

**Math 313, Topics in Elementary Mathematics II, Fall 2006**  
12:55-2:10 WF, LA-03

**Instructor:** Imre Tuba  
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**Office hours:** 5:30-7 W, 3-4 Th, 2:15-3:15 F.

**Prerequisites:** Math 311 or 312.

**Text:** Math 313 Lecture Notes published by SDSU (Montezuma Publishing).

**Course objective:** This course is designed for prospective elementary and middle school teachers. Its goal is to develop an understanding of the mathematical thinking process that will allow you to teach elementary and middle school students. It is not a review of elementary school math and is not a teaching methods course. You will be expected to be able to solve problems at the elementary and middle school level and give clear and coherent explanations of how you solve those problems and why you can solve them that way both verbally and in writing. Your explanations must be accessible to a 5-6th grade student.

**Website:** [www.rohan.sdsu.edu/~ituba/math313](http://www.rohan.sdsu.edu/~ituba/math313).

**Homework and reading** will be posted on the class website regularly. You will be able to follow the progress of the course using the website. It is essential that you take the HW very seriously. Don't leave it to the last moment, do it all, and do it on time. You are unlikely to succeed in a math class without doing all of the HW.

I want to be able to grade and return HW promptly. So to be fair to everyone, I will not accept late HW for credit. It is still better to turn in homework late than never. I will still grade it, only you won't get credit for it.

**Collaboration:** Most of the HW exercises will require individual work. Limited collaboration with your fellow students in the class is ok. The purpose is to let you discuss and critique each other's ideas and not to let you split the workload. Keep collaboration constructive and reasonable. You are expected to fully understand the solution and write it up on your own. Submission of essentially identical work by two different students will not be acceptable.

**Volunteer project:** I want you to have some hands-on experience with work in an elementary or middle school. Make arrangements with a local elementary or junior high school to volunteer at least 6 hours of your time assisting with math instruction. You don't have to teach a class, but do something that has substantial math content, like tutoring, grading, class preparation, etc. You will have to write a short report on your work.

The timing of this project will be announced in class.

**Group project:** Interview a 5-8th grade student. The interview should consist of solving a math problem together with the student. The goal is not to teach the student, but observe how they solve the problem. So pick a problem that is challenging to the student, but that they can figure out how to do possibly with some help from you. While one of you talks to the student, the other can take notes. You can alternate roles if you wish. You will give a brief presentation on your interview in class.

The timing of this project will be announced in class.

**Exams:** There will be two in-class exams, on Oct 4 and Nov 8.

**Final exam:** 12:55 on Dec 13. Place TBA.

**Grading scheme:**

Homework	20%
Volunteer project	10%
Group project	10%
In-class exams	40%
Final exam	20%

A score of 90% or more will guarantee an A, 80% a B, 70% a C, and 60% a D. The curve may be adjusted lower than this.

**Calculators** will not be integral to this course. They may sometimes be useful on some of the homework, but will not be required or allowed on exams. You probably already own a calculator that knows more than we will need.

**Quality of work:** This course focuses on your ability to explain how you solve problems. Therefore the quality of your presentation will be an important aspect of your grade. It is important that you work neatly on the assignments. The quality of your work will affect your grade. Quality has to do with how easy it is for someone else to read your solution to a problem. Use full, grammatically correct sentences. It is not enough to do the math right, you must also present it well.

**Students with disabilities:** If you need special arrangements, let me know well in advance so we can plan to accommodate your needs.

**Another general note:** Learning math is much like learning to ride a bicycle in that you learn by doing it and not by watching someone else do it. Attending class and reading the textbook won't be enough to do well on the exams. You should work through every example and activity in the book and in your class notes and expect to have to re-read everything several times. It's slow, but then your reading list for this class is short.