

MATH 3161

Mathematical Inquiry for Teachers

Course Description:

An in-depth study of concepts and processes underlying the P – 5 school mathematics curriculum with special emphasis on the numeration, number systems, estimation, and computational algorithms. Problem solving serves as a unifying strand. *Prerequisite: MATH 2008 with a minimum grade of C.*

Materials:

- Text: Moch, P., Wares, A., & Harrell, G., *Creating a Positive Change in Elementary Teacher Mathematics*, Dubuque, IA: Kendal Hunt. ISBN 9781465219671.
- Recommended: Scientific Calculator - TI 83 or TI 83 Plus recommended.
- Recommended Supplies: Three-ring notebook, pencils, straightedge

Course Goals:

This course is designed to promote students' active involvement in the learning of mathematics through individual and collaborative problem solving as well as the communication of ideas.

Justification: The first three-hour course of a 9-hour Early Childhood Education concentration in mathematics content required at the junior and senior levels as mandated by the Board of Regents in the 1998, *Policy for the Preparation of Educators*. The intent of this course is to examine the foundations of elementary school mathematics while at the same time modeling teaching/learning environments suitable for the elementary school classroom.

General Student Learning Outcomes:

- By the time a student finishes this course, they should be able to do the following:
- solve problems and build new mathematical knowledge through problem solving;
 - meaningfully develop and model each of the four basic arithmetic operations on the set of integers and rational numbers;
 - model and explain computational algorithms for operations on the set of integers and rational numbers in a meaningful, developmentally appropriate fashion;
 - develop and apply a variety of mental computation and estimation techniques for operations on integers and rational numbers;
 - model chance situations by constructing a sample space to determine theoretical probabilities and by conducting an experiment to determine experimental probabilities;
 - collect, organize, describe, and represent data, as well as read and interpret tables, charts, and graphs;
 - apply measures of central tendency and measures of dispersion;
 - apply and use concepts of ratio, and proportional variation to solve routine and non-routine problems;
 - use algebraic reasoning to solve routine and non-routine problems
 - communicate mathematical ideas using correct representations in written and oral form;
 - apply critical thinking and problem solving skills in a variety of settings;
 - select and use appropriate technology, including calculators and computers.

CLASS PREPARATION AND ATTENDANCE:

Two essential components of this course are 1) preparation for class by completing outside assignments, and 2) involvement in class activities. In this course it is impossible to be engaged in quality learning without taking these two components seriously. *Poor or late attendance or not attending for the full class will adversely affect your grade in the class and not attending 80% of the class sessions may result in an invitation to reschedule the class for a semester and time more conducive to attendance (and a failing grade for the semester.)* If you are tardy, it is your responsibility to make certain that attendance records are modified to reflect your attendance.

Class activities and discussion are very much a part of learning about mathematics. You are expected to be a participant in ways that are most meaningful to you. The intention is for you to make sense of mathematics as well as to begin to consider mathematics classrooms that will provide potentially meaningful mathematics learning opportunities for your future students. This class is your opportunity to begin to make sense of these ideas - MAKE IT AS RICH AS YOU POSSIBLY CAN!

AS PART OF AN INTELLECTUAL COMMUNITY, WE SHOULD FIND APPROPRIATE OPPORTUNITIES TO READ, RESEARCH, REFLECT, PRESENT, CHALLENGE, AND DISCUSS IDEAS!

COURSE EVALUATION*:

Emphasis will be on authentic achievement. *Excellence* will be encouraged and recognized. Your work will be evaluated in the following manner with special consideration given to outstanding accomplishments and the grade may be adjusted (higher) on evidence of excellence.

		<u>Grading Policy:</u>
Formal Learning Opportunities	65%	A 90%-100: Other
Assignments (including problem solving)	15%	B 80%-89
Final Examination (mandatory & comprehensive)	20%	C 70%-79%
		D 60%-69%
		F below 60%

*Instructor reserves the right to modify upon class notification.

Makeup Policies:

Tests: As a general rule, makeup exams will not be given. If one exam is missed, the final exam score will be used in place of that test score. If a second exam is missed, a score of zero will be assigned for that exam. Your lowest test score may be replaced by your final exam score if it is a higher score. All exams should be taken with your best effort.

Assignments: Assignments are due at the beginning of class on the day in which the assignment is due or should be uploaded on BlazeVIEW in the appropriate dropbox.

PROFESSIONALISM and CLASSROOM BEHAVIOR:

During the semester, you need to exhibit professional behavior by focusing on the job at hand – learning mathematics. If you will come to class with the mindset of putting learning first, then the following aspects of professionalism will naturally fall into place:

- Come to class every time it is scheduled, be on time, and don't leave early.
- Turn in requested materials on time.
- Stay on task – learning mathematics.
- Don't pack up your books early.
- Be prepared. Learn today's class notes and do today's homework before coming to the next class session.
- Through your actions and words, display that the work you are doing is important.
- Clean up after yourself
- Do not cheat. *Procedures for academic dishonesty will be followed if work presented as your own is not actually your own work.*
- *Be courteous to and respectful of others. All students have the right to hear the class lectures, so do not converse privately during class lectures.*
- Turn off cell phones, pagers, and other noise-making devices.

Student Opinion of Instruction Statement:

At the end of the term, all students will be expected to complete an online Student Opinion of Instruction survey (SOI) that will be available on BANNER. Students will receive an email notification through their VSU email address when the SOI is available (generally at least one week before the end of the term). SOI responses are anonymous to instructors/administrators. Instructors will be able to view only a summary of all responses two weeks after they have submitted final grades. While instructors will not be able to view individual responses or to access any of the data until after final grade submission, they will be able to see which students have or have not completed their SOIs, and student compliance may be considered in the determination of the final course grade. These compliance and non-compliance reports will not be available once instructors are able to access the results.

Classroom Accommodations:

Students with disabilities who are experiencing barriers in this course may contact the Access Office for assistance in determining and implementing reasonable accommodations. The Access Office is located in Farbar Hall. The phone numbers are 229-245-2498 (V), 229-375-5871 (VP) and 229-219-1348 (TTY). For more information, please visit VSU's Access Office or email: access@valdosta.edu.

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