

Assessment of Student Learning Plan (ASLP): Academic Programs

2015-16 Academic Year

University of Southern Maine

Reminder: All Department Chairs will be responsible for completing an ASLP form by the end of this academic year for each academic program in your department. This campus-wide (annual) form is used to document the ongoing program assessment activities in each department/program. The form was slightly revised (from last year) to better align with the NEASC accreditation- assessment standards.

If you have questions about this form, or need assistance with your program assessment plans during this academic year, please contact Susan King, Director of Academic Assessment, 780-4681, susank@maine.edu.

**To review your department's ASLP form from last year, please use this link below for the ASLP webpage on the assessment website, then click on departmental ASLP's: <https://www.usm.maine.edu/assessment/campus-wide-assessment-student-learning-asl-plan>*

A. College, Department, Date

College CSTH
Department Mathematics and Statistics
Date May 28, 2016

B. Contact Person for the Assessment Plan

Name and title Laurie Woodman, Chair

C. Degree Program

Name of Degree Program B.A. Mathematics

D. Assessment of Student Learning: Program Assessment

Step 1: Identify the Student Learning Outcomes (SLO's)

a. Do you have your student learning outcomes published on your department's website? No

i. If yes, please indicate the url: _____

ii. If no, please list 3-5 of the most important student learning outcomes for your program. **What will students know by the end of your program?**

Over the course of studies as a major in mathematics, students will be able to:

- 1) Translate problems into an appropriate symbolic representation and solve;
- 2) Solve problems using techniques of differential and integral calculus;
- 3) Reason logically and construct and evaluate proofs.

Assessment Resources link: scroll down and select, "Objectives & Outcomes Guidelines"

<https://usm.maine.edu/assessment/assessment-resources>

Student Learning Outcome Statements are clear concise statements that specify how students will demonstrate what they will know, or be able to do, upon completion of your program.

The statements should reflect the highest levels of skill required by a course(s), or in a program. They are framed in terms of the entire program, not individual course outcomes, which should align with program outcomes.

The statements should include action verbs, which make the outcomes measurable (i.e. use action verbs such as: summarize, analyze, design, identify, interpret, apply, demonstrate, evaluate). Examples listed below:

1. Students will be able to apply mathematical reasoning based on definitions, axioms, and theorems to read and write mathematical proofs.
2. Students will be able to analyze a novel, short story, poem, or a significant piece of prose showing familiarity with the literary contexts of the particular genre being examined.

- b. Please identify **which of your student learning outcome(s) were assessed this past academic year**. (One or more of the outcomes and corresponding assessment plans could come from your department's CORE Course Blueprint(s).

Assessment of learning outcome #2 started during the spring 2016 semester.

- c. Do you have a **matrix or curriculum map** showing when your student learning outcomes are assessed and in which courses? No
- i. If yes, do you have this map published on your website? Please indicate url or attach a copy of the curriculum map.
- ii. Assessment Resources link, scroll down to the assessment information list to see examples on "Curriculum Map templates, Curriculum Map SLO's example, and Curriculum Map Embedded Assignments"
<https://usm.maine.edu/assessment/assessment-resources>

Step 2: Assessment Methods Selected and Implemented

- b. Identify which direct measures (other than course grades), that were used to determine whether students achieved the stated learning outcomes for the degree.

Student work was collected on an identified question on the Calculus C final exam.

Assessment Resources link: scroll down and select, "Direct and Indirect Measures-Strategies for Assessing Learning", or "Creating & Using Rubrics, and Rubric Grading & Examples"
<https://usm.maine.edu/assessment/assessment-resources>

Both types of assessment methods are recommended:

Examples of direct measures (using a scoring rubric): comprehensive exams, performance tests, papers or essays, case studies, collection of student work/portfolios, presentations or exhibits, individual or group projects, research studies, capstone projects, internships/practicum, etc.

Examples of indirect measures: alumni surveys or student questionnaires, supervisor surveys, employer surveys, documentation of focus groups, interviews, and tracking performance or course grade studies.

Please note: Generally, the goal of grading is to evaluate individual students' learning and performance. The goal of assessment is to systematically examine patterns of student learning across courses and programs for purposes of improving educational practices. Grades may be the basis of assessment--for example, when a program agrees on a common assignment and rubric for assessment purposes, and grades are aggregated to develop a picture of average student performance. However, by themselves grades awarded in an individual course do not constitute assessment data.

- c. *Briefly describe when you implemented the assessment activity, and if a scoring rubric was used to evaluate the expected level of student achievement. (This information may be shown on your curriculum map).*

Outcome 2 was measured during the spring semester for all students enrolled in Calculus C. Work on an identified final exam question will be reviewed and scored by a team of faculty using a rubric.

Example: Outcome 1 was measured during the fall semester -- all majors completed a problem-solving case study during the ___ course. Case studies were graded on a rubric by two faculty members.

Example: Outcome 2 was measured during the spring semester -- all majors in the capstone course completed a research project. Research projects will be reviewed and graded by a group of faculty.

Step 3: Using the Assessment results to Improve Student Learning

- a. *Briefly describe your unit's process of reviewing the program assessment results (i.e. annual process by faculty committee, etc).*

The assessment results will be shared with the department early in the fall semester and the assessment committee will continue their work based on departmental recommendations.

- b. *What changes have been or will be made to improve student learning, as a result of using the program assessment results?*

We reviewed and revised the frequency of courses offered and implemented the use of the College Level Math exam for placement into MAT 140 Precalculus and MAT 152 Calculus A. The Developmental Mathematics program will be moved into the Department of Mathematics and Statistics in July 2016. We plan to review placement criteria and success rates in these and subsequent mathematics courses.

c. *Date of most recent program review/self-study?*
2008

Examples of improvements:

- 1) Improve the assessment plan; such as, revise student learning outcome(s), change the assessment method or measure, change the time-table for assessing the outcome, review the grading rubric, etc.
- 2) Improve an academic process; such as, frequency of courses offered, personnel related changes, a technology related improvement, revise departmental advising, implement a faculty training session.
- 3) Improve curriculum; such as, enforce prerequisites, change sequence of courses, review or revise course content, change where the outcomes are being assessed, revise proficiencies or development of new rubrics, etc.

E. Course Assessment Activities: *Is your program able to report any assessment-related activities at the Course-Level... (i.e. created grading rubrics to use in required courses, examined student progress in entry-level courses, developed a new course, etc)? Please briefly explain any assessment projects.*

Student work in MAT 108 (College Algebra) and MAT 120 (Introduction to Statistics) is evaluated using responses to common questions on the final examinations.

The Department participated in a Student Learning Outcomes (SLO) Pilot project with two sections of MAT 210 and one section of MAT 152. Results will be compared with a similar pilot during the 2014-15 academic year.

F. Community Engagement Activities in your departmental curriculum:

a. *Does your department have a student learning outcome that is related to any community engagement activities? No (If so, please state the outcome).*

b. *Please indicate what community engagement activities are included in your program's curriculum, and whether the activities are required or optional for students in your major.*

<u>Community Engagement Activity</u>	<u>Included</u>	<u>Required/Optional</u>	
Student Research (related to a community-based problem)	___	R	O
Student-Faculty Community Research Project	___	R	O
Internship, or a Field Experience	<u>Yes</u> *	R	O
Independent Study (community-related project)	___	R	O
Capstone Course (community-related project)	___	R	O
Service-Learning (course-based)	___	R	O
Study Abroad, or an International Program	___	R	O
Interdisciplinary Collaborative Project (community related)	___	R	O
Student Leadership Activities (related to a team project)	___	R	O
Students/Faculty Community Leadership (advisory boards, committees, conference presentations)	___	R	O
*Required for students in the Secondary Mathematics Education Concentration			
Other Activities (not mentioned above):			

c. Please list any courses (i.e. EDU 400) that have a community engagement activity in your program.

Entry-level courses:

Mid-level courses:

Upper-level courses: STA/OPR 575

Reminder: Please complete and submit this form by the end of the academic year, May 2016.