

No-Code Flow Programming & Business Automation with AI

🔗 Course Outline:

Module 1: Foundations of AI Automation, Flow Programming & Vibe Coding

1. Automation-first thinking
2. Flow-based programming logic
3. What “vibe coding” actually means
4. Human - AI collaboration in building systems
5. No-code vs Python vs AI-generated code
6. Ethics, safety, and limits

Module 2: Web Development for Automation Systems

1. Web fundamentals (HTML, CSS, JS – builder-focused)
2. Frontend vs backend (conceptual clarity)
3. Forms, dashboards, and user interfaces
4. Connecting websites to automation workflows
5. Hosting & deployment basics
6. Auth, webhooks, and APIs from the web side

Module 3: Python for Automation, APIs & Backend Logic

1. Python essentials for builders
2. API creation & consumption
3. Data processing & validation
4. Python microservices for workflows
5. Python as backend for web & AI systems

Module 4: AI Chatbot Systems & Conversational Interfaces

1. Chatbot architectures
2. Web-based chat interfaces
3. Context, memory, and session handling
4. Multichannel bots (Web, Telegram, WhatsApp)
5. Chatbots as UX for automation systems

Module 5: No-Code Workflow Automation with n8n

1. n8n architecture & nodes
2. Webhooks and event-driven workflows
3. Conditional logic & loops
4. Error handling and observability
5. n8n + web apps + Python

Module 6: Visual Automation & Integrations with Make.com

1. Make.com scenario design
2. Advanced routing & data transformation
3. SaaS integrations
4. Web-to-Make pipelines
5. AI-powered automation scenarios

Module 7: OpenAI GPT API, Function Calling & LLM Tooling

1. LLM APIs (OpenAI / Gemini / Claude)
2. Function calling & structured outputs
3. Prompt engineering for systems (not chat)
4. LLMs inside web apps & workflows
5. Cost control, latency, and reliability

Module 8: Retrieval-Augmented Generation (RAG) Systems

1. RAG architecture & design patterns
2. Embeddings & vector databases
3. Document pipelines
4. RAG for web apps & chatbots
5. Evaluation & hallucination control

Module 9: AI Agents, Vibe Coding & Autonomous Systems

1. Agent concepts & architectures
2. Tool-using agents)
3. Multi-step reasoning workflows
4. Vibe coding with AI copilots
5. Human-in-the-loop & agent supervision

Module 10: Business Use Cases, MVP Building & Deployment

1. End-to-end MVP design
2. Web + automation + AI integration
3. Deployment & monitoring
4. Security & access control
5. Business ROI & pitching

🕒 **Course Duration: 120 hours**

AI Automation (Agentic AI)

📖 Course Outline:

- Module 1: AI Chatbot Systems
- Module 2: Fundamentals of AI Automation
- Module 3: n8n Workflow Automation
- Module 4: Make.com Tools
- Module 5: OpenAI GPT API, Function Calling, LLM Tools
- Module 6: RAG: Retrieval-Augmented Generation
- Module 7: Agents
- Module 8: Use Cases and MVP

🕒 **Course Duration: 32 hours**

AI-Enhanced Frontend development

📖 Course Outline:

Lesson 1: Setup, Fundamentals & AI-Assisted Coding

1. Introduction to AI-assisted frontend development
2. Installing and configuring Cursor
3. React + TypeScript fundamentals (quick onboarding)
4. Ant Design basics
5. How to write correct prompts for coding tasks
6. First AI-assisted coding exercises
Mini-task: Create a simple personal page

Lesson 2: Building the CV Layout (UI Foundations)

1. Project structure overview
2. Pages and components architecture
3. Ant Design:
 - Layout
 - Typography
 - Grid system
4. Creating CV sections
5. Using AI to generate UI boilerplate code
Mini-task: Build the first version of the CV layout

Lesson 3: AI Content Generation for CV

1. Using GPT to generate CV content
 2. Improving tone, grammar, and rewriting text
 3. Multi-language content generation
 4. Keyword and skill extraction with AI
- Mini-task: Add "Write My CV" AI button to the website

Lesson 4: Voice AI (Text-to-Speech & Speech-to-Text)

1. Understanding TTS and STT concepts
 2. Using Azure / OpenAI APIs
 3. Generating multilingual audio introductions
 4. Voice input for editing CV content
- Mini-task: Add Audio Intro and Voice Edit features to the CV page

Lesson 5: Video AI (Talking Avatar)

1. Overview of AI video generation tools
 2. Creating video scripts using AI
 3. Generating a talking avatar video (3 languages)
 4. Embedding AI-generated video into the CV website
- Mini-task: Add a talking avatar video to the CV

Lesson 6: Advanced AI Features for Personal CV

1. Students choose 2-4 features to implement:
 2. AI CV improvement suggestions
 3. AI contact assistant (chatbot: "Ask about me")
 4. AI profile photo enhancement
 5. AI job title recommender
 6. AI skill graph generator
 7. AI learning roadmap (next 6 months)
 8. AI cover letter generator
- Mini-task: Implement at least 2 advanced AI features

Lesson 7: Project Finalization & Quality Improvements

UI polishing

1. Responsive design
 2. Code refactoring with Cursor
 3. Error handling
 4. SEO & metadata (AI-generated)
 5. Deployment preparation
- Mini-task: Project cleanup and optimization

Lesson 8: Deployment & Presentation

1. Deploying the project to Vercel / Netlify
2. Connecting domain and project name
3. Creating README documentation (AI-assisted)
4. Final improvements
5. Student project presentations
6. Q&A session

Final Result: A public AI-powered CV website

🕒 **Course Duration: 32 hours**

End-to-End Software Testing: Manual, Automation & AI

📖 Course Outline:

Module 1. Python

Lesson_1: Fundamental of Testing, STLC via SDLC

Lesson_2: Defect Management Process/Testing Documentation

Lesson_3: Test Case Development

Lesson_4: Bug Report in Jira and Test Case design in Zephyr Scale

Lesson_5: Static Testing Technique

Lesson_6: Dynamic Testing Technique - Black Box

Lesson_7: Dynamic Testing Technique - White Box

Lesson_8: Test Estimation, Agile methodology (Scrum/Kanban)

Lesson_9/10/11: Database Testing (SQL)

Lesson_12: Web Development Basics

Lesson_13: Client-Server Overview (TCP/IP Model), FrontEnd/BackEnd

Lesson_14/15: API testing with Postman
Lesson_16: Workshop -> API Testing
Lesson_17: Performance testing with JMeter

Module 2. AI

Lesson_18: AI Fundamentals for QA
Lesson_19: Prompt Engineering
Lesson_20: Workshop-> Prompt Testing
Lesson_21: RAG system, Vector DB, Rag vs Fine Tuning
Lesson_22: Integrating AI models APIs into Test Management Tools (Jira/TestRail) via Postman

Module 3: Test Automation (Python + Selenium)

Lesson_23: Automated testing introduction
Lesson_24: Introduction to Python, Visual Studio Code environment setup
Lesson_25: Version Control System (Git/GitHub)
Lesson_26: Variables and standard data types
Lesson_27: Python Collections
Lesson_28: Decision-making statements and loops
Lesson_29: Working with Functions
Lesson_30: File Input/Output
Lesson_31: Object Oriented Programming
Lesson_32: Team Workshop
Lesson_33: Rest API with Python
Lesson_34: Automated testing with Selenium, Locators
Lesson_35: Selenium WebDriver Commands
Lesson_36: Team Workshop
Lesson_37: Page Object Model
Lesson_38: PyTest Framework, Allure Report
Lesson_39: CI/CD, Azure DevOps
Lesson_40/41: Live Project from scratch
Final Assessment

 **Course Duration: 41 lessons/~90 hours**

AI in Quality Assurance

📖 Course Outline:

Lesson 1 – AI Fundamentals

- Overview of AI/ML models and core concepts
- Introduction to NLP, Computer Vision (CV), and Large Language Models (LLMs)
- Key AI Models in Focus: OpenAI, Mistral AI, Gemini
- Understanding tokens and temperature parameters
- Cost considerations: API usage and optimization

Lesson 2 – Prompt Engineering

- Introduction to Prompt Engineering
- Six Effective Prompting Strategies for OpenAI
- Temperature control for creativity and accuracy
- Prompt testing techniques
- Writing effective prompts for QA tasks:
- Checklist generation
- Requirement summarization

Lesson 3 – Workshop: Prompt Testing

- Articles Translation with Google AI Studio and Postman

Lesson 4 – Prompt Testing with Python

- Articles Translation with Python
- Performing CV-based reviews via Python

Lesson 5 – Prompt Generation with Python and GEPA

- Code setup and environment prep
- Dataset split for train/validation
- Prompt generation and validation

Lesson 6 – Integrating AI APIs into Test Management Tools via Postman

- Connecting Gemini AI API to Jira and TestRail
- Automated checklist and test case generation
- AI-assisted test case review
- Regression set analysis

Lesson 7 – Workshop: From Jira to TestRail

- Performing Regression set reviews
- Automating Bug Root Cause Analysis (RCA) with AI

Lesson 8 – RAG Systems and Vector DB

- Introduction to Retrieval-Augmented Generation (RAG)
- Understanding RAG workflow and runtime setup
- Vectors and embeddings explained
- Demonstration: QWALLITY QA Chatbot
- Top 10 QA test cases for chatbot validation

Lesson 9 – Fine-Tuning

- Fine-tuning workflow and lifecycle
- Comparing RAG vs. Fine-Tuning approaches
- Use case demonstration

Lesson 10/11 – QWALLITY Chatbot Testing

- Retrieval conversation testing
- Evaluating chatbot response quality
- Preparing classification datasets
- Performing classification-based testing
- Measuring chatbot accuracy

Lesson 12 – Chatbot Testing with Ragas**Lesson 13/14 – AI Test Metrics and Reporting**

- AI Metrics Types
- Gathering Data in Excel
- Visualize Metrics in Power BI

Lesson 15 – Gathering AI Metrics Automatically Using Python**Lesson 16 – Final Assignment**

- End-to-end AI-integrated QA project

🕒 **Course Duration: 32 hours**