COURSE SYLLABUS

Tunxis Community College

Education That Works For a Lifetime

Course Title:	Number Systems	**Date submitted:**	Spring 2014 (AAC: 17-25)
Department:	Mathematics & Science		
Curriculum:	Mathematics		

Course Descriptors: Make certain that the course descriptors are consistent with college and Board of Trustees policies, and the current course numbering system.

Course Code: (eg. ACC 101)	MAT*141
Course Type:	L

A: Clinical B: Lab D: Distance Learning
I: Individual/Independent L: Lecture N: Internship
M: Seminar P: Practicum U: Studio
X: Combined Lecture/Lab Y: Combined Lecture/Clinical/Lab Z: Combined Lecture/Studio

Elective Type:	G/LAS/M

AH: Art History E: English FA: Fine Arts FL: Foreign Language G: General HI: History HU: Humanities LAS: Liberal Arts & Sciences M: Math S: Science SS: Social Science

Credit Hours:	3
Developmental: (yes/no)	No
Contact Hours: Lecture:	3
Clinical:	0
Lab:	0
Studio	0
Other:	0
TOTAL:	3
Class Maximum:	30
Semesters Offered:	F/Sp/Su

Prerequisites:

C- or better in Intermediate Algebra (MAT*137), Intermediate Algebra for Liberal Arts (MAT*137L), OR Elementary Algebra/Intermediate Algebra Combined (MAT*139), OR appropriate placement test score

Corequisites:

None

Other Requirements:

None

Catalog Course Description:

Nature of Mathematics and theory of sets and logic are studied. Starting with natural numbers, the number system is extended by analysis of its properties to integers, rationals, reals and complex numbers. Various numeration systems are investigated. This course is recommended for students in Early Childhood, Elementary or Middle School Education Programs.

Topical Outline: List course content in outline format.

1. Sets
2. Logic
3. Metric system
4. Mathematical Systems
5. Systems of Numeration
6. Sets of numbers and their structure

Outcomes: Describe measurable skills or knowledge that students should be able to

COURSE: At the successful completion of this course, the student will demonstrate the following abilities:

1. define or describe the terms of set theory

demonstrate as evidence that they have mastered the course content.	2. operate on sets 3. draw Venn diagrams 4. identify statements of logic 5. use the symbolic form of logic 6. construct truth tables 7. perform measurements and conversions within the metric system 8. perform approximate conversions between the metric and American systems 9. perform the four standard operations within various number systems 10. identify the basic parts of a mathematical and axiomatic system 11. identify the basic characteristics of different systems of numeration 12. perform operations in different bases 13. perform conversions between bases 14. identify the characteristics and properties of the subsets of real numbers 15. operate on real numbers 16. use appropriate manipulatives
	PROGRAM: Does not apply
	GENERAL EDUCATION: **7. Quantitative Reasoning -**Students will learn to recognize, understand, and use the quantitative elements they encounter in various aspects of their lives. Students will develop a habit of mind that uses quantitative skills to solve problems and make informed decisions. **Demonstrates**: Interprets numerical information and applies sufficient laws of logic and mathematics to solve problems using numbers, symbols, graphs and/or descriptions. **Does Not Demonstrate:** Misinterprets numerical information or insufficiently applies laws of logic and mathematics to solve problems using numbers, symbols, graphs and/or descriptions.
Evaluation: List how the above outcomes will be assessed.	**Assessment will be based on the following criteria:** Quizzes Exams Projects and group work
Instructional Resources: List library (e.g. books, journals, on-line resources), technological (e.g. Smartboard, software), and other resources (e.g. equipment, supplies, facilities) required and desired to teach this course.	**Required:** Classrooms with sufficient seating and board space Classroom manipulatives related to K-8 Mathematics **Desired:** Storage cabinet for the manipulatives
Textbook(s)	Mathematical Reasoning for Elementary Teachers, 5th edition by Long/DeTemple/Millman