



M 316K: Foundations of Arithmetic

Texas Common Number: MATH 1350

Course Format: Online, Self-Paced

Course Instructor: Pamela Powell, Ph.D. Contact using the Inbox tool in Canvas.

Course Credits: 3

Prerequisites: One of the following with a grade of at least C-: Mathematics 301, 302, 303D, 305G, 316, Educational Psychology 371, Statistics and Data Sciences 302, 304, or 306. Approval from the University Extension advisor.

How This Course Works

This course is online and is self-paced. Students have five months from their date of enrollment to complete the course. All coursework and proctored exams are submitted or taken online.

While this course is self-paced in terms of when you complete the work and submit assignments, periodic assessments are critical to ensuring that students receive adequate support and are able to achieve the intended learning outcomes. Thus, this course is organized into modules that must be completed in order. Students will only be able to move forward once they have received a grade on all assessments within a given module.

Review the course outline and assignment descriptions carefully. Computer-graded assignments are scored immediately. You can expect to receive feedback on instructor-graded assignments or exams within three business days following submission. This does not include weekends or holidays. Requests for expedited grading are not accommodated, so please plan accordingly. During certain times (end of semester, spring break, etc.), instructors may experience higher-than-usual demands on their time and may need additional time for evaluation. Students should reach out to University Extension at uex@austin.utexas.edu with any concerns regarding grading turnaround.

University Extension strongly advises students to be aware of when they may need a course grade to be recorded on their transcript. It can take up to two weeks after the final exam is complete for a grade to be officially recorded with the Office of the Registrar.

Course Overview

This course offers an analysis, from an advanced perspective, of the concepts and algorithms of arithmetic, including sets; numbers; numeration systems; definitions, properties, and algorithms of arithmetic operations; and percents, ratios, and proportions. Problem solving is stressed throughout the course.

Course objectives:

- The primary objective of this course is to increase students' understanding of mathematics as outlined in the Texas State Board for Educator Certification (SBEC) Standards for Early Childhood-Grade 5 (K-5).
- To have future teachers experience learning in some of the formats in which they will be expected to teach: in problem-based situations and by discovery methods.
- To have future teachers practice in communicating mathematics.

Required Materials

Judith Sowder, Larry Sowder, and Susan Nickerson. *Reconceptualizing Mathematics*. New York: W. H. Freeman. 2nd edition, ISBN: 9781464103353; or 3rd edition, ISBN: 9781464193330. Either the 2nd or 3rd edition is acceptable.

Course Organization

This course comprises 8 lessons grouped into 4 modules. Each lesson contains a set of learning objectives, a lesson overview, a self-assessment, and a computer-graded assignment. Three of the lessons also contain an instructor-graded assignment.

Computer-Graded Assignments

Each lesson contains a computer-graded assignment consisting of 10 multiple-choice questions. Computer-graded assignments may only be taken once. They are graded instantly by the course system. To help you prepare for these assignments, each lesson also contains a self-assessment with 10 multiple-choice questions. Self-assessments are not graded; they are provided to assist you in learning the lesson material. You can complete self-assessments as many times as you like, and they have no effect on your course grade.

Instructor-Graded Assignments

Modules 1, 2, and 3 contain an instructor-graded synthesis assignment. For these assignments, you will first print the assignment PDF file, and then complete the printed assignment by hand in pencil or pen. Make sure that your writing is dark and clear so that it will be legible when scanned. Scan the completed assignment. You must combine all of your scans into a single file for submission.

Exams

This course contains a midterm exam and a final exam. The midterm exam covers modules 1 and 2. The final exam is comprehensive.

You must pass the final exam to pass the course.

Course Outline

Module	Topics	Assessments
1 Numbers	Lesson 1: Reasoning about Quantities and Numeration Systems	<ul style="list-style-type: none"> Computer-Graded Assignment 1
	Lesson 2: Natural Numbers and Number Characteristics	<ul style="list-style-type: none"> Computer-Graded Assignment 2
	Lesson 3: Using Numbers	<ul style="list-style-type: none"> Computer-Graded Assignment 3 Instructor-Graded Assignment 4
2 Fractions	Lesson 4: Fractions	<ul style="list-style-type: none"> Computer-Graded Assignment 5
	Lesson 5: Proportional Relationships	<ul style="list-style-type: none"> Computer-Graded Assignment 6 Instructor-Graded Assignment 7
MIDTERM EXAM		
3 Algebraic Reasoning	Lesson 6: Introduction to Algebra	<ul style="list-style-type: none"> Computer-Graded Assignment 8
	Lesson 7: Applications of Algebra	<ul style="list-style-type: none"> Computer-Graded Assignment 9 Instructor-Graded Assignment 10
4 Rates of Change	Lesson 8: Applications of Rate of Change	<ul style="list-style-type: none"> Computer-Graded Assignment 11
FINAL EXAM		

Grade Calculation

Your final grade for the course will be calculated as follows:

3 Instructor-Graded Assignments	30%
8 Computer-Graded Assignments	20%
Midterm Exam	20%
Final Exam	30%

You must pass the final exam to pass the course. You must also earn an overall passing grade:

A	100-93%	B+	89-87%	C+	79-77%	D+	69-67%	F	59-0%
A-	92-90%	B	86-83%	C	76-73%	D	66-63%		
		B-	82-80%	C-	72-70%	D-	62-60%		

Getting Help

- Technical Support: uextechsupport@austin.utexas.edu
- For content questions or questions about assignment and grades, use the Inbox tool within Canvas to contact the course instructor.
- For other questions (registration, transcripts, etc.), contact University Extension.

University Extension Policies

Full University Extension policies for self-paced courses may be found on the University Extension website.

Scholastic Dishonesty

Students in this course are expected to work independently, without direct supervision, and to conduct themselves responsibly in accordance with that freedom. To obtain the greatest benefit from their course work, and for the sake of everyone enrolled in our courses, students must demonstrate the willingness to exercise self-discipline, personal responsibility, and scholastic integrity.

We expect the course work and exams that you submit for course credit to be yours and yours alone. Plagiarism and other forms of scholastic dishonesty are serious academic violations that will not be tolerated. The penalties for scholastic dishonesty include the possibility of failure in the course. Scholastic dishonesty in examinations will automatically result in a grade of *F* on the exam and an *F* in the course.

University Extension Contact Information

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