

Department/Program:	Chair/Director: Iztok Hozo	Assessment cycle/year:
Mathematics and Actuarial Science	Email address: ihozo@iun.edu	2011-12

Mission/Purpose

TEACHING

It is the highest goal of the Department of Mathematics and Actuarial Science at Indiana University Northwest to provide excellent quality education and training in mathematics and actuarial science while also providing the required mathematics courses for education, physical, and life sciences students. It is also our goal to provide quality general education mathematics courses for all IU Northwest students, regardless of their program of study.

SCHOLARSHIP

The faculty in the Department of Mathematics and Actuarial Science demonstrates a high level of commitment to continued scholarship in a variety of focus areas, including pure and applied mathematics, actuarial science, and the scholarship of teaching. The faculty remains dedicated to ongoing professional development for all members of the department.

SERVICE

Faculty members in the Department of Mathematics and Actuarial Science actively seek to engage in the educational needs of the communities surrounding Indiana University Northwest. It is our goal to work cooperatively and collaboratively with other departments at IUN, and the governments and educational systems throughout the region we serve, to improve the quality of life for the citizens of Northwest Indiana.

The activities of the Department of Mathematics and Actuarial Science directly fulfill the IUN Mission, Vision, and Strategic Plans. Our curriculum is designed to provide excellent education in mathematics and actuarial sciences and support curriculum of other departments in the College of Arts and the Sciences and in other divisions of IUN.

The Department of Mathematics and Actuarial Science is academically central to the mission and strategic vision of Indiana University Northwest because of our service role in providing general education courses. Our graduates consistently find jobs in Northwest Indiana and the greater Chicago land area. Indiana University Northwest is also the **only** public university in the seven county region offering a BS degree in Actuarial Science. Existence of our actuarial degree significantly contributes to IU Northwest excellence in business and economics.

Student learning outcomes (Goals):

Goal 1. Use mathematical models such as formulas, graphs, and tables to draw inferences.

Goal 2. Represent mathematical information symbolically, visually, numerically, and verbally.

Goal 3. Use arithmetic, algebraic, geometric, logical, and / or statistical methods to model and solve real world problems.

Which Student learning outcomes (Goals) did you assess this year?

1., 2. And 3.

Assessment Summary			
Outcomes/Objectives	Measure(s)	Findings	Action Plans
1. Represent mathematical information in writing	Students will revise their senior thesis several times and present in COAS students conference or some other venue.		
2. Improve math placement exam readiness	Math placement exam scores	35% of students were placing bellow Algebra1	Provide free seminars for students to help them prepare. Math Department obtained an internal grant in order to address this problem.
3. Improve math placement exam quality of questions	Quality control of 110 placement exam questions (over 2600 students)	18 questions didn't have satisfactory quality indicator (difference in success rate between passing and failing students).	A committee of Math faculty analyzed and revised the 18 underperforming questions.
4. Prevent retention problems after new state requirements to send students to Ivy Tech in case they fail the placement exam!	Math placement exam scores and data on similar program at IUN and IUSB	About 100 admitted IUN students per calendar year need affordable and convenient bellow college level math course (now shifted to Ivy Tech)	In cooperation with Ivy Tech we created a college preparatory course program offered on our campus, and jointly administered with Ivy Tech. We provide students, room, share the cost of instructor; Ivy Tech gets tuition.
5. Create On-Line Finite Math classes	One of our senior faculty invested significant amount of time and effort in order to develop an on-line version of Finite Mathematics course.		
6. We have common mid-term and common final exams in M118 and M100 general education courses. As needed, we look at students' achievements. Math faculty group selects specific problems from these exams that address the three goals (1)-(3). The faculty group will develop a rubric that is based on three outcomes, randomly select a group of students that received a grade of C or better in a course, and analyze work of these students as excellent, satisfactory, or needs improvement. If less than 75% of students score satisfactory on a particular outcome, we will review and revise where necessary the content and coverage of the outcome in our courses for further improvement. We perform this task sporadically, every several years, as needed.			
Analysis Questions			
<i>Based on your findings and action plans, what primary changes will you make for student learning? Program outcomes? Changes to the assessment process?</i>			
2. For months after started the free seminars, the percentage of students failing our placement exam dropped to 20%. We will continue monitoring and administering free seminars as long as we have fund available and as long as results are evident.			
3. We revised the "questionable" items by decreasing guessing probability and also lowering chances for a good student to make a minor mistake. Both lead to better placement and improved student success and retention rate. We continue to monitor and analyze placement exam questions.			
4. We will offer one section per semester to give the students in this program a chance to raise their math skills to college level while attending their other classes. This greatly improves the retention rate as many of these students would probably be gone from our University, discouraged and possibly abandoning higher education goals entirely.			
5. We are starting to offer on-line version of Math-M 118 Finite Mathematics sections. We will monitor the success rate and enrollment levels of these sections and compare them to our regular on-campus sections. The results will influence the quantity and method of delivery of our Math-M 118 sections in the future and possibly expand our selection of on-line courses beyond Finite Math.			