

# FIREBASE SYLLABUS

## Module 1: Introduction to Firebase

- What is Firebase and how it works
- Features of Firebase
- Firebase vs traditional backend
- Creating Firebase account & project
- Overview of Firebase Console

## Module 2: Firebase Setup & Integration

- Setting up Firebase in web apps
- Integrating Firebase with Android / React Native
- Firebase SDK setup
- Project configuration

## Module 3: Firebase Authentication

- Introduction to authentication
- Email & password login
- Google/Facebook authentication
- Phone authentication (OTP)
- User management

## Module 4: Cloud Firestore Database

- Introduction to Firestore
- Collections & documents
- CRUD operations
- Querying data
- Real-time updates

## Module 5: Realtime Database

- Introduction to Realtime Database
- Data structure design
- CRUD operations
- Syncing data in real time

## Module 6: Firebase Storage

- Uploading files
- Downloading files
- Managing media (images, videos)
- Storage rules and security

## Module 7: Firebase Hosting

- Hosting web applications
- Deploying websites
- Custom domain setup
- SSL configuration

## Module 8: Firebase Cloud Messaging (FCM)

- Push notifications basics
- Sending notifications
- Handling notifications in apps
- Topics & targeting

## Module 9: Firebase Functions

- Introduction to Cloud Functions
- Writing serverless functions
- Trigger-based functions
- HTTP functions

## **Module 10: Firebase Security Rules**

- Firestore security rules
- Realtime Database rules
- Authentication-based access
- Best practices

## **Module 11: Firebase Analytics**

- Tracking user behavior
- Events and conversions
- Integrating analytics
- Generating reports

## **Module 12: Performance Monitoring**

- Monitoring app performance
- Crash reporting (Crashlytics)
- Debugging issues

## **Module 13: Remote Config**

- Dynamic app configuration
- A/B testing
- Feature toggles

## **Module 14: Integration with Frontend**

- Using Firebase with React
- Using Firebase with Flutter
- Using Firebase with Android
- API-like usage

## Module 15: Deployment & Optimization

- Deploying full-stack apps
- Performance optimization
- Scaling applications
- Cost optimization

## Module 16: Real-World Projects

- Authentication system
- Chat application (real-time)
- Blog app with Firebase
- E-commerce backend