SNo.	Date	Session	Modules	Technologies
1	Tuesday, February 4, 2025	FN	Introduction to HTML,Basic Tags,Text Formatting Tags,Lists	HTML
		AN	Forms and Inputs,Links and Anchors,Images,Tables	
E1	**Tuesday, February 4, 2025**	**Evaluation**		
2	Wednesday, February 5, 2025	FN	CSS Syntax,Text and Background Styling,Basic Properties	CSS
		AN	Box Model,Selectors,Positioning	
3	Thursday, February 6, 2025	FN	Flexbox,CSS Grid	
		AN	Media Queries,Pseudo-classes and Elements,Transitions and Animations	
E2	**Thursday, February 6, 2025**	**Evaluation**		
4	Friday, February 7, 2025	FN	Utility Classes,Responsive Design with Tailwind	Tailwind CSS
		AN	Flexbox in Tailwind,Grid Layout in Tailwind	
5	Monday, February 10, 2025	FN	Configuring tailwind.config.js,Extending Tailwind (colors, fonts, spacing)	
		AN	State Variants and Dark Mode,Animations and Transitions	
E3	**Monday, February 10, 2025**	**Evaluation**		
6	Tuesday, February 11, 2025	FN	Variables and Data Types,Operators and Expressions	JavaScript & TypeScript
		AN	Conditional Statements (if, else, switch),Loops (for, while, do...while)	
7	Wednesday, February 12, 2025	FN	Function Declarations and Expressions,Arrow Functions	
		AN	Global and Local Scope,Closures and Lexical Scope	
8	Thursday, February 13, 2025	FN	Creating Objects,Object Methods and this Keyword	
		AN	Array Methods (map, filter, reduce),Iterating over Arrays (forEach, for...of)	
9	Friday, February 14, 2025	FN	Understanding Callbacks,Promises and then, catch	
		AN	Async Functions,Error Handling with Async/Await	
10	Monday, February 17, 2025	FN	Setting Up TypeScript,Basic Types (number, string, boolean, etc.)	
		AN	Interfaces and Types,Classes and Generics	
E4	**Monday, February 17, 2025**	**Evaluation**		
11	Tuesday, February 18, 2025	FN	Overview of React, core principles (Components, JSX, Virtual DOM), setting up with Create React App.	
		AN	Create your first React app, understand JSX syntax, render "Hello, World!" component.	
12	Wednesday, February 19, 2025	FN	Functional components, props (passing and destructuring), and default props.	
		AN	Managing state with useState hook, handling events, and updating state	
13	Thursday, February 20, 2025	FN	Class component lifecycle methods (componentDidMount, componentDidUpdate), data fetching.	
		AN	useEffect hook: side effects, dependencies, and cleanup for functional components.	
14	Friday, February 21, 2025	FN	Conditional rendering with if, ternary, and && operators in JSX.	
		AN	Render dynamic lists with .map(), keys for better performance, and displaying data.	
15	Monday, February 24, 2025	FN	Handling controlled form components, managing input values with state.	

15	Monday, February 24, 2025	AN	Form validation, conditional error messages, and managing complex forms with React Hook Form.	React Basic - Advanced
16	Tuesday, February 25, 2025	FN	Set up React Router Dom, create routes, navigate with <Link>, and handle dynamic routes.	
		AN	Implement Context API for global state management (e.g., theme, authentication).	
17	Wednesday, February 26, 2025	FN	Optimize performance with React.memo, useMemo, useCallback, and code splitting (React.lazy()).	
		AN	Understand and implement error boundaries for graceful error handling in components.	
18	Thursday, February 27, 2025	FN	Set up Jest and React Testing Library, write basic tests for components.	
		AN	Test asynchronous behavior, mock dependencies, and write integration tests for components.	
19	Friday, February 28, 2025	FN	Learn advanced patterns like Higher-Order Components (HOCs), Render Props, and Compound Components.	
		AN	Build a small project that integrates all topics: routing, state management, data fetching, and optimization.	
E5	**Friday, February 28, 2025**	**Evaluation**		
20	Monday, March 3, 2025	FN	Overview of Node.js Installing Node.js and npm Setting up a basic Node.js environment	Node.js
		AN	First Node.js Application (Creating a simple HTTP server) Introduction to npm (Node Package Manager) and commands (npm init, npm install)	
21	Tuesday, March 4, 2025	FN	Introduction to Express.js Setting up an Express Application Understanding routing (GET, POST)	
		AN	Implementing routing (PUT, DELETE) Middleware in Express (Basic middleware setup and use)	
22	Wednesday, March 5, 2025	FN	Connecting to MongoDB with Mongoose Performing CRUD Operations (Create, Read, Update)	
		AN	Performing CRUD Operations (Delete) User Authentication with JWT (JSON Web Tokens) Error Handling in Node.js	
E6	**Wednesday, March 5, 2025**	**Evaluation**		
23	Thursday, March 6, 2025	FN	Overview of NestJS (What is NestJS? Why use it?) Installing NestJS and setting up a new project with the CLI Understanding project structure (modules, controllers, services)	
		AN	Creating a simple REST API with NestJS Introduction to modules, controllers, and services Testing your basic NestJS API	

24	Friday, March 7, 2025	FN	Deep dive into controllers: What are controllers? How do they handle incoming requests? Defining routes (GET, POST, PUT, DELETE) Route parameters and query strings	NestJS
		AN	Using request and response objects in controllers Creating dynamic routes and route guards Handling errors and exceptions in controllers	
25	Monday, March 10, 2025	FN	Introduction to Dependency Injection in NestJS Creating and injecting services Understanding the lifecycle of services in NestJS	
		AN	Using services for business logic (CRUD operations) Exploring asynchronous services (e.g., database interactions) Introduction to providers and modules in NestJS	
26	Tuesday, March 11, 2025	FN	Introduction to pipes, guards, and interceptors Implementing validation pipes for data validation Understanding guards for authentication and authorization	
		AN	Connecting to databases using TypeORM or Mongoose Best practices for structuring large NestJS applications Final project or hands-on session: Building a more complex API with NestJS	
E7	**Tuesday, March 11, 2025**	**Evaluation**		
27	Wednesday, March 12, 2025	FN	Introduction to NoSQL and MongoDB Installing MongoDB locally or using MongoDB Atlas (cloud setup) Setting up the MongoDB shell and MongoDB Compass (GUI tool)	MongoDB
		AN	Understanding basic MongoDB concepts: Databases, Collections, Documents Creating a database and collection Basic CRUD operations: insertOne(), find(), update(), and delete()	
28	Thursday, March 13, 2025	FN	Understanding MongoDB queries and filters (e.g., $eq, $gt, $lt, $in) Using projection to select specific fields Sorting and limiting query results	
		AN	Aggregation framework: Using $match, $group, $sort, $project Indexing in MongoDB (creating and managing indexes) Using aggregation pipelines for data transformation	

29	Friday, March 14, 2025	FN	Data modeling: Embedding vs. Referencing (Normalization vs. Denormalization) Creating relationships between collections (One-to-Many, Many-to-Many) Designing MongoDB schemas for different use cases	
		AN	Working with Mongoose in Node.js (connecting to MongoDB, defining schemas) Validations in Mongoose Backup, replication, and performance optimization best practices	
E8	**Friday, March 14, 2025**	**Evaluation**		
30	Monday, March 17, 2025	FN	Introduction to Git, Basic Git Commands	Git & Postman
		AN	Introduction to Postman, Sending Requests, Organizing Requests with Collections, Basic Testing in Postman	
E9	**Monday, March 17, 2025**	**Evaluation**		
31	Tuesday, March 18, 2025	FN	Introduction to Figma Figma interface and tools Setting up a project and working with frames/artboards Basic tools: Selection, Shapes, Pen, Text, Images, Icons	Figma
		AN	Designing UI elements: Buttons, Forms, Navigation Bars Working with components and instances Layouts, Grids, and Constraints Color, Typography, and Styles	
32	Wednesday, March 19, 2025	FN	Introduction to Prototyping Creating interactive prototypes (links, transitions, hover states)	
		AN	Collaboration in Figma (Real-time editing, feedback) Exporting assets (Images, SVGs, design files)	
E10	**Wednesday, March 19, 2025**	**Evaluation**		
33	Thursday, March 20, 2025	FN	Introduction to React Native: What is React Native and why use it for mobile development? Setting up the development environment: Installing Node.js, npm, React Native CLI, and Android/iOS simulators Creating your first React Native app: Using npx react-native init to initialize a new project	React Native
		AN	Understanding the basic structure of a React Native app Running the app on an emulator or physical device (Android/iOS) Overview of React Native components: View, Text, Image, ScrollView, and TextInput	
34	Friday, March 21, 2025	FN	Working with components in React Native: Functional components, State, Props Introduction to Flexbox for layout: Aligning, justifying, and spacing elements Styling in React Native: Using the StyleSheet API and inline styles	

34	Friday, March 21, 2025	AN	Navigation in React Native: Using React Navigation (stack, tab, and drawer navigators) Handling user input: Forms, TextInputs, Buttons Managing state with useState and useEffect hooks	React Native
35	Monday, March 24, 2025	FN	Working with lists: Using FlatList and SectionList for rendering lists efficiently Integrating APIs: Fetching data from a REST API and displaying it in the app Handling navigation parameters and passing data between screens	
		AN	Managing app state with Context API or Redux (brief overview) Using native modules: Accessing device features like Camera, Geolocation, and Storage Debugging and testing React Native apps: Using the React Native Debugger and other tools	
E11	**Monday, March 24, 2025**	**Evaluation**		
36	Tuesday, March 25, 2025	FN	Introduction to Flutter: What is Flutter, and why use it for cross-platform development? Installing Flutter: Setting up the development environment (Flutter SDK, Android Studio/VS Code) Creating your first Flutter app: Running a simple app using flutter create	Flutter
		AN	Understanding the basic structure of a Flutter app: main.dart, widgets, and material design Flutter widgets: StatelessWidget vs StatefulWidget Building a simple UI using basic Flutter widgets: Container, Row, Column, Text, and Image	
37	Wednesday, March 26, 2025	FN	Layouts in Flutter: Using Column, Row, Stack, and GridView to create flexible UI layouts Flexbox in Flutter: Expanded, Flexible, and aligning widgets Handling user input: TextField, Button, and Form widgets for collecting input	
		AN	Styling in Flutter: Using ThemeData, customizing widget appearance, and handling colors Navigation in Flutter: Using Navigator and Routes for screen transitions Creating custom widgets to build reusable components	
38	Thursday, March 27, 2025	FN	Introduction to state management in Flutter: Using setState, InheritedWidget, and Provider Working with ListView to display dynamic data Managing form validation and input handling	
		AN	Working with APIs: Fetching data from a REST API using http package Using Flutter plugins: Accessing device features like Camera, Geolocation, and Storage Debugging and testing Flutter apps: Using Flutter DevTools, testing widgets, and debugging	
E12	**Thursday, March 27, 2025**	**Evaluation**		
39	Friday, March 28, 2025	FN	Introduction to Kafka and use cases Kafka architecture: Producers, Consumers, Brokers, Topics, Partitions Kafka vs traditional messaging systems Kafka setup: Installation and command-line tools	

		AN	Kafka Producers: Writing messages to topics Kafka Consumers: Reading messages from topics Kafka Topics and Partitions: Topic creation, partitions, and replication	Kafka
40	Monday, March 31, 2025	FN	Kafka Consumers and Consumer Groups Kafka offsets: Auto vs manual commit Kafka Producers: Configuring properties and message serialization	
		AN	Kafka Streams: Stream processing (transform, filter, aggregate) Kafka Connect: Integrating with external systems Kafka performance tuning and monitoring best practices	
E13	**Monday, March 31, 2025**	**Evaluation**		
41	Tuesday, April 1, 2025	FN	Introduction to Elasticsearch: What it is and its use cases Elasticsearch architecture: Nodes, clusters, indices, and documents Setting up Elasticsearch: Installation and configuration Elasticsearch basics: Indexing, searching, and retrieving data	Elastic Search
		AN	Understanding Elasticsearch queries: Introduction to the Query DSL (Domain Specific Language) Full-text search vs. exact matches Using basic search queries: Match, Term, Range, and Bool queries Filtering search results and sorting	
42	Wednesday, April 2, 2025	FN	Advanced querying in Elasticsearch: Aggregations and complex queries Using analyzers and tokenizers for text analysis Managing and optimizing indices: Mappings and settings	
		AN	Elasticsearch performance tuning: Sharding, replication, and indexing strategies Integrating Elasticsearch with applications (REST API, Kibana) Monitoring and managing Elasticsearch clusters Best practices for using Elasticsearch in production	
E14	**Wednesday, April 2, 2025**	**Evaluation**		
43	Thursday, April 3, 2025	FN	Introduction to Selenium Selenium WebDriver architecture Setting up Selenium environment Basic Selenium commands: Navigating, interacting with elements	Selenium
		AN	Handling web elements: Locators, clicks, text input Waiting strategies: Implicit and explicit waits Page Object Model (POM) basics	

44	Friday, April 4, 2025	FN	Handling advanced web elements: Pop-ups, alerts, multiple windows Cross-browser testing with Selenium Grid	
		AN	Integrating Selenium with TestNG/JUnit Parallel test execution, test reports Selenium best practices: Code organization, debugging, handling failures	
E15	**Friday, April 4, 2025**	**Evaluation**		
45	Monday, April 7, 2025	FN	Introduction to Python: What it is and why it's popular Setting up Python (installation, IDEs, virtual environments) Python syntax: Variables, data types (strings, integers, floats, booleans) Basic operators: Arithmetic, comparison, logical operators Control flow: If-else statements, loops (for, while)	Python
		AN	Functions in Python: Defining and calling functions Working with lists and tuples: Operations and methods Dictionaries and sets: Usage and differences List comprehensions for efficient data manipulation	
46	Tuesday, April 8, 2025	FN	Working with files: Reading and writing to files (text, CSV, JSON) Error handling: Try-except blocks, raising exceptions Python modules and libraries: Importing and using built-in modules Regular expressions for pattern matching	
		AN	Object-Oriented Programming (OOP) in Python: Classes, objects, inheritance Working with modules and packages Lambda functions, map, filter, and reduce Introduction to Python's datetime module for handling date and time	
47	Wednesday, April 9, 2025	FN	Working with third-party libraries: Installing with pip, examples (requests, numpy, pandas) Introduction to web scraping with BeautifulSoup and requests Introduction to Python's asyncio for asynchronous programming Introduction to decorators and generators in Python	
		AN	Introduction to unit testing in Python: unittest framework Working with databases: Connecting to SQL databases with sqlite3 Introduction to Python web frameworks: Flask basics Final project or exercise: Building a simple Python application that integrates learned concepts	
E16	**Wednesday, April 9, 2025**	**Evaluation**		

48	Thursday, April 10, 2025	FN	What is Machine Learning? Types of Machine Learning: Supervised, Unsupervised, Reinforcement Learning ML Workflow: Data Collection, Preprocessing, Training, Evaluation	Machine Learning Concepts
		AN	Supervised Learning: Classification vs Regression Key algorithms: Linear Regression, Logistic Regression Loss functions and Evaluation Metrics (MSE, Accuracy, Precision, Recall)	
49	Friday, April 11, 2025	FN	Decision Trees & Random Forests: Decision Tree algorithm Random Forests (Ensemble Learning)	
		AN	Support Vector Machines (SVM): SVM Theory and Implementation Hyperplanes, Kernels Model Evaluation: Overfitting vs Underfitting Cross-Validation (K-fold) Evaluation Metrics: ROC, AUC, Confusion Matrix	
50	Monday, April 14, 2025	FN	Unsupervised Learning Overview: Clustering and Dimensionality Reduction K-Means Clustering: K-Means Algorithm, Elbow Method	
		AN	Hierarchical Clustering: Agglomerative Clustering, Dendrograms Dimensionality Reduction: Principal Component Analysis (PCA) t-SNE for Visualization	
		FN	Ensemble Learning: Bagging, Boosting, Stacking Key Algorithms: AdaBoost, Gradient Boosting, XGBoost	

51	Tuesday, April 15, 2025	AN	Hyperparameter Tuning: Grid Search, Random Search Cross-Validation in Hyperparameter Optimization Introduction to Deep Learning: Basics of Neural Networks, Backpropagation Overview of Deep Learning Frameworks: TensorFlow, Keras	
E17	**Tuesday, April 15, 2025**	**Evaluation**		
52	Wednesday, April 16, 2025	FN	What are Large Language Models (LLMs)? History and evolution of LLMs Transformer architecture: Attention mechanism	LLM (Large Language Models)
		AN	Training LLMs: Pre-training and fine-tuning Datasets for LLMs: Tokenization, preprocessing Popular LLMs: GPT, BERT, T5	
53	Thursday, April 17, 2025	FN	Using pre-trained LLMs via APIs (OpenAI GPT, Hugging Face) Fine-tuning LLMs for specific tasks (text classification, summarization)	
		AN	Techniques for improving LLM performance (transfer learning, domain-specific fine-tuning) RAG (Retrieval-Augmented Generation) in LLMs: Overview of RAG: How it enhances LLMs with external knowledge retrieval Using RAG for more accurate responses by combining generative models with retrieval-based models	
54	Friday, April 18, 2025	FN	Prompt engineering: Crafting effective prompts for LLMs Using LLMs in real-world applications (chatbots, content generation)	
		AN	Scaling LLMs: Distributed computing, model compression Future trends and research in LLMs (multimodal models, few-shot learning) RAG use cases: Applications of RAG in question answering, personalized content, and complex reasoning	
E18	**Friday, April 18, 2025**	**Evaluation**		
55	Monday, April 21, 2025	FN	Introduction to TensorFlow: What is it and its use cases Setting up the TensorFlow environment (installation, IDE setup) Overview of TensorFlow architecture and components Basics of TensorFlow: Tensors, operations, and computational graphs	
		AN	Working with TensorFlow data structures: Tensors, variables, constants Basic TensorFlow operations: Matrix multiplication, addition, and element-wise operations Introduction to TensorFlow Datasets (TFDS) for data loading Building your first simple neural network in TensorFlow	

56	Tuesday, April 22, 2025	FN	Neural networks basics: Layers, activations, loss functions Building a simple feedforward neural network (ANN) in TensorFlow Using tf.keras for model creation and training Understanding model compilation, training, and evaluation	TensorFlow
		AN	Deep learning models: Convolutional Neural Networks (CNNs) and their use cases Building and training a CNN for image classification Introduction to Recurrent Neural Networks (RNNs) and LSTMs Training and evaluating an RNN model for sequence data	
57	Wednesday, April 23, 2025	FN	Model evaluation and hyperparameter tuning techniques Understanding overfitting and regularization methods (Dropout, L2 regularization) Introduction to Transfer Learning with pre-trained models (e.g., MobileNet, ResNet) Fine-tuning pre-trained models for custom tasks	
		AN	TensorFlow Serving for model deployment in production Saving and loading models: Checkpoints and SavedModel format Introduction to TensorFlow Lite for mobile deployment Performance optimization techniques: Efficient training, distributed training	
E19	**Wednesday, April 23, 2025**	**Evaluation**		
58	Thursday, April 24, 2025	FN	Introduction to PyTorch, Tensors, tensor operations, and GPU support.	PyTorch
		AN	Autograd and automatic differentiation for backpropagation.	
59	Friday, April 25, 2025	FN	Building and training a simple neural network with torch.nn.	
		AN	Convolutional Neural Networks (CNNs) and their implementation.	
60	Monday, April 28, 2025	FN	Transfer learning with pre-trained models (e.g., ResNet, VGG).	
		AN	RNNs, LSTMs for sequence data and saving/loading models	
E20	**Monday, April 28, 2025**	**Evaluation**		
61	Tuesday, April 29, 2025	FN	Introduction to Mojo programming language Overview of Mojo syntax and structure Setting up the Mojo development environment	Mojo
		AN	Writing basic Mojo programs Understanding Mojo's performance advantages and use cases Integrating Mojo with Python and other languages Exploring Mojo’s key features (e.g., performance optimizations, concurrency)	
E21	**Tuesday, April 29, 2025**	**Evaluation**		

62	Wednesday, April 30, 2025	FN	Introduction to MindsDB and its use cases Setting up MindsDB environment and installation Overview of AutoML concepts Basic MindsDB workflows: Data ingestion and model creation	MindsDB
		AN	Training models with MindsDB: Understanding model types and training process Evaluating model performance and interpretation Integrating MindsDB with databases (SQL, NoSQL) Deploying models and making predictions in production	
E22	**Wednesday, April 30, 2025**	**Evaluation**		