



## Program Catalog Page: Applied Prompt Engineering for Large Language Models (PromptEng)

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### Program Overview

- **Program Main Code Name:** PromptEng
  - **Program Code:** PromptEng
  - **Program Length:** 12 Weeks (3 Months)
  - **Total Contact Hours:** 144 Hours
  - **Total Credit Hours:** 5.4 Credits
  - **Delivery Method:** In-person Live Instructor-Led, Virtual Live Instructor-Led, or 1-on-1 Personalized Mentorship
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### Admissions Requirements

- High school diploma or GED
- Minimum age of 18 years (Applicants under 18 require parental consent)
- Basic Python programming proficiency
- Familiarity with AI tools and web applications
- Successful NVIT Admissions Interview and Readiness Assessment

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## Program Description

The **Applied Prompt Engineering for Large Language Models (PromptEng)** program prepares students to become skilled AI prompt engineers capable of building, fine-tuning, and deploying large language model (LLM) solutions for real-world applications. Students gain practical hands-on skills in:

- Designing and optimizing prompts for various LLMs
- Tuning and evaluating prompts for maximum effectiveness
- Building intelligent LLM-powered applications and workflows
- Integrating Retrieval-Augmented Generation (RAG) systems
- Developing multi-agent AI systems for complex task handling

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## Course Description

This course prepares individuals for entry-level to mid-level roles such as:

- Prompt Engineer
- AI Application Developer
- LLM Product Specialist
- Conversational AI Developer
- Generative AI Content Creator

Students will learn to:

- Architect advanced prompt structures

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- Apply prompt evaluation and fine-tuning strategies
  - Build and deploy applications powered by LLMs
  - Develop hybrid RAG systems and multi-agent architectures
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### Occupations for Which Training Will Be Provided

- Prompt Engineer
  - AI/LLM Developer
  - Conversational AI Specialist
  - RAG System Developer
  - Multi-Agent Systems Engineer
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### Work Settings for Program Graduates

- AI Startups and Tech Companies
  - Enterprise IT Teams
  - Digital Marketing Firms
  - Legal, Education, and Healthcare Sectors
  - Freelance and Consulting Roles
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## Instructional Components

Instructional Component	Hours
Live Lectures + Live Proctored Exams	32
Labs & Projects	48
On-the-Job Training (OJT) + Capstone Project	64
<b>Total Contact Hours</b>	<b>144</b>
<b>Total Credit Hours</b>	<b>5.4</b>

## Course Outline

Subject #	Subject Title	Lecture Hrs	Lab/Project Hrs	OJT + Capstone Hrs	Contact Hrs	Credit Hrs
PromptEng 101	Prompt Engineering Fundamentals	4	12	0	16	0.6
PromptEng 102	Prompt Tuning & Evaluation	4	12	0	16	0.6
PromptEng 103	Integration with Applications	4	12	0	16	0.6

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PromptEng 104	Retrieval-Augmented Generation (RAG) & LLMOps	4	12	0	16	0.6
PromptEng 105	Multi-Agent Systems & Advanced Use Cases	4	12	0	16	0.6
PromptEng 106	Capstone Project and On- the-Job Training	0	0	64	64	2.4

**Total Contact Hours = 144, Total Credits = 5.4**

## Subject Descriptions

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### PromptEng 101 – Prompt Engineering Fundamentals

(Weeks 1–2 | Lec 4 Hrs / Lab 12 Hrs / OJT 0 Hrs | 16 Total Hrs | 0.6 Credit Hrs)

Students will:

- Analyze LLM structures and behavior
- Design prompt frameworks (zero-shot, few-shot, chain-of-thought)
- Implement role-based prompting and conversational flows
- Debug, refine, and test prompts systematically

**Tools:** OpenAI Playground, Anthropic Claude, Cohere

**Prerequisite:** None

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## **PromptEng 102 – Prompt Tuning & Evaluation**

(Weeks 3–4 | Lec 4 Hrs / Lab 12 Hrs / OJT 0 Hrs | 16 Total Hrs | 0.6 Credit Hrs)

Students will:

- Apply few-shot prompting and in-context learning
- Evaluate prompt effectiveness using BLEU, ROUGE, and other metrics
- Fine-tune LLM performance by optimizing instructions
- Conduct model comparisons for business applications

**Tools:** Hugging Face Datasets, Evaluation Metrics Toolkit

**Prerequisite:** PromptEng 101 – Prompt Engineering Fundamentals

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## **PromptEng 103 – Integration with Applications**

(Weeks 5–6 | Lec 4 Hrs / Lab 12 Hrs / OJT 0 Hrs | 16 Total Hrs | 0.6 Credit Hrs)

Students will:

- Integrate LLMs with web applications via APIs
- Build smart assistants and automation bots
- Implement FastAPI and Streamlit-based LLM frontends
- Manage prompt pipelines for enterprise applications

**Tools:** FastAPI, Streamlit, LangChain

**Prerequisite:** PromptEng 102 – Prompt Tuning & Evaluation

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## **PromptEng 104 – Retrieval-Augmented Generation (RAG) & LLMOps**

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(Weeks 7–8 | Lec 4 Hrs / Lab 12 Hrs / OJT 0 Hrs | 16 Total Hrs | 0.6 Credit Hrs)

Students will:

- Design and deploy RAG systems combining vector search and LLMs
- Configure embedding models and vector databases (FAISS, Pinecone)
- Monitor and evaluate production LLM systems
- Understand LLMOps lifecycle and challenges

**Tools:** Pinecone, FAISS, LangChain RAG Templates

**Prerequisite:** PromptEng 103 – Integration with Applications

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### **PromptEng 105 – Multi-Agent Systems & Advanced Use Cases**

(Weeks 9–10 | Lec 4 Hrs / Lab 12 Hrs / OJT 0 Hrs | 16 Total Hrs | 0.6 Credit Hrs)

Students will:

- Develop multi-agent collaboration systems for automation
- Apply frameworks like CrewAI and ReAct
- Design task orchestration, agent memory, and inter-agent messaging
- Build advanced LLM workflows for enterprises

**Tools:** CrewAI, LangChain Agents, Flowise

**Prerequisite:** PromptEng 104 – Retrieval-Augmented Generation (RAG) & LLMOps

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## PromptEng 106 – Capstone Project and On-the-Job Training

(Weeks 11–12 | Lec 0 Hrs / Lab 0 Hrs / OJT 64 Hrs | 64 Total Hrs | 2.4 Credit Hrs)

Students will:

- Deliver a real-world prompt engineering project (e.g., RAG bot, multi-agent chatbot, domain-specific prompt suite)
- Build, test, and deploy a working system or application
- Prepare comprehensive documentation and business case analysis

**Tools:** OpenAI API, LangChain, FastAPI, Streamlit

**Prerequisite:** PromptEng 105 – Multi-Agent Systems & Advanced Use Cases

### Class Schedule

- **Day Students:** Monday and Wednesday, 9:30 AM – 12:30 PM
- **Afternoon Students:** Monday and Wednesday, 1:30 PM – 4:30 PM
- **Evening Students:** Monday and Wednesday, 6:00 PM – 9:00 PM
- **Weekend Students:** Thursday to Saturday, Morning / Afternoon / Evening shifts
- **Virtual Mentorship Students:** 8–10 flexible hours per week

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### Dates School Will Be Closed

- New Year's Day
- Martin Luther King Day
- Presidents' Day
- Good Friday
- Memorial Day
- Independence Day
- LBJ's Birthday
- Labor Day
- Veteran's Day
- Thanksgiving Day
- Day After Thanksgiving
- Christmas Eve
- Christmas Day
- Day After Christmas

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### Class Start Dates

- Classes begin **May 26, 2025**
  - New classes start approximately every 8 weeks for in-person students
  - Virtual Mentorship students have rolling admissions with flexible start dates
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## Tuition and Fees

Fee Type	Cost
Registration Fee	\$50.00
Books and Supplies (estimated)	\$300.00
Background Check (if applicable)	\$150.00
Tuition (In-person Live Instruction)	\$3,999.00
Tuition (Virtual Live Instruction)	\$2,699.00
Tuition (1-on-1 Virtual Mentorship)	\$5,499.00

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### Total Program Cost:

- In-person: **\$4,349.00**
- Virtual Live: **\$2,999.00**
- Virtual Mentorship: **\$5,849.00**

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### Cost Per Single Subject

#### Hourly Tuition Rate (Based on Total Program Cost Divided by 144 Contact Hours):

- In-Person Live Instruction: **\$30.20 per hour**
- Virtual Live Instruction: **\$20.83 per hour**
- 1-on-1 Virtual Mentorship: **\$40.62 per hour**

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Subject Code	Subject Title	Contact Hours	In-Person Cost	Virtual Live Cost	Virtual Mentorship Cost
PromptEng 101	Prompt Engineering Fundamentals	16	\$483.20	\$333.28	\$649.92
PromptEng 102	Prompt Tuning & Evaluation	16	\$483.20	\$333.28	\$649.92
PromptEng 103	Integration with Applications	16	\$483.20	\$333.28	\$649.92
PromptEng 104	Retrieval-Augmented Generation (RAG) & LLMOps	16	\$483.20	\$333.28	\$649.92
PromptEng 105	Multi-Agent Systems & Advanced Use Cases	16	\$483.20	\$333.28	\$649.92
PromptEng 106	Capstone Project and On-the-Job Training	64	\$1,932.80	\$1,333.12	\$2,599.68

**Note:**

- Registration Fee, Books and Supplies, and Background Check apply separately if enrolling in individual subjects.

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