# CS 255 Module Two Assignment Mike Brown

## Functional Requirements

| **Functional Requirement** | **Rationale for Requirement** | **Source(s), APA format** |
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| User authentication & role-based access | Role-based access control ensures that users only access resources relevant to their responsibilities, which protects sensitive student data and maintains system integrity. | Dennis, A., Wixom, B. H., & Tegarden, D. (2012). *Systems analysis and design with UML* (4th ed.). Wiley/O’Reilly. (Chapter 3: Requirements determination). |
| Course & enrollment management | This functionality is essential for delivering instruction at scale. It streamlines course scheduling, enrollment, and registration across a diverse student body. | Dennis, A., Wixom, B. H., & Tegarden, D. (2012). *Systems analysis and design with UML* (4th ed.). Wiley/O’Reilly. (Chapter 3: Requirements determination). |
| Content delivery | Flexible content delivery ensures accessibility for learners with different technological resources, promoting equitable access and engagement. | CS 255. (n.d.). *Designing a User Interface*. |
| Assessment & submissions | Assessments measure student progress and learning outcomes while ensuring academic standards are met. | Dennis, A., Wixom, B. H., & Tegarden, D. (2012). *Systems analysis and design with UML* (4th ed.). Wiley/O’Reilly. (Chapter 3: Requirements determination). |
| Grading & feedback | Grading transparency and continuous feedback support student learning and are central to institutional accountability. | Dennis, A., Wixom, B. H., & Tegarden, D. (2012). *Systems analysis and design with UML* (4th ed.). Wiley/O’Reilly. (Chapter 3: Requirements determination). |
| Communication & notifications | Effective communication fosters collaboration and engagement between instructors and students, enhancing the learning experience. | Shneiderman, B. (2016). *The Eight Golden Rules of Interface Design*. University of Maryland HCI Lab. https://www.cs.umd.edu/users/ben/goldenrules.html |

## Nonfunctional Requirements

| **Nonfunctional Requirement** | **Rationale for Requirement** | **Source(s), APA format** |
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| Usability & accessibility | Shneiderman’s design principles highlight universal usability and consistent interfaces, ensuring that the system is accessible to diverse learners and faculty. | Shneiderman, B. (2016). *The Eight Golden Rules of Interface Design*. University of Maryland HCI Lab. https://www.cs.umd.edu/users/ben/goldenrules.html |
| Performance | Strong performance minimizes user frustration and encourages adoption, which is a key system quality attribute. | Dennis, A., Wixom, B. H., & Tegarden, D. (2012). *Systems analysis and design with UML* (4th ed.). Wiley/O’Reilly. (Chapter 3: Requirements determination). |
| Scalability & availability | Online programs must handle peak registration and exam periods, making scalability critical for reliability. | Dennis, A., Wixom, B. H., & Tegarden, D. (2012). *Systems analysis and design with UML* (4th ed.). Wiley/O’Reilly. (Chapter 3: Requirements determination). |
| Security & privacy | Security and privacy are critical for protecting student records and maintaining institutional trust. | Dennis, A., Wixom, B. H., & Tegarden, D. (2012). *Systems analysis and design with UML* (4th ed.). Wiley/O’Reilly. (Chapter 3: Requirements determination). |
| Interoperability | Interoperability prevents vendor lock-in and supports a broad ecosystem of educational tools. | Dennis, A., Wixom, B. H., & Tegarden, D. (2012). *Systems analysis and design with UML* (4th ed.). Wiley/O’Reilly. (Chapter 3: Requirements determination). |
| Backup & disaster recovery | Backup and recovery measures ensure continuity of instruction and protect data from loss during unexpected outages. | Dennis, A., Wixom, B. H., & Tegarden, D. (2012). *Systems analysis and design with UML* (4th ed.). Wiley/O’Reilly. (Chapter 3: Requirements determination). |

## Assumptions

| **Assumption** | **Rationale for Requirement** | **Source(s), APA format** |
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| Reliable internet access for end users | Since this is a cloud-based system, consistent internet access is assumed for both instructors and students. This assumption clarifies system scope and reduces unnecessary offline complexity. | PM Study Circle. (n.d.). *Assumptions and constraints in project management*. https://pmstudycircle.com/assumptions-and-constraints-in-project-management/ |
| Modern Browser and Device Usage | The LMS assumes users will have access to up-to-date browsers and devices, which supports advanced interface features and security standards. | PM Study Circle. (n.d.). *Assumptions and constraints in project management*. https://pmstudycircle.com/assumptions-and-constraints-in-project-management/ |

## Limitations

| **Limitation** | **Rationale for Requirement** | **Source(s), APA format** |
| --- | --- | --- |
| No Built-in Remote Proctoring at Initial Launch | While proctoring tools may be integrated later, excluding them at launch reduces complexity and allows the project to meet timeline and budget constraints. | PM Study Circle. (n.d.). *Assumptions and constraints in project management*. https://pmstudycircle.com/assumptions-and-constraints-in-project-management/ |
| No offline-first mode | Offline functionality significantly increases design complexity. The LMS will initially operate as an online-first platform, with future enhancements possible. | PM Study Circle. (n.d.). *Assumptions and constraints in project management*. https://pmstudycircle.com/assumptions-and-constraints-in-project-management/ |