

# AI FOUNDATIONS: FROM GENERATIVE MODELS TO AGENTIC SYSTEMS

A 4-WEEK COURSE TO UNDERSTAND AI & START BUILDING WITH IT

START DATE: JANUARY 10, 2026

SESSIONS ON WEEKENDS

LIMITED SEATS



## UNLOCK THE WORLD OF MODERN AI

Learn how today's AI systems work, what they can (and cannot) do, and how to use them to create real, practical solutions.

This course is your starting point into Generative AI, RAG systems, effective prompting, and agentic tools.

## WHO IS THIS FOR?

Anyone curious about AI who wants a solid first course to understand how it works and gain the confidence to build simple AI-powered solutions: students, professionals, educators, entrepreneurs, and decision-makers from any background.



# YOUR JOURNEY THROUGH INTELLIGENCE

## Module 01 - AI Essentials



- History & Evolution
- AI Fundamentals
- Types of AI
- Key Applications
- Ethical Considerations

## Module 03 - RAG



- Building Blocks
- Core RAG Functionality
- RAG Architectures
- Benefits & Challenges
- Best Practices

## Module 02 - Effective Prompting



- Prompt Basics
- Good vs Bad Prompt
- Prompt Design Metrics
- Response Evaluation
- Tools & Platforms

## Module 04 - Agentic AI



- Core Ideas in Agentic AI
- Automation vs Agentic AI
- Types & Technologies
- Challenges & Limitations
- Key Case Reviews

No prior programming, math, or AI experience is required: **the course starts from the fundamentals and gradually builds towards practical, hands-on skills.**

**PI-NEURON digital certificates will be awarded to all participants**

**QUERIES:** [courses@pineuron.com.au](mailto:courses@pineuron.com.au)

**COURSE FEE:** 199 AUD



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# OUTLINE

<b>Module 1</b>	<p><b>Session 01: Foundations of Artificial Intelligence</b></p> <ul style="list-style-type: none"><li>• Definition and scope of Artificial Intelligence in modern systems</li><li>• Distinction between AI, Machine Learning, and Deep Learning</li><li>• Historical evolution of AI: symbolic AI → statistical learning → deep learning</li><li>• Key milestones that shaped today's AI landscape</li><li>• Understanding data-driven intelligence and learning paradigms</li><li>• Narrow AI vs General AI vs emerging concepts of autonomous systems</li></ul> <p><b>Session 02: Overall Pipeline, Models and Fundamentals of Generative AI</b></p> <ul style="list-style-type: none"><li>• Overview of supervised, unsupervised, and semi-supervised learning</li><li>• Key steps in the overall pipeline: from design to deployment</li><li>• Understanding structural differences in AI models</li><li>• Fundamentals of Generative AI</li></ul> <p><b>Session 03: Limitations, Bias &amp; Ethical Considerations in AI</b></p> <ul style="list-style-type: none"><li>• Strengths and weaknesses of individual AI models</li><li>• Bias, fairness and transparency in AI</li><li>• Ethical risks, responsible AI principles and governance considerations</li></ul>
<b>Module 2</b>	<p><b>Session 04: Prompt Fundamentals and Design Principles, Evaluations and Tools</b></p> <ul style="list-style-type: none"><li>• What is prompt engineering and how do large language models interpret prompts?</li><li>• Good vs bad prompts: common patterns and pitfalls</li><li>• The 3C framework for prompt design</li><li>• The 6-point prompt response evaluation framework</li><li>• Emerging trends in prompt design: prompt for prompt</li></ul>
<b>Module 3</b>	<p><b>Session 05: Core Concepts and Architecture of RAG</b></p> <ul style="list-style-type: none"><li>• Introduction to Retrieval-Augmented Generation (RAG)</li><li>• Key building blocks: documents, embeddings, vector stores, retrievers</li><li>• How semantic search enables context-aware generation</li><li>• RAG data flow: query → retrieval → augmentation → generation</li><li>• Practical RAG use cases: chatbots, search, enterprise knowledge systems</li></ul> <p><b>Session 06: Building a RAG System with Python</b></p> <ul style="list-style-type: none"><li>• Understanding basic Python rules with hands on Python coding examples</li><li>• RAG implementation demo in Python</li><li>• Deconstructing RAG implementation → connecting theory with practice</li><li>• Effective prompting within modified RAG implementation</li></ul>
<b>Module 4</b>	<p><b>Session 07: Foundations of Agentic AI, Risks and Applications</b></p> <ul style="list-style-type: none"><li>• What Agentic AI is and how it differs from automation</li><li>• Historical context: rule-based agents → modern AI agents</li><li>• Types of agents: reactive, deliberative, multi-agent systems</li><li>• Human-in-the-loop vs fully autonomous agents</li></ul> <p><b>Session 08: Building your own Agentic AI System</b></p> <ul style="list-style-type: none"><li>• Overview of platforms for Agentic AI development</li><li>• Introduction to n8n for developing AI Agents</li><li>• Integrating LLMs via APIs within n8n for AI-enabled agents</li><li>• Hands-on activity: building a personalized feedback agent with email ability</li></ul>

