

T&L 2900 – Teaching Secondary Math Conceptually: Meeting Mathematics Standards

Course at a Glance

Instructor: Dr. Karen Lea
Length: Approximately 45 hours, complete in 4 months
Dates: Rolling admission
Number of Graduate Professional Development Credits: 3, from the University North Dakota

Introduction

The course *Teaching Secondary Math Conceptually: Meeting Mathematics Standards* is designed to explain and connect the major concepts, procedures, and reasoning processes of mathematics. Current standards and practices in math education will be discussed to outline a teaching methodology that is conceptual, contextual, and constructive. Activities are presented to explain underlying concepts, and illustrate constructive teaching. The course has been divided into four chapters covering four math topics, i.e. integers, fractions, factoring, and functions. Emphasis is on exploring how to develop mathematical understanding in learners.

This online, self-paced program can be started and completed at the student's own leisure **within four months from the UND assigned course start date after enrollment.**

Learning Objectives

As a result of this course, participants will demonstrate their ability to:

- Expand conceptual understanding of integers, fractions, factoring, and functions
- Explore a conceptual methodology of teaching math
- Develop skill in designing constructive learning experiences
- Explore strategies that supports learning the skills outlined in mathematics federal legislation
- Investigate integrating concrete modeling to support conceptual teaching

Session Topics

The course is divided into four chapters.

Chapter 1: Integers

Chapter 2: Fractions

Chapter 3: Factoring

Chapter 4: Functions

Course Materials

This computer-based instruction course is a self-supporting program that provides instruction, structured practice, and evaluation all on your home or school computer. Technical support information can be found in the Help section of your course. There are NO required textbooks.

Assignments & Examinations

Assignments

This course has two required writing components. **ALL ASSIGNMENTS ARE REVIEWED.**

1) *Essay Requirement: Critical Thinking Questions*

There are four Critical Thinking Questions that you must complete. You will do research on the questions and write brief essay responses relating it to the course content (and your personal experiences, when possible).

2) *Essay Requirement: Journal Articles*

This task requires you to write a review of three peer-reviewed or scholarly journal articles, preferably written by an author with a Ph.D. (blogs and news articles are not acceptable) of your choice on a topic related to this course.

Examinations

At the end of each chapter, you will be expected to complete an examination designed to assess your knowledge. There are a total of 4 exams in this course. You may take these exams a total of three times.

Grading

This online course uses **Letter Grading (A, B, C, or F)**.

- All writing assignment scores will make up a final score for writing assignments.
- All examination scores will be make up a final score for examinations.
- Final Grade: The final writing assignment score and the final examination score **will be averaged** to determine your final grade, using the grading scale below.

Course Grading Scale for Letter Grades:

A = 90 - 100% of total score

B = 80 - 89%

C = 70 - 79%

F= below 70%

Scholastic Dishonesty

Students enrolled in this course are expected to be aware of the seriousness of scholastic dishonesty. Unacceptable behavior such as submitting someone else's work as your own, cheating on exams, or plagiarizing can result in failure of the course or other sanctions. For a more detailed description of these policies, please refer to the UND Code of Student Life; Appendix IIIa-3, at: <http://und.edu/student-affairs/code-of-student-life/>