

Online Learning Platform – Features

1. Main Front Page Features

- Central landing page for all users.
- Direct navigation to:
 - Header (global navigation)
 - User Module (Login/Register)
 - Trending Courses

2. Header Navigation

- Routes to:
 - Home
 - Login/Register
 - Courses
 - About
 - Footer

3. Trending Courses Section

- Displays top-rated and popular courses.
- Users can navigate to:
 - Success Stories
 - Footer
 - Course details (through main site navigation)

4. User Module Features

A) Register

- New users can sign up using required details.
- User info is stored in the **User Details** database module.

B) Login

- Authenticates user credentials.
- Redirects user to dashboard to:
 - View All Courses
 - Enroll in a Course

C) Enroll Course

- Users can enroll in available courses.
- Enrollment stored in the **Enrollments** table.

D) View All Courses

- Displays all available courses.
- Access to course details, modules, and content.

5. Admin Module Features

Accessible only after Admin Login.

A) Upload Videos

- Admin can upload lecture videos to the system.
- Videos stored in the **Videos** database.

B) Edit/Delete Courses

- Admin can update or remove existing courses.

C) Platform Mgmt

- Admin can manage:
 - Users
 - Lecturers
 - Content
 - Payments
 - Reports and analytics

6. Lecturer Module Features

Accessible only after Lecturer Login.

A) Upload Videos

- Lecturers can upload lecture videos for their assigned courses.

B) Upload Notes/PDF

- Upload study materials, PDFs, and notes.
- Stored in **Notes & PDFs** table.

C) Create Quizzes/Assessments

- Lecturers can create assessments linked to each course.
- Data stored in **Quizzes** database.

D) Manage Student Queries

- View and respond to student questions.
- Support and guidance for learners.

7. Database Modules

All components store data in the following structured modules:

A) User Details

- Stores profile info, login details, roles.

B) Courses

- Stores course info, syllabus, categories.

C) Videos

- Stores uploaded lecture video URLs/metadata.

D) Notes & PDFs

- Stores downloadable resources.

E) Quizzes

- Stores quiz questions, options, answers.

F) Enrollments

- Tracks which user enrolled in which course.
- Stores progress and completion data.

Tech Stack

Frontend:

- React.js → Fast UI

Backend:

- Node.js + Express → API handling
- JWT Authentication → For users/admin/lecturer login
- Multer → File upload (videos, PDFs)

Database:

- MongoDB → Best for course content, notes, quizzes
- GridFS → For storing big video files

AI Integration:

- OpenAI API → AI tutor, quiz generator, notes summarizer
- Python Microservice (FastAPI) → Additional AI models

Cloud / Storage:

- AWS S3 or Cloudinary → Store videos, thumbnails, PDFs
- Vercel → Frontend deployment
- Render/Railway → Backend deployment

Why choose MERN

- Modern
- Flexible
- Easy to scale
- Good for LMS systems

