MA 308: Problem Solving for Middle School Teachers
Spring 2015

Instructor Information

Instructor:	Laura Croyle
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Office Hours:	M 2:30-3:30pm, TR 2:00-3:00pm

Course Information

Time and Location:	TR 4:00 pm - 5:15 pm, CB 335
Course Webpage:	`www.ms.uky.edu/~lgraham`
Textbooks:	Boaler J., Humphreys C. (2005) Connecting Mathematical Ideas: Middle School Video Cases to Support Teaching and Learning. Heinemann. ISBN: 0-325-00670-9
	Johnson K., Herr T., Kysh J. (2004) Crossing the River with Dogs: Problem Solving for College Students. Key College Publishing. ISBN: 1-931914-14-1

Introduction

This class is intended to operate differently than many other standard math classes. There will be very little lecture, but significant amounts of problem solving and conversation. This will involve activities such as working in a group and presenting ideas at the board. Please come to each class meeting prepared for this type of participation. Hopefully, this structure will reinforce some key ideas:

- Collaboration is an important component of mathematical work.
- Solving problems does not fundamentally involve following procedures, but making sense of difficult concepts. There may be many valid ways to reach a correct answer.
- A problem is not completed until its solution can be presented clearly and convincingly to others.
- The study of mathematics is inherently difficult. Making mistakes and working through incorrect solutions is an unavoidable aspect of problem solving.

Class Policies

- I do not allow the use computers or cell phones during class. Please set cell phones to silent mode, and leave the room if you need to send a text. Violation of this policy will be penalized (at a minimum) by loss of attendance credit.
- Attendance is expected at every class meeting. If you must miss any part of any class, please inform me in writing at least one day in advance (if possible), and provide appropriate documentation. This is especially important if you need to make up an exam. See the page 18 (section 5.2.4.2) of the following document for a definition of excused absence:
  `http://www.uky.edu/StudentAffairs/Code/Section%20V.pdf`
- Let me know if you have a documented disability. This is handled through the Disability Resource Center. If you let me know early in the semester, I am happy to provide reasonable accommodations when needed.

Grading

I will use the standard grading scale in this class, with grades calculated as follows:

Attendance/Participation:	5%
Homework	45%
2 Exams	30% (15% each)
Final Exam	20%

Homework

In general, one homework will be given per week, alternating between problem sets and short essay assignments. The essays will typically be related to a reading or video from the text by Boaler and Humphreys, and should be typed. The problem sets may be handwritten.

Both assignments should be neat, stapled (if there are multiple pages), and labeled with your name, the date, and the assignment. Homeworks will be collected at the beginning of class on the due date, and late homework will not be accepted. You are allowed to work with others on your homework, but you should write up your solutions on your own.

I may give quizzes (announced or unannounced) during class. These will be included in your homework grade.

Schedule

Note that the two exam dates listed below are subject to change.

1/21	Last day to add a class
2/4	Last day to drop a course
2/19	Exam 1
3/16 - 3/21	Spring Break
4/9	Exam 2
4/10	Last day to withdraw
5/1	Last day of class
5/8	Final exam at 10:30 am

Tips For Success

It is likely that many students will find this course challenging because of the nature of the material. However, there are several ways to set yourself up for success:

- **Start your assignments early.** You will almost certainly have more thoughtful essays and solve more problems if you begin thinking about the assignment several days before you write up your submission. Ideas do not always come on demand, and may require days of intermittent reflection.
- **Find one or more classmates with whom to work.** Everything you turn in must be completely written by you, but you are allowed and even encouraged to share ideas with others. Group work has been demonstrated to increase understanding among math students.
- **Come see me during office hours.** Part of my responsibility as an instructor is holding office hours, and this is an excellent opportunity for you to practice problem-solving techniques, discuss ideas from the text, or prepare for tests.