NeXTra

Code . Create . Inspire

Full Stack Software Engineering Bootcamp

Building the Future, One Line at a Time

Enter the realm of software engineering and transform bold ideas into real, functional systems.

Master the full development process – from designing logic to launching solutions – and gain the skills to build technology that shapes tomorrow.

Course Overview

Software Engineering is the process of transforming bold ideas into real, functional, and scalable systems. This course will guide you through the full development lifecycle, from designing the initial logical architecture to mastering programming languages and launching robust solutions, giving you the skills to build technology that will shape tomorrow's digital world.

Why NeXTra?

Applied Learning:

Dive into full-stack development projects, mastering the entire software lifecycle from design and architecture to deployment using modern frameworks and agile methodologies.

Career Growth Support:

Receive comprehensive guidance—from refining your algorithms to navigating job searches—to successfully launch your career as a professional software engineer.

Community & Collaboration:

Collaborate with peers and mentors in a supportive environment, engaging in pair programming and group challenges crucial for real-world development teams.

Elite Mentors:

Learn directly from senior developers and engineering managers who provide current best practices in system design, debugging, and scalable architecture.

Flexible Study Options:

Choose a learning path that fits your schedule, complete with personalized guidance in building a professional GitHub portfolio, tackling technical interviews, and securing developer roles.

Thriving Network:

Join a dynamic community of developers, system architects, and tech innovators who will be your lifelong professional network.

Why Study Software Engineering?

Software engineering is the backbone of modern technology - powering everything from mobile apps and financial systems to AI tools and global business operations. Studying software engineering equips you with the ability to build solutions that solve real-world problems, drive innovation, and shape the future of digital experiences.

What You'll Gain:

End-to-End Development Skills
Master the technologies used by global engineering teams - frontend tools like HTML, CSS, JavaScript, and React, alongside backend skills in Python, Flask, SQL, and relational databases - to build scalable, full-stack applications that solve real-world problems.

Real-World, Project-Based Learning
Gain hands-on experience through labs, coding challenges, API development, and a capstone project where you build a fully functional application. You'll leave with a strong portfolio that reflects real industry work.

Career-Ready Technical & Professional Growth
Sharpen technical skills, strengthen your problem-solving abilities, and build your professional brand with resume support, LinkedIn optimization, mock interviews, and guidance from experts. Everything prepares you for job-ready confidence.

Mentorship, Collaboration & Lifelong Support
Learn within a supportive community of instructors, mentors, and peers. Enjoy personalized check-ins, collaborative learning, and career coaching for up to 12 months after graduation - ensuring you transition smoothly into the tech industry.

Who Can Join?

Our Software Development program is crafted for future engineers who want to master full-stack development and build complex, scalable applications. Ideal for motivated beginners, graduates, and career shifters eager to develop professional-grade engineering skills.

This Course Is Ideal For You If You Are Focused On:

01 **Becoming a Full-Stack Software Engineer:**
You want to build apps using Python, React, JavaScript, APIs, and relational databases.

02 **Understanding Core Engineering Principles:**
You're ready to master algorithms, data structures, problem-solving, and clean code practices.

03 **Building Real Applications:**
You want to create full-stack projects that demonstrate industry-level proficiency.

Prerequisites

Be a High School Graduate:
You should have completed high school and be ready to dive into practical, career-shaping technical skills.

Have Basic Computer Literacy:
A foundational understanding of how to use a computer - such as navigating files, using a browser, and typing - is essential for keeping up with course activities.

Own a Capable Laptop for Development Work:
A reliable laptop or computer with at least Core i5–i7 processor, 8GB RAM, and 500GB storage ensures smooth learning and performance across modern development tools.

Have Access to Stable Internet:
Consistent, reliable internet access is required for live classes, project submissions, collaboration, and accessing learning platforms.

Be Proficient in English (Written & Spoken):
Since the instruction, discussions, and project work are conducted in English, learners must confidently read, write, and communicate in English.

Our Flexible Learning Paths & Schedules

Mode	Duration	Schedule	Fees
Full-time Hybrid (In-person & Online)	6 Months	Mon - Fri (9 AM - 2 PM)	Ksh. 100000
Full-time Online	6 Months	Mon - Fri (9 AM - 2 PM)	Ksh. 85000
Part-time online	9 Months	Mon - Fri (6 PM-9 PM)	Ksh. 100000

CERTIFIED SOFTWARE DEVELOPMENT PROGRAM
(Full-Stack)

Training Job-Ready Full-Stack Developers Through a Practical, Industry-Aligned Curriculum

This intensive program is built around three pillars:

1. **Engineering Foundations**
2. **Front-End to Back-End Mastery**
3. **Career Launch & Capstone Excellence**

Students progress through a structured, immersive journey combining theory, labs, projects, and real-world development practices.

PROGRAM STACK & TOOLS

Learners gain production-level familiarity with:

- **Front-End:** JavaScript (ES6+), HTML5, CSS3, React.js
- **Back-End:** Python, Flask, Intro to Django concepts
- **Databases:** SQL, ORMs (Flask-SQLAlchemy)
- **Developer Tools:** Git, GitHub, APIs, Terminal, Testing suites

TRACK A: 24-WEEK FULL-TIME INTENSIVE

Cycle 1: Becoming an Engineer (Weeks 1–3)

Students begin their journey by establishing their professional identity through resume polishing, GitHub setup, and LinkedIn optimization while simultaneously learning the core building blocks of programming using JavaScript. During this period, they focus on variables, arrays, objects, functions, debugging techniques, and simple algorithms, together with essential software engineering principles such as clean code, Git version control, collaboration workflows, and basic unit testing. By the end of this phase, learners complete a logic-based JavaScript project and a small engineering exercise demonstrating proper Git branching and merging.

Cycle 2: Front-End Foundations (Weeks 4–6)

This phase introduces students to the visual and interactive side of web development. They learn to build layouts using semantic HTML5 and modern CSS techniques, including responsive design, flexbox, and grid. They then apply JavaScript to manipulate the DOM, handle user interactions, and build browser-based features using event listeners and dynamic rendering. The cycle concludes with asynchronous JavaScript, where students fetch data from public APIs using promises and async/await to build fully functional client-side interfaces that consume real data.

Cycle 3: React & Modern Front-End Engineering (Weeks 7–10)

Here, students transition into React, mastering JSX, components, props, and function-based component architecture. They deepen their understanding of state management through useState and useEffect, handle advanced interaction patterns, and learn to structure scalable React applications with routing, reusable components, and basic performance optimization. They also explore global state approaches using the Context API. By the end of the cycle, each student produces a production-style Single Page Application. Week 10 deliberately allows time for rest, review, and polishing prior work.

Cycle 4: Python & Database Systems (Weeks 11–14)

Students now move to the server side, beginning with Python fundamentals like loops, data structures, file operations, and scripting techniques. This then progresses into full Object-Oriented Programming, where learners build classes, inheritance structures, and real-world simulations. The cycle expands into database fundamentals using SQL - covering schemas, table relationships, complex queries, and data modeling - before integrating Python applications with relational databases through ORMs like Flask-SQLAlchemy. Students finish this phase with a working data-driven mini-application.

Cycle 5: Full-Stack API Engineering (Weeks 15–20)

This stage focuses on building production-grade back-end systems. Students design RESTful APIs, construct CRUD endpoints, validate and sanitize data, structure JSON responses, and implement authentication using hashed passwords and JWTs. They then integrate their Flask back-end with their React front-end, managing CORS, environment variables, and real-time data exchange. The cycle also covers backend testing strategies and an introduction to containerization concepts like Docker. By Week 20, students compile a capstone proposal and refine past work during a brief health and review break.

Cycle 6: Capstone & Career Launch (Weeks 21–24)

The final cycle prepares students for real employment by training them through technical and behavioral mock interviews, systems design discussions, and portfolio refinement. Meanwhile, they begin building their final capstone project, moving from database design and wireframing to developing complex features, integrating both front-end and back-end components, and polishing their application for real-world usability. The phase concludes with capstone presentations, a formal technical assessment, and the completion of their job-ready software engineering portfolio.

TRACK B: 36-WEEK PART-TIME PROGRAM

A slower pace, more mastery, wider project range
The extended program mirrors the full-time track but adds:

01 Foundations - more time for:
- Algorithms and data structures
- Documentation and communication training integrated into labs

02 Front-End Level 1 - additional depth in:
- CSS preprocessors (SASS/LESS)
- DOM mastery
- Async JavaScript extended assignments

03 **React Mastery** - enhancements include:
- Advanced state patterns
- Dedicated week for Context
- Full week of React Testing (Jest + RTL)

04 **Backend Level 1** - more time for:
- Advanced Python tooling
- Extended SQL practice: window functions, indexing, views
- Database optimization techniques

05 **Backend Level 2 & Full-Stack Integration** - extra modules:
- System design fundamentals
- Full-stack debugging week
- Detailed API documentation using Swagger/OpenAPI

06 **Capstone Mastery** - with time to:
- Iterate over Capstone design
- Deepen documentation
- Conduct multiple mock interviews

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Our Training Courses:

1. Professional Courses
- Full-Stack Software Engineering Bootcamp
- Full-Stack Website Development Bootcamp
- Data Science Bootcamp
- Data Analytics Bootcamp
- Generative AI Essentials Bootcamp,

2. Certification Programs
- Python
- SQL
- Power BI
- Tableau
- R
- SPSS
- Advanced Excel
- Stata
- CSS & HTML
- JavaScript

3. NeXTra Academy
- High School Tech Bootcamp
- Tech Explorers Junior

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