**GOSHEN COLLEGE**  
**MATHEMATICS DEPARTMENT**  
**MATH 413 SEMINAR: DISCOVERIES**

**Description**  
An examination of an open mathematical question and presentation of results in written and oral form.

**Learning Goals**  
The student will

1. View mathematics as a creative and changing discipline;
2. Investigate a challenging mathematical question;
3. Explain and critique mathematical reasoning through speaking and writing in a precise and articulate manner in both informal and formal settings;
4. Exhibit curiosity, playfulness, creativity, confidence, perseverance, interest in multiple perspectives, and a collaborative spirit.

**Prerequisites**  
Math 205, 212, and two upper level Math courses.

**Activities**  
Students will choose and investigate an open mathematical problem; give presentations on defining the problem, early results, and final results; and listen to other student presentations and provide constructive feedback.

**Instructor**  
David Housman, SC 117, dhousman@goshen.edu, 535-7405, 875-0339 (home)  
Office hours posted on office door and Moodle.

**Class Time**  
TBA. Tentatively, we will meet on January 9 for an introduction, January 30 for problem definition presentations, March 20 for early results presentations, and April 17 for final presentations. Students are encouraged to meet with the instructor outside of class as the semester progresses.

**Grade**  
Based on oral and written presentations of the progress made in attempting to solve an open mathematical problem (60%), oral and written responses to other student presentations (20%), and participation in a professional meeting (20%).

**Professional Meeting**  
There will be an opportunity to participate in the spring meeting of the Indiana Section of the Mathematical Association of America to be held March 13-14 at Taylor University. Documented participation in a previous or different professional meeting in the mathematical or computational sciences will also be accepted. A one page summary of the highlights of the meeting must be submitted.

**Tutoring and Disabilities**  
Goshen College wants to help all students be as academically successful as possible. If you have a disability and require accommodations, please contact Lois Martin, the Director of the Academic Resource & Writing Center early in the semester. In order to receive accommodations, documentation concerning your disability must be on file with the Academic Resource & Writing Center, Good Library 112, x7576, lmartin@goshen.edu. All information will be held in the strictest confidence. The Academic Resource & Writing Center offers tutoring and writing assistance for all students. For further information please see http://www.goshen.edu/campuslife/arwc/.

**Collaboration and Academic Integrity**  
You are encouraged to use all available resources in order to learn the concepts and techniques discussed in this course. However, simply copying someone else's work subverts the learning process. For assignments, you may look at and discuss another student's work; however, you must give written acknowledgement to people and written materials that were used. Failure to observe the above rules will result in a zero on the assignment. Any violation of academic integrity will be reported to the Academic Dean. Observation of the above rules will help you learn the material well and give you the satisfaction of knowing that you have earned your grade.

**Due Date Policy**  
Class participation and assignments can only be excused or made up if (1) there is a serious medical problem, a death in the immediate family, or an irreconcilable conflict with another official Goshen College activity; (2) there is written documentation signed by proper authorities; and (3) the instructor is notified prior to the due date or as soon as possible afterwards.