

MA 105: Mathematics of Finance
Guided Reflection on GER Assessment, Spring 2004

I. GER objectives (Mathematical Sciences)

Each course in the mathematical sciences will provide instruction and guidance that help students to:

1. Improve and refine mathematical problem-solving abilities

Student learning outcome: By the end of the course, students should be able to solve time-value-of-money problems with respect to simple interest, bank discount, and compound interest rates.

Means of evaluation: Students will demonstrate their achievement of the outcome by solving a problem on a test, such as: Mack signs a note promising to pay John \$1000 in 3 years at an annual interest rate of 12% compounded monthly. However, 5 months before the note matures, John sells the note to a local bank which discounts the note based on a bank discount rate of 18%. What are the proceeds John receives from the sale of the note to the bank?

2. Develop logical reasoning skills

Student learning outcome: By the end of the course, students should be able to make accurate comparisons of financial opportunities and justify mathematically the value of the best opportunity in terms of today's money.

Means of evaluation: Students will demonstrate their achievement of the outcome by solving a problem on a test, such as : A consumer can purchase a TV by paying \$450 cash. However, the consumer can choose to pay \$75 down today and \$18 at the end of each month for 2 years. If money is worth 7% compounded monthly to the consumer, which is the better opportunity for this consumer and by how much today?

II. Summary of evaluation for each of the outcomes

Objective 1: Data of 72 students in MA 105 was given to the course coordinator for this objective. Of these students, 57% had total mastery of this concept, 72% of the students had 90% or higher mastery, and 94.4% of the students had 70% mastery or higher.

Objective 2: Data of 68 students in MA 105 was given to the course coordinator for this objective. Of these students, 57% had total mastery of this concept, 74% of the students had 90% or higher mastery, and 81% of the students had 70% mastery or higher.

III. Effectiveness of Course as a GER Course in the Mathematical Sciences

All students improved and refined their mathematical problem-solving abilities and developed logical reasoning skills. Instructors and students are more aware of the course learning outcomes by having them stated in the course syllabus.

IV. Changes since last Guided Assessment

Not applicable

V. Changes to be Made Based on Assessment

In the future, the evaluation instrument will be WebAssign assignments rather than test questions. Data from all sections of MA 105 on specific questions that meet the stated objectives can easily be downloaded without having to ask instructors to provide it. Instructors will be informed at the beginning of each semester of these objectives and of the results of the data collected.