

SkillNexa AI Academy

AI Engineering Capstone

University & Career Preparation Track

Program Level: Engineering Capstone

Total Duration: 96 Hours

Delivery: Cohort-Based + Instructor-Led + Hands-On Labs

Pathway: Foundation → Practitioner → Specialist → Engineering Capstone

The pathway brings together:

- **Generative AI**
 - **Large Language Models**
 - **AI application engineering**
 - **AI APIs**
 - **AI security**
 - **Responsible AI**
 - **Cloud AI systems**
 - **AI architecture**
 - **Human-AI interaction**
 - **Research and implementation**
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PROGRAM GOAL

AI Engineering Capstone represents the final stage of the SkillNexa AI pathway.

Students transition from learning AI concepts and building individual models to engineering complete AI-powered applications and systems.

The program emphasizes:

Research → Architecture → Development → Integration → Testing → Responsible AI → Deployment Concepts → Presentation

By the end of the program, students will have an AI engineering portfolio containing a substantial capstone project, technical documentation, research work, and an application demonstration.

PROGRAM STRUCTURE

Module	Topic	Hours
Module 1	Generative AI & Large Language Models	20
Module 2	AI Engineering	20
Module 3	AI Security & Responsible AI	16
Module 4	AI Systems Design	20
Module 5	Senior AI Capstone Project	20
Total		96 Hours

Course Curriculum

MODULE 1 — GENERATIVE AI & LARGE LANGUAGE MODELS

1.1 Introduction to Generative AI

LAB 1.1

1.2 Large Language Models

LAB 1.2

1.3 Prompt Engineering

LAB 1.3

1.4 AI Applications

LAB 1.4

1.5 LLM Limitations

LAB 1.5

1.6 Generative AI Project

MODULE 1 ASSESSMENT

MODULE 2 — AI ENGINEERING

2.1 AI Application Architecture

LAB 2.1

2.2 AI APIs

LAB 2.2

2.3 AI Workflows

LAB 2.3

2.4 Model Integration

LAB 2.4

2.5 AI Deployment Concepts

LAB 2.5

2.6 AI Engineering Project

MODULE 2 ASSESSMENT

MODULE 3 — AI SECURITY & RESPONSIBLE AI

3.1 AI Risks

LAB 3.1

3.2 AI Bias & Fairness

LAB 3.2

3.3 AI Privacy

LAB 3.3

3.4 AI Security

LAB 3.4

3.5 Responsible AI

LAB 3.5

3.6 AI Risk Assessment Project

MODULE 3 ASSESSMENT

MODULE 4 — AI SYSTEMS DESIGN

4.1 AI Architecture

LAB 4.1

4.2 Scaling AI Applications

LAB 4.2

4.3 Cloud AI Systems

LAB 4.3

4.4 Human-AI Interaction

LAB 4.4

4.5 AI Systems Testing

LAB 4.5

4.6 AI Systems Design Project

MODULE 4 ASSESSMENT

MODULE 5 — SENIOR AI CAPSTONE PROJECT

5.1 Capstone Project Selection

5.2 Capstone Research & Planning

LAB 5.2

5.3 AI System Architecture

LAB 5.3

5.4 Project Implementation

LAB 5.4

5.5 Capstone Evaluation

LAB 5.5

5.6 Research Paper

5.7 Technical Documentation

5.8 Senior AI Capstone Showcase

MODULE 5 ASSESSMENT

FINAL ASSESSMENT