# PRE-AMBLE

Short-listed Vendors of this LME Renewal Initiative will be asked to engage in several activities (including Live Presentations and providing Test Course Instances) to showcase their LME products to the University of Toronto community during the community evaluation timeframe.

The following Use Cases have been developed in consultation with individuals and groups across the University of Toronto, and represent many general and specific activities and requirements of the diverse and complex academic community, and Vendors should carefully consider these when preparing those activities.

## OVERALL INTEGRATED REQUIREMENTS

**NOTE: Vendors should ensure that the following items and issues are considered and addressed throughout the use cases below, and integrated accordingly, not just in isolated circumstances:**

1. Describe how AODA requirements are achieved in all aspects of the LME.
2. Demonstrate **global** features that might be applied to designated users at different levels (program/department/campus), e.g. push Library resources to individual course(s).
3. Tell us what differentiates your LME product from other vendors, including advanced features and customizability.
4. Instructors want 3rd Party Tool Integration in many aspects of an LME to extend functionality. Your product might have built-in features that perform particular tasks, but please **demonstrate** how 3rd Party Tool Integrations might work in your LME in a variety of circumstances, especially in situations where a 3rd party tool might be the obvious choice.
5. Some courses/programs/services need to be available on mobile devices. Please demonstrate the functionalities that instructors and students would have in this regard, to achieve a high-quality experience.

# USE CASES

### Use Case #1 - Start of Term Course Set-up

At the beginning of the term, instructors prepare their course section in a learning management system. They may have content from previous semesters to rollover into a new semester (and in an identical structure or organization), or new content to pull from various sources (e.g. files on their computer, or from internet sites; and may include documents, powerpoints, PDFs, video or audio clips, learning objects such as Articulate Storyline, SCORM packages, tests, etc.).

An ideal scenario would be the provision of well-documented, easy-to-use tools and features for instructors who have very little technical expertise. For instructors teaching multiple sections of the same course, or if teaching recurring courses, there would be a means of avoiding repeat effort during the set-up. Please describe in detail:

1.1. How the above scenario could be accomplished in your system including any recommended workarounds.

1.2. If and how instructors can prevent students from accessing their courses during this set-up period, including any recommended workarounds.
1.3. How analytics might be enabled for all aspects of the course.
1.4. How different courses in different programs might be given a similar look and feel.
1.5. How course content can be arranged via "drag and drop".
1.6. How instructors can see a 'student view' of assignments, grades and more.
1.7. Some courses/programs/services need to be available on mobile devices. Please explain:
- 1.7.a. What functionalities would instructors have access to regarding managing courses on mobile devices such as smart phones and tablets (e.g., for testing, updating course content, online materials or document sharing, other)?
- 1.7.b. What functionalities would students have access to regarding using mobile devices (e.g., for tests, online materials or document sharing, other)?
- 1.7.c. Compare the quality of the mobile experience to non-mobile devices.

1.8 How can your system integrate and accurately sync a (possibly) changing roster of students (e.g. adding/dropping the course), where this roster might affect course activities such as group assignments.

## Use Case #2 - Course Management (including online courses, modules, and meetings)

Courses might be set up and managed in different ways and have different requirements. The following are some scenarios:

2.a. Courses with one instructor only;
2.b. Courses with multiple sections and different instructors for one or more of those sections. One instructor might function as Course Coordinator, taking care of some key overall course issues, such as general announcements, outlines, and documents that apply to all sections, and wanting to post those only once.
2.c. Courses with one instructor only, but are part of a program where a department administrator wishes to apply a similar look and feel to those courses, and/or manage certain features across those courses.
2.d. Courses that are delivered partially or wholly online (with synchronous or asynchronous features), using audio, video or other modules or learning objects.
2.e. Courses with a co-op or practicum component where non-UT supervisors (lacking UT access credentials) provide assessment/progress information for UT students in those programs, requiring access to an online system for these actions.

In some of these situations, it might be desirable to be able to set up one master course and/or template to administer these courses.

Please explain:
2.1. How the above scenarios could be accomplished in your system, including any recommended workarounds.
2.2. Depending on the course section or assigned level/role, how an instructor/TA/student/supervisor/administrator would have access to section-specific material.
2.3. If and how this would also apply to the gradebook so that TAs or instructors would only have access to the sections assigned to them within the gradebook.
2.4. How an instructor might assign multiple roles in a course, including TAs (with or without access to grades); work-study students, or study group facilitators (with no access to grades/limited access to other materials, announcements, etc.)

2.5. how a university service such as the library might make use of APIs or web services provided by your solution to integrate content and services into course sections, courses or programs, and make scripted use of contextual information such as course codes and user roles to make the integrated content locally relevant.
2.6. Demonstrate global features that might be applied to users at different levels (course/program/department/campus) or roles (student/faculty/etc). For example, pushing library information to a course, department program, or user group, e.g. course reserve materials, Springshare LibGuides, in-house-developed library add-ons, live chat reference, and other integrations.

**ANALYTICS**
2.6. Please describe how per-user analytics can be enabled/disabled for all content, including assignments, assessments, video lectures, quizzes, questions and discussion forums. Instructors/course coordinators/administrators want to be able to track/assess student(s) performance, engagement and participation, by assignment, use of resources, and overall, for possible intervention, through some form of analytics, dashboard or report. They also want to access to back-end data, such as activity pathways, quiz responses, tool access counts, etc, to support queries and information discovery. Please show:

2.7. How an instructor/course coordinator can identify, communicate with and make resources available to students who have:
- 2.7.a. accessed specific content;
- 2.7.b. performed above, below or at a threshold for an assessment item (e.g., online test, assignment, other) set by the instructor.

2.8 How user analytics are exportable to csv files, allowing instructors to perform fast correlational studies on the dependence of level of participant engagement with specific content, with performance on specific questions, quizzes or tests.
2.9. How a student can track/access course content/information to help her/him improve her/his performance, and/or view detailed activity/analytics reports related to her/his performance, through some form of dashboard and/or production of a report.

**OTHER**
2.9. How can instructors and students access portions of the course offline? Please demonstrate:
- 2.9.a. What aspects of the course would be available to them while they are offline (e.g., content items, tests, other)?
- 2.9.b. What would be the process to synchronize offline activities when the Internet is available again (e.g., login to system, other specific actions)?

2.10. How would an instructor archive and export courses/sections/selected items?
2.11. How would an instructor copy courses/sections/selected items from one course to a new course shell?
2.12. How would an instructor set up a course calendar?
2.13 How do students view/experience the course calendar, especially triggered alerts?
2.14. How would a student subscribe to a discussion forum or thread? What else can they subscribe to?
2.15 How would students/instructors:
- 2.15.a. Participate and lead meetings online that include real-time presentations, collaborative whiteboards, chat, other.
- 2.15.b. Participate in meetings online that include audio and video conferencing, and the ability to record these sessions.
- 2.16.c. Access an archive of virtual meetings or materials for later viewing.

## Use Case #3 - Student Assignments and Assessment

Instructors want to use an LME to manage various phases of developing and delivering courses to students, including developing and tracking learning outcomes, creating rubrics, managing course documents, course readings and grading, creating and managing groups of students, document sharing, creating and managing tests and quizzes, managing audio, video and other modules, and provide/use analytics.

Additionally, students need to be able to access and view all assignment requirements, submit assignments, share, collaborate and manage documents, use documents across courses and export their own materials out of the LME (eg a portfolio), and access an analytics dashboard to track their own performance/engagement.

Please demonstrate the following:

### *Scenario 3a. Tracking learning outcomes completion*

Learning outcomes can be used to measure student learning and to inform the effectiveness and improvement of program/course/department planning, delivery and evaluation. Learning outcomes are sometimes developed in collaboration with internal and external stakeholders (eg accreditation bodies) and may reference competency-based standards that have been developed to support benchmarking and quality improvement initiatives. Please demonstrate and explain the following:

3.a.1. Represent a learning outcome and/or learning outcome structure within the LME.
3.a.2. Copy and share a learning outcome and/or learning outcome structure across different courses or programs.
3.a.3. Link to external learning outcome structures and standards.
3.a.4. Link one or more learning outcomes to an activity, assignment, specific items in a test, or other.
3.a.5. How can customized reports be produced on learning outcome measure(s) and fulfilment of same by individuals or groups of individual taking a course?
3.a.6. Provide data visualization tools to support generation of customized learning outcome reports.

### *Scenario 3b. Course Documents/Assignments/Sharing*

Instructors need to post and/or link to documents and materials in the system, manage (including student sharing of documents) and grade student assignments. Students need to view assignment requirements and submit and share assignments. Please explain how:

3.b.1. An instructor can post a document/assignment online (one at a time or bulk upload), with or without a timed or adaptive release.
3.b.2. Students can submit an assignment/document individually or by group; possibly with asynchronous submission (across course sections or programs).
3.b.3. Students can record, save and submit audio, video and other files;
3.b.4. There can be anonymous sharing of these files between students, with commenting capabilities.
3.b.5. Instructors can mark up and comment on the assignment/document (including audio feedback to students). Does the collaborative document tool have versioning controls to revert to a previous version of the document?
3.b.6. Instructors can grade assignments:
    3.b.6.a. Inline;

3.b.6.b. Batch download assignments to grade them offline;
3.b.7. The instructor can provide 'provisional' feedback to students individually and/or in groups, that is visible to:

3.b.7.a. student only;
3.b.7.b. group only;
3.b.7.c. entire class
and could be used by the student(s) to revise/re-create the assignment and turn it in again.

3.b.8. Instructors can batch upload graded student assignments;
3.b.9. Instructors can track student assignments;
3.b.10. Instructors can delegate grading to TAs;
3.b.11. Instructors can anonymize grading.

How can students:
3.b.12. View assignment grades and feedback online.
3.b.13. Have access to specific content based on their grade on an assignment.
3.b.14. Have individualized assignment parameters (e.g., date and time extensions) to accommodate student-identified accessibility requirements.
3.b.15. Make their documents (e.g. portfolio) (available/viewable publicly, and/or export them?

### *Scenario 3c. Group-based Collaboration Assignments*

Many course assignments involve group-based collaboration components. Students want to collaborate in ways that support their understanding of content and their connection to their peers, instructors and TAs. Some activities are done privately and materials are accessible to only the members of a given group. Sometimes, collaboration occurs publicly and only in-group members can post content while others in the class can read/review and comment. Or, group collaboration may happen privately but then is made accessible upon submission of the assignment for review/comments by the entire class. An ideal scenario would give full control to the instructor for these various assignment "modes" in a straightforward and robust manner.

Please explain how an instructor can do the following, including any workarounds:

3.c.1. Set up and manage student groups (including instructor-created groups (possibly based on tutorial or practical groups, but not only); student self-signup to groups; randomly assigning students to groups; switching students from one group to another, either by the student or the instructor/TA; establish enrolment caps; view baseline roster populations)
3.c.2. Control and assign different levels of access to course materials and permissions
3.c.3. Create and moderate an online (3rd party) discussion board (graded or ungraded);
3.c.4. Instant message with students and allow students to instant message each other;
3.c.5. Support development of class community, e.g. does your system allow users to create an avatar from a pre-selected set of images?
3.c.6. Describe if and how marks can be allocated for various related student activities (as individuals within a group, for participation/comments), including any recommended workarounds.
3.c.7. How an instructor would mark up and comment (text or audio) on a document?

How would students:

3.c.8. Collaborate together on documents, e.g. simultaneously edit or add content to a document with multiple authors? (Does the collaborative document tool have versioning controls to revert to a previous version of the document?)
3.c.9. Share these assignments:

- 3.c.9.a. with the instructor;
- 3.c.9.b. with whole class;
- 3.c.9.c. with groups of specific other students from the course.

3.c.10. Post and reply to messages on an online (3rd party) discussion board;
3.c.11. Use tools to support working in groups with other students.
3.c.12. Participate and lead virtual class sessions online that include real-time presentations, collaborative whiteboards, chat, other.
3.c.13. Participate in virtual class sessions online that include audio and video conferencing, and the ability to record these sessions.
3.c.14. Access an archive of virtual class sessions or their group materials for later viewing.

### *Scenario 3d. Quizzes/Tests and Quiz/Test Banks*

Instructors want to be able to administer different types of quizzes and tests, e.g., multiple choice, multiple answer, matching, true/false, short answer, essay, and/ or with other features: e.g. timed/not timed, randomized/not randomized, etc. Instructors also want to be able to build and share quiz/test banks, either between their own courses/sections, and/or with other instructors. Please show how:

3.d.1. An instructor can create, deploy and edit a quiz in your system, specifying the workflow and how many steps this takes.
3.d.2. An instructor might set a quiz/test to be completed within 30 minutes; show how the quiz might be set to randomly present questions (or a subset of questions) to students.
3.d.3. The process of uploading/importing existing tests into your system.
3.d.4. An instructor can reuse the quizzes for multiple sections, without having to post duplicates of the quizzes and assignments for each section.
3.d.5. The instructor could share quizzes and course materials with other instructors if they chose to do so.
3.d.6. The instructor could also use the materials in another course (example, copy capabilities?)
3.d.7. The solutions to questions above handles access control and permission to the copied quizzes.
3.d.8. Instructors can create/develop a test bank independent of any one course, and deploy it in one or more courses.
3.d.9. Instructors can create individualized assignment parameters (e.g., date and time extension) to accommodate student-identified accessibility requirements.
3.d.10. Students can take a test/quiz that is preceded by a video or written material that the student must view/read first
3.d.11. Students taking the test/quiz can get immediate feedback for correct/incorrect answers.
3.d.12. Students have access to specific content based on their grade on a test or on whether a survey has been completed.
3.d.13. Instructors can enable specified students' re-taking a test/quiz. (that is, instructors can make a test/quiz/survey available to specific groups of students.)
3.d.14. How tests/quizzes can embed audio/video clips into question stems or answer choices.
3.d.15. How an instructor can set up some test/quiz questions with a common question stem,

rather than every question being 'standalone'.

***Scenario 3e. Images***

Instructors and students often work with high-quality images, for example, Art History students are asked to complete detailed visual analyses of art, Biology students are asked to capture images from high resolution microscopes to compare and contrast structures of plat and animal cells; medical students may be asked to review diagnostic images. Please indicate how your system supports the following uses by instructors or students:

3.e.1. Upload high quality images, allowing for metatagging.
3.e.2. Annotate or comment on high quality images.
3.e.3. Share high quality images with other students in a specific group or with an entire class.
3.e.4. Allow viewing and integration of high quality images that are stored on a separate system (e.g., ArtStor, other).
3.e.5. Integrate and respect rights management of images that are uploaded.

***Scenario 3f. Audio and Video***

Instructors and students want to create, provide, and access audio and video files through the LMS, to support understanding content (eg for language diagnostics and assessment), to prepare for activities prior to class, and for students to reflect on what they have learned. Please indicate how:

3.f.1. A student could play back a video that is hosted on an institutional media repository (lecture or seminar) from within a course
3.f.2. A student could view video content from a 3rd party provider (e.g., YouTube, Vimeo, other) from within a course
3.f.3. A student could upload audio or video samples or assignments
3.f.4. An instructor or TA could provide students with audio / video feedback.
3.f.5. Images and videos could be tagged with alternative text to enable screen readers to convert the text to sound.

## Use Case #4 - Communications

Communications between the course instructor, students and others is important. Tasks might include instructors informing their students about changes to the course, e.g. class cancellation, changes/reminders about assignments. Sometimes courses have study group facilitators who need to inform students of upcoming study sessions. A department (Registrar or Math Centre, etc) might want to notify students of program-related events. Students (individually or in groups) might want to contact each other about group projects or meetings. (Some of these might be at a global level, beyond a single course.) Please explain:

4.1. How would an instructor create an announcement for students? What options would be available to make the announcement available (e.g., time limited duration of announcement, availability of announcement by group, other?)
4.2. How does your system integrate or provide communication tool functionality such as
    4.2.a. Email functionality?
    4.2.b. Twitter? Facebook?
    4.2.c. Other?
4.3. Students contacting each other. Can instructors set any limits on this? Can instructors know about and see students' messages to each other?
4.4. Can an instructor set up and/or edit course or other email lists?

4.5. How your system supports online office hours with or without audio, video and/or whiteboard space capabilities.
4.6. What permissions there are to control the ability to make announcements, e.g. study group leaders would be able to make announcements, but have little or no access to all other materials. (These students might **not** be students in the course.)
4.7. How could personalized messages be sent directly to specific students (eg all first year Biology or third year English students) from other units (the Registrar's Office, Math Centre, the Library)? Please demonstrate.
4.8. How the system supports instant messaging / live chat – receive from and send to an instructor, TA, another student, or group of students.
4.9. How the system provides/supports access to a calendar with the ability to change display/view to:
    4.9.a. All courses and course events listed
    4.9.b. Specific courses and types of course (e.g., tests, assignments)
    4.9.c. Integrate or synchronize calendar with Outlook, Google calendar, other
4.10. How the system supports Notifications – the ability for students to customize notifications regarding addition of course content, upcoming assignments and tests, other
4.11. Global notifications at program, department or division/faculty/campus level.
4.12. Create a public discussion space for a course/program.
4.13. Allow features such as downloading, tagging, voting, sticking, alerts and grading.

**Use Case #5 - Grading**

Instructors use an LME gradebook for courses of all sizes in order to manage interim grades, calculate final grades, to export final grades to the student system and to UT's eMarks system. These grades may be recorded manually for activities that have occurred in the classroom, or be recorded automatically for activities that have taken place online (e.g., online tests, quizzes, etc.). Please explain how instructors can:

5.1 Create a new column for grades and what properties can be customized for the column.
5.2. Make the following changes to your system's gradebook, if applicable, and the number of steps for each:

5.2.a. Reorganize column order. Explain how robust the system is for handling dynamic column numbers.
5.2.b. Batch create multiple columns in the gradebook.
5.2.c. Copy columns and edit the copied column's settings, including weighting.
5.2.d. Make grades visible or invisible to students;
5.2.3. Download, edit, filter, and upload grades in Excel or spreadsheet software;
5.2.f. Designate grading to TAs for large classes;
5.2.g. Release grades to students
5.2.h. Override a grade;
5.2.i. Upload Scantron student responses into the grade book.
5.2.j. Ensure that weighted columns do not go over 100%. (Instructors want to assign weights to grade columns as they are created, but not apply the weight calculation until final grades are calculated.)
5.2.k. Calculate and move final grades from the LME grade book to the U. of T. eMarks system.

5.3. Set alerts (early warning) based on student grade data and course performance.
5.4. Allow custom logics such as BONUS +2% (up to max 100%), and drop lowest /best of grades, etc.

**Use Case #6 - Community and Co-Curricular Organizations**

Some departments and divisions use organizations to provide curricular, co-curricular, administrative and community development support to participants. The leaders and participants may be internal or external to the University. Please demonstrate how your system would support the following:

6.1. Create an announcement for participants within and beyond the organization, including options to control announcement availability (e.g., time limited duration, by group, other?)
6.2. Send personalized messages directly to participants within and beyond the University?
6.3 Provide a calendar for participants within and beyond the University to access with the ability to change display / view to:
- 6.3.a. All organizations and organization events listed.
- 6.3.b. Set up repeatable events.
- 6.3.c. Specific organizations and types of organizations (e.g., tests, assignments) events listed.
- 6.3.d. Integrate or synchronize calendar with Outlook, Google calendar, other.

6.4. Allow for participants to make submissions and to showcase their work (e.g., using ePortfolios, webpages, other) to:
- 6.4.a. The instructor;
- 6.4.b. Selected other students;
- 6.4.c. All other students in the class; and,
- 6.4.d. Selected individuals beyond the university.

6.5 Allow for selective release of content to participants based on progress or achievement.
6.6 Allow participants to customize notifications regarding addition of organization content, upcoming events, other.
6.7. Share and interact with content across multiple organizations (e.g., documents, surveys, discussion topics) using mobile devices.
6.8. Mark up and comment within any type of document (e.g., Office365, Google docs).
6.9. Demonstrate controls to maintain accurate course enrolment rosters as students add/drop a course or change programs, especially in terms of completions tracking, e.g. program requirements such as a lab safety online module. Can this be tracked across multiple courses, e.g. in case of academic integrity or lab safety modules that students must take once only or once a year.