

COURSE ASSESSMENT REPORT

I. Background Information

1. Course assessed:
 Course Discipline Code and Number: MTH 151
 Course Title: Technical Algebra
 Division/Department Codes: MNBS/MTH

2. Semester assessment was conducted (check one):
 Fall 20__
 Winter 2007
 Spring/Summer 20__

3. Assessment tool(s) used: check all that apply.
 Portfolio
 Standardized test
 Other external certification/licensure exam (specify):
 Survey
 Prompt
 Departmental exam
 Capstone experience (specify):
 Other (specify):

4. Have these tools been used before?
 Yes
 No

If yes, have the tools been altered since its last administration? If so, briefly describe changes made.
 (All the tools have been used previously.)

5. Indicate the number of students assessed/total number of students enrolled in the course.
 The 40 students (omitting faculty withdrawals) listed on the rosters from two course sections formed the potential pool for assessment out of 62 total enrollees in three sections. Five of these 40 subsequently withdrew.

6. Describe how students were selected for the assessment.
 The students from two of three course sections formed the assessment pool, as proposed in the assessment plan. (The two sections were simply chosen as those sections not instructed by the assessment scorer.)

II. Results

1. Briefly describe the changes that were implemented in the course as a result of the previous assessment.
 No changes were made as a result of the previous assessment, as none were deemed necessary.

2. State each outcome (verbatim) from the master syllabus for the course that was assessed.
 (Attachment: excerpt from MTH 151 Master Syllabus—MTH 151 Outcomes and Objectives)
 Outcome 1: Apply principles of geometry to calculate length, area, and volume.
 Outcome 2: Make measurements with common measuring instruments and make conversions of units.
 Outcome 3: Use principles of algebra to solve basic algebraic equations, including proportions, and work with formulas.
 Outcome 4: Interpret and apply graphs and charts.
 Outcome 5: Apply basic principles of trigonometry to solve problems with right triangles.

3. Briefly describe assessment results based on data collected during the course assessment, demonstrating the extent to which students are achieving each of the learning outcomes listed above. *Please attach a summary of the data collected.*
 (Attachment: MTH 151 Winter 2007 Assessment Data Analysis)
 The course has five outcomes, each of which has a number of objectives. For each of the outcomes, corresponding questions from standardized department exams were identified. For this assessment, one

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question was selected for each of the objectives, making a total of twenty-three questions in all. Students answered these questions as part of their regular course testing requirements.

On four of the five outcomes, students well exceeded the 70% target achievement standard. Results on these four outcomes showed 84 – 94% success. On the fifth outcome, the result was 60% success, falling 10% short of the 70% target achievement standard. Taken in aggregate, the results were excellent.

4. For each outcome assessed, indicate the standard of success used, and the percentage of students who achieved that level of success. *Please attach the rubric/scoring guide used for the assessment.*

(Attachments: excerpts from MTH 151 Master Syllabus—MTH 151 Assessment Plan with Examples and Scoring Plan; MTH 151 Assessment Scoring Rubric)

All outcomes were evaluated the same way: All class exams with assessment questions were saved for later assessment analysis independent of scoring used for grade purposes. On each exam paper, an assessment earned score (0 – 4) was assigned to the designated assessment questions. (For example, a question left blank was assigned an earned score of 0. A question answered completely correctly was assigned an earned score of 4.) These earned scores were then entered into a spreadsheet and averaged for each student on each course outcome. The standard for success was an earned average of 3 or more. The relevant counts and percentages are included on the MTH 151 Winter 2007 Assessment Data Analysis document.

A brief summary:

Outcome 1: $\geq 90\%$ success; Outcome 2: $\geq 90\%$; Outcome 3: $\geq 90\%$ Outcome 4: $\geq 80\%$ Outcome 5: $\geq 60\%$

5. Describe the areas of strength and weakness in students' achievement of the learning outcomes shown in assessment results.

Strengths: Student achievement on outcomes 1 – 4 was well above target standards.

Weaknesses: Student achievement on outcome 5 was below the target standard. This particular outcome corresponds to the most difficult course material and it was not expected to have success rates as high as those for the other four outcomes. However, it was expected to meet the target standard.

The success on outcome 4 was not as high as on outcomes 1 – 3, though success on this outcome has in the past been as good as or better than for the first three.

III. Changes influenced by assessment results

1. If weaknesses were found (see above) or students did not meet expectations, describe the action that will be taken to address these weaknesses.

Indications from the course instructor are that new activities and supplementary materials were added to the course by the instructor during the assessed term, and these lengthened the time spent on the first three outcomes and lessened that spent on the last two. The pattern of success rates mirrors time spent during the term. Therefore, instructors will be advised of this and cautioned not to shorten the time spent on the last two outcomes—particularly the last one. Indeed, it will be suggested that activities and supplementary materials might best be focused on the last outcome, traditionally the most challenging for students.

Note that the new activities and supplementary materials were developed in the interest of continuous course improvement. Moreover, they were unique to these two sections, and in these sections the overall success rates were excellent. This sort of experimentation is vital. Any changes are unique to the particular instructor to rebalance the time spent on course outcomes to devote more to the last two units. The rationale is that this will improve the success rates on the last outcomes while maintaining high success on the first ones. The same sort changes would be made by this instructor for the number of number and complexity of assignments and activities in support of the various outcomes, with increased emphasis on the last two.

Informal observation of the third class section supports the view that no overall course changes are needed or recommended. Nonetheless, the assessment findings will be shared with the department.

2. Identify intended changes that will be instituted based on results of this assessment activity (check all that apply). Please describe changes and give rationale for change.

a. Outcomes/Assessments on the Master Syllabus
Change/rationale:

b. Objectives/Evaluation on the Master Syllabus

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Change/rationale:

- c. [] Course pre-requisites on the Master Syllabus

Change/rationale:

- d. [] 1st Day Handouts

Change/rationale:

- e. [] Course assignments

Change/rationale:

- f. [] Course materials (check all that apply)

[] Textbook

[] Handouts

[] Other:

- g. [x] Informational to all instructors) Instructional methods

Change: Encourage methods such as "hands on" problem solving to enhance learning, but without trading off time on the last two course outcomes—especially the last one.

Rationale: Such methods plus extra time resulted in very high success rates for the first three course outcomes. However, the cost in time appears to have reduced the success on the last outcome in particular.

- h. [x] Informational to all instructors) Individual lessons & activities

Change: Focus more activities and time on Outcome 5, where success was below the target level in the assessed sections.

Rationale: As in (g), above.

- 3. What is the timeline for implementing these actions? (Fall 2007: This is more a dissemination of information about results of the Winter 2007 assessment. Observations made in the remaining section and in previous terms suggest the general approach used in the past is successful.)

IV. Future plans

- 1. Describe the extent to which the assessment tools used were effective in measuring student achievement of learning outcomes for this course.

The assessment tools were very effective in measuring student achievement of learning outcomes for this course.

- 2. If the assessment tools were not effective, describe the changes that will be made for future assessments.

- 3. Which outcomes from the master syllabus have been addressed in this report?

All ✓

If "All", provide the report date for the next full review: In the next department cycle (≤ 3 years)

If "Selected", provide the report date for remaining outcomes: _____

Submitted by:

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6/28/07

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Please return completed form to the Office of Curriculum & Assessment, SC 247.

Approved by the Assessment Committee 10/10/06