



**ANDHRA PRADESH STATE COUNCIL OF HIGHER
EDUCATION**

**Model Syllabus for Introduction to Artificial Intelligence in consonance with
Curriculum framework w.e.f. AY 2025-26**

COURSE STRUCTURE

Year	Semester	Course	Title of the Course	No. of Hrs /Week	No. of Credits
I	I	1	AI Fundamentals	4	4
			AI Fundamentals-Practice Session	2	0

SEMESTER-I

COURSE 1: AI FUNDAMENTALS

Theory

Credits: 4

4 hrs/week

Learning Objectives:

1. Understand the history and evolution of Artificial Intelligence and Identify major subfields of AI.
2. Investigate the role of AI in various industries like healthcare, agriculture, and education.
3. Examine concepts like bias, fairness, transparency, and accountability in AI systems.
4. Explore the integration of AI in scientific research and discuss future directions and evolving trends in AI.
5. Learn how prompt engineering is used in various sectors like education and content creation.

Course Outcomes:

Students will be able to

1. Describe the different subfields and their roles in AI applications.
2. Analyze the benefits and limitations of AI in diverse domains.
3. Evaluate AI systems in terms of inclusivity, privacy, and robustness.
4. Describe Generative AI and emerging technologies like ChatGPT.
5. Apply prompt engineering concepts to various real-world use cases.

Unit I. AI and its Subfields

Introduction to Artificial Intelligence, History, Definition, Artificial General Intelligence, Industry Applications of AI, Challenges in AI.

Knowledge Engineering, Machine Learning, Computer Vision, Natural Language Processing, Robotics.

Unit 2. Applications of AI

Healthcare, Finance, Retail, Agriculture, Education, Transportation.

Unit 3. Bias and Fairness in AI Systems

Ethics in AI, Bias and Fairness in AI Systems, Transparency in AI Systems, Accountability, Security, Privacy, Inclusivity, Sustainability, Robustness, Reliability.

Unit 4. AI in Research, Generative AI and prompt engineering

AI in Experimentation and Multi-disciplinary research, Generative AI introduction, ChatGPT, Hugging Face, Gemini and other tools basics, Perplexity, Prompt engineering Definition and its importance, Role of Prompt Engineering in AI/ML Interaction, Emerging trends and Future Directions in AI.

Unit 5. Applications of Prompt engineering

Applications of Prompt Engineering: Education, Business & Commerce, Content Creation: AI for Creative Writing, AI for creative design, writing AI scripts for video, generating slides and slidesGPT usage, Designing thumbnails and channel branding with AI

Text Books:

1. AI for Everyone: A Beginner's Handbook for Artificial Intelligence (AI) by Saptarsi Goswami, Amit Kumar Das , Amlan Chakrabarti
2. Prompt Engineering for Beginners: by Kapila Arora, Geetu Garg, Gaurav Arora.

References:

1. Let's Learn Artificial Intelligence: Base Module, Niti Ayog, Atal Innovation Mission.
2. Prompt Engineering for Generative AI: Future-proof inputs for Reliable AI-outputs by James Phoenix & Mike Taylor.
3. Generative AI Tutorial: https://www.w3schools.com/gen_ai/
4. Generative AI 360°: Practical Guide to ChatGPT, Midjourney & AI Tools to Boost Productivity & Creativity , For Professionals, Marketers & Entrepreneurs by Hitesh Motwani , ZebraLearn, 2025.
5. Generative AI: Prompt Engineering Basics:
6. Learn Generative AI Prompt Engineering for everyone. <https://www.coursera.org/learn/generative-ai-prompt-engineering-for-everyone?action=enroll>
7. Free Artificial Intelligence (AI) Tutorial - Hands-On Prompt Engineering for AI Beginners & Business User | Udemy, <https://www.udemy.com/course/prompt-engineering-for-ai-beginners-business-users>

SEMESTER-I

COURSE 1: AI FUNDAMENTALS

Practice Session

2 hrs/week

1. Create a mind map of AI subfields: NLP, CV, ML, Robotics, Knowledge Engineering using Canva/Napkin AI/ Similar Open AI tool
2. Text Analysis with Open-Source NLP Tools: **Tool:** Voyant Tools (text analysis web app)
 - Input sample texts (e.g., news articles, speeches).
 - Explore word frequency, keywords, sentiment.
 - Understand how NLP extracts meaning from text.
3. Train a basic image classifier using webcam images. Observe how the model "learns." Using Google Teachable Machine
 - Train two image categories (e.g., "Smiling" vs. "Not Smiling") using their own webcam images.
 - Observe how the model learns to classify.
 - Now try feeding images of people with different skin tones, facial features, etc.
 - Observe misclassifications or differences in confidence.
4. Simulate an AI chatbot helping a farmer or a student. You may use any GenAI tool of your choice. You may use the prompt below and also try your own.

Prompt:

"Act as an agriculture assistant. A farmer wants to know the best crop based on soil and season. Ask questions and suggest crops."

5. Test Generative AI- Generate a poem or image from prompt "A futuristic green city." using ChatGPT, Hugging Face (e.g., image or text generation)
6. Observe how generative AI models may show biased results when prompted with neutral profession descriptions. (Bing Image Creator / DALL·E on ChatGPT/ChatGPT). Generate images using the following neutral prompts:
 - "A doctor treating a patient"
 - "A teacher in a classroom"
 - "A CEO giving a speech"
 - "A software engineer working from home"

Observe and discuss:

- What gender/race/age are most commonly shown?
- Are the results stereotypical or diverse?

7. Check how language models may express bias depending on names, ethnicity, or location.

Use ChatGPT or Gemini

Prompts:

Prompt A:

“A person named Raj is applying for a bank loan. Will he be approved?”

Prompt B:

“A person named John is applying for a bank loan. Will he be approved?”

Change names, genders, and nationalities.

Observe the following and report your findings:

- Are the responses different?
- Is one version more positive or negative?
- Does the model express bias or hesitate?
- Should AI make such predictions?
- How do developers prevent this?

8. Exploring Text Generation and Summarization with Google AI Studio

Generate Creative Content

“Write a short story (150 words) about a robot who wants to become a chef.”

- Submit and read the AI-generated story.
- Discuss how detailed and creative the output is.

Summarize a Paragraph

Prompt:

Summarize the following paragraph in 3 sentences:

“Artificial Intelligence is a branch of computer science that aims to create intelligent machines that can mimic human thinking. It includes various subfields like machine learning, natural language processing, and robotics. AI is widely used in industries such as healthcare, finance, and transportation to improve efficiency and decision-making.”

- Submit and review the summary.
- Evaluate how well AI extracts key points.

Refine Your Prompt

Try changing the summary prompt to:

“Summarize the paragraph above in simple language for 10-year-olds.”

- Compare this output to the previous one.
- Note how prompt wording changes results.

9. AI for Creative Writing

Prompt:

“Write a short motivational story for 10-year-old students in under 150 words.”

10. Generate **Slides**: Tool: SlidesGPT/Other Free AI tool

Prompt:

“Create a 5-slide presentation on ‘AI in Smart Farming’.”

11. YouTube Thumbnails / Branding: Tool: Canva + Magic Media AI

Design a thumbnail using Canva’s AI tools with a prompt like:

“Design a YouTube thumbnail for a video titled ‘Top 5 AI Tools for Students’.”