**Assessment Report Feedback – Mathematics & Computer Science**

**Assessment Committee Contact**: Scott Hendrix, Academic Skills Center

*\*Note*: Assessment report was reviewed by Dean McCurdy and Scott Hendrix

 Overall, your department/program assessment plan provides helpful presentation of student learning goals, key program components that connect back to these goals, and some helpful discussion about methods and instruments you plan to use for assessing the extent to which specific program components are helping students meet departmental learning goals/outcomes.

 The feedback below is intended to help you reconsider and/or revise and update your assessment plans, as appropriate, as you move forward with current assessment efforts and develop additional assessment initiatives.

*Step 1: Mission*

Your mission statement seems appropriate given your stated departmental goals and beliefs. In addition, your departmental mission seems in line with overall college goals regarding interdisciplinary learning and the liberal arts tradition.

 Note the following comment, however, a tentative suggestion about your mission statement:

You might emphasize student learning goals/outcomes more directly in your statement, especially for use with assessment plans and reports; doing so could help external audiences (e.g., Assessment Committee, Accreditation Team members) more fully understand the connections between your department’s theoretical foundations and the learning goals/outcomes for students in your department.

*Step 2: Outcomes*

 Your department’s learning goals/outcomes seem appropriate given your mission. In addition, *narrowing your major learning goals to six for MATH and five for CS seems a helpful strategy,* both in terms of organizing and presenting learning goals and as a means to provide focus for assessment planning and implementation, as well as for curricular development.

**Note, however, that it is unclear whether the learning goals listed are for all students who take MATH and CS courses, or only for majors in one of the departments/programs**. Please clarify your intended meaning here, by adding appropriate detail/description for the relevant learning goals. (Since your course listing under Step 3 includes MATH/CS 299 & 399, it seems likely that learning goals are for majors only…but please specify, in any case.)

*Step 3: Program Components*

 The program components listed here are clearly significant for the MATH & CS departments. However, for the most part, the relationship of these components back to specific student learning goals/outcomes (listed in Step 2) is not clearly presented.

 The one exception to the above statement is MATH learning outcome #5 (also CS learning outcome #4): “Students will demonstrate proficiency in written and oral communication…” This goal seems to be directly assessed in MATH/CS 299 and 399; *however, we note that your current report does not include any information or data about actual student performance for this learning outcome*. (Such data or information should probably be presented and discussed in Steps 4, 5, and 6, as appropriate.)

 Overall, both plans would benefit from greater explanation about the direct measures that will be used to assess student learning in the various content areas listed under Step 2. For example, for the department courses listed as meeting specific learning outcomes, how will the relevant outcome be assessed within each course? Will all the courses listed for a specific learning goal—such as #1, Continuous Mathematics—equally or similarly assess that particular learning goal? What does it mean for a student to “demonstrate proficiency” in calculus or other content areas—and how will proficiency level be assessed in specific courses? (Or in groups of courses, if such a model is more relevant for your program and learning goals?)

 Finally, inclusion of additional indirect measures of student learning could be beneficial; or at least including actual data/information from the indirect measures you mention in the plan (i.e., course grades). Moreover, the proposed faculty webform to assist with course planning seems like an innovative and useful initiative, and would seem to add another indirect measure of student learning. [Other examples of indirect evidence include the following: retention, graduation, and placement rates (may be impacted by economic conditions or college policies); surveys of students and alumni (may indicate feelings about college experience); grades (standards and even content may differ across instructors and institutions.]

*Step 4: Methods/Data*

 As discussed above under Step 3, both plans would benefit from greater explanation about the direct measures that are or will be used to assess student learning in the various content areas listed under Step 2. Under Step 4, you state that “scores on exams or on selected exam questions” are used to determine student mastery of knowledge for MATH learning goals 1-4 and 6 (and CS learning goals 1-4). But what are some examples of specific exam questions or problems that connect back with specific learning goals? And in which courses do these exam questions occur? What kinds of exams? (mid-term vs. final, etc.) *Do the same questions—or variations of the same questions—appear on exams in both introductory and advanced courses within the same learning outcome grouping?* (If so, then you might have a “natural” means of assessing student learning already built into each course grouping, at the entry level and at the advanced or completion level.)

Also, when considering student exam scores, keep in mind the important distinction between student grades and student performance. The student *performance* on the assignment or exam section is direct evidence; the student *grade* is indirect evidence. The following helpful comment about this distinction comes from Barbara Walvoord, who has had a long and respected career as an assessment leader, consultant, and speaker (Professor Emerita from Notre Dame):

 “Direct assessment does not depend on grades or other very broad evaluations, but is diagnostic and specific, yielding information about specific student strengths and weaknesses, so the dept knows what to work on. (Example: NOT “The students’ average grade on the capstone research project was 3.5,” but “In the capstone research project, the weaknesses of senior students as a whole were A,B, and C, and their strengths were X, Y, and Z.”)”

*Step 5: Analyze and interpret the data*

The information in this section for MATH is unclear, both in general, and especially in relation to the rest of the assessment report/plan. Perhaps the statement about MATH 236 and 335 should be moved to Step 6? And the actual data that was used to make this statement/decision should be included under Step 5, along with the department’s interpretation of that data, as a means to support the decision making and/or curricular changes.

*Step 6: How will the data collected be used for decision-making, strategic planning, etc.*

 Need information/discussion added for this section.

For your next round of assessment plan updating, please consider the comments, suggestions, and recommendations above, and incorporate these as feasible and appropriate. Our hope is that departments will be able to use these assessment efforts to inform program and pedagogical improvements and the ultimate goal is that your assessment plans and reports will show how your departmental assessment efforts have informed your program improvements. Overall, the plans represent good beginnings toward developing and presenting effective assessment for MATH & CS.

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