Bemidji State University

MATH 5760: Topics in Applied Mathematics

A. COURSE DESCRIPTION

Credits: 3
Lecture Hours/Week: 0
Lab Hours/Week: 0
OJT Hours/Week: *.*
Prerequisites: None
Corequisites: None
MnTC Goals: None

This course focuses on an advanced topic from applied mathematics. Possible topics include game theory, operations research, and cryptography. May be repeated for up to 6 credits with different topics. (Might not be offered every year.)

B. COURSE EFFECTIVE DATES: 08/27/2012 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Implement the mathematical modeling process:
   a. Create a model.

2. Implement the mathematical modeling process:
   b. Translate the model to a mathematical problem.

3. Implement the mathematical modeling process:
   c. Solve the mathematical problem.

4. Implement the mathematical modeling process:
   d. Reflect on the reasonableness and completeness of the result.

5. Apply and prove the principal theorems.

D. LEARNING OUTCOMES (General)

1. understand general and specific strategies for mathematical modeling in the topic under consideration.
2. analyze problems, discern structure and pattern and make conjectures in a variety of modeling contexts.
3. apply analytic thinking to develop clear and valid arguments.
4. communicate mathematical ideas and understanding effectively.
5. appreciate the beauty and diversity of techniques relative to the topic under consideration.
6. exhibit advanced modeling and communication skills.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

   None

F. LEARNER OUTCOMES ASSESSMENT

   As noted on course syllabus

G. SPECIAL INFORMATION

   None noted