

Algebra for Elementary School Teachers – Spring 2015

Instructor: Matthew Housley

Class meetings: TH 14:00 – 15:55 LCB 121

Office Hours: TH 13:00-14:00 or by appointment.

Office Location: JWB 107

E-mail address: housley@math.utah.edu

Materials:

- Graphing calculator if you have one, or a computer.
- Notebook with mix of graph paper and lined pages.
- Small folder where you'll keep all the class handouts and work.

Course Content: This course is the second in a sequence of three semesters of mathematics courses required for elementary school teachers. Algebra is the language of generalization, so our goal will be to develop that language for ourselves so that we know where our students are headed in middle and high school grades. Algebraic ideas are a natural extension of arithmetic studied Math 4010. To help students develop mathematical understanding, teachers need to develop their own ability to make sense of mathematical concepts. This is possible only to the extent that we take the initiative in learning to ask questions about why a process works or a statement is true. In this course, asking questions about our work will be encouraged, not having an answer will be a starting point, and you will expect to think, reason and justify your answers.

Course Grading

Assignments	20%
Midterms	30%
Attendance and participation	10%
Teaching project	15%
Final exam	25%
TOTAL	100%

Attendance and participation: Almost everyday during class, you will be working in groups on various activities. I expect you to come to every class on time, turn in assignments when they are due, participate actively in classroom discussions and activities, and take notes in class.

Notes

- 1 **Midterms:** February 12th and March 31st.
- 2 **Assignments:** Throughout the semester, you will be submitting individual and group work. Written work will be graded on four aspects: your understanding of the question, your explanation, your justification, and your answer. The first and last of these are worth a few points each, but most of the points are split between your explanation and justification. Explanation includes clarity and grammar as well as mathematical detail about what you did, what variables you used, and so forth. The level of justification we require will vary, but you should try to provide as complete a proof as you can. Each assignment will be announced a week ahead of its due date.

- 5 Teaching Project:** Each student will teach part of a class during the semester.
- 6 Final Examination: Friday, May 1st 2015, 1:00 – 3:00 pm in LCB 121.**
- 7 Grading Scale:** The grade scale will be the usual:
A (93-100), A- (90-92), B+ (87-89), B (83-86), B- (80-82), C+ (77-79),
C (73-76), C- (70-72), D+ (67-69), D (63-66), D- (60-62), E (0-59).
- 8** The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the [Center for Disability Services](#), 162 Union Building, 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations.
- 9** Last day to drop classes: January 21st. Last day to withdraw: March 6th.
- 10 Tentative Course Outline:**

Week	Topic
1, 2	Sequences
3, 4	Functions
5, 6	Change
7, 8	Linear functions
9, 10	Exponential functions
11, 12	Quadratic functions
13	Polynomials
14	Inverses
15	Systems
	Final Exam