# CS 255 Module Two Assignment Template

## Functional Requirements

| **Functional Requirement** | **Rationale for Requirement** | **Source(s), APA format** |
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| Course Creation & Management: The LMS shall allow instructors to create, update, and organize course materials. | As discussed in Chapter 3 of Systems Analysis and Design with UML, functional requirements define “the services a system should provide.” Allowing instructors to manage course content is core functionality—like how an ATM must allow depositing and withdrawing in the ATM example. | Systems Analysis and Design with UML (n.d.) |
| Student Enrollment & Access: The LMS shall enable students to enroll in courses and access materials. | Students are key end users and need direct access to content. Per the ATM sample business document, the “user perspective” focuses on tasks a user can perform; here, enrolling in and viewing course materials is an analogous fundamental service. | Sample Business Requirements Document for an ATM (n.d.) |
| Submission & Grading: The LMS shall allow students to submit assignments and instructors to grade them online. | Directly aligns with “system must support relevant user tasks.” In the ATM example, the functional requirement to dispense or deposit parallels how the LMS must handle submissions and store results, ensuring that the user’s main transaction is fully supported. | Systems Analysis and Design with UML (n.d.) |
| Discussion Forum: The LMS shall provide asynchronous discussion boards for class interaction. | According to The Eight Golden Rules of Interface Design, supporting user interaction and feedback is crucial. Discussion forums offer a structured interface for collaboration and communication among course participants. | The Eight Golden Rules of Interface Design (n.d.) |
| Reporting and Analytics: The LMS shall generate standard reports for administrators. | As shown in the “reporting” sections of the Sample Business Requirements Document for an ATM, generating statements or logs is considered a core feature. In an LMS context, administrators need analytics about system usage and student performance. | Sample Business Requirements Document for an ATM (n.d.) |
| Notifications and Alerts: The LMS shall send alerts or messages to users. | “Providing clear feedback” is one of Ben Shneiderman’s interface design guidelines. In an ATM scenario, the machine immediately alerts a user if a transaction is about to exceed the account balance. Likewise, an LMS should proactively inform users of important actions or deadlines. | The Eight Golden Rules of Interface Design (n.d.) |

## Nonfunctional Requirements

| **Nonfunctional Requirement** | **Rationale for Requirement** | **Source(s), APA format** |
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| Performance: The LMS shall support up to 5,000 simultaneous users with acceptable load times. | As explained in Chapter 3 of Systems Analysis and Design with UML, nonfunctional requirements address performance, reliability, and other quality attributes. This ensures the LMS remains responsive during peak usage times. | Systems Analysis and Design with UML (n.d.) |
| Availability: The LMS shall maintain 99.9% uptime. | Per the Sample Business Requirements Document for an ATM, system downtime can disrupt critical user activities. Similarly, an LMS must stay highly available to meet students’ and instructors’ needs. | Sample Business Requirements Document for an ATM (n.d.) |
| Security & Data Protection: All user data must be stored securely, following industry‐standard encryption. | Security is a primary concern in any system holding sensitive or confidential data. “Constraints and assumptions” from the project management reading indicates that compliance and user privacy expectations are commonly part of nonfunctional security constraints. | Assumptions and Constraints in Project Management (n.d.) |
| Scalability: The LMS shall accommodate a 25% increase in concurrent users each year without major redesign. | In line with the concept of nonfunctional “extensibility,” the system must handle growing enrollment demands. This parallels how an ATM design might account for future expansions without requiring a complete rebuild. | Systems Analysis and Design with UML (n.d.) |
| Platform Compatibility: The LMS shall be accessible across desktops, tablets, and mobile devices. | According to Designing a User Interface, ensuring a wide range of device compatibility is critical for modern systems. This also supports students’ ability to learn anytime, anywhere. | Designing a User Interface (n.d.) |
| Usability & Consistency: The LMS interface shall provide consistent navigation and layout across all modules. | Shneiderman’s rules stress consistent design to reduce user confusion. Like in the ATM interface example, each interaction follows a familiar pattern, so users quickly learn how to navigate from module to module without re‐learning the UI. | The Eight Golden Rules of Interface Design (n.d.) |

## Assumptions

| **Assumption** | **Rationale for Requirement** | **Source(s), APA format** |
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| Reliable Internet Access: Students and instructors have stable broadband connections. | In the Assumptions and Constraints in Project Management reading, it’s recommended to articulate constraints outside the system’s direct control. An online LMS inherently relies on internet connectivity. | Assumptions and Constraints in Project Management (n.d.) |
| Sufficient IT Support Staff: YOUser University has a dedicated team to maintain the LMS. | Ensures timely updates, security patches, and user support. Again, referencing the project management reading: if there is inadequate staff, the system might not meet its nonfunctional or functional targets. | Assumptions and Constraints in Project Management (n.d.) |

## Limitations

| **Limitation** | **Rationale for Requirement** | **Source(s), APA format** |
| --- | --- | --- |
| Dependence on Third‐Party Tools: Certain components rely on external services. | If a third‐party service goes down or changes APIs, the LMS may lose key functionality. Systems Analysis and Design with UML emphasizes identifying external constraints. | Systems Analysis and Design with UML (n.d.) |
| Data Retention Policy: The LMS will store course and student data for only 5 years. | Storing data indefinitely can increase costs and complicate compliance. “Business requirements” documents often highlight the importance of setting clear retention limits. | Sample Business Requirements Document for an ATM (n.d.) |