MA 201: Math for Elementary School Teachers

Section 3

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Meeting Times: T/R 11:00am-12:15pm, CB 343

Course Description

MA 201: Sets, numbers and operations, problem solving and number theory.

Recommended only for majors in elementary and middle school education.

Prereq: MA 109 or MA 111 or consent of department.

Textbook

We will be using the book *Mathematical Practices: Mathematics for Teachers* by Ron Larson and Robyn Silbey. Students are expected to read the sections in the text *before* we cover them in class. All relevant course materials will be posted on Canvas.

Introduction

MA 201: In this course, we will cover Chapters 2-8 in the textbook.

This course will provide future elementary educators with the mathematical background needed for teaching elementary school mathematics. The emphasis of the course is on developing conceptual knowledge, which is a requirement for effectively communicating

mathematics to elementary school students. We will concentrate on the *why* more than the *how*. This is not a pedagogy course! This is an upper level college mathematics course in which you will acquire mathematical skills to use in future education courses.

Student Learning Outcomes

Students who successfully complete MA 201

- Have a comprehensive knowledge of elementary school mathematics.
- can describe the standard concepts of elementary mathematics in several ways and be familiar with various mathematical modeling techniques.
- Understand and appreciate the importance of mathematics in the elementary school curriculum and effectively advocate mathematics to students.

Motivation

You graduated from elementary school, so why do you need to take this course? This course is not a repeat of elementary school mathematics. You will learn the same concepts but on a much deeper level. This will help you effectively explain mathematics to your future students. For example, rather than being able to correctly add two fractions, you will know several models to aid in the teaching of adding fractions and explain why they work. To teach mathematics effectively at any level:

- Your mathematical understanding of the concepts you teach must be much deeper than the procedural level. You must be able to explain why and how mathematics works.
- You need to be familiar with many ways of describing and modeling mathematical concepts.
- You must have the ability understand students' difficulties and have flexibility to accommodate individual student learning styles.

Attendance

A portion of your final grade will be determined by attendance and class participation. This class is very interactive; therefore, attendance is mandatory. Reasons for an excused absences include illness, death of a family member, trips organized by the university, and religious holidays. Excused absences must be reported as soon as possible, within a week at the latest. Appropriate notification of absences due to university-related trips is required prior to the absence. See Senate Rule 5.2.4.2. for more information.

To report an absence, **email me (your name, section, date, reason)** at the email address provided above within one business day of the absence. You are also expected to furnish proof demonstrating the cause compelling you to miss class at the next class meeting for which you are present.

Unexcused absences include missing class entirely without an excuse, showing up more than 10 minutes late or leaving early without an excuse, and neglecting to stay on task. If there are special circumstances that will require you to be late to class or leave early on a regular basis, please contact me as soon as possible.

Students are expected to withdraw from the class if more than 20% of the classes scheduled for the semester are missed (excused or not) per University policy.

Note: There is a procedure for withdrawing from a class. You have not withdrawn if you simply quit attending.

Math is not a spectator sport!

Participation/Professionalism

I expect you to participate by being present, engaging in group activities, and asking and answering questions. This includes bringing your textbook if you need it, something to write with and on, and anything else you might need. Students are expected to ask questions when they don't understand something.

Classroom Policies

Due to the nature of this course, students will not be permitted to use a calculator unless otherwise specified by the instructor. Therefore, using a calculator (except on occasions when the instructor deems it appropriate) will be considered cheating. Cell phones and other electronic devices should be set to silent (not vibrate) and should not disrupt class in any fashion. If you expect an urgent phone call, please inform me before class. I do not allow texting inside the classroom. Please talk to me if you would like to use a tablet for taking notes.

Discrimination is prohibited at UK. If you experience an incident of discrimination we encourage you to report it to Institutional Equity & Equal Opportunity (IEEO) Office, 13 Main Building, (859) 257-8927.

Homework

Mathematics requires practice. You will be expected to submit daily homework assignments to practice and demonstrate what you learn in class. Homework will be collected at the beginning of each class, and will be graded for completion and accuracy. No late homework will be accepted for days where you had an unexcused absence. In the event of an excused absence, you are expected to turn in your assignment within one week of the due date.

These assignments are given to assist you in your preparations for the course exams and your future career as a teacher. It is to your benefit to complete them. Your work should be written in full sentences and presented in an organized, professional manner (If your homework takes up multiple pages, PLEASE STAPLE THEM TOGETHER!). You are allowed (and even encouraged) to work with others on your homework, but should write up your solutions on your own. Zeroes will be given for any assignment on which work is not shown or cheating of any kind is evident (See SR 6.3.1).

Quizzes

There will be short daily quizzes, based on the homework that was due that day (or the previous class meeting). These quizzes will be given after you have had a chance to ask/answer any questions based on that homework assignment. These quizzes will be graded for accuracy and provide you with feedback necessary for the successful completion of exams.

Quizzes missed due to an unexcused absence cannot be made up. A grade of 0% will be issued for such quizzes. Quizzes missed due to an excused absence must be made up outside of class time within one week of the excused absence.

Presentations

Small groups (~ 3 members) will give short presentations on Exam Review days on an activity from the textbook or the NCTM Illuminations website that covers a portion of the material for the upcoming exam. These presentations should only last 10 minutes per group and three different groups will present on each review day. This leaves 45 minutes of class time for a full-class review.

The presentation will be graded and will provide you a chance to practice effectively teaching and communicating mathematics. You will also submit a short individual self-reflection, about one page, discussing how you think your group presentation went, how it may have been improved, and how you think the class reacted. Reflections are due the class following your presentation. The group presentation activity and the self-reflection will each contribute half of your presentation grade. You are encouraged to meet with me during office hours to discuss your presentation before you give it.

Further details for presentations will be given within the first weeks of class.

Exams

You will complete three in-class exams this semester, as well as one final exam. If you need a make-up or alternate exam, please follow university policy to obtain one. Calculators, notes, and books are strictly forbidden, unless otherwise specified in class. The **tentative dates** for exams are as follows:

Exam #1: Tuesday, September 19th, in class

Exam #2: Tuesday, October 17th, in class

Exam #3: Tuesday, November 14th, in class

Final Exam: Thursday, December 14th at 3:30pm, in classroom

The final exam will be cumulative with an emphasis on the material covered after Exam 3.

Course Grading

The breakdown of your course grade is as follows:

Homework	50 points	10 %
Quizzes	50 points	10 %
Presentation	40 points	8 %

Exam 1	90 points	18%
Exam 2	90 points	18%
Exam 3	90 points	18%
Final Exam	90 points	18%
TOTAL	500 POINTS	100 %

Grading scale for undergraduates:

A	450 - 500 points	90 – 100%
B	400 - 449 points	80 – 89%
C	350 - 399 points	70 – 79%
D	300 – 349 points	60 – 69%
E	Below 300 points	Below 60%

Grading Policy

If you have questions about the grade you received for any assignment, please ask me within one week of the assignment being handed back to you.

Important Semester Dates

- Wednesday, August 23: First day of classes
- Tuesday, August 29: Last day to add a class
- Monday, September 4: Labor Day (ACADEMIC HOLIDAY – NO CLASSES)
- Wednesday, September 13: Last day to drop a class without receiving a grade

- Monday, October 16: Midterm of 2017 Fall semester
- Friday, November 10: Last day to withdraw from a class
- Wed – Fri, November 22-25:Thanksgiving Break (NO CLASSES)
- Friday, December 8: Last Day of Classes
- Mon – Fri, December 11-15: Final Examinations
- Friday, December 15: End of 2017 Fall semester

NOTE: A student who drops a class on or before September 13th, will receive no grade. A student who withdraws after September 13th, will receive a grade of W. After November 11th, no student will be allowed to withdraw unless his/her dean determines that unusual circumstances merit the withdrawal.

Academic Integrity, Cheating and Plagiarism: You should feel free to study with friends, but any work you submit for a grade should be your own work. This applies to all exams, quizzes and written assignments; with the exception of assignments that are specifically designated as group assignments. Academic dishonesty, in any form, will not be tolerated. This includes, but is not limited to, copying a classmate's work, allowing a classmate to copy your work, modifying an exam after it has been handed back in an attempt to deceive the instructor into believing the assignment was graded incorrectly, or using a cell phone or other device during an exam. A student found guilty of academic dishonesty will receive an automatic E on the assignment, and in some cased the offense may lead to an E in the course, academic probation, or even expulsion. See sections 6.3.1 and 6.3.2 of the University Senate Rules for more information regarding academic integrity. You can also refer to the website http://www.uky.edu/Ombud. A plea of ignorance is not acceptable as a defense against the charge of academic dishonesty.

Accommodations

If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours. To receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (DRC). Letters must be received at least one week prior to the requested accommodation. The DRC coordinates campus disability services available to students with disabilities. It is located on the corner of Rose Street and Huguelet Drive in the Multidisciplinary Science Building, Suite 407. DRC Contact: (859) 257-2754 and drc@uky.edu. Their web address is http://www.uky.edu/DisabilityResourceCenter.

UK Mathematics Department Professional Themes

This course will address the four themes of the conceptual framework for the UK professional education program: research, reflection, learning and leading. Students will engage with fundamental ideas in mathematical research, reflection on and analyzing core mathematical content that arise throughout mathematics at all levels. Students will develop as life-long mathematical learners who will be able to take active leadership roles in their future roles as professionals and citizens. The goal in addressing these four themes is to produce teacher leaders who work together to improve student learning among diverse populations and improve education in Kentucky and beyond.

Unbridled Learning Initiatives and the Kentucky Core Academic Standards

This course will provide students an opportunity to advance their knowledge and mastery of the tools associated with Kentucky education reform, focusing on the content and practice standards outlined in the Kentucky Core Academic Standards. As students carry out projects and complete assignments that involve mathematical content underlying instructional activities for P-12 students in Kentucky schools, they will address one or more components of the Unbridled Learning Initiatives.

MA 201/202 Course Coordinator

Amy Green mrs.amy.green@uky.edu

How to succeed

- Come to my office hours and email me as soon as you have questions.
- Read the book and study your notes.
- Form a study group with fellow classmates.
- Make a study plan.
- Find additional help and resources at The Mathskeller (CB 063) or The Study.

Course Help

If you find that you need help in the course, you should email me or stop by my office hours as soon as possible. If the posted office hours do not work with your schedule, please ask about an appointment. I attempt to answer all emails within 24 hours, however, please do not expect a response after 6:00pm. Remember, you earn your grade for this class; I do not GIVE out any grades. Therefore, I expect everyone to try

and do his or her best. You are responsible for your own experience in this class and university. Make it a great one!

Free tutoring can be found in the Mathskeller, CB 063, M-F, 9-5pm.
http://www.mathskeller.com

Changes

I reserve the right to make changes or amend this syllabus at any time. In this event, proper notice will be given.