

### Suggested Readings:

1. M.Srinivasan. (2012). “*Web Technology Theory and Practice*” Pearson
2. Raj Kamal. (2017). “*Internet and Web Technologies*” The Tata McGraw-Hill Publishing Company Limited.
3. Powell, T.A. (2017). “*HTML & CSS: The Complete Reference*” 5th edition, Tata McGrawHill.
4. Deitel, P. J. (2019). “*Python Fundamentals*” Pearson.
5. Thareja, R. (2017). “*Python programming using problem solving approach*” Oxford University Press.
6. University Press.

### Notes:

3. Suggested readings shall be updated and uploaded on the college website from time to time.
4. Examination scheme and mode shall be as prescribed by the Examination branch, University of Delhi from time to time.

### Semester VIII

#### Discipline Specific Elective- DSE-I 8.2

#### Advanced Prompt Engineering

Offered by Computer Science Department, College of Vocational Studies

### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Credits	Lecture	Tutorial	Practical/Practice	Eligibility Criteria	Pre-requisite
4	2	0	2	12th Pass	Fundamentals of Prompt Engineering

#### Learning Objective

To develop advanced capabilities in designing, evaluating, and integrating prompts into real-world AI applications, with a strong emphasis on ethics, optimization, and domain-specific solutions.

#### Learning Outcomes

After completion of the course, learners will be able to:

- Apply structured techniques such as role-based and system-level prompting.
- Evaluate and optimize prompts for coherence, relevance, and factuality.
- Create domain-specific and application-integrated prompt systems.
- Use APIs and function-calling mechanisms to power intelligent workflows.
- Understand bias, ethical implications, and the future scope of prompt engineering.

## SYLLABUS OF DSE-8.2

### Unit 1: Structured and Dynamic Prompting (8 Hours)

- Role-based prompting for industries (e.g., legal, education, therapy)
- System messages vs. user prompts
- Multimodal prompting (text, image inputs)
- Advanced chain-of-thought prompting

### Unit 2: Prompt Evaluation and Optimization (8 Hours)

- Metrics: coherence, relevance, factuality
- Feedback loops and iterative testing
- Prompt injection: types, examples, defenses
- Tools: PromptLayer, RePrompt, LangChain Playground

### Unit 3: Prompt Engineering in Real-world Applications (8 Hours)

- Domain-specific prompts: healthcare, law, marketing, education
- Programming tasks: SQL generation, code explanation
- LLM integration in apps: LangChain, RAG
- Function calling and API usage in prompts

### Unit 4: A) Ethics, Bias, and Future Trends (6 Hours)

- Bias in AI output and prompt shaping
- Legal concerns: copyright, attribution, responsibility
- Emerging trends: hyper-personalized prompts, memory, autonomous agents

### B) Collaborative and Autonomous Prompt Systems (6 Hours)

- Prompt chaining and orchestration
- AutoGPT, BabyAGI: loop-based prompting
- Multi-agent prompting
- Self-improving prompts and HITL systems

### Practical Exercises (8 Hours)

- Build a prompt-powered LLM mini-agent
- Integrate prompts with APIs and real-time workflows
- Evaluate robustness via stress testing and adversarial inputs
- Workshop: convert an app idea into a prompt-driven product

### Suggested Readings

- Liang, Percy, et al. (2022). Prompt Programming for Large Language Models. Stanford University.
- White, Tom. (2023). Prompt Engineering for Generative AI: A Guide for Building with ChatGPT and Beyond. O'Reilly Media.
- Chase, Nathan Hunter. (2023). The Art of Prompt Engineering with ChatGPT: Crafting Effective Prompts for Better AI Outputs.
- OpenAI Documentation – <https://platform.openai.com/docs>
- Zamfirescu-Pereira, I. et al. (2023). Teaching with Prompt Engineering: Practical Tools and Theories. MIT Press.
- Sebastian Raschka. (2023). LLMs from Scratch: Language Models and Prompting Fundamentals.
- LangChain Docs – <https://docs.langchain.com>

### Semester- VIII

#### Discipline Specific Elective- DSE 2

#### Paper No.:- 8.4

#### Religious & Philosophical Traditions in Indian Subcontinent

Offered by Department of History, College of Vocational Studies

#### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisites of the course (if any)
Religious & Philosophical Traditions in Indian Subcontinent	4	3	1	0	Pass in class XII	NIL