MTE 4110 Elementary School Mathematics and The Computer

Instructor: Professor Charles Cheng, 454 MSC, (248) 370 – 3444, cheng@oakland.edu

Class Time: MW 3:30–5:17 PM

Class Room: 172 SFH

Office Hours 2:30-3:30 PM and by appointment

Text Books:

1. Terrapin LOGO (software): purchase information forthcoming

2. Geometers Sketchpad: purchased at http://www.keymath.com/x18112.xml. One-year license costs $9.96 plus shipping. (This is old information. You only need it for the last four weeks. New information is forthcoming.)

3. Liping Ma: Knowing and Teaching Elementary Mathematics, LEA, 1999. (You do not have to buy this book. Library has an on-line copy. You only need to read it once.)

4. Lecture notes, free at https://files.oakland.edu/users/cheng/web/

Prerequisite: MTE 211 Structures of Geometry

Description: This course is an introduction to creative use of computers in teaching mathematics in elementary education. The main tool is the LOGO computing language. The table of contents is as follows:

1. Introduction to TERRAPIN LOGO and Computer Architecture
2. Procedures with Input
3. Recursive Procedures
4. Drawing with Colors
5. Coordinate Geometry
6. Drawing Triangles
7. Drawing Trees
8. Tessellation
9. Fractals
10. Words, Numbers and Lists
11. Rational Number Arithmetic
12. Arithmetic

13. Loops
14. More Number Theory
15. Introduction to Geometers Sketchpad

Homework: Homework will be assigned daily but will not be collected. Since it is virtually impossible to understand the material without doing the homework, ample class time will be devoted to discussing the homework. Each class some students will be chosen at random to present their solutions of one or more of the homework problems to the class. Performance on these homework assignments will determine 20% of the course grade.

Quizzes: There will be approximately 12 in-class quizzes on Mondays throughout the semester (see the calendar). Two of the lowest quiz grades will be dropped and the total will determine 40% of the course grade. There will be no make-ups.

Projects: There will be six computer projects. These constitute 40% of the course grade. Each student is expected to complete the project by himself/herself alone. The due dates are indicated in the calendar. Discussions of these among the students are allowed but copying from or "working together" with other people are considered cheating.

Grades: As detailed above, the grade in this course is determined by scores on the computer projects, homework presentation and the quizzes. The percent grade will be converted to an OU grade using the following scale:

Percent Grade	OU Grade
95	4.0
80	3.0
65	2.0
50	1.0
0	0.0

Academic Honesty: The penalty for cheating is a grade of 0.0 in the course in addition to any penalty imposed by the University Academic Conduct Committee.

* The information contained is subject to change by the instructor.