**Project Design Phase-II**

**Solution Requirements (Functional & Non-functional)**

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| Date | 24 June2025 |
| Team ID | LTVIP2025TMID52072 |
| Project Name | LearnHub |
| Maximum Marks | 4 Marks |

**Functional Requirements:**

**Following are the functional requirements of the proposed solution:**

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| --- | --- | --- |
| **FR No.** | Functional Requirement (Epic) | Sub Requirement (Story / Sub-Task) |
| **FR-1** | User Registration | - Registration through form- Manual registration via API tool (for admin) |
| **FR-2** | User Login | - Login via email & password- Role-based redirection (Student/Teacher/Admin) |
| **FR-3** | Course Creation | - Course form submission- Auto assignment of creator as educator |
| **FR-4** | Course Enrollment | - Enroll on click (Student)- Assign courses to students (Teacher) |
| **FR-5** | Section Management | - Add course sections- Embed YouTube video / external articles |
| **FR-6** | Course Completion | - Mark course as completed- Generate downloadable certificate |
| **FR-7** | Admin Controls | - View all users- Delete any course- View stats |
| **FR-8** | Dashboard | - Role-specific dashboards- Easy access to course features |
| **FR-9** | Navigation & Routing | - Protected routes for authenticated users- Conditional Navbar visibility |

**Non-functional Requirements:**

**Following are the non-functional requirements of the proposed solution:**

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| --- | --- | --- |
| **NFR No.** | **Non-Functional Requirement** | **Description** |
| **NFR-1** | Usability | Intuitive UI/UX with responsive design using React Bootstrap. |
| **NFR-2** | Security | Token-based authentication using JWT, protected routes, hashed passwords. |
| **NFR-3** | Reliability | Uses MongoDB with schema validations and proper error handling on both backend and frontend. |
| **NFR-4** | Performance | Backend optimized with async/await, UI loading states, API structured for speed. |
| **NFR-5** | Availability | Local and cloud-ready with modular routes, scalable hosting support. |
| **NFR-6** | **Scalability** | **Modular folder structure, easily extendable with more roles or features like quiz, analytics.** |