Sample Lesson Plan 1 — "Understanding Generative AI and LLMs"

Module: 4 – Generative AI & Large Language Models
Duration: 60 minutes

Learning Objectives

- Differentiate traditional AI from generative AI.
- Explain the core principles of large language models (LLMs).
- Critically evaluate AI-generated content for factual accuracy and bias.

Activities

1. **Mini Lecture (15 min)** — Instructor or digital twin "Leo" explains generative vs. traditional AI using visuals from the module slides.
2. **Hands-on Prompting (25 min)** — Students test prompts in ChatGPT and Gemini to generate summaries of a Wikipedia article, then discuss differences.
3. **Group Reflection (15 min)** — Teams identify one strength and one limitation of LLMs based on their experiments.
4. **Wrap-Up Discussion (5 min)** — Key takeaways summarized in shared whiteboard.

Tools

- ChatGPT, Gemini, and Perplexity
- Jupyter Book "Generative AI & LLMs"
- Miro or Jamboard for collaborative notes

Assessment

- **Formative:** Group reflection entries on Canvas (graded for completion).
- **Summative:** Quiz on LLM characteristics and responsible use.

Sample Lesson Plan 2 — "Prompt Engineering for Academic Tasks"

Module: 5 – Fundamentals of Prompt Engineering
Duration: 90 minutes

Learning Objectives

- Identify different prompt patterns (instructional, role-based, chain-of-thought, etc.).
- Apply prompt patterns to generate improved academic outputs.
- Evaluate the quality of AI-generated results using rubrics.

Activities

1. **Warm-Up (10 min)** — Discuss "Why prompts matter" using examples of vague vs. precise instructions.
2. **Pattern Exploration (20 min)** — Instructor demonstrates five prompt patterns using a simple book recommendation task.
3. **Group Exercise (40 min)** — Teams rewrite prompts for the same task using different patterns; compare and discuss outputs.
4. **Reflection (15 min)** — Each student completes a short reflection on the most effective pattern and why.
5. **Wrap-Up (5 min)** — Instructor highlights prompt evaluation best practices.

Tools

- ChatGPT or Claude for prompt testing
- Canvas discussion board
- Markdown worksheet with reflection questions

Assessment

- **Formative:** Peer feedback on prompt variations.
- **Summative:** Submission of a "Prompt Comparison Table" with evaluation criteria.

Sample Lesson Plan 3 — "Human + AI Collaboration in Learning"

Module: 8 – Case Studies and Capstone Applications
Duration: 120 minutes

Learning Objectives

- Apply AI tools to enhance teaching, learning, or research productivity.
- Design a human-AI workflow aligned with ethical and transparent AI use.
- Present and justify a use case for AI integration in a professional or educational setting.

Activities

1. **Case Study Review (30 min)** — Analyze real FGCU or Dendritic use cases: "AI for grading feedback" and "AI for course design."
2. **Design Challenge (60 min)** — In groups, create a workflow diagram showing how humans and AI collaborate on a chosen task (e.g., lesson planning, data analysis, advising).
3. **Presentation (20 min)** — Groups present their workflow and receive peer feedback.

4. **Reflection (10 min)** — Students write key insights on human-AI symbiosis.

Tools

- ChatGPT, Canva, and Lucidchart for workflow design
- Jupyter Book “AI in Practice”
- Presentation deck template provided in Canvas

Assessment

- **Formative:** Instructor feedback on group design drafts.
- **Summative:** Final group presentation rubric assessing creativity, ethics, and feasibility.