COURSE SYLLABUS

AI Software Engineering Bootcamp (Self-Paced)

Pick up the skills to design, create, and launch AI-powered applications through a structured, hands-on software engineering program.

> Group classes (Live Online) and onsite training are available for this course. For more information, email corporate@nobledesktop.com or visit: https://www.nobledesktop.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)

- Use Claude Code as a practical coding assistant for planning, editing, debugging, and shipping apps
- Build confidence with Git, GitHub, and collaborative development workflows
- Understand the structure of modern web apps across frontend, backend, APIs, and deployment
- Create full-stack projects with Next.js, Supabase, authentication, and third-party APIs
- Improve app quality with responsive design, accessibility, testing, and security practices
- Deploy a finished application with environment variables, a custom domain, and launch-ready polish

Build a Website with AI (Self-Paced)

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

- Choose the right website type and plan its pages, content, and primary actions
- Map the site structure and create wireframes before beginning visual design
- Build responsive layouts using a flexible, consistent design system

- Improve accessibility, performance, imagery, and motion across the site
- Set up contact forms, SEO, analytics, and a custom domain

Interactive Design (Self-Paced)

Learn the design decisions behind a real design system, then direct AI to build your own interactive version of one.

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

Financial Dashboard (Self-Paced)

- Turn a bookkeeping workflow into a data model (accounts, transactions, statements, reports) and a working database schema
- Build the basics of bookkeeping 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 real figures
- Build an Ask-Your-Data copilot: load a CSV, ask in plain English, and have Claude choose the chart while your code does 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 your analytics, lets 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 display real campaign performance data
- Use the Claude API to turn analytics into clear, actionable insights
- Generate on-brand email campaigns and images using Claude and Gemini

Client Operations & Practice Management Tool (Self-Paced)

Build the back office for any client-based business, clients, scheduling, AI session notes, and billing, 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 clean up notes, create summaries, and suggest next-session goals
- Manage invoices, overdue balances, and editable AI-generated payment reminders

Knowledge-Base Chatbot (Self-Paced)

- Describe the architecture of a chatbot application (front end, server, database, LLM integration) in plain language precise enough for an AI agent to act on
- Direct an agent to scaffold and connect each of those pieces, and verify the result actually works rather than just "looks done"
- Load a company's own documents into a chatbot's knowledge base so it answers from that material instead of general knowledge
- Distinguish authenticated users from general users and direct an agent to implement that distinction, including persisted chat history
- Design and test guardrail logic that keeps a chatbot on-topic and refuses unrelated questions
- Specify and review agent-built feature additions, including a human escalation path with an email notification integration, and iterate based on testing
- Build a basic evaluation set to check whether a chatbot stays grounded and on-topic, and use it to catch regressions
- Deploy a working version of a chatbot to a live environment

AI Coding Capstone (Self-Paced)

- Plan and execute a full application build from concept to deployment
- Use advanced AI-assisted development workflows and tools
- Integrate AI-powered features into real-world applications
- Conduct production readiness reviews and testing
- Present technical work clearly through demos and documentation
- Prepare a portfolio project for job applications