

MATH 245: Mathematics for Elementary Teachers I

Syllabus: Section 1 Spring 2017

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Office Hours (OH): Open OH
on M, T, W, R, F
(See the following link for specific hours)
Monday-Friday: By appointment

Class Time: MW 2:30pm – 3:45 pm (JAC A05)

Appointments can be made via the following link:

http://www.supersaas.com/schedule/Gillentine_Appointments/Spring_2017_Schedule

Course Description: Introduction to sets; the real number system and its subsystems. For elementary and special education majors only.

Course Outcomes: Students will develop competence with respect to the five process standards found in *Principles and Standards for School Mathematics* published by the National Council of Teachers of Mathematics in 2000:

1. Problem solving – students will become more confident and independent problem solvers.
2. Reasoning and proof – the student’s ability to use deductive, inductive, and intuitive reasoning will grow, and he/she will be able to explain his/her solution process.
3. Communication – students will appreciate the role of discussion in learning mathematics and the value of notation and vocabulary as precise tools that make communication easier.
4. Connections – students will become more aware of connections between various mathematical topics and of connection between mathematics and many other application areas.
5. Representation – the student will increase his/her ability to create and use mathematical representations to model and interpret mathematical ideas and concepts.

In addition, students will have the opportunity to engage in the Standards for Mathematical Practice as outlined in the Common Core State Standards for Mathematics:

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Students will observe and study not only the mathematical content for which they will be teaching but also understand the mathematics on a deeper level in order to be able to examine topics from many different perspectives and appreciate multiple strategies.

See Learning Objectives for a detailed list of objectives that each student is expected to master by the end of the semester.

Purpose: This course is designed to prepare students to meet the challenge of teaching mathematics in elementary schools. This is not a methods course. The primary focus of this course is mathematics content; however, material is presented in a way that suggests effective approaches to teaching children. After completing the course, students should be able to:

- Use a variety of strategies and techniques to solve problems that arise in mathematics and other areas.

- Utilize models and manipulatives to understand and explain basic concepts.
- Use mental math and estimation to judge accuracy and reasonableness of results.
- Understand the meaning of, use of, and connections between addition, subtraction, multiplication and division of real numbers.
- Use the properties of real numbers to calculate more efficiently.
- Display a greater degree of confidence in the ability to use and explain mathematics.

Text (Recommended): *A Problem Solving Approach to Mathematics for Elementary School Teachers*, Tenth Edition, by Billstein, Libeskind and Lott

Supplies:

- Manipulatives Kit (must bring indicated items as required to class – must purchase from the Ole Miss Bookstore by **session 7, Monday, February 13**). It is students’ responsibility to replace lost/stolen items from their kit and damaged bags. Items can be purchased at www.hand2mind.com
- 3 Ring Binder with section dividers (recommended)
- Course Packet (will be available via Blackboard) – Pages will be needed in class during discussions. You must bring a printed copy will you to class at all times by **session 3, Monday, January 30**.
- A pack of loose leaf notebook paper (recommended)
- An electronic device (cell phone, tablet, or computer) – Some discussions will take place via Google Docs. If you do not have access to an electronic device, then inform the instructor within the first two weeks of class. A device will be provided to you. Google Drive, Google Doc, and Google Sheets are three apps that should be downloaded to your device before class begins **session 9, Monday, February 20**.

Instructional Methods:

There will be almost no lectures in this course. To help the students develop their intuitive reasoning and problem-solving skills, most of class time will be spent working in small groups on problems and tasks. An important part of learning to solve problems is being willing to struggle with a problem even after getting stuck.

Discussions of the problems will be done in a large group setting after most groups have finished. Sometimes students will be asked to write up their ideas and solutions, but they are ALWAYS expected to think about the problems, participate in solving them, and communicate their ideas with others. Communicating ideas clearly to others is as important as developing them in the first place.

Please note that this is a mathematics content course, not a pedagogy (methods) course. However, correct pedagogy techniques will be used in order to set an example. As an Elementary Education major, students will participate in a mathematics methods course during their senior block in which they will be taught more about the methods they will witness in this class. After students finish this course they will feel much more confident and comfortable about teaching mathematics and about being a mathematical authority in their classroom.

Grading:

Percent of overall grade

10 Assessments and Comprehensive Final Exam	85%
Assignments	10%
Class Participation	5%

Final grades for the course will be assigned using the following system:

Letter Grade	Percentile Range
A	90%-100%
B+	87%-89%
B	80%-86%

C+	77%-79%
C	70%-76%
D	60%-69%
F	Below 60%

Units and Exams (Tentative Dates):

Assessment 1 – Session 6; Wednesday, February 8
 Assessment 2 – Session 8; Wednesday, February 15
 Assessment 3 – Session 10; Wednesday, February 22
 Assessment 4 – Session 12; Wednesday, March 1
 Assessment 5 – Session 14; Wednesday, March 8
 Assessment 6 – Session 16; Wednesday, March 22
 Assessment 7 – Session 18; Wednesday, March 29
 Assessment 8 – Session 20; Wednesday, April 5
 Assessment 9 – Session 22; Wednesday, April 12
 Assessment 10 – Session 24; Wednesday, April 19

Final Exam – Session 29; Monday, May 8 at 4:00 P.M.

See Assignments and Class Participation Packet and Student Calendar for details on assignments and due dates.

Questions will not be answered the day an assignment is due or the day of an exam.

All assignments are due at the beginning of class. Deductions for late assignments are as follows:

Up until the beginning of the next class meeting: -20%

No assignment will be accepted after the beginning of the following class meeting.

SafeAssign:

Some assignments must be submitted using the SafeAssign feature of Blackboard the day those assignments are due. This software is used to detect plagiarism in all typed assignments.

Flexibility Clause – The requirements, assignments, policies, evaluation procedures, etc., are subject to change. Students' experiences and needs, as well as emerging knowledge, will be considered in modifying this course syllabus.

VERY IMPORTANT:

1. Exams should not be missed. However, if you must miss an exam due to extreme illness or death in the immediate family, the instructor must be notified as soon as possible. Official documentation must be provided within one week of the exam. A make up exam may be scheduled at the instructor's discretion.
2. Any student who will miss a test because of an official University function must reschedule and take this test at a time BEFORE the test is scheduled to be given. Official University documentation must be provided. NO OTHER rescheduling will be allowed.
3. An "I" grade will not be given without the permission of the Department of Mathematics.
4. Any student having three or more final examinations scheduled for the same day will arrange with the instructor to take the noon examination on some other mutually satisfactory date. Please note that only the noon examination may be rescheduled for this reason.
5. No final examinations are to be given at other than scheduled hours, either for an individual or for a class, unless the instructor concerned has specific approval from the academic dean.
6. Every student must take the final exam at the time scheduled. The only exceptions are those students affected by # 2 or # 4 above.

7. A grade of C or better in MATH 245 is required in order to enroll in MATH 246.

ATTENDANCE POLICY:

Students are allowed (3) absences. Five points are deducted from the participation total for **EACH absence above the limit**. It is the student's responsibility to make sure his/her attendance record is correct.

Attendance will be verified within the first two weeks of class. Note that students who do not attend class within the first two weeks of the semester may be dropped from the roll.

TARDY POLICY: Each tardy will result in a 1 point deduction from participation points. If you have a class before this section that will prevent you from attending class on time, then email the instructor your class schedule. **DO NOT BE LATE TO CLASS!** It is the **STUDENT'S RESPONSIBILITY** to notify the professor if they arrived to class **LATE!**

University Policies:

Academic Dishonesty/Cheating: The following statement is the policy of the Department of Mathematics in MATH 245 regarding cheating:

Offenses: Cheating on any exam or assignment, theft or attempted theft of exam questions, possession of exam questions prior to the time for examination, or the use of materials not deemed "legal" by the professor on tests or assignments shall all be offenses subject to appropriate penalties.

Penalties: The penalty for commission of any offense set out above is failure in the course and, subject to the approval of the Chancellor, dismissal or suspension from the University.

Plagiarism: Plagiarism is a serious offense and is treated as such. Students caught plagiarizing on ANY assignment will receive a zero for the assignment (first offense) and will be dismissed from the course with a recorded grade of F (second offense). No exceptions!

WITHDRAWAL DEADLINE FOR SPRING 2017 SEMESTER: Friday, March 3. After the Course Withdrawal Deadline, courses dropped will be recorded on University records and the W grade will be recorded if the student is not failing the course at the time of withdrawal; otherwise the grade recorded will be F. After the course withdrawal deadline, a student may drop a course only in cases of extreme and unavoidable emergency as determined by the academic dean; dropping a course after the deadline will not be permitted because of dissatisfaction over an expected grade or because the student is changing his/her major.

ACADEMIC NEEDS: It is the responsibility of any student with a disability who requests a reasonable accommodation to contact the Office of Student Disability Services (915-7128). That office will then make contact with the professor of this class, through the student. The professor will then work with the student so that a reasonable accommodation of any disability can be made. Students requesting accommodations must notify their professor in a timely manner (**no later than session 5, Monday, February 8**). Students must submit an Instructor Notification of Classroom Accommodation form to each professor before direct classroom accommodations will be provided. Students should make an appointment to meet with the professor in order to discuss the implementation of approved accommodations in each class.

Special Dates:

Classes begin: Monday, January 23

Spring Break: Monday, March 13 – Friday, March 17

Classes end: Friday, May 5

Final Exam: Monday, May 8, 4:00 P.M.