# AI in Construction

**Length:** 1 Day

**Summary:** This course introduces construction professionals to practical applications of artificial intelligence in the construction industry. Through hands-on activities, discussions, and real-world examples, participants will learn how AI tools like Microsoft CoPilot can enhance productivity, safety, and decision-making in construction projects. The course emphasizes the practical implementation of Microsoft CoPilot and helps participants develop strategies for integrating AI into their daily work, regardless of their current access or experience with AI tools. An additional focus will include security and ethical concerns and how to integrate corporate policy into the use of AI in their work.

**Learning Objectives**: After completing this course, participants will be able to:
1. Explain fundamental AI concepts and their relevance to construction
2. Identify practical applications of Microsoft CoPilot in construction projects and operations
3. Use basic AI tools available in Microsoft CoPilot to solve common construction-related challenges
4. Evaluate potential AI implementation opportunities in their work, using Microsoft CoPilot as an example
5. Create a practical plan for integrating Microsoft CoPilot into their construction workflows

## COURSE CONTENT

**Session 1: Foundations and Basic Applications (3 hours)**

Module 1: Introduction to AI (45 minutes)
- Opening activity: "What comes to mind when you hear 'AI'?" (Group discussion)
- Basic AI concepts and terminology
- Types of AI relevant to construction
- Examples of how Microsoft CoPilot is being used in construction
Knowledge Check: AI Basics Quiz
- Breakout Activity: Identifying AI myths in construction

Module 2: AI Tools Overview (55 minutes)
- Introduction to ChatGPT, Claude and Microsoft CoPilot
- Demo: Basic interaction techniques
- Partner Activity: Practice basic prompts
- Knowledge Check: Tool Capabilities
- Individual Exercise: Writing effective prompts for ChatGPT, Claude, and Microsoft CoPilot

Module 3: Construction-Specific Applications (60 minutes)
- Use cases in construction:
  - Safety documentation
  - Material calculations
  - Schedule optimization
  - Code compliance checks
- Demo: Solving common construction problems with Microsoft CoPilot
- Breakout Activity: Problem-solving scenarios
- Knowledge Check: Application Matching

**Session 2: Advanced Applications and Implementation (3 hours)**

Module 4: Advanced Use Cases (45 minutes)
- Project planning and estimation
- Risk assessment
- Quality control documentation
- Site logistics optimization
- Partner Activity: Creating project schedules with Microsoft CoPilot
- Knowledge Check: Use Case Analysis

Module 5: Practical Implementation (55 minutes)
- Best practices for AI integration
- Common challenges and solutions
    - Organizational readiness
    - Leadership support
    - Funding and training
    - Corporate security policy
    - Access to appropriate tools
- Ethics and safety considerations
- Breakout Activity: Overcoming implementation barriers for a Microsoft CoPilot solution
- Knowledge Check: Implementation Planning

[20-minute break]

Module 6: Integration Planning (60 minutes)
- Individual Exercise: Personal AI implementation plan using Microsoft CoPilot
- Small Group Reviews: Plan feedback and refinement
- Final Presentation: Selected participants share plans
- Action Item Development
- Course Wrap-up and Resources

**Activities Details for above**

Breakout Activities:
1. AI Myths in Construction (4-5 people)
   - Groups analyze common misconceptions
   - Present findings to main group

2. Problem-solving Scenarios (2-3 people)
   - Work through real construction challenges (Can be customized)
   - Practice using Microsoft CoPilot for solutions

3. Implementation Barriers (4-5 people)
   - Identify potential obstacles
   - Develop practical solutions using Microsoft CoPilot

Hands-on Activities:
1. Basic Prompt Practice
   - Partners take turns writing and refining prompts, with an emphasis on Microsoft CoPilot
   - Share successful approaches and surprises

2. Project Schedule Creation
   - Work in pairs to develop AI-assisted project schedules using Microsoft CoPilot
   - Compare different approaches

Individual Assignments:
1. Prompt Writing Exercise
   - Create prompts for specific construction tasks using Microsoft CoPilot
   - Test and refine approaches

2. Implementation Planning
   - Develop personal AI integration strategy
   - Create 30-60-90 day action plan

**Knowledge Checks (At the end of each Module)**
- Multiple-choice questions
- Scenario-based problems
- Tool capability matching
- Application identification
- Best practices recognition

Resources Provided
- Microsoft CoPilot Quick Reference Guide
- Prompt Engineering Best Practices for Microsoft CoPilot
- Implementation Planning Worksheet
- Use Case Library
- Additional Learning Resources List
- Community of practice recommendations to keep learning as a team