

Unit Name: Mathematics Assessment Summary Fall 2008-Spring 2009

What are the student learning outcomes in your unit?

- a) Use mathematical models such as formulas, graphs, and tables to draw inferences.
- b) Represent mathematical information symbolically, visually, numerically, and verbally.
- c) Use arithmetic, algebraic, geometric, logical, and / or statistical methods to model and solve real world problems.

Which outcome did you assess this academic year?

The Math Department collected data to assess whether the students who enrolled in the math refresher class (MAT044 Ivy Tech class) would successfully pass the next class in their math placement sequence, which is our M007 Elementary Algebra. All three of these outcomes were assessed in their examinations. We plan to assess these outcomes in more detail once we finish designing the curriculum.

In 2008, we assessed all three outcomes in the general education course M118 (probability and linear programming concepts).

How did you assess their skills before, during and / or at the end of the semester / academic year?

The students' final grades from the Ivy Tech 044 class were recorded and the students' academic records were tracked to determine if they enrolled in the IU Northwest M007 Elementary Algebra class and if so the students' final grade in the M007 Elementary Algebra class was recorded. Successful progression in the math sequence was deemed accomplished if the student obtained a grade of C or higher in MAT044 and M007, grades of W or F are not considered a success and D grades are not used.

In M118, students needed to pass the pretest or the prerequisite class. They all took the common final and mid-term exams.

Please summarize the data you have collected this semester / academic year.

The grades from all students who enrolled in the MAT044 Ivy Tech math class starting from the first semester it was offered (Spring 2007) until the Fall 2008 were recorded. Each student's final grade in MAT044 was recorded from the available transcripts that were sent to IU Northwest; not all enrolled students' grades were obtained due to students who have a hold on their records at Ivy Tech. Each student with a recorded grade for MAT044 was tracked in regards to if and when they registered for M007 Elementary Algebra at IU Northwest. The final course grade for M007 Elementary Algebra was also recorded once the student completed the semester at IU Northwest. The data indicate that the majority of the students who enrolled in the MAT044 passed the class, 67%, however, these students were not as successful when they completed their M007 Elementary Algebra class at IU Northwest, with only 37% of the students passing the course.

In August 2008 six problems (that address mathematical reasoning outcomes) were assessed for a random sample of 20 students (that received C or better in Fall 2007 M118 – Finite

Mathematics classes). Three questions were selected from the common Midterm Exam and three from the common Final Exam.

85% of students scored better than 70% (satisfactory) on the six problems and thus achieved given outcomes.

Students average performance was between 81% and 84% (excellent /satisfactory) for all problems but one. That problem had an average score of 63% (needs improvement).

The average Midterm Exam score was 84% (excellent /satisfactory) vs. 76% (satisfactory) on the Final Exam.

Please describe any programmatic changes you have made or are planning to make based on the data you have collected.

We plan to offer a “stretch” version of M007 Elementary Algebra, hopefully starting in the Spring 2010 semester. Those students who place at the refresher math course level will now have the opportunity of taking a 2-semester sequence of M007 Elementary Algebra instead of enrolling in the MAT044 Ivy Tech math class. Students will receive 4 credits for the “stretch M007” class, 2 credits each semester plus a lab portion for the class. Starting in the Spring 2010 semester, Ivy Tech will be changing the curriculum of their MAT044 math class and it will move from a 3 credit hour class to a 5 credit hour class. The combined unsuccessful track record of Ivy Tech’s MAT044 class and the increase in credit hours (and student tuition) prompted us to offer an alternative which is both educationally and financially superior.

For Math M118, based on this assessment, we plan to put more emphasis on systems of linear inequalities and on preparation for the Final Exam in the future. We already changed the textbook for the class and increased coverage of linear programming

****Note:** Please use this template to provide the responses to the prompts above.**