

Course-Level Student Learning Outcome (SLO) Assessment Plan

SLOAT member's name(s): Carlos Castillo and Soraida Romero

Division/Department: Math & Physics Division

Course to be assessed for SLOs in Fall 2010: MTH 100

~~~~~

1. What student learning outcomes (SLOs) will you assess in fall 2010? Please identify at least 2 course goals (CG), relevant general education goals (GEG), and/or applicable program goals (PG) from your ECC Course Outline SLO Assessment Summary Sheet.

- SLO #1 CG 1: Demonstrate knowledge of the fundamental concepts and theories from algebra and geometry.
- SLO #2 CG 2: Utilize various problem-solving and critical-thinking techniques to set up and solve real-world applications.
- SLO #3 CG 3: Communicate accurate mathematical terminology and notation in written and/or oral form in order to explain strategies to solve problems as well as interpret found solutions.
- SLO #4 CG 4: Use calculators effectively as a tool to solve such problems as those described above.

2. For each SLO given above, what assessment methods (rubrics, assignments, tests, classroom assessment techniques, portfolios, surveys, etc.) will you implement in Fall 2010 to gather evidence of student learning related to the outcome? Identify each type of assessment method included below in your lists – direct (D) or indirect (I)? student learning outcome (SLO), process (P), input (In), or context (C)? summative (S) or formative (F)? qualitative (QL) or quantitative (QN)? objective (Obj) or subjective (Subj)?

Assessment methods to be used to assess SLO #1, #2, #3, and #4:

- (1) We plan to blue-print the 4 departmental tests in MTH 100 for acquisition of all MPOs for MTH 100. All 10 sections to be assessed will be using the same 4 exams,

and attempts will be used to have the 10 sections use the same two versions (if not possible, we will have at most 4 different versions.) The combined total of these multiple-choice problems on these 4 exams in MTH 100 will then be used to assess all 21 MPOs for MTH 100 that fall under SLO #1,#2,#3, and #4 listed above. This assessment method is D, SLO, S, QN, and Obj.

- (2) At the end of the semester, each faculty member selected to teach one of the 10 sections will be asked to submit a sheet with the following information for each student in their section: student name, student ID, grade earned, number of absences, and if the students used the Online Homework package. Using this information, we plan to assess the following:
  - (a) if there is a correlation between number of absences and final grade. This assessment method is I, P, S, QN, and Obj.
  - (b) if there is a correlation between using the Online Homework package and final grade. This assessment method is I, P, S, QN, and Obj.
- (3) After the 10<sup>th</sup> day of class, a list of all students in these 10 sections will be compiled by the course coordinators (hopefully with the assistance of the Office of Institutional Research), with their ID #s, whether they are taking MTH 100 with an adjunct or full-time faculty member, if they are taking MTH 100 in the day or evening, main campus or West Essex Campus, placement test scores, and all math courses they have taken at ECC up to the MTH 100 class they are presently taking with their grades for these courses. From this spreadsheet, the two course coordinators will attempt to determine the following:
  - (a) if there is a significant difference between the grades attained by those students who take the course with an adjunct vs. a full-time member. This assessment method is I, C, S, QN, and Obj.
  - (b) if there is a significant difference between the grades attained by those students who take the course in the day vs. the evening. This assessment method is I, C, S, QN, and Obj.
  - (c) if there is a significant difference between the grades attained by those students who take the course in the Main campus vs. West Essex campus. This assessment method is I, C, S, QN, and Obj.
  - (d) what percent of students who pass MTH 100 without having gone through our developmental courses and determine if there is a significant difference between

- passing MTH 100 without remediation vs. with remediation. This assessment method is I, In, S, QN, and Obj.
- (e) what percent of all the students in the sample have met the pre-requisite for taking MTH 100 and if there is a significant difference between the grades obtained in MTH 100 by those that met the pre-requisite vs. those that did not. This assessment method is I, In, S, QN, and Obj.
  - (f) what percent of students pass MTH 100 who had received a grade of “C” or “C+” in MTH 092 and determine if there is a significant difference between those that pass MTH 100 after having earned grades of “C” or “C+” in MTH 092 vs. those who had earned “A”, “B+” or “B” in MTH 092. This assessment method is I, In, S, QN, and Obj.
  - (g) what percent of students who pass MTH 100 did not leave a time lapse between MTH 092 and MTH 100 and determine if there is a significant difference between those that pass MTH 100 and had left a time lapse vs. those that did not. This assessment method is I, In, S, QN, and Obj.
- (4) Late in the semester (early December), we will ask all instructors of these 10 sections to distribute an anonymous student questionnaire. This questionnaire will have questions that relate to students’ math background, attitude toward math, problems that impeded their learning math, and what they have done to help them learn math better during the semester. The responses will be analyzed to determine the following:
- (a) if there is a significant correlation between final grade in MTH 100 and student’s math background and attitude. This assessment method is I, In, S, QN, and Subj.
  - (b) if there is a significant correlation between final grade in MTH 100 and students’ reporting of attendance, going to tutoring, and using the Online Homework package. This assessment method is I, P, S, QN, and Subj.

3. For each SLO given above, identify *when* each assessment method will be used in the course in Fall 2010; e.g., draw up a timeline for the course which indicates when every SLO assessment method named above will be used throughout the semester (Week 1 – Week 16).

Timeline for all assessment methods:

- (a) Week of September 13: Identify the 10 sections of MTH 100 and inform the faculty members who teach these sections of our assessment plans for these sections.
- (b) Week of September 13: The first draft of a student questionnaire will be prepared by the two course coordinators. It will then be edited and reviewed by Alvin Williams and finalized.
- (c) Week of September 20: Contact the Information Technology (IT) department, asking them to provide us with an Excel spreadsheet containing the names and IDs of all students in these 10 sections, their placement test scores, and all math courses taken at the College up to MTH 100 with the semester and grade for each. Once this is received, the two MTH 100 coordinators will begin to investigate and add on to the spreadsheet if the student is taking the class with an adjunct vs. full-time, day vs. evening, Main campus vs. WEC, if they've left a time lapse between MTH 092 and MTH 100, and if the student met the pre-requisite for MTH 100. This work will take place between the months of October, November, and December.
- (d) Week of September 27: Students in these 10 sections will take their first departmental exam. The instructors will have the multiple-choice questions which have been blue-printed to particular MPOs for MTH 100 answered on a Scan-Tron sheet and these will be returned to our two MTH 100 coordinators to have analyzed. The last week of each month thereafter the same will be done with the Midterm, Exam #2, and the Final exams.
- (e) Week of December 1: The student questionnaire will be disseminated to the students in these 10 sections. The results will be tabulated by the two course coordinators and sent to be analyzed by Alvin Williams.
- (f) December 20: The instructors of these 10 sections will be instructed to submit to the two coordinators a complete list of all their students, their IDs, their final grade for the course, # of absences in the class, and if the student participated in Online Homework for the course. The coordinators will then take this data and add it on to the student spreadsheet that had been prepared earlier.
- (g) December 20: The completed spreadsheet and the student questionnaire responses will be sent to Alvin Williams to have a statistical analysis done.

(h) During the Christmas holiday break, the two coordinators will write a report of the findings of the study.

4. How many sections of the course or how many students will be involved in using these assessment instruments and collecting SLO assessment data in Fall 2010? Please identify your sample size by number of classes (sections of the course) or number of students. (REMEMBER: A 5% error margin in your analysis is ensured if you sample 278 out of 1000 students, 217 out of 500 students, 184 out of 350 students, 132 out of 200 students, 80 out of 100 students, or 44 out of 50 students. – taken from p. 48 of *Assessing Student Learning: a common sense guide*, 2<sup>nd</sup> edition by Linda Suskie)

10 sections of MTH 100 in fall 2010 with about 35 students in each section (a total of approximately 350 students) will be involved in data collection.

5. Using ~~representative-random~~ sampling, which sections or which students will be involved in using these assessment instruments and collecting SLO assessment data in Fall 2010?

Characteristics of the 10 Chosen Sections: 6 Day sections at the Main Campus (3 of these taught by full-time instructors and 3 taught by adjuncts), 2 Evening sections at the Main Campus (all taught by adjuncts), 1 Day section at the West Essex Campus (full-time instructor), and 1 Evening section in the West Essex Campus (full-time instructor).