

# Fundamentals of Modern AI Course

Gain foundational knowledge in Artificial Intelligence by exploring modern tools, real-world applications, and key ethical considerations. Learn how AI is transforming workplaces through hands-on practice with machine learning, generative models, prompt engineering, and more.

Group classes in Live Online and onsite training is available for this course. For more information, email [onsite@graduateschool.edu](mailto:onsite@graduateschool.edu) or visit: <https://www.graduateschool.edu/courses/fundamentals-of-modern-ai>



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## Course Outline

### Module 1: Key AI Concepts

- Differentiate machine learning, deep learning, and foundational/generative models.
- Understand how neural networks underpin modern AI systems.
- Situate today's GenAI within the broader evolution of AI.

### Module 2: Chatbots & Prompt Engineering

- Explore how chatbots work and where they're useful.
- Practice core techniques like Chain-of-Thought and RAG to improve responses.
- Apply prompt patterns to control tone, format, and accuracy.

### Module 3: Copilots & Assistants

- Survey productivity copilots (e.g., Microsoft 365 Copilot, Acrobat AI Assistant).
- Automate writing, summarization, and document workflows.
- Identify governance and access considerations for enterprise rollout.

### Module 4: Languages & Platforms for AI

- Review common languages and platforms used to build and run AI solutions.
- Compare strengths of hosted tools vs. developer-centric stacks.
- Recognize when to prototype vs. productize.

### Module 5: Cloud Computing & AI

- Connect cloud services to AI hosting, scaling, and MLOps.
- Map data pipelines and vector stores to model use.
- Identify managed AI services vs. custom deployments.

### Module 6: Planning for AI

- Outline an AI roadmap aligned to business goals.
- Define roles, resourcing, and change management.

- Establish criteria for “AI-ready” people, process, and data.

### **Module 7: Risks of AI**

- Identify key risks: accuracy, bias, privacy, IP, and security.
- Design guardrails and review checkpoints.
- Balance speed with risk tolerance.

### **Module 8: Responsible/Ethical AI**

- Apply ethical principles to model selection and deployment.
- Operationalize transparency, accountability, and human oversight.
- Measure and monitor for unintended harm.

### **Module 9: Image Generation & Diffusion Models**

- Understand how diffusion models generate images.
- Control style, composition, and iteration through prompting.
- Discuss licensing and content provenance.

### **Module 10: (More) AI Tools**

- Compare emerging tools across writing, data, and media tasks.
- Match tools to use cases and team skill levels.
- Create a shortlist for pilot testing.

### **Module 11: Cybersecurity**

- Survey ML in cybersecurity and enterprise security platforms.
- Review cloud security options (e.g., AWS security services).
- Plan for secure AI adoption and monitoring.