

MATH 313 - SELECTED TOPICS IN ELEMENTARY MATHEMATICS

Spring 2010

Section 1, MW 1400-1515, EBA 254
Section 2, TTh 1600-1715, GMCS 325

Instructor: **Chris Jepsen**

Office Info: GMCS 592 (594-1665)

Office Hours: **MW** 1300-1350, **TTh** 1030-1120 and 1500-1550 & by appointment

E-mail: Jepstonian@aol.com (Subj: Math 313)

The course:

OVERVIEW: In your past mathematics courses, the emphasis has likely been on how-to-do certain mathematics. Math 313 is designed to make you think about problems. As a teacher, you should not only be able to solve problems but also be able to explain why your methods of solution make sense. Hence, this course involves giving explanations, in addition to final answers. This course is not a presentation of topics taught at specific grade levels, nor a methods-of-teaching course. You will have methods courses during your credential program. Your aim here should be to gain a deep understanding of the topics while sharpening your ability to think mathematically.

DESCRIPTION: Math 313 is primarily focused on **Algebra and Change** (ch. 12-15), **Number Theory** (ch. 11) and **Transformation Geometry** (ch. 22). This course concludes the SDSU Liberal Studies look at elementary school mathematics from the advanced perspective of a teacher. Its topics and their treatment were motivated by the elementary school mathematics curriculum and national teaching recommendations. It was designed to draw together and extend your earlier work in Math 210, 211, and 311. Therefore, some of the sections in Math 313 will provide a second look at various topics from those courses. **Problem Solving** will also play a key role in tying these courses together. By the end of this course, you should have a greater and more sophisticated understanding of the mathematics covered.

STRATEGIES: Every theory of learning assumes that the student is engaged. Engagement means more than just copying from the chalkboard. Learning comes through your active mental involvement, and your willingness to reflect on the ideas you encounter; it does not happen automatically. It is very important that you attend class regularly, study the ideas, keep up with the homework, and ask questions or seek help when there's something you don't understand. Strive for better understanding, rather than just memorizing and imitating what you see.

Text: Reconceptualizing Mathematics, **First Edition**, Sowder, et al.

Materials: Graph Paper and Straight Edge (No Calculators)

Prerequisites: Math 210, Math 211 and the LS Math Proficiency Assessment

Grading:

1. Two Exams (90 points each)	180 points
2. Five Quizzes (30 points each): lowest dropped / <u>no</u> make-ups	120 points
3. Final (comprehensive)	<u>150 points</u>
TOTAL	450 points

Letter grades will be assigned as follows:	At least 414 points ($\geq 92\%$) → A	At least 351 points ($\geq 78\%$) → C+
	At least 405 points ($\geq 90\%$) → A-	At least 324 points ($\geq 72\%$) → C
	At least 396 points ($\geq 88\%$) → B+	At least 315 points ($\geq 70\%$) → C-
	At least 369 points ($\geq 82\%$) → B	At least 306 points ($\geq 68\%$) → D+
	At least 360 points ($\geq 80\%$) → B-	At least 279 points ($\geq 62\%$) → D
		At least 270 points ($\geq 60\%$) → D-

Note: In a *border-line* case, your attendance and participation may affect your grade.