & Selection in organization.
- Analyze the concepts of HRM & different training methods.
- Evaluate PERT/CPM Techniques for projects of an enterprise and estimate time & cost of project & to analyze the business through SWOT.
- Create awareness on contemporary issues in modern management & technology.

UNIT-I		Lecture Hrs: 7

Management - Concept and meaning - Nature-Functions - Management as a Science and Art and both. Schools of Management Thought - Taylor‘s Scientific Theory-Henry Fayol‘s principles - Elton Mayo‘s Human relations - Organizational Designs - Line organization - Line & Staff Organization - Functional Organization - Matrix Organization - Project Organization - Committee form of Organization - Social responsibilities of Management.

UNIT-II		Lecture Hrs: 7

Principles and Types of Plant Layout - Methods of Production (Job, batch and Mass Production), Work Study - Statistical Quality Control- Material Management - Objectives - Inventory-Functions - Types, Inventory Techniques - EOQ-ABC Analysis - Marketing Management - Concept - Meaning - Nature-Functions of Marketing - Marketing Mix - Channels of Distribution - Advertisement and Sales Promotion - Marketing Strategies based on Product Life Cycle.

UNIT-III		Lecture Hrs: 7

HRM - Definition and Meaning – Nature - Managerial and Operative functions - Job Analysis - Human Resource Planning(HRP) - Employee Recruitment-Sources of Recruitment - Employee Selection - Process - Employee Training and Development - methods - Performance Appraisal Concept - Methods of Performance Appraisal – Placement - Employee Induction - Wage and Salary Administration.

UNIT-IV		Lecture Hrs: 7

Definition& Meaning - Setting of Vision - Mission - Goals - Corporate Planning Process - Environmental Scanning - Steps in Strategy Formulation and Implementation - SWOT Analysis - Project Management - Network Analysis - Programme Evaluation and Review Technique (PERT) - Critical Path Method (CPM) Identifying Critical Path - Probability of Completing the project within given time - Project Cost- Analysis - Project Crashing (Simple problems).

UNIT-V		Lecture Hrs: 7

Customer Relations Management(CRM) - Total Quality Management (TQM) - Six Sigma Concept - Supply Chain Management(SCM) - Enterprise Resource Planning (ERP) - Performance Management – employee engagement and retention - Business Process Re-engineering and Bench Marking - Knowledge Management – change management – sustainability and corporate social responsibility.

Textbooks:

1. Frederick S. Hillier, Mark S. Hillier. Introduction to Management Science, October 26, 2023
2. A.R Aryasri, Management Science, TMH, 2019

Reference Books:

1. Stoner, Freeman, Gilbert.Management, Pearson Education, New Delhi, 2019. 2.
2. Koontz & Weihrich, Essentials of Management, 6/e, TMH, 2005.
3. Thomas N.Duening & John M.Ivancevich, Management Principles and Guidelines, Biztantra.
4. Kanishka Bedi, Production and Operations Management, Oxford University Press, 2004.
5. Samuel C.Certo, Modern Management, 9/e, PHI, 2005

IV B.Tech I Semester

23CST23e	Agentic AI Engineering	L	T	Pr	C
		3	-	-	3

Prerequisite: Knowledge of Python programming and Artificial Intelligence concepts.

Course Objectives:

- **To provide foundational knowledge of intelligent AI agents, their architectures, and operational principles.**
- **To equip students with the skills to design, develop, and orchestrate AI agents using modern frameworks and platforms.**
- **To enable students to build, deploy, and evaluate agentic AI solutions for real-world applications.**

Course Outcomes:

After successful completion of the course, students will be able to:

CO1 : Explain the principles, architectures, and types of intelligent AI agents.

CO2 : Develop AI agents using memory management, tool calling, and agent development platforms.

CO3: Build LLM-powered agents using planning, orchestration, RAG, and workflow automation techniques.

CO4: Analyze the coordination, collaboration, and workflow design of multi-agent systems.

CO5: Analyze agent deployment architectures and emerging trends in Agentic AI.

Unit I: Foundations of AI Agents **Lecture 9 Hrs**

Evolution of AI Agents and Agentic AI, Characteristics and Architecture of Intelligent Agents, Types of AI Agents, Agent Environment and Lifecycle, Reasoning and Decision-Making Concepts, Applications of AI Agents.

Unit II: Agent Design and Development **Lecture 8 Hrs**

Goal-Oriented and Task-Oriented Agents, Agent Memory and Context Management, Tool Calling and Function Calling, Coding Agents using Frameworks and Developing Agents using Low-Code/No-Code Platforms (n8n, Zapier, Make), Designing Domain-Specific Agents, Agent Testing and Evaluation.

Unit III: LLM-Powered Agents and Agent Workflows **Lecture 9 Hrs**

Large Language Models as Agent Brains, Agent Planning and Task Decomposition, Agent Orchestration and Workflow Management, Retrieval-Augmented Generation (RAG) for Agents, Workflow Automation using AI Agents, AI Coding and Knowledge Agents, Human-in-the-Loop Systems.

Unit IV: Multi-Agent Systems and Collaboration **Lecture 8 Hrs**

Fundamentals of Multi-Agent Systems, Agent Coordination and Collaboration, Multi-Agent Workflow Design, Enterprise Workflow Automation, Enterprise AI Agent Applications, Case Studies of Multi-Agent Solutions.

Unit V: Agent Deployment and Emerging Trends **Lecture 8 Hrs**

Agent Deployment Architectures, Monitoring and Maintenance of Agent Systems, Emerging Trends in Agentic AI.

Design and Development of Multi-Agent Systems for Domain-Specific Applications such as Banking, Agriculture, Healthcare.

Text Books

1. Karthik Ramgopal, Designing Autonomous AI Agents, O'Reilly Media, 2024.
2. Paul Iusztin and Maxime Labonne, AI Engineering: Building Applications with Foundation Models, O'Reilly Media, 2025.

Reference Books

1. Valentino Zocca and Ram Sriharsha, Building LLM Powered Applications, Packt Publishing, 2024.
2. Jay Alammar and Maarten Grootendorst, Hands-On Large Language Models, O'Reilly Media, 2024.
3. Michael Wooldridge, An Introduction to MultiAgent Systems, 2nd Edition, Wiley, 2009.
4. Noah Gift and Alfredo Deza, Practical MLOps: Operationalizing Machine Learning Models, 2nd Edition, O'Reilly Media, 2024.

IV B.Tech I Semester

23CST30d	AI Powered Application Development	L	T	P	C
		3	-	-	3

Course Objectives:

- **To provide knowledge of AI-powered application development using modern software engineering and Python programming concepts.**
- **To enable students to design and develop full-stack applications integrated with AI models, APIs, and databases.**
- **To equip students with skills to build, deploy, and evaluate AI-powered applications for real-world scenarios.**

Prerequisite: Knowledge of Python programming, databases, and Artificial Intelligence concepts.

Course Outcomes:

After successful completion of the course, students will be able to: CO1: Explain the fundamentals of AI-powered application development.

CO2: Develop full-stack AI applications using frontend, backend, and database technologies.

CO3: Integrate LLMs and SLMs into applications using AI services, APIs, and SDKs.

CO4: Analyze the design and implementation of AI-powered application features.

CO5: Analyze deployment, scaling, and monitoring strategies for AI-powered applications.

Unit I: Application Development (9 Hrs)

Introduction to AI-Powered Applications, Software Development Life Cycle (SDLC), Agile Methodology and Scrum Basics, AI Application Development Lifecycle, Lambda Functions, map() and filter(), Iterators and Generators, Object-Oriented Programming Concepts, Exception Handling, Modules and Packages, Working with JSON Data.

Unit-II: Full-Stack AI Application Development (9 Hrs)

Web Application Architecture, MVC and MVT Design Patterns, Frontend Development using React.js, RESTful API Development, Database Integration using Python and ORM, CRUD Operations, Integration of Frontend and Backend Applications.

Unit III: AI Model Integration for Applications (9 Hrs)

Introduction to Large Language Models (LLMs) and Small Language Models (SLMs), AI Service Integration using APIs, Working with AI SDKs and Frameworks, Integrating LLMs and SLMs into Python Applications, Prompt Engineering Fundamentals, AI Response Processing and Validation.

Unit IV: Building AI-Powered Applications (9 Hrs)

Design of AI-Powered Application Features, Conversational AI and Chatbots, Document Analysis and Knowledge Applications, AI Content Generation Applications AI Agents and Productivity Applications, Case Studies of AI-Powered Applications.

Unit V: Deployment and Scaling (8 Hrs)

Application Deployment Fundamentals, Containerization Concepts, Cloud Deployment Basics, Scaling AI Applications, Logging and Monitoring, Capstone Project Design and Implementation.

Text Books

1. Eric Matthes, Python Crash Course, 3rd Edition, No Starch Press, 2023.
2. William S. Vincent, Django for APIs, 5th Edition, WelcomeToCode, 2024.
3. Paul Iusztin and Maxime Labonne, AI Engineering: Building Applications with Foundation Models, O'Reilly Media, 2025.

Reference Books

1. Valentino Zocca and Ram Sriharsha, Building LLM Powered Applications, Packt Publishing, 2024.
2. Jay Alammar and Maarten Grootendorst, Hands-On Large Language Models, O'Reilly Media, 2024.
3. Simon Holmes, Clive Harber, Tomomi Imura, Noel Hurst, Christian Kaindl, The React Workshop, 2nd Edition, Packt Publishing, 2024.
4. Noah Gift and Alfredo Deza, Practical MLOps: Operationalizing Machine Learning Models, 2nd Edition, O'Reilly Media, 2024.

IV B. Tech I Sem

Course Code	EMPLOYABILITY SKILLS	L	T	P	C
23BST33	OPEN ELECTIVE - III	3	0	0	3

Course Objectives:

- To encourage all round development of the students by focusing on productive skills
- To make the students aware of Goal setting and writing skills
- To enable them to know the importance of presentation skills in achieving desired goals.
- To help them develop organizational skills through group activities
- To function effectively with heterogeneous teams

Course Outcomes (CO):	Blooms Level
CO1: Understand the importance of goals and try to achieve them	L1, L2
CO2: Explain the significance of self-management	L1, L2
CO3: Apply the knowledge of writing skills in preparing eye-catchy resumes	L3
CO4: Analyse various forms of Presentation skills	L4
CO5: Judge the group behaviour appropriately	L5
CO6: Develop skills required for employbility.	L3, L6

UNIT - I	**Goal Setting and Self-Management**	Lecture Hrs

Definition, importance, types of Goal Setting – SMART Goal Setting – Advantages-Motivation – Intrinsic and Extrinsic Motivation– Self-Management- Knowing about self– SWOC Analysis

UNIT-II	**Writing Skills**	Lecture Hrs

Definition, significance, types of writing skills – Resume writing Vs CV Writing - E-Mail writing, Cover Letters - E-Mail Etiquette -SoP (Statement of Purpose)

UNIT - III	**Technical Presentation Skills**	Lecture Hrs

Nature, meaning & significance of Presentation Skills – Planning, Preparation, Presentation, Stage Dynamics –Anxiety in Public speaking (Gloss phobia)- PPT & Poster Presentation

UNIT - IV	**Group Presentation Skills**	Lecture Hrs

Body Language – Group Behaviour - Team Dynamics – Leadership Skills – Personality Manifestation - Group Discussion-Debate –Corporate Etiquette

UNIT - V	**Job Cracking Skills**	Lecture Hrs

Nature, characteristics, importance & types of Interviews – Job Interviews – Skills for success – Job searching skills - STAR method - FAQs- Answering Strategies – Mock Interviews

Textbooks:

1. Sabina Pillai, Agna Fernandez. Soft Skills & Employability Skills, 2014.Cambridge Publisher.

2.Alka Wadkar. Life Skills for Success, Sage Publications, 2016.
Reference Books:
1. Gangadhar Joshi. Campus to Corporate Paperback, Sage Publications. 2015 2. Sherfield Montogomery Moody, Cornerstone Developing Soft Skills, Pearson Publications. 4 Ed. 2008 3. Shikha Kapoor. Personality Development and Soft Skills- Preparing for Tomorrow .1 Edition, Wiley, 2017. 4. M. Sen Gupta, Skills for Employability, Innovative Publication, 2019. 5. Steve Duck and David T McMahan, The Basics f Communication Skills A Relational Perspective, Sage press, 2012.
Online Learning Resources:
1. https://youtu.be/gkLsn4ddmTs 2. https://youtu.be/2bf9K2rRWwo 3. https://youtu.be/FchfE3c2jzc 4. https://youtu.be/xBaLgJZ0t6A?list=PLzf4HHlsQFwJZel_j2PUy0pwjVUgj7KlJ 5. https://www.youtube.com/c/skillopedia/videos 6. https://onlinecourses.nptel.ac.in/noc25_hs96/preview 7. https://onlinecourses.nptel.ac.in/noc21_hs76/preview 8. https://archive.nptel.ac.in/courses/109/107/109107172/# 9. https://archive.nptel.ac.in/courses/109/104/109104107/

IV B.Tech I Semester

23BST40	Advanced Aptitude and Critical Thinking	L	T	Pr	C
		3	-	-	3

Course Objectives:

- **To develop quantitative aptitude, logical reasoning, and analytical skills required for competitive examinations and career assessments.**
- **To enhance verbal ability, reading comprehension, and communication skills for academic and professional success.**
- **To equip students with problem-solving techniques, analytical writing skills, and test-taking strategies for higher education and employment opportunities.**

Prerequisite: Basic mathematical aptitude and fundamental English language proficiency.

Course Outcomes:

After successful completion of the course, students will be able to:

CO1: Apply quantitative aptitude techniques to solve competitive examination problems.
CO2: Analyze and solve logical and analytical reasoning problems.
CO3: Demonstrate proficiency in verbal ability and reading comprehension.
CO4: Develop effective analytical writing and communication skills.
CO5: Apply test-taking and time management strategies for competitive examinations.

Unit I: Quantitative Aptitude Fundamentals (9 Hrs)
Number Systems, Percentages, Ratio and Proportion, Profit and Loss, Simple and Compound Interest, Averages, Time and Work, Time-Speed-Distance, and Problem-Solving Techniques.

Unit II: Advanced Quantitative Aptitude (9 Hrs)
Algebra, Progressions, Permutations and Combinations, Probability, Geometry and Mensuration, Data Interpretation, and Data Sufficiency.

Unit III: Logical and Analytical Reasoning (9 Hrs)
Coding-Decoding, Blood Relations, Direction Sense, Seating Arrangements, Syllogisms, Statements and Conclusions, Logical Deduction, Puzzles, and Critical Reasoning.

Unit IV: Verbal Ability and Reading Comprehension (9 Hrs)
Vocabulary Building, Synonyms and Antonyms, Analogies, Sentence Completion, Error Detection, Sentence Correction, Para Jumbles, and Reading Comprehension.

Unit V: Analytical Writing and Test Preparation (9 Hrs)

Analytical Writing, Essay Development, Argument Analysis, GRE Test Structure, Time Management, Mock Tests, Interview Skills, and Group Discussions.

Text Books

1. R.S. Aggarwal, Quantitative Aptitude for Competitive Examinations, S. Chand Publishing, Latest Edition.
2. R.S. Aggarwal, A Modern Approach to Verbal and Non-Verbal Reasoning, S. Chand Publishing, Latest Edition.
3. Norman Lewis, Word Power Made Easy, Goyal Publishers, Latest Edition.

Reference Books

1. Arun Sharma, How to Prepare for Quantitative Aptitude for CAT and Other Competitive Examinations, McGraw-Hill Education, Latest Edition.
2. Arun Sharma and Meenakshi Upadhyay, How to Prepare for Logical Reasoning for CAT and Other Management Examinations, McGraw-Hill Education, Latest Edition.
3. Nishit K. Sinha, Verbal Ability and Reading Comprehension for CAT, Pearson Education, Latest Edition.
4. M. Tyra, Magical Book on Quicker Mathematics, BSC Publishing, Latest Edition.

IV B.Tech I Sem

23CSP18	PROMPT ENGINEERING Skill Enhancement Course	L	T	P	C
		0	1	2	2

Course Objective:

This course delves into prompt engineering principles, strategies, and best practices, a crucial aspect in shaping AI models' behaviour and performance. Understanding Prompt Engineering is a comprehensive course designed to equip learners with the knowledge and skills to effectively generate and utilize prompts in natural language processing (NLP) and machine learning (ML) applications. This course delves into prompt engineering principles, strategies, and best practices, a crucial aspect in shaping AI models' behaviour and performance.

Course Out comes:

- Under standing the fundamentals and evolution of prompt engineering.
- Gaining the ability to craft effective closed-ended, open-ended, and role-based prompts.
- Learning to probe and stress-test AI models for bias and robustness.
- Applying prompt optimization techniques and performance evaluation methods.
- Mitigating bias and promoting ethical prompting practices in NLP/ML systems.

Module 1: Introduction to Prompt Engineering

- Lesson 1: Foundations of Prompt Engineering
  - Overview of prompt engineering and its significance in NLP and ML.
  - Historical context and evolution of prompt-based approaches.

Module 2: Types of Prompts and Their Applications

- Lesson 2: Closed-Ended Prompts
  - Under standing and creating prompts for specific answers.
  - Applications in question- answering systems.
- Lesson 3: Open-Ended Prompts
  - Crafting prompts for creative responses.
  - Applications in language generation models.
  - Standard way of writing prompts
  - Real time prompts

Module 3: Strategies for Effective Prompting

- Lesson 4: Probing Prompts
  - Designing prompts to reveal model biases.
  - Ethical considerations in using probing prompts.
- Lesson 5: Adversarial Prompts
  - Creating prompts to stress-test models.
  - Enhancing robustness through adversarial prompting.

Module 4: Fine-Tuning and Optimizing with Prompts

- Lesson 6: Fine-Tuning Models with Prompts
  - Techniques for incorporating prompts during model training.
  - Balancing prompt influence and generalization.
- Lesson 7: Optimizing Prompt Selection
  - Methods for selecting optimal prompts for specific tasks.
  - Customizing prompts based on model behavior.

Module 5: Evaluation and Bias Mitigation

- Lesson 8: Evaluating Prompt Performance
  - Metrics and methodologies for assessing model performance with prompts.
  - Interpreting and analyzing results.
- Lesson 9: Bias Mitigation in Prompt Engineering
  - Strategies to identify and address biases introduced by prompts.
  - Ensuring fairness and inclusivity in prompt-based models.
  - Crafting better prompts for AI tools

Module 6: Real-World Applications and Case Studies

- Lesson 10: Case Studies in Prompt Engineering
- Exploration of successful implementations and challenges in real-world scenarios.
- Guest lectures from industry experts sharing their experiences.

Text books:

1. "Prompt Engineering in Action" – Danny D. Sullivan
2. "The Art of Prompt Engineering with Chat GPT: A Hands-On Guide" – Nathan Hunter.

Reference Books:

1. "Prompt Engineering in Practice" – Michael F. Lewis
2. "Mastering AI Prompt Engineering: The Ultimate Guide for Chat GPT Users" – Adriano Damiao
3. "Writing AI Prompts For Dummies" – Stephanie Diamond and Jeffrey Allan
4. "Prompt Engineering Guide" (Online Resource) – promptingguide.ai

Online Resource link :

https://www.udemy.com/course/understanding-prompt-engineering/?couponCode=NVDINCTA35TRT