

# Northern Illinois University Learning Management System Review 2020-2021

## Summary Report and Recommendation

Northern Illinois University (NIU) conducted a comprehensive Learning Management System (LMS) review during the 2020-2021 academic year. While faculty usage and overall satisfaction with the university's current LMS (Blackboard) remains high, the university hadn't conducted a formal evaluation of other LMS systems in a number of years.

The review was a thorough, comprehensive effort to evaluate the primary learning management systems in the higher education market. This evaluation was broad in scope and sought input from faculty, staff and students on not only their current satisfaction with NIU's current LMS but also what features are desired in a LMS moving forward. Through NIU's partnership with Internet2, the top three leading LMS platforms in Higher Education – Blackboard Learn, D2L Brightspace, and Instructure Canvas – were reviewed to ensure that we select a platform that will serve the core interests of the university for years to come. The evaluation supplied the data to prepare a recommendation on whether an alternative LMS should be considered at this time. A website was developed for the project with complete details.

### Overview and History of Blackboard at NIU

Blackboard Learn was originally licensed at NIU in 1999 to facilitate the delivery of web-based courses, but it has been used much more broadly as a critical system for facilitating teaching and learning.

Over time, other components have been added (initially individually priced but now bundled in our institutional license):

- Blackboard Community System in 2003 – facilitates non-academic use of Blackboard
- Blackboard Content System in 2007 – file repository for storage and sharing, within and outside of courses
- Blackboard Collaborate in 2011 – two-way audio/video web conferencing (upgraded to Collaborate Ultra in 2016)
- Blackboard Mobile Learn in 2011 – mobile app for student and faculty access to Blackboard on smartphones and tablets

NIU hosted Blackboard locally from 1999 to 2018, when it was migrated to the cloud to reduce costs, increase performance, and provide a path to the Ultra Experience, Blackboard's modern and completely redesigned interface. The Ultra Base Navigation and Course View were introduced in Spring 2019. Blackboard was relied upon heavily in the pivot to emergency remote instruction in response to the pandemic.

# Usage of Blackboard

## Academic Courses

Blackboard is used by 95% of faculty and instructors, 99% of students, and for 73% of all course sections (fall 2020). A majority of NIU courses each semester make extensive use of the capabilities of the system. Blackboard integrates with other cutting-edge tools for teaching and learning including video applications, publisher platforms, exam proctoring, and student engagement systems.

Figure 1: NIU Students & Faculty with at Least 1 Course in Blackboard, Fall Semester, 2002-2020

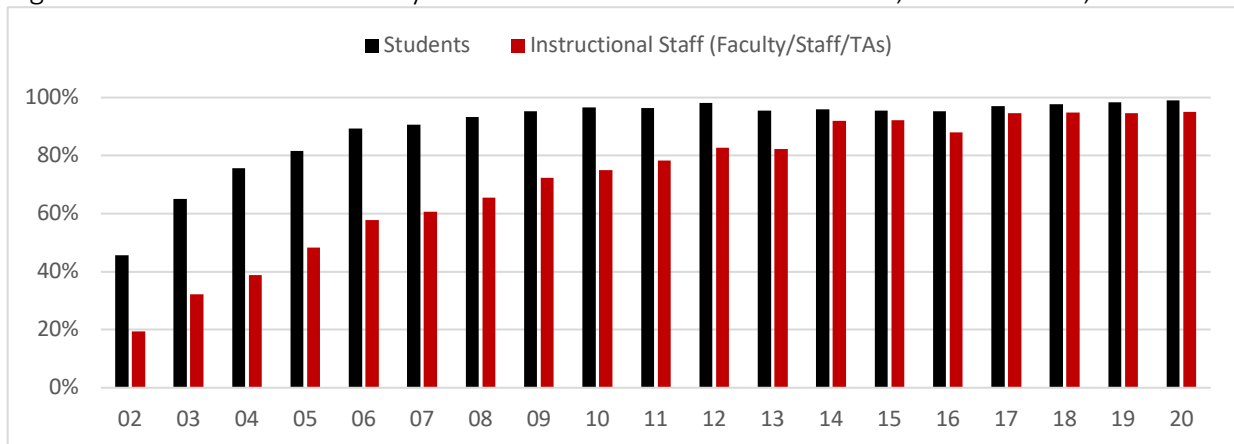


Figure 2: Use of Blackboard by Individual Students, 2002-2020

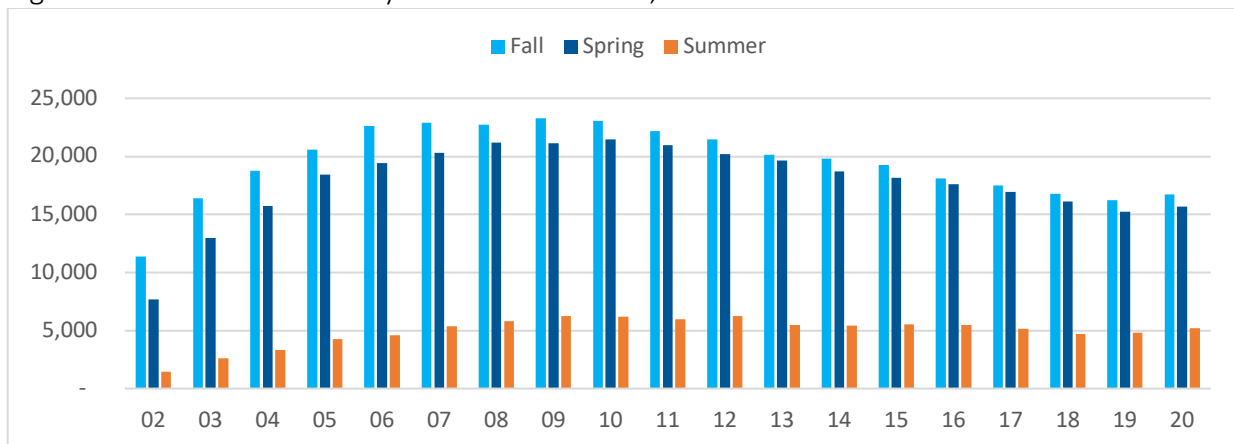


Figure 3: Use of Blackboard by Individual Faculty/Staff/TAs to Teach, 2002-2020

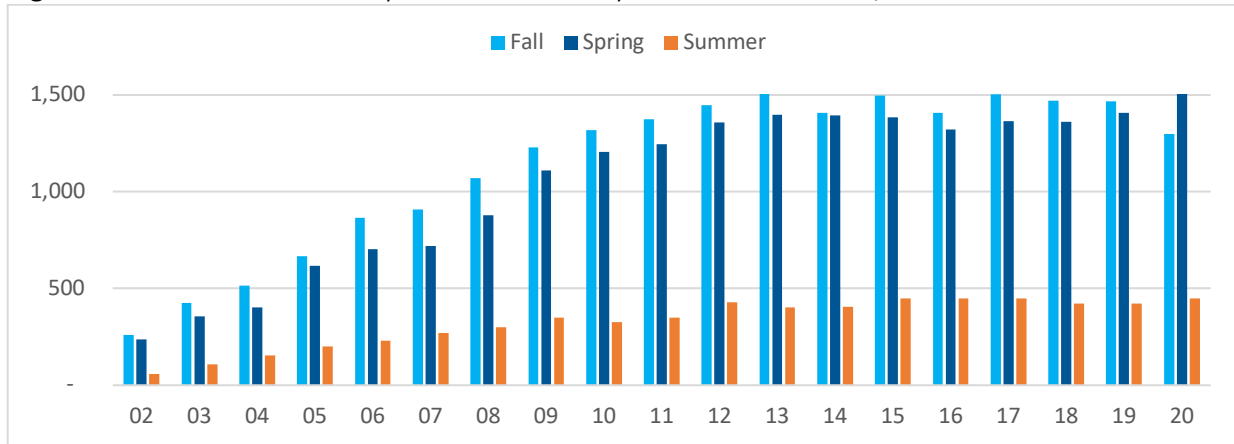
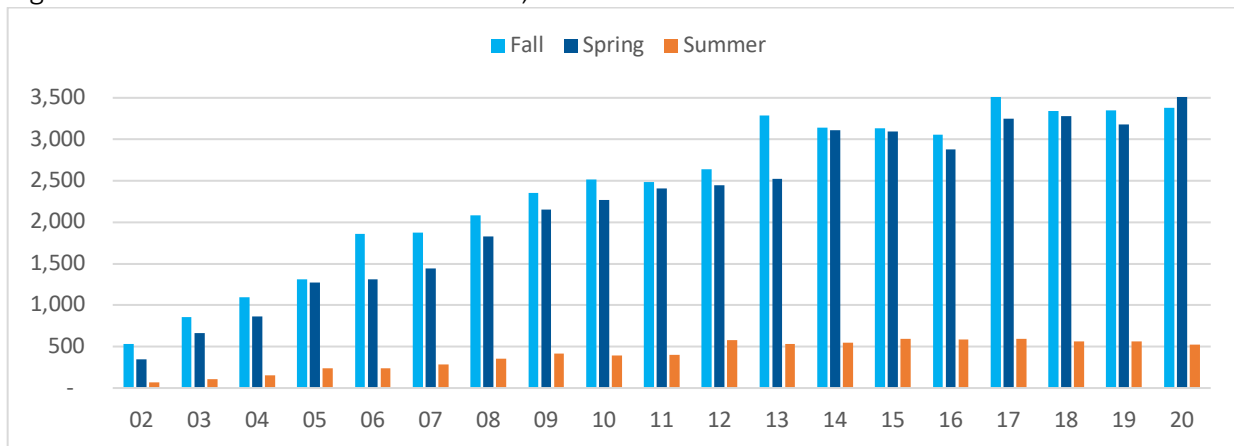


Figure 4: Course Sections on Blackboard, 2002-2020



\*in spring 2020, all course sections were automatically enabled for faculty due to COVID-19 and campus closure

Figure 5: Percentage of Course Sections Taught Using Blackboard (since 2010)

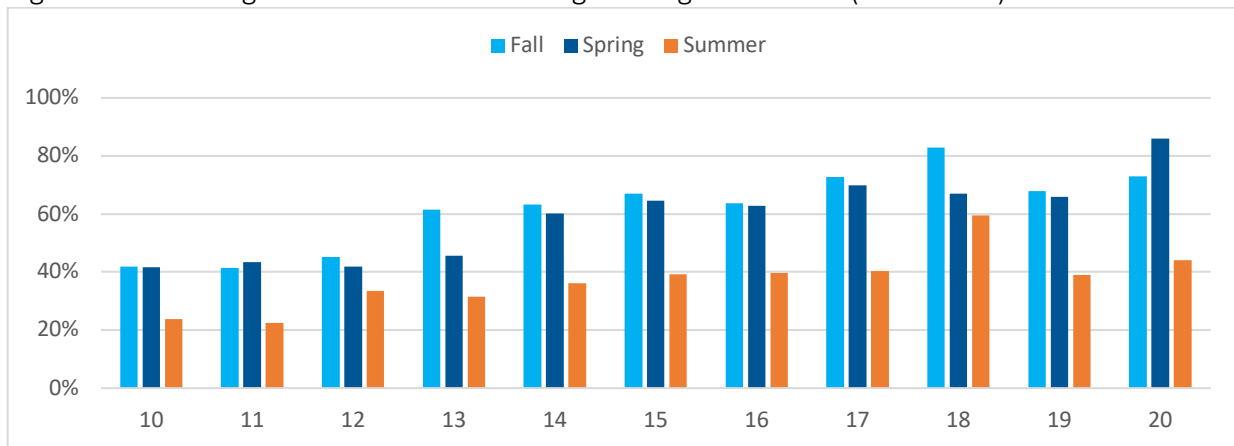
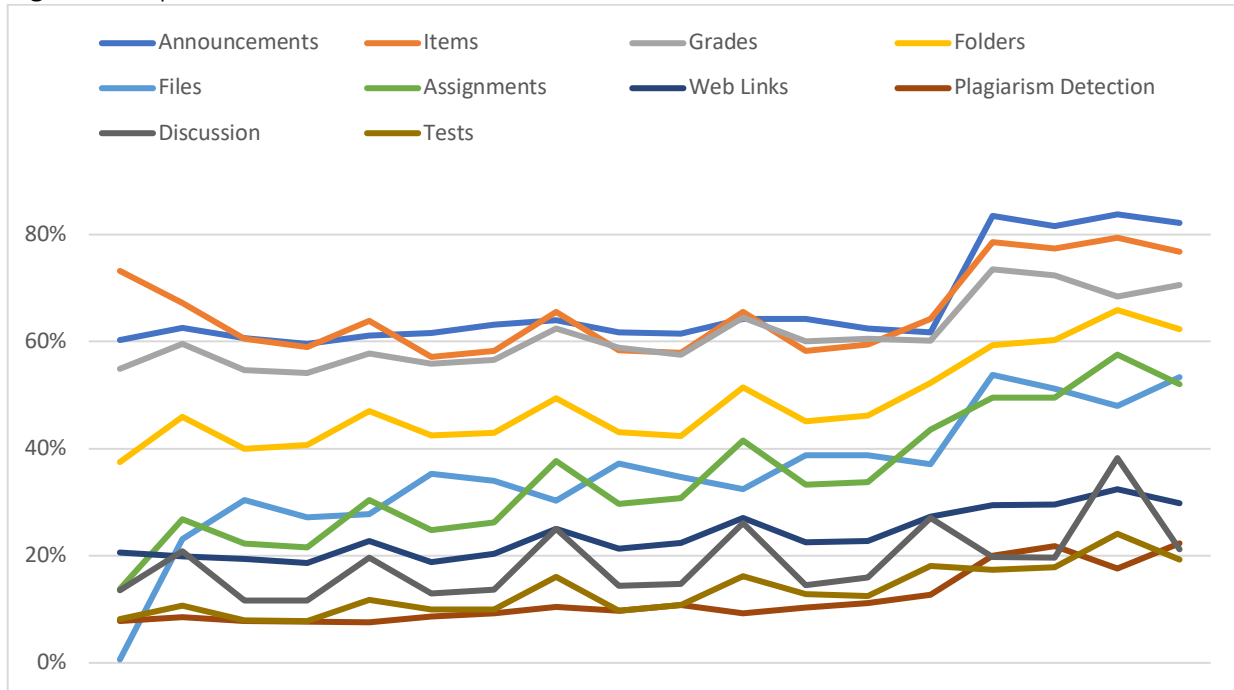


Figure 6: Top 10 Tools Used in Blackboard Courses



Blackboard use stats available at [niu.edu/blackboard/about/usage](http://niu.edu/blackboard/about/usage)

### Other Uses

In addition to scheduled academic courses, Blackboard is used in a variety of ways to support the mission of the university:

- Departmental communication to students by major/minor on events and program deadlines
- Development and storage of course materials for upcoming and previous semesters
- Student portfolios for program assessment and supporting job searches
- Department and programmatic assessment across courses, including general education assessment
- Storage and delivery of electronic reserves using a process custom-developed by the University Libraries and Division of Information Technology
- Annual compliance training for students, faculty, and staff, including state-mandated ethics and Title IX training
- Delivery and tracking of training completion for employees including Card Services, Division of Information Technology, Recreation, and Holmes Student Center

### Satisfaction with Blackboard

NIU faculty and instructors were surveyed in 2016 and 2019 to gauge satisfaction and comfort with Blackboard. In 2016, 83% of faculty strongly agreed or agreed that they were satisfied with

Blackboard and 82% responded that they were confident using Blackboard (these questions were not repeated in 2019). From 2016 to 2019, other measures of confidence and satisfaction were relatively consistent or increased, including finding that Blackboard enhanced teaching effectiveness and helped students to be more successful.

	2016	2019
I am generally satisfied with the quality of Blackboard	83%	N/A
I feel confident using Blackboard features in general	82%	N/A
I have a generally favorable attitude toward using Blackboard	80%	79%
Using Blackboard increases my efficiency when teaching	72%	75%
I find Blackboard to be easy to use	67%	68%
Using Blackboard increases my teaching effectiveness	64%	69%
Blackboard helps students to be more successful in their courses	62%	65%

For more details on reported faculty use and satisfaction with Blackboard, see complete reports of past Blackboard usage surveys at [niu.edu/blackboard/about/satisfaction](http://niu.edu/blackboard/about/satisfaction)

## Review Task Force

In October 2020 Executive Vice President and Provost Ingram authorized the LMS review and for it to be jointly coordinated by the Center for Innovative Teaching and Learning (CITL) and the Division of Information Technology (DOIT). Given the widespread and longstanding use of the LMS, a task force with broad and inclusive representation was formed with members nominated by colleges and stakeholder units from across the university, consisting of the following:

### Executive Committee

Responsible for execution of the review, including the solicitation of feedback, development of a communications plan, and presentation of a final report. The executive committee met weekly and consisted of the project co-chairs, project manager, application services senior director, one member from the technical committee, two members from the advisory committee, and procurement representative.

- **Project Co-chair** – Matthew Parks, Associate Vice President and Chief Information Officer, DOIT
- **Project Co-chair** – Jason Rhode, Executive Director, CITL
- **Project Manager** – Susan Smith, Projects Coordinator, Institutional Effectiveness
- **Application Services Representative** – Nick Choban, Senior Director, Application Services, DOIT
- **Technical Committee Representative** – Daniel Ihm, Director, Application Development and Support, DOIT
- **Co-chair of Advisory Committee** – Therese Arado, Acting Director of the Law Library and Professor

- **Co-chair of Advisory Committee** – Stephanie Richter, Director of Teaching Excellence and Support, CITL
- **Procurement Representative** – Antoinette Bridges, Director, Procurement Services and Contract Management

### Advisory Committee

Representatives from across university stakeholder groups who provided input into the evaluation process and establishment of evaluation review criteria. The advisory committee met on an as-needed basis and was responsible for seeking and incorporating campus feedback on the process, responding to draft reports, and supporting the communications plan. The technical committee served as a subgroup of the advisory committee.

The advisory committee members represented both novices and power-users of learning management systems, with an average of 8 years of experience with Blackboard. They have also used a wide variety of learning management systems, with an average of 2.2 systems each.

- **College of Business Faculty Representative** – Gina Nicolosi, Professor and Chair, Department of Finance
- **College of Education Faculty Representative** – Wei-Chen Hung, Professor and Chair, Department of Educational Technology, Research and Assessment
- **College of Engineering and Engineering Technology Faculty Representative** – Gary Chen, Professor, Department of Industrial and Systems Engineering
- **College of Health and Human Sciences Faculty Representative** – Hamid Bateni, Associate Professor, School of Allied Health and Communicative Disorders
- **College of Liberal Arts and Sciences Faculty Representative** – Artemus Ward, Professor, Department of Political Science
- **College of Law Faculty Representative** – +Therese Arado, Acting Director of the Law Library and Professor
- **College of Visual and Performing Arts Faculty Representative** – Kelly Gross, Assistant Professor, School of Art and Design
- **University Libraries Faculty Representative** – Alissa Droog, Assistant Professor, Education and Social Sciences Librarian
- **Instructor Representative** – Federico Bassetti, Instructor, Department of Operations Management and Information Systems
- **Instructor Representative** – Joyce Laben, Instructor, Department of Leadership, Educational Psychology and Foundations
- **Instructor Representative** – Candace Medina, Instructor, Department of World Languages and Cultures
- **Student Success Representative** – LaBrian Carrington, Academic Advisor/Counselor, Academic Advising Center
- **Student Affairs Representative** – Amanda Newman, Associate Director, Disability Resource Center

- **Staff Representative** – Kelsey Johnson, Senior Director, Operations and Financial Strategy, College of Business
- **Staff Representative** – Deirdre Young, Acting Associate Director, Registration and Records
- **Student Representative** – Antonio Johnson, President, Student Government Association
- **Student Representative** – Marissa Dordick
- **Student Representative** – Gaylen Rivers
- **Graduate Student Teaching Assistant** – Bailey Zo Kreager, Department of Geology and Environmental Geosciences
- **Communications Representative** – Holly Nicholson, Web Team Manager, Division of Enrollment Management, Marketing and Communications
- **Division of Outreach, Engagement and Regional Development Representative** – Amy Jo Clemens, Director, Center for P-20 Engagement

+ = Advisory Committee Co-chair

### Technical Committee

Responsible for operationalizing the review of systems, engagement with key stakeholders, and collection of evaluation data.

- **DOIT Representative** – Daniel Ihm, Director, Application Development and Support
- **DOIT Representative** – Shawn Staggs, Applications Programmer Analyst
- **CITL Representative** – +Stephanie Richter, Director of Teaching Excellence and Support
- **CITL Representative** – Jason Underwood, Director of Instructional Design and Development
- **CITL Representative** – Tracy Miller, Assistant Director

### Additional Internal Engagement

Beyond the aforementioned individuals who served collectively as the LMS review task force, the following internal stakeholder groups were also engaged throughout the review process and provided with status updates along with opportunities for feedback.

- Office of the Executive Vice President and Provost
- Council of Deans
- Associate Deans
- Department Chairs/Directors
- Faculty Senate
- Academic Planning Council (APC)
- Innovative Teaching and Learning Advisory Committee (ITLAC)
- Online Learning Advisory Council (OLAC)
- IT Planning Council (ITPC)
- Computing Facilities Advisory Committee (CFAC)

- Student Government Association (SGA)

## Review Criteria and Scoring

### Review Scoring

The following scoring system was established, with scores weighted according to the following maximum scores:

Review Elements	Points Possible
Responses to questions from task force	100
Technical review of the criteria, based on technical committee's testing in a pilot server	200
Campus feedback (direct surveys, focus groups)	250
Pricing, contracted	200
Pricing, transition (to including maintaining multiple licenses, training, etc.)	50
Vendor support for transition and training	100
Roadmap	100
<b>Total Weighted Points Possible</b>	<b>1,000</b>

### Technical Review Criteria

The LMS review task force identified and established technical review criteria, organized into the following categories (available in provided appendices and shared under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License](#)):

1. [General Usability](#)
2. [Accessibility](#)
3. Content Management
  - a. [Content Creation](#)
  - b. [Content Reuse](#)
4. Communication
  - a. [Profiles](#)
  - b. [Email/Messaging](#)
  - c. [Announcements](#)
  - d. [Discussion Board](#)
  - e. [Groups](#)
  - f. [Notifications and Calendar](#)
5. Assessment
  - a. [Assignments](#)
  - b. [Tests](#)
  - c. [Portfolios](#)
  - d. [Gradebook](#)
  - e. [Other Assessment](#)



6. [Analytics and Reporting](#)
7. Technical Requirements
  - a. [Hosting](#)
  - b. [Security](#)
  - c. [Disaster Recovery](#)
  - d. [Customization](#)
  - e. [Integration](#)
  - f. [Technical Support](#)
  - g. [Data Access and Reporting](#)

*[Criteria for support of non-credit activities and non-matriculated students](#) were optional but could increase technical review score.*

### Additional Criteria and Scoring

The following additional criteria and scoring elements were similarly developed for use during the review and shared:

- [Technical Review Weighted Scoring](#)
- [Vendor Technical Questionnaire](#)
- [Roadmap Scoring](#)
- [Vendor Support for Migration Scoring](#)

## Review Process and Timeline

The review process was comprehensive and transparent, with detailed criteria and metrics for evaluation and scoring. The executive committee met with each vendor to provide an overview of NIU's review process and topics for inclusion in campus demonstration presentations. Subsequent steps in the review included:

1. Each vendor met with the Executive Committee to provide background into their history as a company, general overview of solution, and roadmap ahead -- information that provided additional context in advance of campus demonstrations.
2. Each vendor provided a test instance of their platform for technical review and access to existing documentation; technical committee then reviewed the systems and rated each according to the full list of technical criteria.
3. Executive committee and technical committee requested written responses to additional questions based on the technical review.
4. Each vendor provided two virtual demonstrations for faculty, staff, and students to attend on functionality for teaching and learning. Demonstrations were recorded and made available for NIU users to view on the LMS review website. Participants completed follow-up surveys to rate each system's functionality.

5. Each vendor provided separate virtual demonstrations of shopping cart features for outside learners and external programming. Participants similarly completed follow-up surveys to rate the system's functionality.
6. Technical committee built sample courses in each system with identical content and conducted focus group sessions with advisory committee and other NIU constituent groups. Focus groups compared the courses from each system and rated the systems' functionality.
7. Each vendor provided references of client institutions comparable to NIU for the executive committee to reach out to for their institutional experience and feedback.

## Recommendation

Of the three LMS platforms reviewed (Blackboard Learn, D2L Brightspace, Instructure Canvas), **Blackboard Learn** received the highest review score and is recommended for renewal for another 5-year contract term.

## Frequently Asked Questions

1. Why was Blackboard selected as our LMS to use going forward?

While each system has strengths and weaknesses, Blackboard received the highest review score, taking into account all the review elements. The overall scoring included feedback from faculty, instructors, staff and students; technical review; pricing (both for transition and multi-year contract); roadmap of new feature development; and vendor support for transition and training.

Continuing with Blackboard allows faculty to be thoughtful and deliberate about transitioning to a new system on a longer timeframe. [Blackboard Learn Ultra](#) has a robust feature set that is being added to rapidly over the next year, and Blackboard provides enterprise-level security and reporting options we need as a large institution. Staying with Blackboard is also the most affordable solution to the university and provides the most value to our students and faculty.

2. How long will NIU faculty be able to continue teaching with the Original Course View in Blackboard?

We strongly recommend faculty transition to the [Ultra Course View](#) as soon as they are comfortable doing so, with the support of the Center for Innovative Teaching and Learning (CITL). Faculty can learn more by attending a [workshop](#) or taking advantage of a CITL [partnership](#) to work one-on-one with a member of their team. Blackboard course templates are also available that provide a quick start for building your course in Ultra.

The Original Course View will become unavailable at some point, and all NIU faculty and instructors will have to adopt the Ultra Course View at that time. Right now, that date has not yet been determined. The Original Course View will be available at NIU through May 2023, at a minimum.

The Division of IT and the Center for Innovative Teaching and Learning will be working closely with their advisory and governance committees as well as with Blackboard to identify an appropriate timeline for sunsetting Blackboard Learn Original.

**3. What new features are coming to the Ultra Course View?**

Blackboard is updated on a weekly basis, and new features are introduced every month. Since NIU introduced the Ultra Course View in May 2019, Blackboard has added over 40 new features and enhancements to Ultra. Blackboard has even more on their roadmap to be released. Stay up-to-date with new features on [What's New in Ultra?](#)

**4. What is Blackboard Ally?**

NIU's new contract with Blackboard includes adoption of Ally, a revolutionary product that integrates seamlessly into Blackboard and focuses on making digital course content more accessible. As the instructor adds course content, the content passes through an accessibility checklist and is scored, and machine learning algorithms perform a full structural and visual analysis. Alternative formats are automatically generated for students and the instructor is provided feedback on how to ensure future content is as accessible as possible.

**5. When can NIU faculty begin using Blackboard Ally?**

The Disability Resource Center, Presidential Commission on the Status of Persons with Disabilities, Center for Innovative Teaching and Learning, and Division of IT are working together to design an implementation plan for Blackboard Ally. If you are interested in being part of the pilot group, email [citl@niu.edu](mailto:citl@niu.edu).

## Appendix A: Technical Review Criteria and Scoring

### 1. General Usability

Description	Points Possible
Interface is modern and consistent with contemporary web-based software.	20
Interface is easy and intuitive to navigate.	20
System is designed to be mobile-compatible, and most major functions of the system can be completed from a mobile browser, within the limitations of a mobile device.	20
A mobile app is available for faculty and students to access courses and perform most major functions of the system and provides mobile notifications based on user preferences.	10
Courses can be set to open to students as of a specific date and can be open/closed by instructors.	10
Students can access but not modify past courses, such as viewing grades, assignments, or content, and instructor can control what is open to students.	5
System provides instructor with a student view without requiring a separate log in.	5
<b>Total</b>	<b>100</b>

### 2. Accessibility

Description	Points Possible
Interface complies with WCAG 2.0 standards and Section 508.	20
Vendor can provide a VPAT that has been externally validated.	10
Vendor provides documentation and training for users who rely on assistive technology to use their system.	10
Vendor provides process and timeline for addressing accessibility issues.	5
System checks files and text editor content for accessibility issues.	5
<b>Total</b>	<b>50</b>

### 3a. Content Management: Content Creation

Description	Points Possible
Course template and navigation menu are customizable at the administrative and instructor level.	10
System supports common file types such as text, multimedia, image and object files that are used in higher education.	20
Instructors can selectively release material, assessments, announcements, and emails based upon course activity, grades, or start and end dates.	10

System has a fully functional text editor with font formatting options, adding multimedia, math equations editor, spell checker, html, and other standardized formatting options.	10
Files can be uploaded to the system via drag-and-drop as well as browsing local storage.	5
Content items can be ordered via drag-and-drop.	5
<b>Total</b>	<b>60</b>

### 3b. Content Management: Content Reuse

<b>Description</b>	<b>Points Possible</b>
Instructors can copy or import an entire course or select course materials and assessments for use in another course section.	20
Instructors can import content packages and test banks from publishers.	10
Courses can be archived by the instructor or an administrator for storage outside of the system.	20
System automatically generates back-ups of active courses on a routine basis.	5
System has a function that offsets assignment and calendar dates when courses are copied.	5
<b>Total</b>	<b>60</b>

### 4a. Communication: Profiles

<b>Description</b>	<b>Points Possible</b>
Student and instructor names and email addresses can be set via SIS integration and locked to prevent individual changes.	20
Students and instructors can create profiles in the system, including adding a profile photo and specifying a major or department.	10
Students and instructors can control the privacy of their profile in the system.	10
Students can identify gender pronouns in their profile.	10
<b>Total</b>	<b>50</b>

### 4b. Communication: Email/Messaging

<b>Description</b>	<b>Points Possible</b>
Users can use an email or messaging feature to communicate with individuals and groups.	20
Email or messaging can include file attachments.	5
Email or messaging can be viewed within the system and be sent to an external email address.	10
Messages can be sent to students via SMS.	5
Message notifications are highly visible to recipients.	20

<b>Total</b>	<b>60</b>
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#### 4c. Announcements

<b>Description</b>	<b>Points Possible</b>
System has the ability to create an announcement within the course, including file attachments, that can be emailed simultaneously to the class.	20
Announcements can be created in advance to be sent at a later date.	10
<b>Total</b>	<b>30</b>

#### 4d. Discussion Board

<b>Description</b>	<b>Points Possible</b>
System has a fully functional discussion board tool (with a fully functional text editor).	20
Instructors can enable or disable anonymous posting.	5
Instructors can require that students make an initial post before viewing classmates' posts.	10
Discussion posts can be marked "read" or "unread".	5
Instructors can create separate discussion environments for small groups that can be open to all or only a select set of students.	20
Instructors can delete posts.	5
Instructors can limit discussions to specific time periods.	10
Instructors can easily see a statistical summary of discussions displaying each user's participation, which can be used to generate grades from the same screen.	20
Columns are automatically created in the grade book when discussion grading is indicated.	20
Discussion grading includes a comment box for feedback and an interactive rubric.	10
Users have the ability to subscribe to discussion and have notifications of posts.	10
Instructors can enable video as an option for posts and replies.	10
<b>Total</b>	<b>145</b>

#### 4e. Groups

<b>Description</b>	<b>Points Possible</b>
Instructor can create groups via random assignment or manual selection of specific students.	20
Groups are automatically created with combined course section numbers.	10
Instructor can communicate with all members of a group via the email/messaging tools.	20

Group members can communicate with one another via the email/messaging tools.	10
Instructor can assign an assessment to one or more groups, the group members make a single submission on behalf of the entire group, the grade earned is assigned to all members of the group, and the group grade can be overridden for an individual group member.	20
<b>Total</b>	<b>80</b>

#### 4f. Communication: Notifications and Calendar

<b>Description</b>	<b>Points Possible</b>
System notifies students of upcoming and past due dates based on assessments created within the course (such as assignments, texts, discussions, or other items included in the grade book).	20
System includes ability to send SMS, email, and mobile push notifications, based on user preference.	10
Students and instructors can modify notification frequency and type based on personal preference.	10
System has a robust calendar feature that contains course events and tasks from all courses, differentiated clearly by course (such as by color).	20
System has a robust calendar feature that is automatically updated when an assignment due date is entered or updated in a course.	20
System has a robust calendar feature that allows students to access assignments by clicking on them within the calendar.	10
System has a robust calendar feature that allows students to add their own events to the calendar.	10
System has a robust calendar feature that can be synced with an outside calendar via automatic feed.	5
<b>Total</b>	<b>105</b>

#### 5a. Assessment: Assignments

<b>Description</b>	<b>Points Possible</b>
Instructors can create assignments with text instructions, embedded media, and attached files.	20
Instructors can set a due date for assignments, which is automatically populated in the calendar and used for reminders/past due notifications to students.	20
Instructors can set a time limit for students to submit the assignment once it is opened.	5
Assignment submission and grading is functional, systematic, and efficient.	20
Student assignment submissions can include multiple files in a single submission.	5
Student assignment submissions can include images, sound, video, or embedded media via LTI integration.	10

Student assignment submissions can include images, sound, video, or embedded media via LTI integration.	20
Assignment submissions can be downloaded in bulk for offline grading.	10
Instructor can create assessments designed for students to review each other (peer-review).	10
System includes a built-in plagiarism detection tool.	20
Assignment can be designated as extra credit.	10
<b>Total</b>	<b>150</b>

### 5b. Assessment: Tests

<b>Description</b>	<b>Points Possible</b>
Instructors can create tests with automatically scored: true/false, multiple choice, multiple answers, fill-in blank, numeric (with significant figures), matching questions, hot spot, calculate formula; and manually scored essay/short answer questions.	20
Question prompts (and answers for multiple choice, multiple answer, and matching questions) include full text editor formatting options, including the ability to embed media, create web links, and attach files.	10
Instructors can allow partial credit for answers on automatically scored questions.	10
Instructors can specify questions as extra credit.	10
Test banks can be imported from existing test banks as well as created and maintained by instructors. Questions in test banks can be imported into course exams.	20
Tests and test banks can be easily copied or imported from one course to another.	20
Instructors can create anonymous surveys.	5
Order of test questions can be randomized per student.	10
Order of answer options for multiple choice questions can be randomized per student.	10
Question selection can be randomized from a block of questions or test bank, where instructor specifies how many questions are presented to each student.	20
Instructors can control visibility and timing of feedback, including question text, right/wrong indicators, score per question, submitted answer, and correct answer.	20
Instructor can specify dates and times when students can access tests and modify these for individuals or groups of students.	20
Instructor can set a time limit for completing the test once a student has started it and can modify the time limit for specific individuals.	10
Instructor can set the number of attempts allowed and which grade is used of multiple attempts.	10
Instructor can limit access via a password.	5



Instructor can edit a question after students have submitted a test and automatically regrade submissions, including changing the correct answer, adding additional correct answers, providing full credit for all students, specifying a question as extra credit, or removing the question.	20
Instructors can view data on student access of tests, including date and time of when the student started the test, when individual questions were saved, and when the student submitted the test.	20
Instructor can download all student submissions as a tab- or comma-delimited file.	10
<b>Total</b>	<b>250</b>

### 5c. Assessment: Portfolios

<b>Description</b>	<b>Points Possible</b>
System provides an e-portfolio tool that allows for work to be shared internally and externally to the University.	20
Files submitted as part of regular course work can be imported to the portfolio as artifacts.	10
Students can upload files to be included as portfolio artifacts.	20
Portfolios can be easily submitted to a course assignment for grading and feedback.	20
Institution can create and manage templates for student portfolios.	10
<b>Total</b>	<b>80</b>

### 5d. Assessment: Gradebook

<b>Description</b>	<b>Points Possible</b>
Manually create and maintain graded items (columns).	20
Manually edit all gradebook data.	20
Show or hide an individual grade item.	10
Specify overall grade calculation by points or a weighted grading scale by including all or only select graded items/categories.	20
Create custom grading scales.	10
Input scores, percentages, letters, pass/fail, or text entries.	20
Create extra credit items (columns).	10
Drop one or more of the lowest grades from a set of items.	10
Exempt a student from a graded item.	5
Email/message a student directly from the gradebook.	10
Reorder grade items (columns) via drag and drop.	10
Enable automatic zeroes for past-due items.	5
Control visibility of feedback and grades (such as bulk "posting").	20
Student view of grades includes completed and upcoming course assignments.	5

Student view of grades includes graded assignments and instructor feedback.	20
Student view of grades includes total points earned in the course.	20
Student view of grades includes how the final grade is calculated, including relevant weights.	20
System has a rubric building tool that can be associated directly to assessments, including assignments, essay/short answer test questions, discussion boards, blogs, and wikis.	20
Rubrics can be imported.	10
Rubrics can be exported.	10
When an instructor adds an assignment, test, or other assessment, the system automatically adds a graded item (column) in the gradebook.	20
Gradebook facilitates simple navigation for instructors to grade a series of student submissions to the same graded item.	20
Assignments and tests can be graded anonymously.	10
Assignments can be graded by multiple individuals and their rubrics and/or overall ratings can be aggregated into a final grade.	10
Instructors can filter the view of the gradebook using different criteria such as by student or graded item.	10
Instructors can search the grade book for a student or graded item.	5
Instructors can sort students alphabetically or by performance on any graded item.	10
While scrolling through the grade book the student names should be visible at all times.	20
Instructors can export and import the gradebook to and from an external spreadsheet program.	20
Instructors and administrators can view a history of changes to the gradebook.	10
Instructors can submit an overall letter grade from the gradebook to our SIS (PeopleSoft), by an existing tool or by custom development.	10
<b>Total</b>	<b>440</b>

#### 5e. Assessment: Other Assessments

Description	Points Possible
System includes standard web 2.0 tools such as blogging and wikis that can be graded through a single user interface.	20
Assessments can be associated with outcomes that can be linked to course-level, department-level, or program-level outcomes for accreditation purposes.	10
<b>Total</b>	<b>30</b>

#### 6. Analytics and Reporting

Description	Points Possible
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System has an early warning system based on student performance and/or access that alerts the instructor to potential issues about their students.	20
System has an early warning system based on student performance and/or access that alerts the student to potential issues in their own learning or access.	10
System tracks and reports student access to content and assessments, including date/time and number of times accessed.	10
System reports the last access date for each student.	20
<b>Total</b>	<b>60</b>

#### 7a. Technical Requirements: Hosting

<b>Description</b>	<b>Points Possible</b>
System is cloud-hosted using adaptable and scalable architecture.	20
All environments should have 24x7 availability and 99.99% uptime guarantee.	20
Institution can specify custom URL for accessing the application (e.g., webcourses.niu.edu).	10
Vendor proactively monitors the health of the environments and takes corrective actions to alleviate issues.	20
Vendor notifies institutions of system issues in a timely fashion.	20
Planned outages for maintenance are scheduled during off-hours and communicated well in advance.	20
System includes notifications and reporting options around disk space usage so that the quantity of space used on the platform can be proactively managed, including automated or built-in mechanisms which assist with the management of disk space usage.	20
The solution should utilize common NIU authentication mechanisms (Azure AD preferred) for end user account access and web0based access by system administrators and operators.	20
All system components including authentication points and the central system should synchronize against an industry standard time source (e.g., NTP source from NIST or downstream mirror).	20
Archive courses are automatically backed up on a daily basis and archives are retained for 30 days.	10
<b>Total</b>	<b>180</b>

#### 7b. Technical Requirements: Security

<b>Description</b>	<b>Points Possible</b>
Administrators can customize existing roles and can create new, custom roles with specific access privileges to course content and tools.	10

Institution can delegate privileges to appropriate administrators to access and edit courses within their purview (e.g., a department chair could access courses offered by his/her department).	5
Institution can limit the file types and sizes that are permitted for instructors and students to upload with separate restrictions by user type.	10
Vendor is able to ensure maximum compatibility with frequent browser updates.	20
The system must provide full audit trails on all system activities.	20
The system must be secured in a manner appropriate for a server containing sensitive personal data.	20
The system must be able to comply with the Family educational Rights and Privacy Act (FERPA).	20
Vendor complies with the limitations on the use and redisclosure of Personally Identifiable Information from education records as defined in 34& CFR § 99.00 et seq.	20
Vendor will maintain confidentiality, and shall not re-disclose Personally Identifiable Information from education records except as authorized by the University in writing.	20
Vendor meets or exceeds the <a href="#">NIU Information Security Policy</a> .	20
Data is encrypted at rest and in transit, including all data that is transacted over a network element.	20
Vendor conducts periodic risk assessments to determine and prioritize risks and enumerate vulnerabilities.	10
Vendor understands the impact that attacks might have on their products and ensures that their products meet applicable contractual obligations, regulatory mandates and security best practices and standards.	20
Vendor shares with customer all security-relevant information regarding the vulnerabilities, risks and threats to their products immediately and completely upon identification.	20
Any breach must be reported to the University's ISO.	20
On an annual basis, provide the University with a SOC 1 and 2 report.	10
All university data must be stored in the United States.	20
At the end of the contract, the University requests 90 days to access and retrieve data.	10
NIU would prefer a tier-three rated data center.	10
Only front-end servers should be accessible and all other servers be firewalled and only accessible by support personnel at your organization or the University.	20
Vendors current information security policy creates a secure infrastructure access and prevents intrusion.	20
<b>Total</b>	<b>345</b>

7c. Technical Requirements: Disaster Recovery

Description	Points Possible
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Vendor has a documented and tested disaster recovery plan including off-site backup, recovery and contingency plan in place to protect from hardware failure, data corruption and environmental disaster.	20
Vendor has a recovery plan if their datacenter(s) becomes unusable.	10
Recovery point objective (RPO) for our individual services is under 8 hours	5
Recovery time objective (RTO) for our individual services is under 8 hours.	5
<b>Total</b>	<b>40</b>

#### 7d. Technical Requirements: Customization

<b>Description</b>	<b>Points Possible</b>
Institution can apply custom branding, including logo, colors, and images.	20
Institution can customize content of the landing page to highlight important announcements or relevant resources, differentiated by user role (e.g., student, instructor, etc.).	20
Institution can differentiate branding for sub-groups.	10
<b>Total</b>	<b>50</b>

#### 7e. Technical Requirements: Integration

<b>Description</b>	<b>Points Possible</b>
System can integrate with PeopleSoft for generating user accounts, creating courses, and managing course enrollments.	20
System can integrate with the following via an extension or LTI: Turning Technologies, Kaltura, VoiceThread, Zoom, Microsoft Teams, Chalk and Wire, Major Publishers (McGraw-Hill, Pearson, Cengage, etc.), eXplorance Blue, Examity, Respondus LockDown Browser & Monitor.	20
System can support LTI 1.3 and LTI Advantage.	20
API's are available which allow developers to build integrations which can create, read, update, or delete data objects in real-time.	20
<b>Total</b>	<b>60</b>

#### 7f. Technical Requirements: Technical Support

<b>Description</b>	<b>Points Possible</b>
Vendor offers 24x7 support for severe system issues and business hours support in the central time zone for non-emergency support.	20
Vendor utilizes an incident ticketing system that provides administrators with the ability to enter support requests and incidents and view the status of all tickets.	20
Incident tickets are handled quickly, based on priority and severity.	20
Vendor conducts extensive quality assurance testing prior to release an update or patch.	20

<b>Total</b>	<b>80</b>
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**7g. Technical Requirements: Data Access and Reporting**

<b>Description</b>	<b>Points Possible</b>
Institution can generate reports, analytics, or query data on usage, authentication, student engagement data, grade information, disk space usage, enrollments, etc.	20
Institution can access log data for purposes of troubleshooting.	20
The solution provides direct database access for analyzing data issues with direct SQL queries, as well as the ability to pull/extract data from system into our data warehouse with ETL tools.	20
<b>Total</b>	<b>60</b>

## Appendix B: Technical Review Weighted Scoring

To account for varying number of criteria per category and to weight by relative importance of criteria, the following adjusted points possible will be assigned to the technical review criteria categories:

<b>Criteria Category</b>	<b>Weighted Points Possible</b>
General Usability	200
Accessibility	200
Content Management – Content Creation	200
Content Management – Content Reuse	100
Communication – Profiles	50
Communication – Email/Messaging	100
Communication – Announcements	100
Communication – Discussion Boards	200
Communication – Groups	100
Communication – Notifications and Calendar	100
Assessment – Assignments	200
Assessment – Tests	200
Assessment – Portfolios	100
Assessment – Gradebook	200
Assessment – Other	50
Analytics and Reporting	100
Technical Requirements – Hosting	200
Technical Requirements – Security	200
Technical Requirements – Disaster Recovery	200
Technical Requirements – Customization	100
Technical Requirements – Integration	200
Technical Requirements – Data Access and Reporting	200
Technical Requirements – Technical Support	200
<b>Total Weighted Points Possible</b>	<b>3,500</b>

## Appendix C: Vendor Technical Questionnaire

As we constructed the list of review criteria, it was clear that there were items that we would not be able to judge directly from the interface. The following questions were compiled by the LMS Review Task Force for vendors to respond to.

### 1. Hosting

- a. Describe how you proactively monitor the health of the environments and take corrective actions to alleviate issues.
- b. Based on severity, how quickly and frequently does your organization delivery issue notifications and by what communication method?
- c. How does your organization schedule planned outages for maintenance? When is a maintenance window typically scheduled? How much advanced notice will you provide?
- d. Provide your notification and reporting options around disk space usage so that the quantity of space used on your platform can be proactively managed. Provide information about any automated or built-in mechanisms which assist with the management of disk space usage.
- e. Provide a technical requirements document, design architecture and associated network diagrams for the proposed solution.
- f. What is the established plan to ensure maximum compatibility with browsers as they constantly release updates?

### 2. Security

- a. Describe how the solution has been hardened to maintain system integrity and data privacy. Provide any white papers or similar documentation specifying the appropriate use of multilayered (application, server/OS, network, IPS, etc.) security mechanisms to deploy the system.
- b. Explain your current information security policy. How does your organization go about creating a secure infrastructure access and prevent intrusion?
- c. Describe built-in system features and safeguards designed to meet typical institutional FERPA and privacy concerns.
- d. Describe the process the system uses for encrypting data to rest and in transit, including all data that is transacted over a network element.
- e. Does your company conduct periodic risk assessments to determine and prioritize risks, and enumerate vulnerabilities?
- f. Does your company understand the impact that attacks might have on your products and ensure that your products meet applicable contractual obligations, regulatory mandates and security best practices and standards?



- g. How does your company share with customer all security-relevant information regarding the vulnerabilities, risks and threats to your products immediately and completely upon identification?
- h. Provide your breach notification process and timeline.
- i. On an annual basis, do you provide the University with a SOC 1 and 2 report?
- j. Describe where university data will be stored and how you are able to ensure that all university data is stored in the United States.

### 3. Disaster Recovery

- a. Please detail your disaster recovery plan as it applies to the service provided to NIU. Do you have a documented and tested off-site backup, recovery and contingency plan in place to protect from hardware failure, data corruption or environmental disaster?
- b. What is your recovery plan if your datacenter(s) becomes unusable?
- c. What is the recovery point objective (RPO) for our individual services? NIU would prefer a time under 8 hours.
- d. What recovery time objective (RTO) for our individual services? NIU would prefer a time under 8 hours.
- e. Please describe any additional redundancy and a fail over setups that are offered for your service. NIU prefers vendors conduct a disaster recovery test annually.

### 4. Support

- a. Does your company offer 24 x 7 support for severe system issues and business hours support in the central time zone for non-emergency support?
- b. If there is an incident ticketing system, please detail how the system works including ability to enter support requests and incidents directly or by email, and ability to view status of all tickets.
- c. What is your turnaround time for incident tickets and service requests based on priority?
- d. Document the general policies and procedures currently in place for quality assurance testing.

### 5. Implementation / Migration

- a. Describe/outline a completed implementation of a similar scope and institution size including timeframes and the quantity of vendor and institution resources required (how many people doing what activities with what role, etc.).
- b. Please attach a proposed timeline for implementation.
- c. Please describe all migration tools and what types and levels of implementation support services that you have available.
- d. Describe any prerequisites incumbent upon the university prior to the acquisition of implementation support – e.g., administrator training, required certifications, etc.

- e. Describe (by name, title and experience) the implementation team that would be assigned to our account, including management, tenure and certifications.

## 6. Roadmap

- a. What are some upcoming features currently under development or soon to be developed?
- b. How do you establish your development priorities?
- c. How do you communicate roadmap development to clients? How frequently does that communication occur?

## Appendix D: Roadmap Scoring

<b>Criteria Category</b>	<b>Points Possible</b>
Published roadmap items are substantive improvements in features, usability, scalability, or security of the system.	30
Roadmap content and pace of implementation demonstrates commitment to improvement and active investment in the system.	30
Roadmap is shared frequently with clients.	20
Clients have a clear mechanism to influence the roadmap, including what features are considered and how these features are designed.	20
<b>Total Points Possible</b>	<b>100</b>

## Appendix E: Vendor Support for Migration Scoring

<b>Criteria Category</b>	<b>Points Possible</b>
<b>Data Transfer</b> - Vendor provides a straightforward means to transfer course data for import.	20
<b>Course Conversion</b> - Vendor provides a means to bulk convert courses.	20
<b>Integration and Development Support</b> - Documentation and assistance with integrations and custom development.	20
<b>Training</b> - Vendor provides training for administrators, faculty, and students.	20
<b>Change Management</b> - Vendor provides guidance and project management for migration, adoption and change management.	20
<b>Total Points Possible</b>	<b>100</b>

## Appendix F: Criteria for LMS Support of Non-Credit Activities and Non-Matriculated Students

The purpose of this set of criteria is to identify the features sought in an LMS, in order to provide support for individuals who are seeking access to non-credit training and educational programming, as well as to non-matriculated students who are seeking access to for-credit offerings. These learners would be able to create their own accounts; browse the available offerings; register for a course, event or training program; and pay a fee during registration. The process should be seamless and user-friendly.

There are a wide range of offerings that should be made visible to these individuals:

- For-credit courses
- Course modules
- Training programs
- Continuing education programming
- Webinars, podcasts, seminars, conferences and other events
- Proficiency testing
- Credentials assessment

### 1. Registration and Catalog

- g. Publicly viewable catalog of offerings that includes:
  - Ability for non-registered learners to see the available offerings
  - Search based on title, description, keywords, dates, and program
  - Overview page with an image, title, description, dates
  - Distinct branding for separate catalogs by program or client
- h. Account creation process that is integrated within the registration process for new users; same account is used for course access and subsequent registrations.
- i. Special registration options in addition to primary registration for an offering, such as a breakout session, with the ability to limit the capacity and increase registration fee for these options.
- j. Custom registration fields for each offering that can be used to gather information from registrants in addition to basic account information (such as accommodations, membership number, company size, industry, how they learned about the offering, etc.).
- k. For asynchronous, self-paced offerings, ability to allow immediate access to course upon completion of registration and payment or delay access until the course start date.
- l. Automated email reminders for registered users who selected offerings (e.g., put them in a shopping cart) but did not complete the registration/enrollment process.
- m. Automated emails to recommend offerings related to ones they have completed.
- n. Self-service for account verification and password reset.

- o. Help documentation available for learners on demand for troubleshooting technical issues.

## 2. Shopping Cart and Payment Processing

- a. Ability to set a registration fee or provide access to an offering at no cost.
- b. Ability for learners to register for multiple offerings simultaneously (e.g., place multiple offerings in a shopping cart and check out once for all of the selections).
- c. Payment via credit card and PayPal.
- d. Ability to provide learners with registration codes and various discount codes to enter in lieu of paying via credit card.
- e. Ability to accept international payments.
- f. Flexible registration fees:
  - Differentiated pricing by attendee categories (member, non-member, exhibitor, attendee, student, retired, etc.).
  - Automatic price changes based on date (early, standard, late, onsite).
  - Special pricing for group registration (e.g., discount if three or more people register from the same organization).
  - Tiered pricing for bulk registration (e.g., full rate for first 10 registrants from the same organization, discounted registration for each additional registrant).
  - Discount codes to reduce or waive registration fee, and reporting to identify number of discount codes used.
  - Manual override of pricing for individual registrants.
- g. Ability to provide a refund.

## 3. Administration

- a. Administrative controls to access and edit or cancel registrations, course completions, and registrant accounts.
- b. Unlimited number of administrative accounts.
- c. Ability to grant limited administrative rights for distributed staff who oversee offerings delivered through the system to create and modify offerings without having access to full administrative access to system configuration.
- d. Ability to grant rights for viewing reports based on course or category/program.

## 4. Data and Reporting

- a. Automated evidence of course completion for learners, such as a certificate, populated with course title and date of completion.
- b. Automated digital badges awarded on course completion.
- c. Automated, self-service transcript of all courses completed by a single learner.
- d. Administrative reporting for course completion, including date of course completion.

- e. Dashboard view to summarize registration and course completion details for a single offering or all offerings in a category.
- f. Export to CSV or spreadsheet of registration and course completion data.
- g. Tracking of continuing education units (if any) associated with each offering, including certificate number, hours, activity, and required submissions.
- h. Access to data on learner shopping/browsing behavior, including course overview page views, registration, and course completion.
- i. Integration with marketing software such as Slate, Salesforce or USI (to analyze buying behaviors and collect client lists based on user defined fields).
- j. Integration with Peoplesoft to streamline financial processes.



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## Appendix G: LMS Review Questions for References

1. Approximately how long have you used XXX? What LMS did you use prior to XXX?
2. What do you like the most about XXX? If you were part of the decision-making process, what factors were pivotal in the decision to adopt XXX?
3. What do you believe are the biggest gaps or limitations with XXX?
4. How long did it take to migrate to XXX? Did you have any issues with integrations or data migration?
5. Did you convert courses from your previous LMS to XXX or rebuild them?
6. How responsive is XXX when troubleshooting? Are you satisfied with their support and response times?
7. Does XXX take action on your enhancement suggestions?
8. Do you have any lessons learned or is there anything else you would like to share with us?