Enrollment No						
Course Name		MERN Full Stack		TLAB™ BRIDGING THE GAP		
Trainee Name						
Trainer Name						

Module Name	Weeks	Topic	Sub Topic	Trainee Sign	Trainer Sign	Date
Module 1 - Introduction (JavaScript, Node.js, MongoDB Basics)	Week 1	Modern JavaScript (ES6+)	Variables (let, const), scope, Functions (arrow functions, async/await), Promises & callbacks, Array & Object methods, Modules & imports			
	Week 2	Node.js & NPM Basics	What is Node.js? Event loop, Using npm & package.json, File system (fs), path, os modules, Building a simple CLI app			
	Week 3	Express.js Basics	What is Express.js?, Creating REST APIs, Middleware (bodyParser, morgan, cors), Routing basics, Error handling			
	Week 4	MongoDB Basics	Introduction to NoSQL databases, Collections & documents, CRUD operations in Mongo shell, Mongoose ODM basics, Schema & models			
Module 2 - Backend Development (Node.js + Express + MongoDB Advanced)	Week 5	Authentication & Security	JWT authentication, Password hashing with bcrypt, Role-based access control, Environment variables (dotenv)			
	Week 6	Advanced APIs	Query params & filtering, Pagination & sorting, File uploads (Multer), Sending emails (Nodemailer)			
	Week 7	Testing & Debugging	Unit testing with Jest / Mocha, API testing with Postman, Error logging (winston, morgan)			
	Week 8	Project Work (Backend)	Build User Management API (Register, Login, Profile CRUD, JWT).			
	Week 9	React Fundamentals	JSX, Components, Props, State, Event handling, Conditional rendering, Lists & keys, React Router basics			

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Module 3 - React.js Frontend Development	Week 10	Hooks & Context API	useState, useEffect, useContext for global state, Custom hooks, API calls with Axios & Fetch			
	Week 11	CSS integration	Material UI / Tailwind, Component reusability & best practices			
	Week 12	State Management & UI Libraries	Redux Toolkit basics, Redux with async Thunks			
Module 4 - Integration & Deployment	Week 13	Connecting MERN Stack	Connect React frontend with Express API, Axios API service setup, Token-based authentication in React, Protected routes & role-based UI			
	Week 14	Advanced Features	Image upload & preview, Real-time features with Socket.IO (chat/notifications), Performance optimization (lazy loading, memo)			
	Week 15	Deployment	Deploy backend, Deploy frontend, MongoDB Atlas cloud setup, Environment variable management			
	Week 16	Final Project	A complete MERN Full-Stack Application with authentication, CRUD, and deployment.			