TECH ENGINEER

3 Months Certification Course

Syllabus 2026

FULL STACK Development

Prepared By:
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This Full-Stack program is designed to provide complete practical knowledge of programming tools and strategies. Students will learn how to design & develop front-end and back-end systems and build successful online careers.

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WHY YOU SHOULD LEARN FULL-STACK DEVELOPMENT

Here is why you should learn full-stack development:

- **High Demand and Lucrative Career:** Full-stack developers are in high demand across industries, with companies preferring multi-skilled professionals for their ability to manage entire projects.
- **End-to-End Product Ownership:** You can handle everything from User Interface (UI) design and frontend functionality to backend logic, databases, and server management.
- **Increased Flexibility and Independence:** You can work on various parts of a project, reducing reliance on other team members and making you more adaptable in remote, fast-paced, or startup environments.
- **Greater Creativity:** You can bring your own app ideas to life from scratch, from the initial concept to the final, deployed product.

Common technologies to learn include frontend languages like HTML, CSS, and JavaScript, and backend technologies like Java, Python, Ruby, or Node.js, along with databases.

FULL STACK COURSE CONTENT

Module 1 – HTML

Introduction To Web And Basic HTML Tags

- Introduction to front-end
- Basic structure of an HTML page
- Attributes, elements and relationships
- Comments
- Basic tags – Paragraph, headings, hr, br
- Basic attributes – ID and class
- Anchor tags

Structuring Content Using HTML Tags

- Classification of elements – Block and inline
- Container tags – Div and span, and when to use them
- Including media – Images, audio and video
- Responsive media
- Presenting tabular data
- Styling tables

Working with Forms

- Introduction to forms
- Changing the HTTP method used for submission (method attribute)
- Default value for inputs
- Types of buttons
- Various input types – Password, textarea, checkbox, radio buttons, select dropdown, file input

Introduction to CSS, CSS Inheritance and Various Selectors

- Including CSS
- Choosing the way to include CSS
- Pseudo classes – Link-related classes
- Structural Pseudo classes – :first-letter, :first-line, :first-child, :last-child, :nth-child

The Cascade, Specificity and Style Resolution

- Cascade – User-agent vs author styles
- Introduction to specificity – how selectors affects styles applied
- Use of !important
- Computed and resolved styles

Important CSS Properties

- Box model in depth
- Typography related properties
- Handling overflow
- Hiding elements

Deeper Understanding of Client-Server Communication

- Introduction to responsive web design (RWD)
- Fluid layouts
- Fluid images
- Media queries

Introduction JavaScript, Variables, Scopes & Data Types

- Running JavaScript in the browser and Node
- Comments, Variables and primitive data types
- Variable scopes, scope chain
- Using arrays

Operators, Control Flow & Functions

- Operators and expressions
- Control flow – Branching and looping
- Function declaration and usage
- Anonymous function and function expression
- Handling variable number of arguments
- Callbacks – passing functions as arguments

Functions (Continued) & Objects

- Returning functions
- Adding and deleting properties
- Listing object properties – for..in loop and object.keys()
- Constructor function and the new keyword
- Function – functions as objects
- call(), apply() and bind() as methods of functions

Built-in Objects and Functions

- Array methods
- Date methods
- JSON
- Number methods
- String methods

Exception Handling & Browser Objects

- Exception handling
- Window
- Navigator
- Location
- History

DOM and Event Handling

- The document object
- Nodes and the DOM tree
- Different ways to handle events
- Event object properties and methods

Module 2 – TypeScript

Basics of TypeScript

- Introduction to TypeScript
- Why TypeScript?
- Setting up TypeScript
- JavaScript vs TypeScript
- Type annotations, variable declarations, basic datatypes, type inference

Deeper Dive into TypeScript

- Namespaces, namespaces using multiple files
- Modules, import, export, namespaces vs modules
- Generics, generic functions, generic classes

Introduction to Angular

- What is Angular?
- Why Angular?
- Angular versions
- Where does Angular fit?
- Multi page application (MPA)
- Single page application (SPA)
- Setting up Angular
- Create your first Angular app
- Serve your Angular app
- Edit your first Angular component

Project Structure, Modules, Bootstrapping

- Understand project structure
- Modules
- Decorators
- Bootstrapping
- Add Bootstrap to our app
- Use Bootstrap in our app

Data Binding and Component Interaction

- Data binding
- Component interaction
- Angular forms: Template driven forms & reactive forms

Directives, Pipes, Services and Dependency Injection

- Directives
- Pipes
- Services
- Dependency injection

Coding Fundamental and Basics of Programming

- Basics of programming
- Programming environment
- Fundamental keywords
- Basic operators
- Decision making operators
- Loop statements
- Functions in the program
- File I/O

Control Statements

- If statement
- While statement
- For and Do-while
- Continue
- Break

String, Math, Formatters etc.

- Strings
- Identifying length of string
- String comparing
- Searching within string
- Replacing string
- Math functions
- Formatting strings

Packages

- Naming conventions in packages
- Creating package

Files & Threads

- Reading a file
- Writing a file
- Appending to existing file
- Check file exists
- Delete file, asynchronous process
- What is thread
- Run a method parallely

Streams

- Streams
- forEach
- IntStream
- Map
- Filter
- Limit
- Skip
- Collect

Date & Time API

- Date & tim e objects
- Manipulate date operations
- Date formatters

Module 3 – Backend Databases

- MongoDB vs RDBMS
- Install MongoDB & Compass
- Databases
- Collections
- CRUD document
- Introduction of API and Micro-Services
- API integration using NodeJs

DevOps & Cloud deployment

- Jenkins
- Git
- Packaging & distributing
- Deployment on AWS

Certificate

Upon completing this Certification course, you will receive a program completion certificate from Tech Engineer, Mohali (Pb). This certificate will testify to your skills as an expert in the completed course.

Contact Us

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