

AI 101 (Technical) – AI Foundations for Technical Practitioners

OEM: Galvanize • Code: AI_101_TECHNICAL_AI_FOUNDATIONS_FOR_TECH

COURSE DESCRIPTION

AI 101 (technical) introduces technical practitioners to how modern AI-enabled systems are designed, specified, built, and delivered in real engineering environments. The program progresses from foundational understanding and safe usage through specification design, AI-assisted development workflows, and disciplined software delivery practices

AUDIENCE PROFILE

- Active duty service members
- Government civilians
- Reservists and national guard service members (must be on orders to attend)

PREREQUISITES

- A personal computer that is reasonably new (within the last 4-5 years)
- 16 GB RAM (8 GB acceptable, but not recommended)
- Mac or Windows OS
- Video/audio capable webcam (can be a separate webcam device)
- A reliable, strong internet connection

COURSE OBJECTIVES

By the end of this course, participants will be able to:

- Participants develop the ability to move from ambiguous feature requests to production-ready implementations by combining structured specifications, test-driven development with AI, and repeatable engineering workflows.
- Understand model behavior, limitations, and responsible deployment
- Design AI-ready specifications and implementation contracts
- Design and apply AI-enabled development workflows
- Execute and evaluate AI-assisted software delivers

COURSE OUTLINE

Module 1: Understand model behavior, limitations, and responsible deployment

- Develop awareness of how AI systems behave in technical environments, including how they fill gaps in specifications, where risks emerge, and how to apply appropriate constraints, security, and scope boundaries when integrating AI into engineering workflows.

Module 2: Design AI-ready specifications and implementation contracts

- Translate ambiguous feature requests into structured specifications, requirements, and acceptance criteria that AI systems can implement without guessing. Apply formal requirement structures, examples, and explicit constraints to eliminate ambiguity and define clear implementation contracts.

Module 3: Design and apply AI-enabled development workflows

- Use structured development patterns—including test-driven development and human–AI pairing—to generate, evaluate, and refine code, tests, and design decisions while maintaining control over implementation quality and scope.

Module 4: Execute and evaluate AI-assisted software delivers

- Decompose features into small, testable units, generate scaffolds from specifications, validate outputs through acceptance criteria and testing, and deliver review-ready code using disciplined workflows that ensure reliability, traceability, and maintainability.

Module 5: Resulting Capability

- Participants complete the program with the ability to:
- Translate ambiguous feature requests into structured specifications and acceptance criteria that define clear, testable implementation contracts
- Build and apply AI-assisted development workflows using test-driven development, structured prompting, and human–AI pairing practices
- Evaluate AI-generated outputs—including code, tests, and design decisions—using verification methods, quality criteria, and engineering judgment
- Deliver production-ready changes through disciplined workflows that include slicing, testing, debugging, and review to ensure reliability and maintainability
- These skills enable engineers to integrate AI into engineering processes while maintaining code quality, system reliability, and responsible deployment standards.