

Project Title:

Learning Management System (LMS)

Analysis and Design

1. Functional Requirements

Major Modules and Functionalities:

- Add course
- Add lecture
- Delete course
- Delete lecture
- Faculty can see how many students have registered, how many courses, how many lectures
- Faculty will be able to appoint teaching assistant
- Course progress bar
- Register, verify, login

2. System Architecture

The LMS follows a **three-tier architecture**:

- **Presentation Layer:** React.js
- **Application Layer:** Node.js with Express.js
- **Database Layer:** MongoDB

3. Database Design

- **Users table** (UserID, Name, Email, Password, Role, Subscription)
- **Courses table** (CourseID, Title, Description, Image, Duration, Category, Instructor, Offered_when)
- **Lectures table** (LectureID, CourseID, Title, Description, ContentType, Offered_when)
- **Progress table** (CourseID, CompletedLectures, UserID)

4. Security Measures:

- **JWT Authentication** for login security.