# Distance Learning Technology Scorecard

Criteria for Supporting Distance Learning Infrastructure

Developed by the Infrastructure Workgroup for the 2025 SUS Strategic Plan for Online Education

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# Background

Information technology infrastructure is deeply embedded in the distance learning experience. To ensure that systems enable student and faculty success, the course delivery and supporting technology is to be considered a critical system and supported as such. The Distance Learning Technology Scorecard enables institutions to evaluate the strengths and weaknesses of their distance learning technology, accessibility compliance, and support environment.

## Overview of systems

1) **Learning Management System:** application that allows for the administration, distribution of content and resources, performance management and assessment, and reporting for courses. A Learning Management System typically integrates with a variety of third party tool providers to enable additional functionality.
2) **Student Information System:** application that facilitates the interaction and management of admissions, registration and financial aid processes. The system supports a variety of operational processes such as course scheduling, grading, student and personnel record management.
3) **Customer Relationship Management:** application used to manage and support interactions with customers.
4) **Enrollment Management Middleware:** system(s) which integrates with Student Information System, Learning Management System, and Customer Relationship Management System to enable and facilitate a variety of administrative processes such as automatic/manual course enrollment, course creation, and reporting.

## Scoring

The scorecard provided contains 17 quality indicators where each indicator is worth up to three points. The reviewer will determine at what level their distance learning program meets the intent of the indicator after examining all internal systems, procedures, and policies.

| 3 = Exemplary | 2 = Meets Criteria | 1 = Insufficient | 0 = Not Observed |
|---|---|---|---|

- **0 points = Not Observed.** There are no indications that the standards are in place.
- **1 point = Insufficient.** There is existence of the standard, though much improvement is needed in this area.
- **2 points = Meets Criteria.** The standard is fully implemented.
- **3 points = Exemplary.** The standard goes beyond full implementation.

## Scoring Ranges

There is a total of 51 points attainable on the scorecard. An evaluator should tally up all of the points attained on the scorecard and compare the total to the ranges below for guidance on the strength of an institution's distance learning infrastructure:

- **0 - 17 - Insufficient**
- **18 - 25 - Needs improvement**
- **26 - 33 - Good**
- **34 - 41 - Very good**
- **42 - 51 - Excellent**

The scorecard provides the opportunity to go beyond "Meets Criteria" with an "Exemplary" designation; an institution that "Meets Criteria" for all of the items on the scorecard will receive a minimum of 34 points.

## Operations

The Learning Management System is an integral part of the distance learning environment where it serves as the central point for student and faculty interaction. Operational processes revolve around usability, reliability, and support structures to facilitate student, staff, and faculty success.

### Suggested practices

- A website is available that details the requirements of the Learning Management System, provides access to tutorials on its use, and recommended best practices.[1]
- Maximize the power of a Learning Management System API to create middleware to facilitate integration with institutional systems.
- Learning Management System testing is frequently performed to ensure a quality and consistent user experience.[2]

### Quality indicators

| | **Exemplary (3)** | **Meets Criteria (2)** | **Insufficient (1)** | **Score** |
|---|---|---|---|---|
| **Building and maintaining infrastructure** | The Learning Management System is scalable and is prepared to handle client growth.<br><br>Equipment and resources are available to monitor, adjust performance, and ensure that applications and systems run optimally. | The Learning Management System is scalable and is prepared to handle client growth.<br><br>Equipment and resources are available to monitor system performance and applications. The system does not allow for real time performance adjustments. | The Learning Management System is partially prepared to handle client growth. | |
| | **Comments**: Optional | | | |

[1] "Teaching and Learning Online - UMass Amherst." http://www.umass.edu/oapa/oapa/publications/online_handbooks/Teaching_and_Learning_Online_Handbook.pdf. Accessed 28 Mar. 2017.

[2] "LMS Operation and Governance: Taming the Beast by Steve Foreman ...." 9 Sep. 2013, https://www.learningsolutionsmag.com/articles/1244/lms-operation-and-governance-taming-the-beast-part-3-of-4. Accessed 30 Mar. 2017.

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| **Reliability and operability** | Systems are highly reliable and operable with measurable standards being utilized, such as system downtime tracking or benchmarking. The institution is proactive in ensuring that the system maintains reliability during peak connectivity periods. | Systems are reliable and operable with measurable standards being utilized, such as system downtime tracking or task benchmarking. | Systems are reliable and operable. The institution does not regularly monitor system performance or perform benchmarking. | |
| | **Comments**: Optional | | | |
| **Technical requirements and usage** | The minimum computer and browser requirements of end-user interaction with the Learning Management System are defined, available, and accessible from multiple locations.<br><br>Tutorial videos on how to use the system are available and regularly updated to ensure relevance. | The minimum computer and browser requirements of end-user interaction with the Learning Management System are defined, available, and accessible from multiple locations. | The minimum computer and browser requirements of end-user interaction with the Learning Management System are defined and available. | |
| | **Comments**: Optional | | | |
| **Analytics and business intelligence** | Dashboards and reports on users, courses, tools, and Learning Management System usage are available. | Dashboards and reports on users, courses, tools, and Learning Management System usage are available. | Dashboards and reports on users, courses, tools, and Learning Management System usage are available, though reporting is only | |

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| | Support, training, and resources are available to assist users with the use of analytics. | | available to administrative users. | |
| | **Comments**: Optional | | | |
| **Academic integrity** | The system supports a variety of assessment methods to mitigate the risk of academic misconduct.<br><br>Procedures, tools, and best practices are available and in place to maintain the integrity of courses.<br><br>For example:<br>● Secure examinations<br>● Support for proctored exams service<br>● Plagiarism detection | The system supports a variety of assessment methods to mitigate the risk of academic misconduct.<br><br>Procedures and tools are available and in place to maintain the integrity of courses.<br><br>For example:<br>● Secure examinations<br>● Support for proctored exams service<br>● Plagiarism detection | The system supports a variety of assessment methods to mitigate the risk of academic misconduct. | |
| | **Comments**: Optional | | | |
| **Third party integration, customization, and support** | The Learning Management System ecosystem supports integration with third party tools and custom services. The system supports content | The Learning Management System ecosystem supports integration with third party tools. The system supports content compliance standards | The Learning Management System ecosystem has limited support for third party tools. | |

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| | compliance standards such as SCORM, xAPI, AICC. | such as SCORM, xAPI, AICC. | | |
| | **Comments**: Optional | | | |

## Support

Support structures are in place to enable the success of users and their interactions with the various distance learning systems. Training procedures are in place to maximize the utilization of system features and services.

### Suggested practices

- Provide training to users who support the technology infrastructure as the systems are continuously evolving.[3]
- Ensure that resources are available to support a variety of user technological aptitude levels. Support training in person, and online to accommodate the needs of a variety of users.
- The use of an enterprise CRM allows for a consolidated approach to handling student support services. [4]
- Leverage technology resources to monitor performance against quality assurance objectives to ensure quality outputs and improvements.[5]
- Develop accessibility checklists to ensure that new software and services comply with policies on product accessibility.[6]

### Quality indicators

| | **Exemplary (3)** | **Meets Criteria (2)** | **Insufficient (1)** | **Score** |
|---|---|---|---|---|
| **End-user support** | Personnel and resources are in place to support faculty, staff, and students in the | Personnel and resources are in place to support faculty, staff, and students in the | Personnel and resources are in place to support faculty, staff, and students in | |

[3] "University IT Strategy - University of Glasgow." 16 Jan. 2015, http://www.gla.ac.uk/media/media_387823_en.pdf. Accessed 24 Mar. 2017.
[4] "ITS Self-Study 2011 - UC Santa Cruz - Information Technology Services." 11 Jan. 2011, http://its.ucsc.edu/planning/docs/self-study2011-2.pdf. Accessed 20 Mar. 2017.
[5] "The Practice of a Quality Assurance System in Open and Distance ...." http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan029184.pdf. Accessed 30 Mar. 2017.
[6] "Procure accessible technology - UW-Madison Information Technology." 11 Feb. 2016, https://it.wisc.edu/guides/accessible-content-tech/procure-accessible-technology/. Accessed 30 Mar. 2017.

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| | development, use, and troubleshooting of technology and skills.<br><br>Multiple modalities of end-user support are available. For example:<br>● Phone<br>● Chat<br>● Email<br><br>End-user support is available during peak hours.<br><br>System-support is available 24 hours per day. | development, use, and troubleshooting of technology and skills.<br><br>Multiple modalities of end-user support are available. For example:<br>● Phone<br>● Chat<br>● Email<br><br>End-user support is available during peak hours. | the development, use, and troubleshooting of technology and skills. | |
| | **Comments**: Optional | | | |
| **Training** | Resources are provided to users to facilitate interactions and use with the Learning Management System and related components.<br><br>Training is available in person, and online: synchronously, and asynchronously.<br><br>Professional development is available for support staff who maintain the distance learning infrastructure. | Resources are provided to users to facilitate interactions and use with the Learning Management System and related components.<br><br>Training is available in person, and online: synchronously, and asynchronously. | Resources are provided to users to facilitate interactions and use with the Learning Management System and related components. | |

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| | **Comments**: Optional | | | |
| **Disability Support** | Ability to provide personalized support to students with disabilities.<br><br>Systems support the use of assistive technology tools such as:<br>● Screen readers<br>● Magnifiers<br><br>Accommodations are available at the user and system level. | Ability to provide support to students with disabilities.<br><br>Systems support the use of assistive technology tools such as:<br>● Screen readers<br>● Magnifiers | Ability to provide support to students with disabilities. | |
| | **Comments**: Optional | | | |
| **Accessibility compliance** | Compliance with Section 508 of the Rehabilitation Act of 1973 and alignment with Web Content Accessibility Guidelines (WCAG) 2.0.<br><br>Processes are in place to vet and ensure that information technology implementation does not create barriers for access.<br><br>Courses are audited to ensure compliance with accessibility law. | Compliance with Section 508 of the Rehabilitation Act of 1973.<br><br>Processes are in place to vet and ensure that information technology implementation does not create barriers for access. | Compliance with Section 508 of the Rehabilitation Act of 1973 is considered on an as needed basis. | |

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| | **Comments**: Optional |

## Security Policies

Distance learning information systems and their use enable the transfer of confidential student information, which presents a potential for risk of maintaining the security of student records. There is a delicate balance between maintaining student privacy and creating an online environment that is conducive to learning. To preserve the balance, institutions should examine their distance learning infrastructure to ensure that systems support privacy, while facilitating access to information.

### Suggested practices

- Ensure compliance with the information security triad: confidentiality, integrity and availability.
- Authentication is available to ensure that the user who is accessing the information, is indeed who they present themselves to be. [7]
- Encode information upon transmission and storage to ensure that only authorized individuals have access. Use encryption to process information into another form, to prevent unauthorized access.[8]
- Roles on what a user can and cannot do are clear and defined. Every user that is part of the online learning environment is assigned to a role with specific privileges. [9]

### Quality indicators

| | **Exemplary (3)** | **Meets Criteria (2)** | **Insufficient (1)** | **Score** |
|---|---|---|---|---|
| **Security plan** | A documented security plan is in place and operational to ensure quality, in accordance with industry best practices. | A documented security plan is in place and operational to ensure quality, in accordance with industry best practices. | A user access and password management plan is in place. | |

[7] "Chapter 6: Information Systems Security | Information Systems for ...." https://bus206.pressbooks.com/chapter/chapter-6-information-systems-security/. Accessed 30 Mar. 2017.
[8] "Electronic Data Security | Institutional Review Board | University of ...." http://www.irb.pitt.edu/electronic-data-security. Accessed 30 Mar. 2017.
[9] "User Roles and Privileges - Blackboard Help." 11 Oct. 2016, https://en-us.help.blackboard.com/Learn/Administrator/Hosting/User_Management/User_Roles_and_Privileges. Accessed 30 Mar. 2017.

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| | Security plan addresses the confidentiality, integrity, and availability of data on systems that support distance learning.<br><br>The security plan is frequently revised and tested to ensure relevance with latest information security developments. | Security plan addresses the confidentiality, integrity, and availability of data on systems that support distance learning. | | |
| | **Comments**: Optional | | | |
| **Data management practices** | Data management practices comply with regional privacy and information system laws.<br><br>Policies are in place for data input, maintenance, and removal.<br><br>Access control is available where definitions are available for access categories and user roles.<br><br>Data access roles are organized by users, owners, and custodians. | Data management practices comply with regional privacy and information system laws.<br><br>Policies are in place for data input, maintenance, and removal.<br><br>Access control is available where definitions are available for access categories and user roles. | Data management practices comply with regional privacy and information system laws. | |
| | **Comments**: Optional | | | |

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|---|---|---|---|---|
| **User access control** | Administrative access is limited to privileged users. The Learning Management System and Enrollment Management Middleware support the ability for custom roles and privileges.<br><br>A role based access control (RBAC) or access control list (ACL) is in place.<br><br>A scheduled auditing process is in place to ensure privileged users do not access content above their defined access level. | Administrative access is limited to privileged users. The Learning Management System and Enrollment Management Middleware support the ability for custom roles and privileges.<br><br>A role based access control (RBAC) or access control list (ACL) is in place. | Administrative access is limited to privileged users. The Learning Management System supports the ability for custom roles and privileges. | |
| | **Comments**: Optional | | | |
| **User tracking** | Inspection abilities are present. The system allows for retrieval and investigation of user access logs.<br><br>The system gathers information on page access and interactions. | Inspection abilities are present. The system allows for retrieval and investigation of user access logs.<br><br>The system gathers information on user page access, though it does not provide details on page interactions. | Inspection abilities are present. The system allows for retrieval and investigation of user access logs. | |

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| | **Comments**: Optional |

## Disaster Recovery

An unforeseen event has the ability to bring a distance learning environment to a halt. A disaster recovery plan can enable an institution to recover as quickly as possible and resume operations for students, faculty, and staff. Not having a disaster recovery plan puts student success and institutional reputation at risk.

### Suggested practices

- Ensure that the Learning Management System maintains an uptime of at least 99.9% with a software monitoring system in place to notify users of outages or disruptions.[10] [11]
- Implement a redundancy system to eliminate any single points of failure.
- A comprehensive backup plan is part of the disaster recovery plan. Regular backups of all data should be performed to minimize the impact that data loss would have on the institution.[12]
- An assessment of what effect downtime would have on the institution should be considered. If the systems that support distance learning go down, what would happen.

### Quality indicators

| | **Exemplary (3)** | **Meets Criteria (2)** | **Insufficient (1)** | **Score** |
|---|---|---|---|---|
| **System testing** | Testing procedures and policies are documented and in place to ensure that system updates maintain confidentiality, system integrity, and provide a minimal impact on | Testing procedures and policies are documented and in place to ensure that system updates maintain confidentiality and system integrity.<br><br>System testing takes | Testing procedures and policies are documented and in place to ensure that system updates maintain confidentiality and system integrity. | |

[10] "Scope of UMassOnline Hosted Learning Management System Services." 29 Jul. 2015, https://confluence.umassonline.net/display/UMOLTT/Scope+of+UMassOnline+Hosted+Learning+Management+System+Services. Accessed 30 Mar. 2017.
[11] "Texas A&M IT Assessment Report 2011-2012 - Office of the Vice ...." http://cio.tamu.edu/files/IT_Weave_Online_Assessment_11_12.pdf. Accessed 28 Mar. 2017.
[12] "IT Disaster Recovery Plan | Ready.gov." https://www.ready.gov/business/implementation/IT. Accessed 30 Mar. 2017.

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| | Learning Management System availability.<br><br>System testing takes place on a non-production environment. | place on a non-production environment. | | |
| | **Comments**: Optional | | | |
| **Disaster Recovery Plan** | The institution has established a disaster recovery plan for the continuance of the Learning Management System and associated systems, in the event of prolonged service disruption:<br>● Recovery time objective (RTO) is defined as resuming normal operations within a maximum of 12 hours of a system failure.<br>● Recovery point objective (RPO) is defined as being able to retrieve a data backup point within 24 hours of a system failure. | The institution has established a disaster recovery plan for the continuance of the Learning Management System and associated systems, in the event of prolonged service disruption:<br>● Recovery time objective (RTO) is defined as resuming normal operations within a maximum of 24 hours of a system failure.<br>● Recovery point objective (RPO) is defined as being able to retrieve a data backup point within 48 hours of a system failure. | The institution has established a disaster recovery plan for the continuance of the Learning Management System and associated systems, in the event of prolonged service disruption:<br>● Recovery time objective (RTO) is defined as resuming normal operations within a maximum of 48 hours of a system failure.<br>● Recovery point objective (RPO) is defined as | |

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| | | | being able to retrieve a data backup point within 1 week of a system failure. | |
| | **Comments**: Optional | | | |
| **Disaster Recovery Test** | Full system disaster recovery tests are performed bi-annually to ensure compliance with Recovery Time Objective (RTO) and Recovery Point Objective (RPO). | Partial Disaster recovery tests are performed annually to ensure compliance with Recovery Time Objective (RTO) and Recovery Point Objective (RPO). | Disaster recovery tests are performed occasionally to ensure compliance with Recovery Time Objective (RTO) and Recovery Point Objective (RPO). | |
| | **Comments**: Optional | | | |

**Total Score** 0

## Additional References


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