

**MATHEMATICAL STRUCTURES
FOR EARLY CHILDHOOD AND ELEMENTARY
TEACHERS
MATH 3603 - 001**

Fall 2012

Instructor: Douglas B. Aichele
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Office Hours: WF, 2:30-3:20 p.m.; (426 MSCS); If you have a conflict with these times, please make an appointment (after class, by telephone or email) to see me at another time.
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<http://www.math.okstate.edu/~aichele>
The URL for the OSU Syllabus Attachment for 2012 Fall semester is
<http://academicaffairs.okstate.edu/images/documents/sylatfa.pdf>

OSU Catalog Description. Prerequisite(s): 1483, 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 emphasize student investigation and discovery, discussion and presentation, and working with mathematical tools. Together with MATH 3403, it prepares students for CIED 3153 and 4153 and/or HDFS 3223.

Important Note to Students. This course is no longer an A-designated General Education course; it will NOT satisfy the General Education Analytic and Quantitative Thought (A) upper division requirement.

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). Here are a few thoughts that will help you be successful

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 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.
3. The value of this course will depend mostly on you - your involvement, effort, and creativity.

Required Textbook. *Mathematics For Elementary School Teachers (Fourth edition)* by O'Daffer, Charles, Cooney, Dossey and Schielack, 2008.

MLRC: Mathematics Learning Resource Center. The MLRC can be an invaluable resource to support your mathematical learning. **Location:** 4th Floor Classroom Building.

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Daily Routine. Almost every class meeting will 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.

Examination Grades. There will be three (3) fifty-minute in-class examinations with a maximum possible score of 100 points each and a 100 point comprehensive Final Examination during Final's Week which will be recorded TWICE. The **Final Examination** is scheduled for Friday, December 14, 2012 at 2:00 - 3:50 pm. in 009 AGH (our regular class meeting room). The time for the Final is not negotiable (except when the OSU Final Exam Overload Policy applies). *You should note this on your calendar now; Plan ahead.*

There will be **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 from the instructor in advance of the exam and only for very serious and unavoidable conflicts. Note. Prior documented university-sponsored activities can qualify for this missed exam replacement; it would be appreciated if you would please work with me well ahead of time to gain approval. If this condition is not satisfied, it is understood that a grade of 0 will be recorded for the missed exam. If a second exam is missed, it will receive an automatic 0.

Quizzes. There will be twelve (12) unannounced quizzes in class; you must be present for the entire class session to present a quiz. Each quiz will cover material over the homework and/or notes and will be worth 10 points. At the end of the semester, the lowest two (2) quizzes will be dropped. Because the lowest two (2) quizzes will be dropped at the end of the semester, there are NO Make-Ups for Quizzes.

Class Attendance/Participation. Class attendance involving active participation is a very important element in your success. PLEASE ACTIVELY PARTICIPATE IN EACH CLASS SESSION. Because of the value I place on our class sessions as active learning opportunities, I ask that you assume responsibility for being physically present no later than 1:30 pm. *If you are late for whatever reason, please respect your classmates and do not interrupt the class session already in progress. If the door to the classroom is closed, this is the signal that class has begun.* I also realize that you may have a class that follows this one; I will dismiss each class session promptly at 2:20 pm. Even though I believe that your active participation in this class is important to your success in it, there is no course attendance requirement.

You will have an opportunity to earn course credit, however, through regular active participation in the class meetings that can contribute to improving your final course grade. Here's how it works. You will be assigned an **Attendance/Participation Score** at the end of the semester. Attendance will be recorded during each class session. Your attendance/participation score is based on 50 points maximum and will be determined by your total days absent from class. As a prospective teacher, professionalism is expected; therefore, attendance/participation in this course is important. You must be fully

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participating in class to be considered present and determining "full participation" will be left to the discretion of the instructor. Here are some helpful things to remember about the attendance/participation score.

1. You must be present for the *entire* class session in order to be counted as present.
2. Because there is no class attendance requirement, there is no reason for "excused" absences for any reason, including university-sponsored activities and illness.
3. 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.
4. The attendance score/participation score is **optional** and is meant to reward students for good attendance and active participation. A low class attendance/participation score will **not lower** your overall grade.
5. You will be given 50 attendance/participation points at the beginning of the semester. You will receive one "free" absence, with no points deducted. For each absence after that, you will have 3 points deducted from your attendance/participation score.
6. If a person has no absences at all during the semester (present at every class meeting), 3 additional bonus points will be added to the attendance/participation score (in this instance, the total is 53).

Replacing an Exam. At the end of the semester, you may replace the lowest of the first three exam scores or *one* of the two final exam scores (if it is your lowest score), provided it improves your letter grade, with points awarded to you as follows.

One-half of your lowest exam score	+	Your Attendance/ participation score	=	The grade that replaces your lowest exam score
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Example: Gumbie's lowest exam score is 59 and he has 2 absences. Gumbie's points are calculated as follows:

Half of Gumbie's lowest test score	30 (half of 59 is 29.5, rounded up to 30)
Attendance/participation score	47 (first absence is "free", so $50 - 3 \cdot 1 = 47$)
Replacement Grade	77

Gumbie's lowest exam score of 59 will be replaced with a score of 77.

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

Examination 1	100 points
Examination 2	100 points
Examination 3	100 points
Quizzes (10)	100 points
Final Examination	100 points
Final Examination	100 points

TOTAL	600 points

Letter grades will be assigned according to the following scale.

540 - 600 points	A
480 - 539 points	B
420 - 479 points	C
360 - 419 points	D
below 360 points	F

Drop and Withdrawal Policy. "Dropping" means you are withdrawing from a specific course but you are still enrolled in at least one other OSU course; the last day to drop a course with an automatic grade of "W" is November 9, 2012. "Withdrawal" means you are dropping *all courses* you are and no longer enrolled for the current semester; the last day to withdraw completely from OSU classes with an assigned grade of "W" or "F" is November 30, 2012. Additional information about "dropping" and "withdrawing" is available on the Fall 2012 Syllabus Attachment. **IT IS YOUR RESPONSIBILITY TO KNOW AND COMPLY WITH ALL DEADLINES.**

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.

Academic Integrity. The university has explicit rules governing academic integrity. Please consult the OSU Fall 2012 Syllabus Attachment mentioned above on the web. Working with another person or in study groups on problems can be helpful in learning the material. I encourage you to work together if you find it helpful. However, **all written work submitted must be your own.** Copying someone else's problem solution or showing your written solution to someone else are prohibited; such behaviors are regarded as violations of academic integrity and will be treated according to the University's policy. In order to be successful in learning the material and doing well on the examinations you must think very hard about the problems themselves **before** discussing them with anyone else.

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Special Accommodations for Students. "If you think you have a qualified disability and need special accommodations, you should notify the instructor and request verification of eligibility for accommodations from the Office of Student Disability Services (315 Student Union). Please advise your instructor of your disability as soon as possible, and contact Student Disability Services, to ensure timely implementation of appropriate accommodations. Faculty have an obligation to respond when they receive official notice of a disability but are under no obligation to provide retroactive accommodations. To receive services, you must submit appropriate documentation and complete an intake process during which the existence of a qualified disability is verified and reasonable accommodations are identified" (OSU Fall 2012 Syllabus Attachment).

A final note. I am genuinely committed to your success this semester and care about your general welfare as a student. I hope you will take advantage of my open invitation to see me whenever I can be of help to you. Do Well!

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

Textbook Problems
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Section

Problems to Work

§1.1	2,3,5,6,11,13,14,15,17,23abd,24,26,31,32
§1.2	1,3,5,6,7-10,12,15,64,67,83,additional problems
§1.3	3,4,5a,6,7,11,12,15,16,25,28,32
§2.1	1,2ac,3bcde,4,5ab,6,8,10,11,12,14,15ab,18,21,22,24ab,25,26,27,31
§2.2	1ab,2ac,3,4,5,8,9,10a,11a,12,13a,14a,15d,16a,24,26,33a,34,39
§2.3	1c,2a,3a,7,9,10,12ab,18a,19,21a,23ab,25,26,27b,31ab,35,36a,37,38,43

Exam 1 Friday, September 14, 2012

§2.4	1-7,12,14c,18ab,19,22bef
§3.1	1-21odd,23-26,27,29,33,34,39,41,43,48,50,51;
§3.2	1-6,8-14even,15-19odd,22,23,26,27,30,31,32,42,43,49,50,54,56,57,58,60,66
§3.3	1,2-8,14,16,19,23,24,26,36,38,43,58,59
§3.4	2,3ab,5,6,7,19-22,26,27,29,35,37,39-43,49,50,51-57,62,additional problems
§4.1	2,3,5,6,8-15,18ac,19,20,22,23,28-37,39,45,46,47,48,49ace,57,78
§4.2	1,2,4,5,6,8,13-15,18,19a,20,21,23,24,26,28-30,33-35,40,45ab,46,50a-f,63
§5.1	1,2-15,17a,18ab,20,22,24,27,30,31,36,37,39,41,42,44,47,49,56,60

Exam 2 Wednesday, October 17, 2012

§5.2	2,3,4,6-12even,16,18,22ac,28,30-32,34,38,39ace,40ab,44,46,47ac,48ac,53
§6.1	1-3,8-11,12a,14,15a-e,17ac,18ac,22,24ab,26abc
§6.2	1ad,2ad,3ad,4ab,8,9acd,11cd,12bc,13bcd,17,18cd,19a,28,31
§6.3	1ab,3,4ac,5abc,7,9,10ab,12bc,14-17,19ace,21,22,23ac,27ac,28,33ac,35,41,42,47,48
§6.4	2,3,5,7,11-14,22
§6.5	3,4ac,5ac,7ac,8,9ac,10a,13,17-20,27
§7.1	1,4-16even,17,20,22,24,30,31,35,37,38,42,45,46,55

Exam 3 Friday, November 16, 2012

§7.2	2,3,6,10,11,18,19,20,24,29,30,34,37ab,38,40,44,51,53,56,59,63,66,67ade
§7.3	8,10-12,21,22,24,26,30,31,36,40,43,45,47c,50,52,54
§7.4	1,2,5,7,8,12,16,18,21
§8.1	1,3,4,6,8,9,13-15,21,28,33
§8.2	1-4,6,7,10,12,14,15
§8.3	2,4,7,8,9,12,23,26,27,35

Final Exam Friday, December 14, 2012 (2:00 - 3:50 pm)
(Comprehensive)

Notes. (1) The dates for all exams will not change; mark your calendar now.
(2) Because I want us to spend an adequate amount of time on each section, it may be necessary to limit the sections that will be covered on an exam. I will be very clear about telling you which sections you need to be prepared for prior to the exams.