“Students must learn mathematics with understanding, actively building new knowledge from experience and prior knowledge...Learning with understanding is essential to enable students to solve new kinds of problems they will inevitably face in the future.” (Principles and Standards for School Mathematics, National Council of Teachers of Mathematics (NCTM), pages 20 – 21)

**Course Description**

Math 132 is one of a three course sequence which might be titled “Math Appreciation for Elementary Education Majors.” This course includes the study of real and irrational numbers, geometric relationships, properties of geometric figures, one-, two-, and three-dimensional measurement, and problem solving. Multiple ways of teaching concepts will be explored. It is up to the student to break away from the old traditional way of learning mathematics and to think about the topics in a different conceptual way.

**Course Objectives and Policies**

Adults need mathematical proficiency every day to process and make decisions about the vast amount of quantitative data with which they are bombarded. Therefore, competence with basic mathematics and problem solving is an important component of the Common Core State Standards which are taught in the elementary classroom. Math 13200 provides the opportunity for you to develop an understanding and appreciation of the beauty and utility of mathematics and geometry so that you can implement the required curriculum for your students.

The prerequisite for Math 132 is a grade of C or better in Math 130 or equivalent, so you already know how to solve problems for most topics. This course focuses on why techniques for finding solutions work and on the thinking that one does in approaching a mathematics problem. We will consider the history and development of mathematics. We will use technology appropriately to allow us to work on more interesting and complex problems. Assignments will emphasize investigation, critical thinking, and analysis rather than rote computation. As a teacher, you should not only be able to solve mathematics problems, but also to explain why your solution method makes sense. Hence, this course emphasizes giving explanations, not just getting final answers.

You will be expected to come to class each day having prepared the homework and done the reading listed in the course calendar. You should participate actively in classroom discussion by both asking and answering questions and turn in all assignments when they are due.

There are a number of campus-wide policies related to Academic Integrity, Student Misconduct, Religious Holidays, Special Services, etc. for courses at IUPUI. You are expected to know and follow all of these policies. A link to these policies can be found on the left of the OnCourse page, entitled “Campus Course Policies.” This link may also be found at [www.iupui.edu/code](http://www.iupui.edu/code) See your instructor if you have questions.
**Prerequisite**
You should have earned a grade of C or better in Math 130 or equivalent. If you do not have solid abilities with arithmetic and basic algebra, you will find this course very difficult.

**Textbooks**
- *Bigger, Better, Best*, by Stuart Murphy
- Index Cards, Colored Pencils or Crayons

**Calculators**
Students must use the **TI-30XA** calculator for this class. No other calculator will be allowed.

**Attendance**
Although attendance is recorded, there is no numerical attendance component to your grade. Realize that if you are absent on the day of a quiz, you cannot earn those points. If you are absent when an assignment is due you cannot earn full credit for that assignment. If your grade is border line at the end of the semester, good attendance will be a valid reason to round up to the higher grade. You are in competition with others in the class as well as the School of Education. This is the beginning of your professional career preparation. Attendance is a GOOD indication of what type teacher you will be. **THINK ABOUT IT.**

**Administrative Withdrawal**
A basic requirement of this course is that you will participate in all class meetings and conscientiously complete all required course activities and/or assignments. Keep in touch with your instructor if you are unable to attend, participate, or complete an assignment on time. If you miss more than half of the required activities within the first 25% of the course [i.e. first four weeks] without contacting your instructor, you may be **administratively withdrawn** from this course. Our course meets two times per week; thus if you miss more than four classes in the first four weeks, you may be withdrawn. Administrative withdrawal may have academic, financial, and financial aid implications. Administrative withdrawal will take place after the full refund period, and if you are administratively withdrawn from the course you will not be eligible for a tuition refund. If you have questions about the administrative withdrawal policy at any point during the semester, please contact your instructor.

**Withdraw Dates**
- Last day to withdraw with automatic grade of W via the Late drop/add classes (eDrop/eAdd) link on the self service page. **Advisor signature is required.** UCOL students must see advisor by 5:00 p.m. on prior Friday. If submitting in person, pick up the form from your advisor or school and submit signed form by 5:00 p.m. on prior Friday, to the Office of the Registrar Campus Center 250.
- **Advisor and instructor signatures required.** Submitted in person only at the Office of the Registrar by 6:00 p.m., Campus Center 250. Pick up the form from your advisor or school.
Grading Policy:

Grades will be determined using scores from the following activities:

- **Tests**
  There will be three tests during the semester. Each test will be worth 100 points. You must take the test on the day that it is given. If you must miss an exam due to a circumstance beyond your control (such as a death in the family, illness, religious holiday, etc.), a make-up exam will be permitted with proper documentation. You must notify your instructor before the missed exam to arrange a make-up exam. **A student should not expect more than one make-up exam during the semester.**

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<th>TEST DATES</th>
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<tr>
<td>__________ – Chapter 9</td>
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<td>__________ – Sections 6.4, 10.1, 10.2</td>
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<td>__________ – Sections 10.3, 11.1, 11.2, 11.3</td>
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  *Sections covered on tests may change at the discretion of the instructor.*

- **Final Exam**
  The Final Exam is comprehensive and will cover material from Chapters 9, 10, 11 and Section 6.4. It will be held in LD 229. Be sure that you do not have any conflicts (work or personal) with the time and date of the final exam. If you find that you have a conflict with this final exam and that of another class, contact your instructor immediately so that the conflict may be resolved. The final exam is worth 200 points.

- **Quizzes**
  There will be quizzes during the semester. If you are absent the day of a quiz, or the day a quiz is due, you cannot earn those points. Make-up quizzes are at the discretion of the instructor; if one is given, the student may only earn half credit.

  **Take-home-quizzes:** If a quiz is take-home, you are encouraged to prepare using books, notes and discussions with other students. The actual writing of the quiz must be done independently. If the instructor suspects that copying or cheating has occurred, all parties involved will receive a zero.

- **Article Writings**
  There will be article writings during the semester. Check Oncourse for specific instructions for each assignment. Each will require a one to two page typed essay about the assigned article or book. All article writings are due on the date listed on the calendar. *Late assignments cannot receive full credit.* Formal writing standards are expected on all Article Writings.

- **Homework Writings**
  There will be homework writings during the semester. These are to be turned in on the indicated date. *Late assignments cannot receive full credit.* Formal writing standards are expected on all Homework Writings.

- **Children's Literature Book Project**
  You will be investigating children's literature about a mathematics concept. This project will involve Common Core Standards for Mathematics for geometry.

- **Homework**
  Homework will be collected as announced in class. It will be spot graded. Results of homework could help or hurt you if you are on the border line at the end of the semester.
• **Quizzes, Take-Home Quizzes, Article Writings, Homework Writings, Children’s Literature Book, Homework**

  The policy for these activities will be determined by each instructor. These activities will be worth a total of 200 points.

**Assessment:** Your letter grade for the course will be determined from your total scores which will be computed as follows:

- 44% (3 in class exams – 300 points)
- 28% (Quizzes, Article Writings, Homework Writings, Children’s Literature Book, Homework – 200 points)
- 28% (Final Examination – 200 points)

- 97%, 93%, and 90% for grades of A+, A, and A-
- 87%, 83%, and 80% for grades of B+, B, and B-
- 77%, 73%, and 70% for grades of C+, C, and C-
- 67%, 63%, and 60% for grades of D+, D, and D-
- Below 60% is an F

**Note:** Per the policy of the Education Department, you must have a minimum grade of C to pass the course. That means you need at least 73% to pass. They will NOT accept a grade of C-.

**Incompletes**

Grades of Incomplete will only be given in accordance with the university policy available at [http://www.registrar.iupui.edu/incomp.html](http://www.registrar.iupui.edu/incomp.html). Specifically, students must be passing at the ¾ mark of the semester to qualify for assigning an incomplete. The instructor must agree that an incomplete is appropriate and it must be approved by the Associate Chair of the Department of Mathematical Sciences.

**IUPUI Principles of Undergraduate Learning (PUL’s):**

- **Core Communication and Quantitative Skills** – addressed in oral communication, both one-on-one and in groups, and through writing assignments.
- **Critical Thinking** – addressed in exploring problem solving strategies.
- **Integration and Application of Knowledge** – addresses as students look at elementary applications and the State Standards.
- **Intellectual Depth, Breadth, and Adaptiveness** – addressed in problem solving strategies and readings.
- **Understanding Society and Culture** – addressed in readings about math in different cultures and settings.
- **Values and Ethics** – addressed in group activities and classroom dynamics of the college classroom and an elementary classroom.

**Course Coordinator**

Any inquiries about this course or student/instructor issues should be directed to the course coordinator, Nancy Kitt, UC B002C 278-4132, nkitt@math.iupui.edu.

**Special Services**

Students needing accommodations because of a disability will need to register with Adaptive Education Services and complete the appropriate forms issued by AES before accommodations will be given. The AES office is located in Joseph T. Taylor Hall (UC), Room 100, and may be reached by calling 274-3241.
**Student Misconduct**
The IUPUI Department of Mathematical Sciences expects all students to adhere to the regulations put forth in the “IUPUI Code of Student Rights, Responsibilities, and Conduct” concerning academic misconduct or personal misconduct. Procedures for imposing academic and disciplinary sanctions are outlined in the Code. The Code can be found at [http://www.iupui.edu/code](http://www.iupui.edu/code).

**Campus-Wide Policies Governing the Conduct of Courses at IUPUI**
These can be found at [http://registrar.iupui.edu/course_policies.html](http://registrar.iupui.edu/course_policies.html) with links to specific policies in the general areas of attendance, academic policy, conduct and related policies.

**Academic Integrity**
Cheating on assignments and tests or other academic works is a violation of university policy. Any behavior that is construed as cheating or academic dishonesty will not be tolerated in this course. This includes, but it is not limited to, plagiarism, cheating during exams, acquisition of tests or other academic materials, as well as aiding and abetting others in committing the violation. The classroom protocol will be guided by the Student Code of Conduct which, among other things, asserts IUPUI’s commitment "to maintain[ing] a spirit of civility in a community in which diversity is welcomed. Every student, staff, and faculty member plays a significant role in promoting an environment that is conducive to academic excellence by fostering a climate of civility and mutual respect."

**Weather:** There is a link on the left side of the OnCourse page to the IUPUI Weather and Campus Status information. If the university is officially open, we will hold class. [http://www.iupui.edu/~prepared/weather/](http://www.iupui.edu/~prepared/weather/)

**Course Expectations**
Because learning is a goal of this class and learning is impacted by the classroom environment, it is expected that all students will help create a positive classroom environment. This includes but is not limited to the following policies:

1. Take responsibility for your own learning through attendance, participation, and effort.
2. Attend class regularly, since much of the course work is tied to learning in group and class activities. Please discuss with your instructor, ahead of time, if you must miss a class for any reason.
3. Conduct yourself using basic classroom etiquette:
   - Do not arrive late or leave early, as this can be distracting for the class.
   - Do not have private conversations during class; even whispering can be distracting. Unnecessary or disrespectful talking is not acceptable.
   - Do not work on assignments for other classes, read other textbooks, or other books.
   - Turn your cell phones OFF or to silent mode. Any and all other electrical devices will be turned off during the class. If you have an emergency to take care of, please leave the room.
   - **DO NOT TEXT MESSAGE. I have the right, and will either confiscate the device for the remainder of the class or remove the student from the class.**
   - Laptops are not allowed in class.
4. Read all sections in the textbook prior to the class in which the material will be discussed. Come to class prepared for active learning of the relevant topics covered in those readings.
5. Submit assignments on the due date indicated on the class calendar.
6. Participate fully by staying on task and contributing significantly to the discussion topics. Show respect for the instructor and classmates, and their points of view.
7. Demonstrate your best effort in completing assignments, presenting ideas orally, or in written work.
8. Make an appointment with your instructor if you wish to discuss a problem or an issue associated with the class or if you wish to discuss the grading of an assignment.

At the discretion of the instructor, students may have their final grade lowered by any percent for not adhering to these policies.

FORMAL WRITING EXPECTATIONS FOR STUDENTS IN MATH 13200

The assignments you turn in are a representation of yourself. This course is part of your preparation for a career as a teacher. The image you put forward should be one of competence and professionalism.

For all written assignments, I will expect you to type your paper (unless I indicate otherwise), use formal written English including, but not limited to, proper word usage and correct spelling, punctuation, and grammar. Be sure to proofread your work before submitting it for a grade and pay particular attention to the following:

1. Use paragraphs correctly.
2. Use correct spelling
3. Do not write run on sentences. Use periods, capital letters, and commas appropriately.
4. Do not use he/she or his/her.
5. Do NOT use “text-messaging” within any paper. “CU l8r” is not acceptable.
6. Be sure to use the correct form of a word. For example, the sentence “John should bye to number too pencils two use for the test sense it will be a Scan-Tron test” contains five errors (Can you find them all?) and is not acceptable.

For every error, I may deduct a point from your grade. That means if you have several run-on sentences, one point will be deducted for each sentence. If a word is used incorrectly or misspelled, one point will be deducted each time the error occurs. If I cannot understand what you are trying to say and have to struggle to grade the paper, points will be deducted. It is possible to earn negative points for a paper that is poorly written, no matter how good the content is. You are in college on the track to a professional career. This is the time to develop good habits and begin to prepare for your future as an excellent teacher.

Welcome to Math 13200. I look forward to getting to know you and helping you with a beginning step to become an awesome elementary school teacher!