

Math 125 – Math for Elementary Teaching

Kevin Hartshorn – Spring 2006

Vital Information

Class Meeting

MWF 12:50pm – 2:00pm
PPHAC 232

Required Text

*Mathematical Reasoning
for Elementary Teachers*
(4th Edition) by DeLong
and Temple

Class Web-page

<http://www.math.moravian.edu/hartshorn/math125>

Contact Information

Office

PPHAC 222

e-mail

hartshorn@moravian.edu

Office hours

Mon 2:30–4:00pm
Tue 8:30–10:00am
Thu 1:30–3:00pm

Course Topics and Goals

This course is designed specifically for students who intend to teach in elementary school. Its purpose is to provide the mathematical background necessary for teaching with confidence and imagination the basic concepts of mathematics as well as techniques of problem-solving. Throughout, the emphasis will be on basic ideas, problem-solving, and the larger historical and cultural contexts of mathematics.

The primary goals of this course are to provide a deeper understanding of mathematical concepts, methods of reasoning, and techniques of calculation that are taught in the elementary grades. Specifically, a successful student will be able to:

- use the mathematical content of this course to model and solve realistic problems;
- use mathematical reasoning to find patterns, make and test conjectures, and create simple proofs or find counterexamples to prove or disprove these conjectures;
- communicate results and conjectures using words, tables, symbols, or graphs;
- make connections between mathematical topics and other areas of mathematics, other disciplines, or situations in daily life;
- use technology as a tool to help solve problems;
- use visual and tactile aids (manipulatives) to make mathematical concepts more concrete;
- work well as part of a team to define, solve and report on projects.

Course Materials

Our text is *Mathematical Reasoning for Elementary Teachers* (4th Edition) by Long and DeTemple. In addition, students are expected to have a calculator. Almost all schools introduce students to calculators in early grades, and calculators are used routinely for investigation of properties of numbers, for problem-solving, and for confirmation of hand calculations.

Evaluation and Grading

Grades will be determined through quizzes, homework, group projects, exams, and a system of “culture points.” The breakdown will be as follows:

15%	Homework and Quizzes
5%	Culture points
10%	Group work and class participation
45%	Three exams (based on the average score)
25%	Final exam

Assignment Parameters

Practice problems and readings will be assigned every day, and you are expected to complete them for the next class meeting.

Some assignments will be group work done both in and outside of class. Each group member will turn in an individual report based on the work of the entire group. When grading these assignments, I will choose *one* report from each group. Every member of the group receives the same grade.

The remainder of the assignments are meant to be individual work. For those assignments you are expected to work on your own. If you have any questions you should come to me for help.

Quizzes are meant to help you monitor your progress in the course. They will be based on material from the class, readings, and the practice homework problems. ***There will be no make-up quizzes.***

We will have three in-class tests during the semester as well as a cumulative final exam. The tentative dates for the exams are ***Friday, February 10, Wednesday, March 1, and Friday, March 31.*** The registrar will determine the time and place for the final exam.

Remember that for every hour spent in class, you should expect to spend 2 hours doing work outside of the class. ***You cannot learn math without lots of practice!***

A key component of this class is to provide you with a perspective of the role of mathematics in life. For this perspective, you need to develop an understanding of what mathematics actually is and how it relates to the world around us. Over the course of the semester, you will complete a sequence of “cultural activities” to help gain an understanding and appreciation of mathematics. There are no particular assignments for culture points, rather there are opportunities for you to participate in events: conversations about mathematics, articles, colloquia, special problems. For each event in which you participate, you will be awarded points based on the short written summary/reflection on the event.

Attendance

Regular and active attendance is vital. Your “class participation” score is based not only on your attending class, but on you being an active and positive contributor to the class.

If you miss a class you are responsible for finding out what you missed. A late assignment will be graded with 20% reduction for each day that it is late. There will be no make-up quizzes given, and make-up exams are only given in extreme, pre-approved cases. If you will need to miss an exam, it is your responsibility to contact me ***in advance.***

If you miss an exam or quiz for a legitimate reason (e.g.: severe illness), be sure to contact me as soon as possible.

Academic Honesty

Students will be expected to adhere to the standard of the Academic Honesty policy as described in the Student Handbook (pages 51-53). Any violations of this will result in severe penalties on the assignment, a report to the Dean, and the very real possibility of failing the course. For specific application to this course, be sure to refer to the *Assignment Parameters* section above.

Disclaimers

- This syllabus is subject to change through the semester. Any updates to the syllabus will be posted on the class web page.
- If you are in need of special accommodations due to a disability, please contact the Learning Services Office as soon as possible. We can only accommodate your special needs if we are made aware of them.
- All grades given in this class are subject to my qualitative judgement as professor of the course.