MERN Course Syllabus

React

- What is ReactJs and why to use it
- React Js Application Development
  - Project Configuration using WebPack.
  - Module Loader
  - Using Web Pack for Images, CSS
    - Understanding WebPack
    - Installing required modules for application development
- Understanding ES6 Features for coding
  - Classes, Properties, Functions, Arrow Functions.
- React Js Features
  - Component
    - The component class and its properties
    - Stateless and Stateful Components
    - Creating Component Using ReactJs APIs
    - CreateClass, CreateElement, etc.
  - Define HTML Element
  - Render Method
  - Defining Component Properties
    - State and Props
    - Applying Properties for the component from Root Render method
  - Understanding JSX
    - Creating Elements in the Component Class
    - Defining Properties for the Element.
  - React Events
    - DOM Events
    - Event and Property Binding using Bind function
  - Synthetic Events
  - Using React.js Forms
    - Using Form Element
    - Managing Submit
    - Controlled Components
    - Component Lifecycle
      - Methods invoked while loading a component
      - Methods invoked on re-rendering a component
      - Methods invoked while unloading a component
      - Un-Controlled Components
      - Using Refs
    - Validations
  - Using Parent Child Components
    - Passing data across Components
    - Parent/Child Events.
  - ES Features
    - Using async
    - Using await
- Routing in React
  - React Router

- o Path Matching
- o Routing with Multiple Components
- Promises v/s Observables
  - o Using fetch and axios to consume REST api endpoints
  - o Using arrow operators and call backs

Redux

- What is the FLUX architecture and why to use it
- Store for managing Application State and Event Broadcasting
- Action for Creating Action, Dispatching Action, Action Binders
- Reducer for Creating and combining reducers
- Injecting Redux Store using Providers

Node.js

- Introduction to the Node.js Framework
- Installing Node.js and using Typescript
- Overview of Blocking vs Non-Blocking IO
- Event Handling Loop in Node.js
- Using Node.js to execute scripts
- The Node Package Manager - npm
- The package.json configuration file
- Using & compiling Typescript for Node.js
- Working with the HTTP protocol
- Building an HTTP Server
- Accepting a request
- Rendering a response
- Using Representational State Transfer Protocol (REST)
- Understanding concept of Web-Services
- Introduction to REST Full W/S

Express.js

- Introduction to the Express.js Framework
- Installing the Express package
- Routing
- HTTP Methods (Get, Put, Post, Delete)
- URL Building
- Body-Parser to read data from incoming requests
- Cookies
- Sessions
- Authentication
- Using CORS
- RESTful APIs
- Using Middleware
- Express & DB Integration
- Using Typescript with Express

MongoDB

- Introduction to the NO-SQL Databases
- Data Modeling
- Create & Drop Database
- Create & Drop Collection
- Data Types
- Insert Document
- Query Document
- Update Document
- Delete Document
- Projection
- Limiting Records
- Sorting Records
- MongoDB – Indexing
- Object Id
- Aggregation and Map-Reduce