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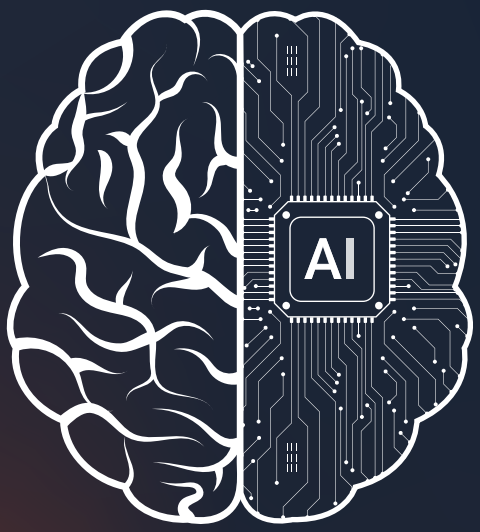

AI PROMPT ENGINEERING FUNDAMENTALS

FROM BASIC PROMPTS TO INTELLIGENT AI SYSTEMS

Unlock the full potential of generative AI

Generative AI is rapidly transforming how organisations operate—enabling faster workflows, improved decision-making, and scalable automation. However, the true value of these tools depends on how effectively they are used.

This course moves beyond basic prompting to teach a structured, professional approach to working with AI. Participants will learn how to design, debug, and manage AI interactions to produce more reliable, consistent, and useful outputs.

Designed for professionals already familiar with AI tools such as Microsoft Copilot, this course develops the skills needed to move from simple usage to structured, system-level thinking.a

Who should attend

- Professionals already using AI tools in their work
- Managers and team leads looking to scale AI usage
- Anyone who wants more consistent, higher-quality AI outputs
- Individuals interested in designing AI-driven workflows

What you will learn

By the end of this course, participants will be able to:

- Design structured prompts that produce reliable results
- Diagnose and fix poor AI outputs using a debugging mindset
- Apply a repeatable framework for prompt construction
- Understand and manage AI risk in real-world environments
- Design multi-step AI systems and workflows
- Use AI as a structured system, not just a tool

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MODULE 1

An Introduction to Prompt Engineering

From Questions to Structured Instructions

- Understanding prompting as a design discipline
- Why input quality determines output quality
- AI as a probabilistic system (not fixed outputs)
- Prompts as the interface between human intent and AI

Exercise - Compare outputs from identical prompts to understand how interpretation and assumptions affect results

MODULE 2

Why Prompts Go Wrong

Diagnosing and Fixing Common Failures

- The root causes of poor AI output: ambiguity and missing context
- Understanding how AI interprets incomplete instructions
- Identifying prompt failures vs model limitations
- Developing a structured debugging mindset

Exercise – Analyse flawed AI outputs and identify missing or unclear instructions, then rewrite prompts to improve accuracy

MODULE 3

The Anatomy of a Prompt

Building Clear, Structured Instructions

- The five components of an effective prompt:
  - Role
  - Task
  - Context
  - Constraints
  - Output Format
- How structure improves consistency and accuracy
- Moving from intuitive prompts to deliberate design

Exercise – Deconstruct and rebuild a weak prompt using a structured framework to produce a higher-quality output

MODULE 4

Governance, Risk, and Guardrails

Using AI Safely and Responsibly at Scale

- Understanding AI risk beyond accuracy
- Managing hallucinations, bias, and decision risk
- Designing guardrails to control AI behaviour
- Defining human vs AI responsibilities
- Enabling safe, scalable AI usage within organisations

Exercise – Identify risks in a real-world scenario and convert them into clear, enforceable guardrails

MODULE 5

Building an AI Agent

From Single Prompts to Goal-Based Systems

- What is an AI agent and how it differs from a prompt
- Designing goal-driven, multi-step AI systems
- Key components: goals, memory, tools, decision logic
- Iteration and refinement for improved outcomes

Exercise – Design a simple AI agent that performs a multi-step task through structured instructions and iteration

MODULE 6

Building Agentic Workflows (Capstone)

Designing Systems of AI Agents

- Moving from individual agents to coordinated workflows
- Multi-agent systems and task specialisation
- Orchestration: controlling sequence and decision-making
- Human-in-the-loop design based on risk
- Designing complete AI systems for real-world use

Exercise – Build a complete agentic workflow for a real-world scenario, including roles, sequence, and escalation points

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Practical Exercises and Application

Throughout the course, participants will take part in structured exercises designed to reinforce learning and build confidence, including:

- Comparing outputs from different prompt designs
- Identifying and fixing flawed AI responses
- Rebuilding prompts using structured frameworks
- Designing AI agents and workflows for real-world scenarios

Outcome

Participants will leave this course with a practical, structured approach to working with AI—enabling them to produce more reliable outputs, reduce risk, and design systems that scale beyond individual use.