MATH 13100   MATHEMATICS FOR ELEMENTARY TEACHERS I   FALL 2018

Section 00000   MW (TTh)   xxxxxxxxxx – xxxxxxxxxxxxx   **3 Credits**

Instructor: **Office Phone:**
E-Mail Address: **Office Location:**
Office Hours:

"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 13100 is the second in a three course sequence which is titled "Mathematics for Elementary Teachers."

Our course goals, in these sequences of classes, are to prepare you to:
Be a poised and self-confident mathematics teacher in the elementary classroom
Have deep understanding of the reasoning behind various mathematical processes
Be knowledgeable and to clearly articulate mathematical ideas using correct vocabulary

Multiple ways of teaching concepts will be explored in this class. It is up to each student to "break away" from the old traditional way you have learned mathematics and to contemplate the topics in this course in a different **conceptual** way.

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 me, 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 or HAVE YOUR PHONE VISIBLE. 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 me 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.

Learning Objectives

This course focuses on <u>why</u> 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. 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.*

Upon completing this course, students will be able to:

1   Correctly perform algebraic operations and solve equations.
2   Perform operations with exponents and radicals.
3   Solve inequalities involving linear functions.
4   Understand basic probability including combinations and permutations
5   Determine the probability of one and/or multiple events including conditional probability
6   Understand basic statistical measures including mean, median, and mode.
7   Correctly develop various graphing methods for representing data.
8   Solve problems involving standard deviation and relationship to normal distributions.

Prerequisite

You should have earned a grade of C- or better in Math 11000 or equivalent. If you do not have solid abilities with arithmetic and basic algebra, you will find this course very difficult.

Textbooks

By clicking the above link (or copy and paste to address bar), students can order our textbook on-line (Or from University Bookstore). You will be provided with a CONNECT Access Full Digit Code good for **18 months** and will also include the 10th edition eBook, *Mathematics for Elementary Teachers: A Conceptual Approach*, <u>TENTH</u> Edition, by Bennett/Burton/Nelson/Ediger

ISBN Number: 9781259293436

- Once the student has purchased the above materials, for an additional fee, the student may purchase the three-hold punch edition of *Mathematics for Elementary Teachers: A Conceptual Approach*, <u>TENTH</u> Edition, by Bennett/Burton/Nelson/Ediger. This book will be shipped directly to the student's home address.

- **Colored Pencils or Crayons**

Calculators

The IUPUI math department recommends the use of the TI-30XA calculator for this class. <u>You may not use your **CELL PHONE** as a calculator</u>.

Attendance

Attendance is EXTREMELY important for the Elementary Education Mathematics content courses. Much discussion is held during class pertaining to teaching ideas. Much group work, as well as forming conceptual understandings of mathematics is done in class. 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 boarder 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. Enrolling in college classes is a financial commitment on the part of*** SOMEONE.

I allow two excused absences. In order for an absence to be excused, I must have some type of official document (doctor's note, obituary, etc.). All other days missed will be counted as an unexcused absence. The chart below shows how your grade will be altered for each class missed.

Unexcused Absent	0	1	2	3	4	5	6
+/- from attendance grade	0	-1%	-2%	-4%	-6%	-8%	-10%

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 me 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 me, 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 me.

Incomplete

Grades of Incomplete will only be given in accordance with the university policy available at 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.

Grade of FN
The grade of FN is given to students who have attended class but their lack of attendance is the basis for a failing grade. The grade of FN will be treated on the transcript in the same way as a grade of F. The student will not see the FN. Use of the grade of FN, along with the last date of attendance in class will provide documentation required by the University auditors to comply with **federal financial aid regulations.**

Withdraw Dates

SUNDAY October 21, 2018 - Last day to withdraw with automatic grade of W via the Late drop/add classes link in One.IU. **Advisor signature is required**. The school of Science Dean's Office will not endorse a withdrawal after October 21, 2018 for School of Science majors unless a documentable excuse is established.

Grading Policies:

Grades will be determined using scores from the following activities:

Final Exam	20%		**100-93**	**A**
Exams	40%		**92-90**	**A-**
Quizzes	10%		**89-87**	**B+**
Homework	20%		**86-83**	**B**
Attendance	10%		**82-80**	**B-**
			79-77	**C+**
			76-73	**C**
			72-70	**C-**

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% of the total points to pass. SOE will NOT accept a grade of C-.

Homework

Homework will be assigned for each section from our online textbook. You should work on the homework as it is assigned. Make sure you have read the assigned pages that accompany the homework before you begin.

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 me before the missed exam to arrange a make-up exam. *A student should not expect more than one make-up exam during the semester.* **If you miss a test and do not contact me, you will NOT be allowed to make up the test.** This is COLLEGE, and the beginning of your PROFESSIONAL CAREER.

Quizzes

There will be five online quizzes during the semester. Each quiz will be worth 100 points.

Final Exam

The Final Exam is comprehensive and will cover material from all sections covered throughout the semester. 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.

Final Exam Date   xxxxxxxxxxxxxxxxxxxxxxxxx

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: Bruce Boling (brboling@iupui.edu) 317-278-4132

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

Cheating will result in a minimum penalty of receiving a grade of F in the course. 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.

Campus-Wide Policies Governing the Conduct of Courses at IUPUI

These can be found at 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 to the IUPUI Registrar's Home Page under the MODULE titled "Weather" on the CANVAS page. This site states the current status of the university. You may need to go to the **VERY TOP** of the page for the status information. If the university is officially open, we will hold class.

CELL PHONES DURING TESTS: I have noticed that students are beginning to use cell phones for more than just making calls and texting. With the clear quality of some of the cameras, I have noticed students sitting in the hallway taking pictures of quizzes, homework, or pages from textbooks, obviously with the intent of putting the phone in their lap during the test and looking up information. Therefore, all cell phones must be placed in backpacks and away from students during testing.

Counseling and Psychological Services (CAPS)

During the semester, if you find that life stressors are interfering with your academic or personal success, consider contacting Counseling and Psychological Services (CAPS). All IUPUI students are eligible for individual counseling services at minimal fees. Group counseling services are free of charge. CAPS also performs evaluations for learning disorders and ADHD; fees are charged for testing. CAPS is located in Walker Plaza, Room 220 (719 Indiana Avenue) and can be contacted by phone (317-274-2548). For more information, see the CAPS web-site at: http://life.iupui.edu/caps/