## 4.6 Resources

Table 3: Resources for development of LMS

|  |  |
| --- | --- |
| Project Resources | Number of Engineer |
| Project Manager | - Number: 1 engineer  - Allocation: Part-time (0.3 FTE)  - Duration: Throughout 4 months  - Person-Days: ~25 days  - Responsibilities: Coordination, planning, stakeholder management |
| UX/UI Designer | - Number: 1 engineer  - Allocation: Part-time (0.2 FTE)  - Duration: Mainly August-September  - Person-Days: ~20 days  - Responsibilities: Bilingual interface design, user guides, training materials |
| Front-end Application Developer | - Number: 2 engineers  - Allocation: Full-time in August, part-time thereafter  - Person-Days: ~50 days  - Responsibilities: React components, drag-and-drop interface, assessment forms |
| Web Application Developer | - Number: 2 engineers  - Allocation: Full-time during development  - Person-Days: ~45 days  - Responsibilities: Next.js app router, API integration, authentication flow |
| Backend / API | - Number: 2 engineers  - Allocation: Full-time in August, support thereafter  - Person-Days: ~40 days  - Responsibilities: Database integration, API endpoints, session management |
| Quality Assurance (QA) | - Number: 1 engineer  - Allocation: Part-time throughout  - Person-Days: ~18 days  - Responsibilities: Testing, bug tracking, user acceptance testing |
| Installation and Support | - Number: 2 engineers  - Allocation: Peak during deployment and assessments  - Person-Days: ~20 days  - Responsibilities: Server setup, teacher training, technical support |

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|  |  |  |
| --- | --- | --- |
| **Process** | **Person-Days** | **Percentage** |
| **Planning** | **25** | **11.5%** |
| Requirement Gathering (Curriculum Alignment, Simulation Packaging Strategy) | **8** | 3.7% |
| Roadmap Definition | **5** | 2.3% |
| Project Team Introduction | **2** | 0.9% |
| Project Kick-Off Meeting | **3** | 1.4% |
| Planning Sign-Off | **7** | 3.2% |
| **Design** | **30** | **13.8%** |
| UI/UX Design (Dashboard, Simulation Viewer, Material Viewer, Assessments) | **22** | 10.1% |
| Mock-up Review and Sign-Off | **8** | 3.7% |
| **Development** | **85** | **39.0%** |
| Core Web App | **25** | 11.5% |
| Offline-First System (Service Worker, IndexedDB) | **18** | 8.3% |
| Dynamic Metadata Loader and Bundle Manager | **15** | 6.9% |
| Simulation Viewer + Material Integration | **12** | 5.5% |
| Assessment Engine + Result Tracker | **15** | 6.9% |
| **Internal Testing** | **20** | **9.2%** |
| Test Case Preparation | **8** | 3.7% |
| Manual Testing (Plug-in requirement with Web Browser and connection) | **12** | 5.5% |
| **System Deployment** | **18** | **8.3%** |
| Build, Package, Prepare for Distribution | **10** | 4.6% |
| Setup for first wave (OS and Web Browser as well as plug-in required) of school installations | **8** | 3.7% |
| **Installation** | **15** | **6.9%** |
| On-site system installation and customization within basic operating system and web browser as requirement from the system | **15** | 6.9% |
| **Project Closure** | **25** | **11.5%** |
| Training Document (User Manual as Video and Document) | **10** | 4.6% |
| Onsite User (teachers/administrator) Training | **15** | 6.9% |
| **TOTAL PROJECT EFFORT** | **218** | **100%** |
|  |  |  |
| **Phase Distribution Summary:** |  |  |
|  |  |  |
| 📋 **Planning Phase:** 25 days (11.5%) - Requirements, roadmap, kick-off |  |  |
| 🎨 **Design Phase:** 30 days (13.8%) - UI/UX design for all components |  |  |
| 💻 **Development Phase:** 85 days (39.0%) - Core features and integration |  |  |
| 🧪 **Testing Phase:** 20 days (9.2%) - Quality assurance |  |  |
| 🚀 **Deployment Phase:** 18 days (8.3%) - Build and distribution |  |  |
| 🔧 **Installation Phase:** 15 days (6.9%) - On-site setup |  |  |
| 📚 **Closure Phase:** 25 days (11.5%) - Documentation and training |  |  |

## 4.7 Milestones and Timeline

Table 4: Project milestone for development of LMS

|  |  |
| --- | --- |
| **Process** | **Person-Day** |
| **Planning**   * Requirement Gathering (Curriculum Alignment, Simulation Packaging Strategy) * Roadmap Definition * Project Team Introduction * Project Kick-Off Meeting * Planning Sign-Off | 8  5  2  3  7 |
| **Design**   * UI/UX Design (Dashboard, Simulation Viewer, Material Viewer, Assessments) * Mock-up Review and Sign-Off | 22  8 |
| **Development**   * Core Web App * Offline-First System (Service Worker, IndexedDB) * Dynamic Metadata Loader and Bundle Manager * Simulation Viewer + Material Integration   Assessment Engine + Result Tracker | 25  18  15  12  15 |
| **Internal Testing**   * Test Case Preparation * Manual Testing (Plug-in requirement with Web Broser and connection) | 8  12 |
| **System Deployment**   * Build, Package, Prepare for Distribution * Setup for first wave(OS and Web Broser as well as plug-in required) of school installations   **Installation**  On-side system installation and customization within basic operating system and web browser as requirement from the system.  **Project Closure**  Training Document (User Manual as Video  and Document)  Onside User (teachers/administrator) Training | 10  8  15 |
| **Total amount breakdown in days** | **XXX Person-Days** |