

## Mathematical Structure

Math 3603

Fall, 2015

Class location: Willard 007A

**Instructor:** Karen Strande  
**Office:** 436 Math Sciences  
**Office Hours:** Monday/ Wednesday 12:45-1:15pm  
OR by appointment  
**Telephone:** 744-2302  
**e-mail:** karen.strande@okstate.edu

**Online classroom:** <http://oc.okstate.edu>

**E-Mails.** All e-mails MUST include, on the subject line, your first and last name and when the class meets (i.e., Jane Doe, MWF 8:30). Grades will not be discussed in emails. You must come to my office to discuss your grades or visit with me before or after class, if time and circumstances permit. In addition, emails asking questions that are answered in the syllabus will not get a response.

**OSU Catalog Description.** Prerequisite(s): 1583, 1493, or 1513. Foundations of mathematics and number concepts for prospective early childhood and elementary educators. Problem solving, logic, set theory, functions and relations, number systems, number theory, rational numbers, decimals and fractions, exponentiation, probability, and applications. Class format may include some individual and/or group work and lecture. Together with Math 3403, it prepares students for CIED 3153 and 4153 and/or HDFA 3223.

Some Initial Comments. The content and instructional delivery of this course models the current professional thinking and standards endorsed by the National Council of Teachers of Mathematics (NCTM). Please be aware that:

1. Math 3603 is specifically designed for prospective elementary/early childhood/middle level teachers; if you are pursuing a major different from one of these, your advisor will work with you to select a course more appropriate and valuable to your studies.
2. Math 3603 is a content mathematics class much like other MATH-prefixed courses you have taken; the pedagogical issues related to teaching this content in the school setting is addressed in detail in one of the methods courses that you will be taking as part of your program.

**Cell Phones.** Turn cell phones off during class. Cell phones are not allowed out at any time during class except under unusual circumstances and only when cleared in advance by the instructor. Use of cell phones may result in an absence for the class period.

**Critical Dates, Resources, Services.** It is important that each student be familiar with all critical dates for dropping, adding, withdrawing from the university, etc. This information can be obtained from the class site on D2L. In addition, each student is encouraged to take full advantage of the resources and services available through the university.

**Course Prerequisites and Objectives.** Math 1513, College Algebra, (or Math 1483, Functions) is the official prerequisite for the course. The course covers foundations of numbers (set theory, numeration, and real number system), number theory, algebraic systems, functions, plus applications and probability.

**Textbook.** *A Problem Solving Approach to Mathematics for Elementary School Teachers* by Billstein

**Course Format.** Each class period may consist of a combination of lectures, individual and/or group activities, and discussion. In addition, there will be assignments and homework, which must be completed outside of class. Note: ALL WORK MUST BE SHOWN on all problems unless impossible. If you “think it,” you should show it.

**Examinations:** There will be three (3) fifty-minute exams with a maximum possible score of 100 points each and a 150 point Final Exam.

**NO MAKE-UP EXAMS** in this course. If one exam is missed, the score on the final will replace the missed exam score only if you request and obtain approval (when possible) in advance of the exam and only for very serious and unavoidable conflicts that are documented (see Math Department Policy at the end of this syllabus). If this condition is not satisfied, a grade of zero will be recorded for the missed exam. If a second exam is missed, it will receive an automatic 0.

The exams are scheduled as follows:

**Exam 1**, September 18

**Exam 2**, October 21

**Exam 3**, November 20

**Final Exam is Friday December 11 at 2 pm**

**Class assignments (Homework):** All assignments will be collected and checked for completion. On occasion a quiz will accompany the homework as a check of comprehension. At least one presentation will be assigned. Assignments will be posted with their due dates on D2L.

**Class Attendance: (50 points)** Attendance will be taken during each class session. As a future teacher, professionalism is expected; therefore, attendance in this course is important. Entering the classroom more than five minutes late will result in an absence. You must be awake (not dozing), not using a cell phone, not reading a paper (etc.) and not disruptive to the instructor or the students around you in order to be counted as present. Your attendance score is determined by your total days absent from class. The rules governing the attendance score are shown below.

1. You must be present for the entire class session in order to be counted as present. If you come in more than five minutes late or leave early, you may be counted absent.
2. You must sign the roll to be considered present. This is YOUR responsibility. Failure to sign the roll will result in an absence and cannot be disputed at a later date.
3. There are no “excused” absences for any reason, including university-sponsored activities and illnesses. Everyone is given two absences. Please do not bring notes or letters to excuse your absence.
4. The instructor has complete discretion in awarding attendance points. If you are sleeping during class, or are otherwise not participating in class (including texting, reading a paper, etc.) you may be counted as absent.
5. You will be given 50 attendance points at the end of the semester. You will receive two “free” absences, with no points deducted. For each absence after that, you will have 3 points deducted from your attendance points.

**Course Evaluation.** Course grades will be determined according to the following distribution.

Letter grades will be assigned as follows:

Exam 1	100 pts.	675 – 750 points	A
Exam 2	100 pts.	600 – 674 points	B
Exam 3	100 pts.	525 – 599 points	C
Assignments	250 pts.	450 – 524 points	D
Final	150 pts.	Below 450	F
<u>Attendance</u>	<u>50 pts.</u>		
Total:	750 pts.		

**Grades will not be curved.**

**Drop and Withdrawal Policy** (General University Policy). “Dropping” means withdrawing from a specific course while “withdrawal” means withdrawing from all courses and leaving the University for the balance of the term. It is your responsibility to know and comply with all deadlines. Reasons similar to those listed below will not result in approval for dropping a course after the university deadline (OSU policy).

- a. Student’s lack of knowledge or misunderstanding of the deadline.
- b. Student waited to get the results of an exam or other assignment.
- c. Student’s grades have declined since the deadline.
- d. Student doesn’t need the course for graduation.
- e. Different deadlines existed at a previous school.

**Incomplete Grade.** The grade of “I” is given to students who satisfactorily completed the majority of the course work and whose work averages “D” or better, but who have been unavoidably prevented from completing the remaining work of the course. The conditions including appropriate time limits for the removal of the “I” are indicated on the official class roll by the instructor. A condition that the students must repeat the course in order to remove the “I” is not permitted. The maximum time allowed for a student to remove an “I” is one calendar year.

**Academic Dishonesty/Misconduct.** The university has explicit rules governing academic dishonest and academic misconduct. The policies are detailed in the document “Student Rights and Responsibilities Governing Student Behavior.” It is available from the Deans’ Office, the Provost’s Office, and various other places around campus. The university policies will be followed in this class. The minimum penalty for an act of academic dishonesty will be the assignment of a grade of 0 on the examination or homework assignment.

**Special Accommodations for Students.** If any member of this class feels that he has a disability and needs special accommodations of any nature whatsoever, the instructor will work with you and the Office of Disabled Student Services, 326 Student Union, to provide reasonable accommodations to ensure that you have a fair opportunity to perform in the class. Please advise the instructor of such a disability and the desired accommodations at some point before, during, or immediately after the first scheduled class period.

**Final Note.** Any changes in this syllabus will be communicated to you in class by the instructor.

## MATHEMATICS DEPARTMENT POLICY ON MISSED WORK

(A) ) A student shall be offered reasonable accommodation in the event that he or she misses a major assessment activity for a valid and documented reason.

(B) Appropriate documentation shall be provided by the student in a timely fashion to support his or her request for accommodation.

(C) Major assessment activities are those such that a zero on that activity could reasonably be foreseen to impact the student's grade substantially (i.e. an exam).

(D) Valid reasons include official University activities, activities associated with military service, documented illness, documented family emergencies, mandatory court appearances, and any other documented events of comparable gravity.

(E) ) Reasonable accommodation means that the student will be given the opportunity to earn a grade on the assessment activity that is based on criteria as similar as possible to those used to grade his or her classmates. This opportunity should normally be made available in a timely fashion.

## Course Outline

Math 3603 – Mathematical Structures

Text: A Problem Solving Approach to Mathematics for Elementary Teachers  
by Billstein, Libeskind and Lott

The schedule below accounts for 36 periods, leaving 8 periods for exams, etc.

Chapter 1: An Introduction to Problem Solving – 4 periods

Chapter 2: Introduction to Logic and Sets – 3 periods

Chapter 3: Numeration Systems and Whole Number Operations -5 periods

Chapter 4: Number Theory – 4 periods

Chapter 5: Integers – 2 periods

Chapter 6: Rational Numbers and Proportional Reasoning – 4 periods

Chapter 7: Rational Numbers as Decimals and Percents – 4 periods

Chapter 8: Real Numbers and Algebraic Thinking (Section 1 only) – 1 period

Chapter 9: Probability – 4 periods

Chapter 10: Data Analysis/Statistics: An Introduction – 5 periods