TechZnanie Innoversity: Web Development (Full Stack) Curriculum Roadmap

3-Month Immersive Program: From Frontend Basics to Full Stack Deployment

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Program Overview & Core Technologies

Empowering You to Build, Deploy, and Maintain Dynamic **Full-Stack Web Applications.**

Structured Program Journey

💻 Phase 1: Months 1-2 (Online)

Foundational & Core Training

Intensive online modules covering fundamental concepts and essential coding skills. Flexible remote learning to build a strong theoretical and practical base.

📍 Phase 2: Month 3 (Offline)

Project & Immersion

Collaborative, in-person environment dedicated to real-world project development, advanced skill application, and industry networking.

Key Technology Stacks

Frontend Essentials

Core Languages: HTML, CSS, JavaScript
Frameworks: React (or similar modern JavaScript framework for dynamic UIs)

Backend & API Mastery

Server-Side: Node.js with Express.js (adaptable to Python/Java)
Connectivity: RESTful APIs for seamless data exchange
Security: Robust Authentication mechanisms

Database Fundamentals

Data Storage: Relational (SQL) and Non-relational (NoSQL) database concepts

Phase 1: Month 1 - Frontend Development Fundamentals

Laying the Essential Web Foundations for **Dynamic User Experiences**

<> Web Foundations & Version Control

HTML Fundamentals: Mastering the core language for web content, including semantic elements, forms, and accessibility best practices.

Web Structure: Understanding document flow and building well-organized, maintainable web pages.

Git/GitHub: Introduction to essential version control for collaborative development and robust project tracking.

HTML   Web Foundations   Git Version Control

🎨 Styling & Layout Mastery

CSS Essentials: Applying styles to web pages, covering selectors, properties, and values for visual appeal.

Box Model: In-depth understanding of element dimensions, padding, borders, and margins for precise spacing.

Advanced Layouts: Implementing modern layouts using **Flexbox** for 1D alignment and **CSS Grid** for 2D systems.

CSS   Box Model   Flexbox   CSS Grid

>_ Dynamic Web Interactivity

🖥 Modern Frontend Frameworks

Phase 1: Month 2 - Backend Development & Integration

Building **Robust Server-Side Logic** & Seamless Data Connectivity

Server-Side Foundations

Core Concepts: Intro to server-side programming, request-response cycle, and foundational architectural patterns.

Frameworks: Hands-on with **Node.js** & **Express.js** for building scalable web applications.

Node.js   Express.js

Data Persistence & Management

Database Types: Exploring **Relational (SQL)** databases like PostgreSQL and **Non-relational (NoSQL)** like MongoDB.

Operations: Mastering **CRUD (Create, Read, Update, Delete)** operations and data modeling.

Tools: Utilizing **ORMs/ODMs** for simplified database interaction.

SQL   NoSQL   CRUD

Building & Consuming APIs

API Design: Principles of designing **RESTful APIs** for clear communication between frontend and backend.

Integration: Connecting the backend to databases to serve dynamic content.

Testing: Practical API testing using tools like **Postman** to ensure functionality and reliability.

REST APIs   Postman

Security & Deployment

Authentication: Implementing secure authentication with **Hashing** and **JWT (JSON Web Tokens)**.

Integration: Strategies for seamless **Frontend-Backend integration**.

Deployment: Introduction to **Basic Cloud Deployment** concepts for live environments.

Authentication   JWT

Unlocking High Value Career Opportunities

Phase 2: Month 3 - Capstone Full Stack Project & Career Readiness

Transforming Learning into **Real-World Impact** and **Professional Opportunities**

The Final Sprint: Project Development & Refinement

Week 9: Strategic Planning & UI/UX Design

Initiate your capstone with detailed application planning, developing comprehensive UI/UX mockups, designing a robust database schema, and establishing effective team collaboration strategies.

`Project Planning` `UI/UX` `Database Schema`

Week 10: Dynamic Frontend Development

Build the main user interface, efficiently consume backend APIs, implement responsive design for seamless cross-device functionality, and refine the user experience through iterative processes.

`Frontend UI` `API Integration` `Responsive Design`

Accelerating Your Tech Career

Week 12: Deployment, Testing & Showcase

Master cloud deployment techniques, conduct thorough end-to-end testing to ensure application stability, and prepare a compelling final project presentation for stakeholders and peers.

`Cloud Deployment` `E2E Testing` `Showcase`

Tailored Career Support

Receive dedicated sessions for resume and portfolio building, ensuring your skills and capstone projects are effectively showcased to potential employers. Gain personalized guidance to articulate your unique technical journey.

Your Journey to Full Stack Mastery

Unlock Your Full Stack Potential: A Holistic Path to Becoming a Job-Ready Developer.

🔧 Hands-on Projects & Real-World Scenarios

Our curriculum is meticulously designed around **practical, hands-on projects** that simulate authentic development challenges.

Gain invaluable experience by building functional applications, deeply embedding theoretical knowledge and preparing you directly for industry demands.

Practical   Hands-on   Real-World

🎓 Expert Mentorship & Personalized Guidance

Benefit from dedicated **expert mentorship** provided throughout both the online and immersive offline phases of your program.

Our experienced instructors offer personalized support, timely feedback, and crucial industry insights, ensuring confident progression through complex topics and continuous growth.

Mentorship   Personalized Support