SU DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE
SYLLABUS (Tentative)
MATH 130   Fundamental Concepts I

Objectives: To provide students with a thorough understanding of the mathematical concepts covered in grades one through eight using approaches that support professional (NCTM & CCSS) standards. To move prospective elementary school teachers through the mathematical content and develop the ability to explain the mathematical concepts and relationships. Using correct vocabulary, the student must be able to explain concepts in everyday language appropriate for the listener and be able to demonstrate these concepts using physical models and/or activities. Participation in active learning (group work, use of manipulatives, etc.) is expected. Non-routine problem solving to be included regularly throughout the semester.

This course **does not** satisfy General Education requirements.

For students in the Elementary Education program.

Prerequisite: Proficiency in algebra and mastery of arithmetic skills, including fractions, decimals, and percents. Three years of high school math, including two years of algebra and one year of geometry.

Text: Reconceptualizing Mathematics, 3rd edition by Judith Sowder, Larry Sowder, and Susan Nickerson

	Weeks
The base 10 place value system Understanding place value (alternative bases may be explored) and visual representation of real numbers.	2.0
The operations of addition and subtraction Ways of thinking about and representing the operations on real numbers, including a look at traditional and nontraditional algorithms, and children's views. Representations to include decimal squares and decimal wheels.	3.5
The operations of multiplication and division Ways of thinking about and representing the operations on real numbers, including a look at traditional and nontraditional algorithms and children's views. May also be extended to rational numbers when appropriate. Representations to include decimal squares.	3.5
Fractions and meanings To include visual representations and how they aid in the different conceptions of fractions.	4.0
Tests	1.0
	14.0

EVALUATION

Assignments, Quizzes, Classwork	20 – 40%
Tests	30 – 60%
Comprehensive Final Examination	20 – 30%

Free tutoring is available for this course in the Spring and Fall semesters.

Writing Across the Curriculum: At the University Writing Center, trained consultants are ready to help you at any stage of the writing process. It is often helpful for writers to share their work with an attentive reader, and Writing Center consultations allow writers to test and refine their ideas before having to hand papers in to their instructors or to release documents to the public. In addition to the important writing instruction that occurs in the classroom and during professors' office hours, the Center offers another site for learning about writing. **All students are encouraged to make use of this important service.**

NOTE: ONCE A STUDENT HAS RECEIVED CREDIT, INCLUDING TRANSFER CREDIT, FOR A COURSE, CREDIT MAY NOT BE RECEIVED FOR ANY COURSE WITH MATERIAL THAT IS EQUIVALENT TO IT OR IS A PREREQUISITE FOR IT.