Math 46: Mathematics for Elementary Education
Tuesday/Thursday, 1:30 – 3:45 pm on Zoom

Instructor: Matthew Lee **Email:** leematthew@fhda.edu
Office Hours: Online on Zoom, Tuesday/Thursday 5-6 pm and by appointment

Required Materials:
1) Access to internet and computer
2) Notebook, paper and writing tools

About the Course: This course is designed for prospective elementary and middle school teachers. Many of the topics of the course will look familiar to you – however as a future teacher, familiarity is not enough. A teacher must be an expert in the subject that they teach. As such, we will focus on conceptual understanding and strive for you to understand elementary mathematics at a deep level. The topics will include mathematical reasoning and problem solving strategies, logical development of the whole numbers, integers, rational numbers, and real numbers, arithmetic in these number systems, and geometry and measurement. Throughout the course students will experience the learning of mathematics in a way that models how they can create an active learning environment for their future students.

About the Textbook: We will use *Mathematical Reasoning for Elementary Teachers* by Long and DeTemple. You can purchase it through the bookstore website, and there is an online version available as well.

We will not be able to cover 100% of the material in the book during our class time. As such, it is your responsibility to read each section as needed. A reading schedule will be posted on Canvas.

Course website: Canvas will be the main hub of information for the course. All course materials will be uploaded and made available as the course progresses, and you will submit most of your assignments through Canvas.

Since our class is online, it is YOUR responsibility to check Canvas often and keep up with course material, announcements, quizzes, and other assignments. You must develop a good habit of checking Canvas regularly if you plan to succeed not only in our class, but your other classes at De Anza as well.

Grades: We will use a standard letter grading system (97-100 A+, 93-96 A, 90-92 A-, etc).

Weekly Homework	20%		*Chapter Quizzes*	15%
Papers	15%		*Activities and Reflections*	20%
Group Project	10%		*Final Exam*	20%

Weekly Homework: There are weekly homework assignments which are due every *Sunday* by midnight on Canvas. These problem sets will mostly come from the textbook, with a few additional problems as well.

Homework is 20% of your grade. The lowest 2 scores will be dropped.

Chapter Quizzes: We will have quizzes at the end of every chapter. These will be administered through Canvas, and could include multiple choice questions, free response questions, and fill in the blank. You will have 2 attempts per quiz.

Quizzes are 15% of your grade. If you miss or plan to miss a quiz, let me know ASAP.

Papers: We will have 2-3 writing assignments throughout the quarter. You will explore your own background in mathematics and analyze the current state of mathematics education. More details will be given throughout the quarter.

Papers are 15% of your grade. Late work will be accepted with partial credit.

Activities and Reflections: As our class is online, you will have small activities to complete through Canvas. Expect to complete 1 or 2 activities per week. These could include responses to math videos, analyzing an educational idea, and more. We will also be practicing metacognition – thinking about thinking – an important pedagogical tool. At the end of every week, you will reflect and self-evaluate on your progress in this class. Not only will this improve your ability to judge what you need to improve, but I hope that you can implement similar ideas in your own classroom at some point.

Activities and Reflections are 20% of your grade.

Group Project: We will have a collaborative project where you will design and describe a lesson plan that could be implemented in an elementary school classroom. This will culminate in a presentation on the last day of class. The majority of this work will be done outside of class.

The Group Project is worth 10% of your grade.

Final Exam: The final exam will be cumulative and the time is currently TBA. It will be a take home exam and you will submit it on Canvas. More details will be given closer to the exam date.

The final exam is 20% of your grade. There will be no makeup exam.

Academic Integrity: All students are expected to exercise high levels of academic integrity throughout the quarter. As this is an online class, you are more responsible than ever for your own learning – cheating and plagiarism only hurt your own learning experience, and will not be tolerated.

Disability Notice: If you have any special circumstances that you feel may influence your performance in this class (a diagnosed learning disability, physical disability, or anything at all that might interfere with your learning), please email or chat with me privately so that we can best accommodate you and we can create a learning environment that works for you.
If you have technology issues which are preventing you from accessing our course, please let me know ASAP and we will work out a solution together.

Student Learning Outcome(s):

*Analyze mathematical problems from elementary mathematics, apply problem solving techniques using a variety of methods, solve these problems individually and in groups, and communicate results mathematically through a variety of forms.

*Utilize ideas from number theory, distinguish types and properties of numbers, and employ mathematical rules for operating on rational and irrational numbers using verbal, symbolic, geometric, and numerical methods.

*Examine and evaluate myths and realities about the contemporary discipline of mathematics and its practitioners.

*Identify and discuss developments in the history of elementary mathematics from a variety of cultures.