Math 105: Fundamental Mathematics Concepts for Teachers I

Course information is also posted on Carmen.

Texts:
Mathematics for Elementary Teachers, 2nd edition, and *Activities Manual* by Sybilla Beckmann (These are packaged together. The ISBN for the package is: 0321447174).

Calculators are not permitted on any quiz or exam in this course.

Course Description and Expectations:
This is the first course in the three-course sequence of Math 105, 106 and 107. Math 105 focuses on concepts of number systems and operations. The goal of this course is to prepare you to become teachers of elementary and middle school students. Knowing the mathematics for yourself is not the same as knowing the math for teaching. To that end, we emphasize explanations of mathematical ideas. To make this point very clear: Full credit will NOT be given for correct mathematical answers without an explanation that is clear and complete.

Attendance and participation 5 days a week is critical to your success in this class. Each class will consist of doing an activity in a small group and discussing it with the whole class. You are expected to participate actively in all phases, so please bring the Activities Manual to each lecture and recitation. Explaining your thinking verbally in small and large groups will prepare you to explain mathematics with your students. It will also help you clarify your own ideas and/or questions.

Reading is crucial because we do not teach using the traditional lecture format. Reading assignments are designed to provide the explanation and summary of material that are not provided in class. You are expected to complete all reading assignments. You will find the Practice Problems (which immediately precede the homework sections) and their solutions particularly helpful.

Overall Grading Scheme:

Attendance & Participation	10%
Homework:	17.5%
Quizzes:	17.5%
Midterm exam:	25%
Final exam:	30%

Exams
This course will have a common midterm on **Thurs., October 29 (7:30 – 8:20 PM)** and a common final exam on **Mon., December 7 (7:30 – 9:20 PM).** If you have a conflict with either or both of these exams, be sure to alert your lecturer.

Homework
There will be weekly homework assignments. Homework assignments will receive a score out of 15 points: you will receive 5 points for completing all of the problems (less if you do

not) and ONE randomly selected problem will be graded on the 10-point scale following this paragraph. The graded problem will be assessed on both the quality of your explanation and the correctness of your solution. Occasionally, a score will be given that is not on the rubric (e.g., a "1" or a "7.5"). This indicates that your work is between two scores.

Grading Rubric

Points	Description	Characteristics
10	Very good	Correct mathematics that is carefully thought out and thoroughly explained.
8	Good	Correct mathematics with an emerging but incomplete explanation.
6	Basic	Correct mathematics but little or no explanation OR largely correct mathematics with an emerging explanation that shows understanding.
4	Emerging	Work that has some merit but also has significant shortcomings in the mathematics and/or explanation.
2	Credit for effort	Work that shows some relevant effort but is seriously flawed.
0	No credit	No work submitted or no serious effort shown.

Homework Revision Policy:
Any graded homework problem may be revised and resubmitted according to the following requirements:

- Resubmit the original homework assignment with your TA's comments.
- Submit a complete revision of the problem solution.
- Return the revision to your TA no later than 1 week after the graded papers have been returned.
- You may earn up to half the missed points. These will be added to the original score for your final score.

Quizzes
Most Fridays there will be a 15-minute quiz (10 points) on material taken from the homework and activities completed in lecture and recitation since the previous quiz. Activities listed on the syllabus but not completed in class should be finished outside of class — on quizzes, you will be responsible for all the material in the assigned activity. Quizzes will be graded on the same 10-point rubric as the homework problem (see below).

Makeup Quiz Policy:
If you have an excused absence (e.g., illness with doctor's note, religious holiday, university sanctioned conflict), a makeup quiz will be permitted. The lowest quiz score will be dropped at the end of the quarter. You should use that option to compensate for an unexcused absence. Note that the instructor determines what constitutes an "excused"

absence. Please communicate any absence to the instructor as soon as possible. This may be done by e-mail.

A. GEC Information. This Mathematics course can be used, depending on your degree program, to satisfy the Quantitative and Logical Skills category of the General Education Requirement (GEC). The goals and learning objectives for this category are:

Goals: Courses in quantitative and logical skills develop logical reasoning, including the ability to identify valid arguments, use mathematical models and draw conclusions based on quantitative data.

Learning objectives: Students comprehend mathematical concepts and methods adequate to construct valid arguments and understand inductive and deductive reasoning, scientific inference and general problem solving.

B. Disability Statement. Students with disabilities that have been certified by the Office for Disability Services will be appropriately accommodated, and should inform the instructor as soon as possible of their needs. The Office for Disability Services is located in 150 Pomerene Hall, 1760 Neil Avenue; telephone 292-3307, TDD 292-0901; http://www.ods.ohio-state.edu/.

C. Academic Misconduct Statement. It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term "academic misconduct" includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee. For additional information, see the Code of Student Conduct (**http://studentaffairs.osu.edu/resource_csc.asp**)

**You may use the Internet as an additional resource, HOWEVER, any use of examples or text taken from any Internet website must be cited as with any other outside materials.

***You are encouraged to work with other students and with tutors in the Tutor Room; however, you must submit your own individual written work.