AI-271: Using Claude Code for Agentic Coding

Course Length: 1 day or 2 half days

Course Description:
AI-powered coding agents such as Claude Code are rapidly transforming how software is designed, implemented, and maintained. This course teaches participants how to move beyond simple prompt-based coding and adopt a systematic, agentic approach that improves productivity without sacrificing quality, governance, or maintainability.

Participants will learn how to use Claude Code's advanced chat and agent modes to implement "vibe coding". The course combines conceptual foundations with extensive hands-on exercises done on a popular large open-source code base, enabling participants to immediately apply these techniques to real-world projects.

Training objectives:
By the end of this training, participants will be able to:

- Understand important concepts of agentic coding and the architecture of modern coding agents
- Learn about prompt engineering techniques in coding agents
- Understand the goal and differences between tools, agent skills, subagents, plugins and hooks
- Be able to configure and use built-in and MCP tools
- Be able to configure and use subagents, plugins and hooks
- Learn about methods to validate responses of coding agents
- Learn about the security aspects of Agentic Coding

Main topics:

- Main concepts of agentic coding, architecture of modern coding agents
- Prompt engineering in coding agents
- Extensions to coding agents: tools, agent skills, subagents, plugins and hooks
- Configuring and using built-in and MCP tools
- Configuring and using agent skills, subagents, plugins and hooks
- Validating Agent Responses
- Security Aspects of Agentic Coding

Structure: roughly 50% lecture, 50% hands on lab exercises.

Target audience: Software developers and testers as well as their technical managers who want to understand and use Claude Code for agentic coding.

Prerequisites:

- Experience with VS Code or similar IDEs
- Experience using ChatGPT or similar chat-based AI tools
- General programming skills, experience with at least one object-oriented programming language

This training is part of the Agentic AI portfolio of Component Soft which explores essential topics, such as:

- AI-101: Intro to GenAI with Large Language Model (LLMs) and LLM-based apps.
- AI-241: Using Github Copilot for Agentic Coding

- AI-271: Using Claude Code for Agentic Coding
- AI-281: Using OpenAI Codex for Agentic Coding
- AI-311: Using Coding Agents and spec-kit for Spec-Driven and Test-Driven Development (SDD and TDD)
- AI-261: Using Amazon Kiro (I) for Agentic Coding
- AI-361: Using Amazon Kiro (II) for Spec-Driven and Test-Driven Development (SDD and TDD)
- AI-453: Agentic AI Application Development with LLMs
- AI-454: Agentic AI Application Development with LLMs (extended version)