COURSE SYLLABUS

AI Software Engineering Bootcamp (Self-Paced)

Self-paced: Learn AI-assisted software engineering through full-stack development, systems design, security, and a capstone application.

> Group classes (Live Online) and onsite training are available for this course. For more information, email corporate@nobledesktop.com or visit: https://training-nyc.com/certificates/ai-software-engineering-bootcamp-self-paced



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Course Outline

This package includes these courses

- AI Coding Bootcamp with Claude Code (Self-Paced) (60 Hours)
- Build a Website with AI (Self-Paced) (30 Hours)
- Interactive Design (Self-Paced) (30 Hours)
- Financial Dashboard (Self-Paced) (30 Hours)
- Marketing & Creative Studio (Self-Paced) (30 Hours)
- Client Operations & Practice Management Tool (Self-Paced) (30 Hours)
- Knowledge-Base Chatbot (Self-Paced) (30 Hours)
- AI Coding Capstone (Self-Paced) (60 Hours)

AI Coding Bootcamp with Claude Code (Self-Paced)

Build web applications with Claude Code, GitHub, Next.js, Supabase, and APIs. Practice code review, debugging, design, testing, security checks, and deployment.

Build a Website with AI (Self-Paced)

Plan, design, build, and launch a real website, with an AI assistant handling the code.

- Pick the right website type and plan its pages, content, and primary actions
- Map the site structure and create wireframes before any visual design begins
- Build responsive layouts on a flexible, consistent design system
- Improve accessibility, performance, imagery, and motion across the site
- Set up contact forms, SEO, analytics, and a custom domain
- Direct AI to build, test, and publish the finished site to a live URL

Interactive Design (Self-Paced)

Understand the design decisions behind a real design system, then steer AI to build an interactive version that is yours.

- Build design systems around typography, color, spacing, contrast, and corner styles
- Translate visual decisions into reusable design tokens and a single source of truth
- Assess designs across web, mobile, social media, and print
- Prepare developer handoffs, Figma variables, and preview links ready for clients
- Use AI to plan, build, review, and refine a custom design tool

Financial Dashboard (Self-Paced)

- Translate a bookkeeping workflow into a data model (accounts, transactions, statements, reports) and a working database schema
- Build bookkeeping basics in code: a chart of accounts, categorizing transactions, and reconciling against statements
- Compute financial stats, revenue growth over time, and profitability margins in JavaScript, never letting the model invent a number
- Build charts, KPI cards, anomaly flags, and an exportable report from values your code calculated
- Call the Claude API from your own server-side code to write commentary, a monthly summary, and anomaly explanations grounded in the actual figures
- Build an Ask-Your-Data copilot: load a CSV, ask in plain English, and have Claude select the chart while your code handles the math
- Keep your Claude API key server-side, handle AI failures gracefully, and persist data to a hosted database
- Deploy the finished dashboard to a live URL with production secrets and a pre-launch checklist

Marketing & Creative Studio (Self-Paced)

Build a real AI marketing studio that pulls in your analytics, has Claude read them, and generates on-brand campaigns and imagery, then deploy it live.

- Design a marketing data model and hosted database for campaigns, assets, analytics, and content
- Build a multi-screen app with Next.js, Tailwind CSS, and Claude Code
- Connect Google Analytics to surface real campaign performance data
- Use the Claude API to turn analytics into clear, actionable insights
- Generate on-brand email campaigns and images with Claude and Gemini
- Secure API keys, save content, handle errors, and deploy the finished app

Client Operations & Practice Management Tool (Self-Paced)

Build the back office for any client-based business: clients, scheduling, AI session notes, and billing, all in one real app you deploy.

- Translate business needs into a database for clients, sessions, notes, and invoices
- Build a secure CRUD app with Next.js, Tailwind CSS, Postgres, and user login
- Track client packages, session status, attendance, hours, and remaining balances
- Use the Claude API to tidy up notes, create summaries, and suggest next-session goals
- Manage invoices, overdue balances, and editable AI-generated payment reminders
- Secure client data, deploy the app, and complete a pre-launch QA checklist

Knowledge-Base Chatbot (Self-Paced)

- Explain the architecture of a chatbot application (front end, server, database, LLM integration) in plain language precise enough for an AI agent to act on
- Steer an agent to scaffold and connect each of those pieces, and confirm the result actually works instead of just "looking done"
- Load a company's own documents into a chatbot's knowledge base so it answers from that material and not from general knowledge
- Separate authenticated users from general users and steer an agent to implement that distinction, including persisted chat history
- Design and test guardrail logic that keeps a chatbot on subject and turns away unrelated questions
- Specify and review agent-built feature additions, including a human escalation path with an email notification integration, and iterate on what testing shows
- Assemble a basic evaluation set to check whether a chatbot stays grounded and on subject, and use it to catch regressions
- Deploy a working version of a chatbot to a live environment

AI Coding Capstone (Self-Paced)

Plan and build a full-stack application with AI-powered features. Practice testing and deployment, document your work, and present the project.