

MEAN Stack Development Course – Detailed Syllabus

Institute: Arrow Multimedia Course Duration: 6 Months Course Level: Beginner to Advanced Mode: Practical + Real-Time Projects Outcome: Job-ready Full Stack Developer

Module 1: Web Development Fundamentals

Introduction to Web Application Development

How the Internet Works (DNS, HTTP, HTTPS)

Client–Server Architecture

Frontend vs Backend vs Database

HTML5

Elements, Attributes & Semantics

Forms, Tables, Media & Accessibility

CSS3

Box Model

Flexbox & Grid Layout

Responsive Design Principles

Introduction to Git & GitHub

Version Control

Repository Management

Branching & Collaboration

Module 2: JavaScript Core Concepts

JavaScript Overview & Execution Flow

Variables, Data Types & Operators

Conditional Statements & Loops

Functions

Declaration, Expression, Arrow Functions

Scope, Hoisting & Closures

Arrays & Objects

DOM Manipulation

Event Handling

Form Validation using JavaScript

ES6 Features

let, const

Spread & Rest Operators

Destructuring

Modules

Module 3: Advanced JavaScript & TypeScript

Asynchronous JavaScript

Callbacks, Promises & Async/Await

JSON & REST API Concepts

Fetching Data from APIs

TypeScript Introduction

TypeScript Advantages

Data Types, Interfaces & Classes

TypeScript Configuration

Using TypeScript with Angular

Module 4: Angular Fundamentals

Introduction to Angular Framework

Angular Architecture & MVC Pattern

Angular CLI

Project Setup & Folder Structure

Components & Templates

Data Binding

One-way & Two-way

Directives

Structural & Attribute Directives

Pipes

Routing & Navigation

Module 5: Advanced Angular Development

Template-Driven Forms

Reactive Forms

Validations & Custom Validators

Services & Dependency Injection

RxJS & Observables

State Management Basics

Authentication & Authorization

Performance Optimization

Reusable Components

UI Library Integration (Material / Bootstrap)

Module 6: Node.js & Express.js

Introduction to Node.js

Node.js Architecture & Event Loop

NPM & Package Management

Express.js Framework

RESTful API Development

Routing & Controllers

Middleware

Error Handling

Authentication

JWT

Sessions

API Testing using Postman

Module 7: MongoDB Database

Introduction to NoSQL Databases

MongoDB Architecture

Collections & Documents

CRUD Operations

Schema Design using Mongoose

Data Relationships

Aggregation Framework

Indexing & Performance Optimization

Database Security Best Practices

Module 8: Full Stack Integration

Connecting Angular with Node.js Backend

API Integration

JWT-Based Authentication Flow

Role-Based Access Control

Environment Configuration

File Upload Handling

Error Logging & Debugging

Module 9: Deployment & DevOps Basics

Hosting Concepts

Web Servers & Cloud Basics

Deploying MEAN Applications

Cloud Platforms Overview

Environment Variables & Security

CI/CD Basics

Performance Monitoring

Application Maintenance

Module 10: Projects, Freelancing & Career Support

Real-Time Full Stack Projects

Application Architecture Design

Portfolio Development

GitHub Profile Optimization

Freelancing Platforms Overview

Client Communication & Project Handling

Interview Preparation

Mock Interviews

Final Project Review

Certification

Course Outcomes

Build complete MEAN stack web applications

Work with real-time APIs & databases

Deploy full stack applications

Create professional portfolio & projects

Prepare for jobs & freelancing opportunities

Arrow Multimedia Industry-Oriented Full Stack Training with Practical Exposure & Placement Support