1. Understand the Core Goal

Learners must **design and build a GenAI-powered mentor simulator** that teaches *prompt engineering*.

- It should feel like interacting with a **virtual instructor or peer**.
- The system must be **dynamic, adaptive, and feedback-driven** — not static like slides or pre-set exercises.

2. Design Multiple Instructor Personas

- Create **at least three distinct personas** (e.g., supportive coach, critical reviewer, time-pressed expert).
- Each persona must:
    - Stay consistent in its character across the conversation.
    - Adapt its *tone and style* depending on how well the learner is performing.
- Learners should explicitly write prompts that **control these persona traits**.

Example:

The Coach
Tone: Encouraging, motivational, growth-oriented.
Style: Uses positive reinforcement and goal-setting.
Example:
"Don't worry if you can't recall all six levels now. You've already nailed the first three—let's push a little further and celebrate progress along the way."

3. Build Adaptive Learning Dialogues

- Write prompts that make the AI:
    - Assign **interactive tasks**.
    - Ask **probing questions** (to test learner understanding).
    - Critique and refine the learner's prompts.
- Techniques to demonstrate:
    - **Role prompting** (defining personas clearly).
    - **Chain-of-thought scaffolding** (guiding reasoning step by step).

- **Few-shot examples** (showing model how to evaluate/respond).

Framework for Adaptive Learning Dialogue
Diagnose → Instructor probes learner's current state.
Adapt → Adjust tone, difficulty, or strategy based on learner response.
Feedback → Provide encouragement, correction, or stretch challenge.
Loop → Iterate until mastery or learner satisfaction.

Adaptive Dialogue Examples
1. Coach Persona (Motivational, Growth Mindset)
Instructor: "Can you recall the first two levels of Bloom's taxonomy?"
Learner A (confident): "Yes—Remember and Understand."
Instructor (Adapt): "Excellent! Let's stretch—what's the third level? Think of applying knowledge in real life."
Learner B (struggling): "I can't remember."
Instructor (Adapt): "That's okay! You already know the first step—Remember. Let me give you a hint: after knowing and understanding, what do you usually do with information?"
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4. Implement Evaluation of Learner Prompts

Framework to Evaluate Prompt Preferences
Probe → Ask the learner to choose or react to different teaching prompt styles.
Test → Present a concept in multiple styles (e.g., coach, socratic, entertainer) and see which they resonate with.
Reflect → Ask meta-questions: "Which explanation made most sense to you?"
Adapt → Instructor switches to the preferred prompt style for future dialogue.

🎭 **Sample Evaluation Flow**
Instructor (meta-level):
"I can explain Bloom's taxonomy in different ways. Tell me which feels most natural to you."

Style A – Direct / Structured
"Bloom's taxonomy has six levels: Remember, Understand, Apply, Analyze, Evaluate, and

Create. Each level is a step upward in thinking complexity."

Style B – Analogy

"Think of Bloom's taxonomy as a video game. You start with basics (Remember), move to learning game mechanics (Understand), use them in play (Apply), break down strategies (Analyze), judge best moves (Evaluate), and finally invent your own play style (Create)."

Style C – Socratic Question

"If you're learning cooking, what would come first: recalling recipes, experimenting with them, or inventing new ones? Where would evaluation fit?"

Style D – Playful / Humorous

"Bloom's levels are like a superhero origin story. First, you recall your powers (Remember), then figure them out (Understand), try them in a fight (Apply), study enemies (Analyze), judge who's toughest (Evaluate), and finally invent a new power (Create)."

Instructor (evaluate preference):

"Which one clicked most for you—A (Direct), B (Analogy), C (Question), or D (Humorous)?"

"Do you prefer me to challenge you with questions, give step-by-step clarity, or keep it fun with stories?"

🔁 **Adaptive Outcome**

If learner chooses A → Stick with concise, structured prompts.

If learner chooses B → Lean on analogies and metaphors.

If learner chooses C → Continue Socratic questioning.

If learner chooses D → Use playful, gamified prompts.

This way, you're not just teaching content—you're also teaching learners how they like to be taught.

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Support scenario customization

Trainers should be able to input task domains (e.g., creative writing, data analysis, customer service). Prompt templates must adapt instructor behavior and evaluation criteria accordingly.

🔑 **What this means in practice**

Task domain flexibility

The same prompt structure should work for multiple domains.

Example:

In creative writing → feedback on originality, storytelling.

In data analysis → feedback on accuracy, clarity, logic.

In customer service → feedback on empathy, tone, resolution.

Instructor behavior customization

Prompt should let trainers decide: mentor, coach, grader, peer, etc.

Each role will influence tone, level of support, and interaction style.

Evaluation criteria customization

The same base scenario adjusts feedback focus.

Example:

For writing → clarity, creativity, grammar.

For analysis → correctness, reasoning, robustness.

For service → empathy, communication, professionalism.

🧩 **Example Prompt Template (Support Scenario Customization)**

Instruction to AI:

"You are acting as a {role} in the domain of {task domain}. Your goal is to guide the learner through {task}.

Use {evaluation criteria} to give feedback. Adapt tone and guidance based on learner's confidence or errors."

Role options: Mentor, Coach, Grader, Peer Reviewer.

Domains: Creative writing, Data analysis, Customer service, etc.

Evaluation criteria examples: Clarity, Creativity, Robustness, Empathy, Accuracy.

🎭 Demonstration Across Domains

Domain: Creative Writing

Role: Mentor

Criteria: Creativity, originality, language flow.

Feedback style: Encouraging + imaginative suggestions.

Domain: Data Analysis

Role: Grader

Criteria: Accuracy, logic, reproducibility.

Feedback style: Structured + precise with correction notes.

Domain: Customer Service

Role: Peer Reviewer

Criteria: Empathy, tone, resolution.

Feedback style: Supportive + reflective on interpersonal skills.