Instructor: Shane Briggs  
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Office: GMCS - 506  
Office Hours: 1:30pm – 3:00pm Tuesday & Thursday, 10am – 11am Friday  
Tutoring Hours: 12pm – 2pm on Monday & Wednesday in the Mathematics Tutor Lab in Love Library 1103  
Course Units: 2  
Lecture Hours: We will meet Tuesdays and Thursdays 12:30pm – 1:20pm  
Prerequisites: Math 210, 311  
Text: Reconceptualizing Mathematics for Elementary School Teachers, 1st or 2nd Edition  
(We will focus on Chapters 12, 13, 14, and 15)  

Course Objective: This course has been designed for future elementary school teachers. The course aims to develop the understanding of mathematics at a sufficient level such that it becomes readily teachable. In addition to solving many elementary/middle school level math problems, this teachability will be attained through developing both written and spoken descriptions of how and why your method produced a solution to a given problem. Our focus is the area of algebra where we will further understand the power of this language through using its tools to solve problems.  

Student Learning Outcomes: 1) Explain what a function is and why functions are important in mathematics. 2) Solve a story problem using algebra and a drawing. 3) Discuss how graphs portray change. 4) Represent a given quantitative relationship with a graph or an algebraic equation. 5) Draw qualitative graphs for a situation, both a distance-time graph and a position-time graph. 6) Interpret the changes illustrated by various parts of a distance-time or position-time or speed-time graph. 7) Show your grasp of different approaches to solving a story problem: table, graph, equation(s). Give the advantages and disadvantages of each approach from the elementary school perspective.  

Group Study: It can be very beneficial to form study groups in order to develop the skills necessary to communicate in the language of mathematics. As future teachers you will need to be comfortable with asserting yourself in front of others and study groups can help foster the confidence needed to do this.  

Academic Integrity: Please be mindful to not let your collaborations adversely affect your understanding of the material. In other words, do not copy other people’s work. Any sign of identical homework sets will not be overlooked and is not acceptable. You are responsible for understanding any work you hand in. Cheating is a serious matter, which violates the student code of conduct and therefore will be reported.  

“Statement on Cheating and Plagiarism: Cheating is the actual or attempted practice of fraudulent or deceptive acts for the purpose of improving one’s grade or obtaining course credit; such acts also include assisting another student to do so. Typically, such acts occur in relation to examinations. However, it is the intent of this definition that the term ‘cheating’ not be limited to examination situations only, but that it include any and all actions by a student that are intended to gain an unearned academic advantage by fraudulent or deceptive means. Plagiarism is a specific form of cheating which consists of the misuse of the published and/or unpublished works of others by misrepresenting the material (i.e., their intellectual property) so used as one’s own work. Penalties for cheating and plagiarism range from a 0 or F on a particular assignment, through an F for the course, to expulsion from the University. For more information on the University’s policy regarding cheating and plagiarism, refer to the Schedule of Courses (‘Legal Notices on Cheating and Plagiarism’) or the University Catalog (‘Policies and Regulations’).”
Homework: Homework will be collected and graded as a part of your final grade. Please take the homework seriously. Mathematics is learned by thinking about, struggling with, and solving math problems. And your success in this course will strongly depend on keeping up with the homework. Late homework will not be accepted for credit. However, you may turn in the assignment late and I will grade and return it so you can see how well you understand the material. All the homework problems you are responsible for are taken from the “Learning Exercises”, of the text, not to be confused with “Supplementary Learning Exercises”. You are required to turn in the homework problem solutions from the problems in red on the homework document. Please refer to the schedule for homework due dates.

Group Project: You will be randomly selected into groups of 3 - 4 to perform what is called a math trail. More information will be given in class regarding the requirements of the math trail project. The project will consist of an in class presentation from each group as well as a detailed write up.

Exams: There will be two exams. Exam 1 on Oct. 3rd will cover Chapters 12 and 13. Exam 2 on Nov. 5th will cover Chapter 14. Missed exams can only be made up in the case of University-approved absences.

Final: Your final is on Thursday, Dec. 12 from 10:30am – 12:30pm. It will be held in the same room as lecture. It will cover material from the entire course. It is imperative that you attend the final exam. Your course grade would obviously suffer greatly if you were to be absent for the final exam.

Grade Breakdown:

- Homework.......20%
- Group Project.....10%
- Exam 1..........20%
- Exam 2..........20%
- Final..............30%

Grade Scheme:

- 90% ≤ A
- 80% ≤ B < 90%
- 70% ≤ C < 80%
- 60% ≤ D < 70%
- F < 60%

Note: The actual scheme may differ from this for purposes of curving the class.

Neatness: It is very important that your work is clear. Being an organized and neat writer will help you find mistakes that may have occurred in your write up. Your neatness will also be handy when it comes time to review your notes or homework sets for study purposes. Also, your future students will more clearly understand what you are teaching them if your writing and thoughts are legible and intelligible. So please do indeed make a concerted effort to hand in clear work, because with practice it will just happen naturally.

Calculators: Calculators may be necessary for some of your homework problems. However, they will not be needed or allowed for your exams or final.

Religious Observances: Please notify me by the end of the second week of class of any planned absences for religious observances. If proper notice has been given we can certainly work out a reasonable accommodation.

Students with Documented Disabilities: Please give me proper notice to allow ample time to make the necessary arrangements to accommodate your needs. For information regarding accommodations please contact the Student Disability Service Office at (619) 594-6473.
**Courtesy:** ***IN CLASS CELL PHONE USE WILL NOT BE PERMITTED*** Please pay attention in class. We have a limited number of lecture hours and as a sign of respect to your fellow classmates please refrain from unnecessary distractions.

**Syllabus Subject to Change:** Please be advised that this syllabus, along with the schedule, is subject to change. My aim is to have the syllabus and schedule go unchanged. However, due to the pace of the course one direction or another or unforeseen events the syllabus and/or the schedule may need to be altered.

**Note:** I hope at the end of this semester you feel more properly prepared to impart the mathematical knowledge your future students require in order to have successful academic careers. I encourage you to think about mathematics everyday during this term, and how you will relate it to your own students someday. Understanding mathematical concepts can be frustrating at times and the process of demystifying certain concepts happens on a problem by problem basis. But truly understanding mathematics at any level is a very rewarding experience and is one I hope you and your future students seek and experience routinely.