

**Syllabus for MA 308-001**  
**Mathematical Problem Solving for Middle School Teachers**  
**(For Elementary and Middle School Majors Only)**  
**Spring 2011**

**Course:** MA 308-001, TR 9:30–10:45 am, CB339

**Instructor:** Carl Lee

**Office:** 967 Patterson Office Tower

**Mailbox:** 715 Patterson Office Tower

**Phone:** 257-1405 (or 257-3336 to leave a message)

**Email:** lee@ms.uky.edu (preferred method for reaching me)

**Office Hours:** TR 11:00–12:00, and by appointment, since I realize that this time may not be convenient for everyone.

**Texts:**

1. Driscoll, *Fostering Algebraic Thinking: A Guide for Teachers, Grades 6–10*, Heinemann, 1999, ISBN-10: 0325001545, ISBN-13: 978-0325001548.
2. Driscoll, DeMatteo, Nikula, and Egan, *Fostering Geometric Thinking: A Guide for Teachers, Grades 5–10*, Heinemann, 2007, ISBN-10: 0325011486, ISBN-13: 978-0325011486.

**Course Web Page:** [www.ms.uky.edu/~lee/ma308sp11/ma308sp11.html](http://www.ms.uky.edu/~lee/ma308sp11/ma308sp11.html). Please bookmark this page.

**Course Description:** Heuristics of problem solving. Practice in solving problems from algebra, number theory, geometry, calculus, combinatorics, and other areas. Primarily for middle school teachers. This course may not be counted towards a mathematics major or minor. Prerequisite: MA123, MA113, MA137, or consent of instructor.

**Learning Outcomes:** Students will demonstrate knowledge of and facility with problem solving methods. Students will demonstrate the use of the mathematical understanding to solve prob-

lems. Students will demonstrate knowledge of the role of problem solving in facilitating deeper mathematical understanding.

**Attendance and Participation:** This class is designed for active involvement of the students. You will be actively supporting each other as you gain experience and understanding. Multiple ideas and points of view are important. You will benefit from hearing others' approaches to analysis and problem solving, and they will benefit from you. So attendance and active participation are expected. If you miss a class for any reason, please explain your absence in writing as soon as possible, by completing an Absence Report form from the course website and submitting it to me. Your absence will be excused if it is due to serious reason (such as illness, death in the family, or travel organized by UK—see the official list of excused absences at <http://www.uky.edu/StudentAffairs/Code/Section%20V.pdf>). Students absent due to an excused absence bear the responsibility of informing the instructor about their excused absence within one week following the period of the excused absence (except where prior notification is required)

**Homework:** There will be frequent homework assignments, usually assigned weekly. Most homework assignments will consist of problems to solve and write up, and reflections on certain aspects of problem solving.

**Exams:** I am tentative planning to have three exams during the semester, but this may be reduced to two. The tentative dates are

- February 10
- March 10
- April 7

**Final Exam:** Tuesday, May 3, 8:00 am, in our regular room, CB339.

**Grading:**

Class attendance and participation	10%
Homework	45%
Exams	30%
Final	15%

A	90–100%
B	80–89%
C	70–79%
D	60–69%
E	0–59%

You will receive information on your current grade after each of the exams. In particular, you will receive your midterm evaluation by the middle of the semester.

**Working Together:** It is OK to work together on homework. However, when it comes time for you to write up the solutions, I expect you to do this on your own, and it would be best for your own understanding if you put aside your notes from the discussions with your classmates and wrote up the solutions entirely from scratch. Working together on exams, of course, is expressly forbidden.

**Cheating:** Cheating and plagiarism can lead to significant penalties. See Academic Offenses and Procedures, <http://www.uky.edu/StudentAffairs/Code/Section%20VI.pdf>.

**Expectations:** I expect that everyone will maintain a classroom conducive to learning. I like an informal atmosphere, but it must be orderly. Thus, everyone is expected to behave with basic politeness, civility, and respect for others. In particular, talking in class is OK if it's part of a class discussion or directed to me. Private communications are not, especially during quizzes and tests. Neither are reading extraneous materials, using electronic equipment, or sleeping.

**Accommodations Due to Disability:** If you have a documented disability that requires academic accommodations, please see the instructor as soon as possible. In order to receive accommodations in this course, you must provide the instructor with a Letter of Accommodation from the Disability Resource Center (Room 2, Alumni Gym, 257-2754, email address [jkarnes@email.uky.edu](mailto:jkarnes@email.uky.edu)) for coordination of campus disability services available to students with disabilities.

**Suggestions:** Suggestions for improvement are welcome at any time. Any concern about the course should be brought first to my attention. Further recourse is available through the offices of the Department Ombud and the Department Chair, both accessible from the Main Office in 715 Patterson Office Tower.

### **Course Schedule and Important Dates:**

- January 11 — Tuesday — Last day a student may officially drop a course or cancel registration with the University Registrar for a full refund of fees
- January 13 — Thursday - First day of this class
- January 17 — Monday — Martin Luther King Birthday — Academic Holiday
- January 19 — Wednesday — Last day to add a class for the 2011 Spring Semester
- January 19 — Wednesday — Last day to officially withdraw from the University or reduce course load and receive an 80 percent refund
- February 2 — Wednesday — Last day to drop a course without it appearing on the student's transcript
- February 9 — Wednesday — Last day to officially withdraw from the University or reduce course load and receive a 50 percent refund
- February 10 — Thursday — Tentative date for Exam #1
- March 7 — Monday — Midterm of 2011 Spring Semester
- March 10 — Thursday — Tentative date for Exam #2
- March 14–19 — Monday through Saturday — Spring Vacation — Academic Holidays
- April 1 — Friday — Last day to withdraw from the University or reduce course load. Students can withdraw or reduce course load after this date only for “urgent nonacademic reasons.”
- April 7 — Thursday — Tentative date for Exam #3
- April 28 — Thursday — Last day of this class
- May 3 – Tuesday – Final Exam at 8:00 am in CB339