# CS 255 Module Two Assignment Template

## Functional Requirements

| **Functional Requirement** | **Rationale for Requirement** | **Source(s), APA format** |
| --- | --- | --- |
| Assignment Submission and Grading Management | Students must be able to submit assignments, and instructors must be able to grade the assignments. Submission and grading are core features of online learning through all LMSs. | Martin, F., Sun, T., & Westine, C. D. (2020). *A Systematic Review of Research on Online Teaching and Learning From 2009 to 2018.* Computers & Education, 159, 104009. <https://doi.org/10.1016/j.compedu.2020.104009> |
| Discussion Board & Message Board | The LMS should support discussion boards, messaging, and announcements for communication between students and instructors. Discussion boards and message boards are essential for interaction and engagement in online learning environments. | Dahlstrom, E., Brooks, D. C., & Bichsel, J. (2014). *The Current Ecosystem of Learning Management Systems in Higher Education: Student, Faculty, and IT Perspectives.* EDUCAUSE Center for Analysis and Research. |
| Levels of User Access/Control | The LMS must support different levels of user access and control of certain features (e.g., student, instructor). Levels of access ensure that users can only access features that are relevant to their role, such as grading for instructors and assignment submissions for students. | Al-Azawei, A., Parslow, P., & Lundqvist, K. (2017). *Barriers and opportunities of e-learning implementation in Iraq: A case of public universities.* The International Review of Research in Open and Distributed Learning, 18(6), 234–255. <https://doi.org/10.19173/irrodl.v18i6.3196> |
| Course Content Management | Instructors must be able to upload, organize, and manage course materials, such as PDFs, videos, links, assignments. A core function of a LMS is to contain and distribute structured learning materials. | Edutechnica. (2024). *LMS usage in higher education: 2024 update*. <https://edutechnica.com> |
| Third-Party Tool Support | The system should support third-party tools like Turnitin. Third-party tools enhance a LMS’s functionality. | Educause. (2020). *7 Things You Should Know About LMS Integration*. https://library.educause.edu/resources/2020/2/7-things-you-should-know-about-lms-integration |
| Mobile Device Accessibility | The system should be accessible on mobile devices via an app or mobile browsers. With the popularity of smartphones and tablets, mobile accessibility is important. | (Dahlstrom et al., 2014) |

## Nonfunctional Requirements

| **Nonfunctional Requirement** | **Rationale for Requirement** | **Source(s), APA format** |
| --- | --- | --- |
| Cross-Platform Usability | The LMS must be accessible across various operating systems (Windows, macOS, iOS, Android) and browsers (Chrome, Firefox, Safari, Edge). Ensuring cross-platform compatibility increases accessibility and user satisfaction. | Watson, W. R., & Watson, S. L. (2007). An Argument for Clarity: What are Learning Management Systems, What are They Not, and What Should They Become? *TechTrends, 51*(2), 28–34. |
| System Availability | The LMS must be available for close to 100% of the time. Availability ensures minimal disruption to learning, which is critical for student and faculty satisfaction. | (Watson & Watson, 2007) |
| Scalability | The LMS must support a growing number of users and courses without affecting performance of the system. As YOUser University grows, the system must be able to easily scale to accommodate more users and data. | Al-Kahtani, N. S. (2015). *Evaluating Learning Management Systems: Adaptability in Higher Education.* International Journal of Information and Education Technology, 5(6), 409–415. <https://doi.org/10.7763/IJIET.2015.V5.543> |
| Data Security | The LMS must use encryption, access control, and secure authentication to protect sensitive student data. Security protects sensitive user data and ensures compliance with regulations like FERPA and GDPR. | (Al-Azawei et al., 2017) |
| User-Friendly Interface | The LMS should have easy navigation to reduce the learning curve for new users. | Lieberman, M. (2018). *Canvas tops list of most usable LMSs, faculty survey finds*. Education Dive. https://www.highereddive.com/news/canvas-tops-list-of-most-usable-lmss-faculty-survey-finds/538464/ |
| Technical Support | Students and instructors will need real-time help. Technical support is crucial to avoid delays/disruptions in learning. | Construct Education. (2021, April 27). *The impact of technical support on digital learning platforms*. Construct Education. https://constructeducation.com/blog/impact-of-technical-support-for-learning-platforms/ |

## Assumptions

| **Assumption** | **Rationale for Requirement** | **Source(s), APA format** |
| --- | --- | --- |
| Users have internet access | By default, students and staff have access to the internet to utilize the system. | Khoo, E., Hall, C., & Schweitzer, R. (2023). *Students’ digital technology attitude, literacy and self‑efficacy and their effect on online learning engagement*. *International Journal of Educational Technology in Higher Education, 21*, Article 3. <https://doi.org/10.1186/s41239-023-00437-y> |
| Users have basic digital literacy | Users are expected to have enough experience navigating online environments to learn to use the system. | (Khoo, E., Hall, C., & Schweitzer, R., 2023) |

## Limitations

| **Limitation** | **Rationale for Requirement** | **Source(s), APA format** |
| --- | --- | --- |
| University’s Budget | The university may have a limited budget for the creation of the LMS system. | Exly. (n.d.). *Difference between premium and budget‑friendly LMS options*. Retrieved July 2025, from <https://exlyapp.com/blog/product-insights/understanding-lms-cost-pricing-models/> |
| Static UI | UI may not support customization for instructors to be able to implement customizations they think may enhance their students’ learning experience. | Thought Industries. (2024). *A customizable LMS: When to know you need one*. Thought Industries. Retrieved July 2025, from <https://www.thoughtindustries.com/blog/customizable-lms/> |