

# Math 211 – Fall 2009 – CRN 15823

**Instructor:** Scott Fallstrom

**Office:** Deady 108C

**Phone:** (541) 346-4728

**Hours:** 4:00-5:20 (TR)

**Class Location:** Fenton 105

**Email:** [fallstro@uoregon.edu](mailto:fallstro@uoregon.edu)

**Course:** Fundamentals of Elementary Mathematics I (3 cr)

**Website:** The Blackboard site will be the main source of information for the course.

## **Required Materials:**

- *A Problem Solving Approach to Mathematics for Elementary School Teachers.* Billstein, Libeskind, Lott. Ninth Edition. This course covers the Chapters 1 through Chapter 4.3 of the textbook; the rest is covered in Math 212 and 213. You will probably be able to sell it back when you are finished; however, many of you will find it quite useful to keep as a reference for later.
- *Knowing and Teaching Elementary Mathematics: Teachers' Understanding of Fundamental Mathematics in China and the United States (Studies in Mathematical Thinking and Learning).* Liping Ma. This book will be referenced during the course and at least two writing projects will be assigned from it for each section. Chapters 1 and 2 will be covered in Math 211, chapters 3 and 5 will be covered in Math 212, and chapters 4, 6, and 7 will be covered in Math 213.
- *Calculator.* **\*\*(Math 211-12-13)\*\*** A scientific calculator is highly recommended, and is the only type of calculator allowed on tests. Graphing calculators are allowed in class and for homework but not allowed on the exams. The TI-30X IIS is recommended, but many other types are just as good. Ask me about possible calculators if you are concerned. There may be assignments or tests which prohibit the use of the calculator.
- *Subscription to TOMT.* "The Oregon Math Teacher" is a journal where you can see actual lesson plans from current practicing teachers, obtain problem sets to use in your classroom, and perhaps submit your own articles. The cost is \$10 and will run for one full year. You'll receive information the first week and we'll get copies of them much more quickly if the orders for all students are sent in at once. We will reference the issues in class and sometimes in homework.

**Office Hours:** Mon. 11-12, 2-3; Tu. 10-11, 12-1; Th. 11-12; Fri. 11-12; or by appointment.

**Prerequisites:** As outlined in the college catalog, the prerequisite for this course successful completion of Math 095 (C- or better). Do not be offended if I ask for proof to ensure that the prerequisite is satisfied.

**Student Conduct:** Violations of the student conduct code will be treated quickly and harshly. A student found in violation may receive a failing grade, and will have this infraction reported to the university. I do not tolerate academic dishonesty in any form. You are planning on being a teacher and an incident of cheating may result in your expulsion from the teacher program. The University of Oregon requires reporting of ALL instances of cheating, no matter how small. These include:

- looking at another person's exam during a testing situation
- copying another student's homework and submitting it as your own
- bringing in and using notes or supplemental materials when none are allowed
- submitting work or information from an internet source as your own material (without noting it as a reference/resource)
- allowing another student to copy your work and submit it – you will be punished exactly the same as the person who did the copying. To avoid this, don't give your work to someone else. Working together means sharing ideas and discussing concepts, and is acceptable; each student must independently write their own solutions and responses.
- all other instances of cheating described in the Student Conduct Code

# Math 211 – Fall 2009 – CRN 15823

**Special Accommodations:** If you need adaptations or accommodations because of a disability, if you have medical information you need to share with me, or if you have special arrangements in case the building must be evacuated, please make an appointment to discuss your accommodation needs with me as soon as possible.

**Student Responsibilities:** Students are responsible for the materials necessary for the successful completion of this course. A student enrolling in this course is responsible for all material covered in previous class days; no exceptions will be allowed.

- 1) It is your responsibility to turn off cell phones, pagers, and other electronic devices that can be distracting. You could just put it in “vibrate” mode as long as it is not a disturbance.
- 2) If you choose to drop the course, you must choose to withdraw using the proper paperwork. If you do not complete this, you will receive a failing grade.
- 3) I expect you to take the time needed for this course. Many students will need 3 hours per hour of class time in order to succeed and understand the concepts. That is more than 20 hours outside of class each week!
- 4) Seek help if you need it. There are many ways to get help:
  - a. See me. I am available and willing to help students who choose to seek me out. If my hours are not convenient for you, come and talk to me after class so that I can work out a way for you to get the help you need.
  - b. Meet with the TA, Shauna Kief; she’s an excellent resource with knowledge of the course.
  - c. Form peer or study groups. Meet with others to work on homework, worksheets, or study for tests. Often your fellow classmates are your best resource.
  - d. The TLC (Teaching and Learning Center, PLC 68) offers Math Tutors if you need further assistance. Caution: some tutors may find the material challenging and may not be able to assist you further.

**Grading:** The following are the breakdowns.  
 Homework, Worksheets, Quizzes ..... 13%  
 QFC’s and Writing Assignments ..... 16%  
 Readiness Quiz ..... 5%  
 Mid-Term Exams (each) ..... 17%  
 Final Exam ..... 32%

*You will need a 70% or better (C-) to continue with Math 212.*

Final Course Percentage	Grade	<input checked="" type="checkbox"/>	Final Course Percentage	Grade	<input checked="" type="checkbox"/>	Final Course Percentage	Grade
97% or above	A+	<input checked="" type="checkbox"/>	83% to 86.9%	B	<input checked="" type="checkbox"/>	70% to 72.9%	C–
93% to 96.9%	A	<input checked="" type="checkbox"/>	80% to 82.9%	B–	<input checked="" type="checkbox"/>	63% to 69.9%	D
90% to 92.9%	A–	<input checked="" type="checkbox"/>	77% to 79.9%	C+	<input checked="" type="checkbox"/>	60% to 62.9%	D–
87% to 89.9%	B+	<input checked="" type="checkbox"/>	73% to 76.9%	C	<input checked="" type="checkbox"/>	Lower than 60%	F

**GRADING SYSTEM:** Information about weighted grading systems may be discussed in class. Blackboard can work perfectly with this type of grading system so the percentage shown as the “Weighted” total is fairly accurate. Incompletes (I) are issued in extremely rare circumstances to students already passing the course. To withdraw and receive a grade of “W”, you must fill out proper paperwork by the proper deadline. Failure to do this in time could result in a failing course grade instead of a “W”. I will post grades to Blackboard as soon as they are completed, and you may check your grade as often as you like.

**CURVING OF TESTS AND COURSE GRADES:** I do not curve exams based on a high or low average and I do not change course grades at the end of the term.

# Math 211 – Fall 2009 – CRN 15823

**Schedule of Topics:** This is tentative so realize that it may change. However, it should give you an approximate idea of what sections are covered on a particular day.

Week	Monday	Tuesday	Wednesday	Thursday	Friday
1	Sept 28 <i>No Class</i>	Sept 29 <i>No Class</i>	Sept 30 1.1/PSP	Oct 1 <i>No Class</i>	Oct 2 PSP/Readiness Quiz
2	Oct 5 ① 1.1-1.2	Oct 6 <i>No Class</i>	Oct 7 ② 1.2	Oct 8 <i>No Class</i>	Oct 9 1.2/1.3
3	Oct 12 1.4	Oct 13 <i>No Class</i>	Oct 14 1.4/2.1	Oct 15 <i>No Class</i>	Oct 16 ③ 2.1/2.2
4	Oct 19 2.1/2.2	Oct 20 <i>No Class</i>	Oct 21 2.2	Oct 22 <i>No Class</i>	Oct 23 2.2/2.3
5	Oct 26 2.3/2.4	Oct 27 <i>No Class</i>	Oct 28 2.4/Review	Oct 29 <i>No Class</i>	Oct 30 <b>Test #1</b>
6	Nov 2 2.5	Nov 3 <i>No Class</i>	Nov 4 2.5	Nov 5 <i>No Class</i>	Nov 6 3.1
7	Nov 9 3.2	Nov 10 <i>No Class</i>	Nov 11 3.2	Nov 12 <i>No Class</i>	Nov 13 ④ 3.3
8	Nov 16 3.3	Nov 17 <i>No Class</i>	Nov 18 3.4	Nov 19 <i>No Class</i>	Nov 20 3.4/Review
9	Nov 23 <b>Test #2</b>	Nov 24 <i>No Class</i>	Nov 25 4.1	Nov 26 - No Class <i>THANKS-GIVING</i>	Nov 27 - No Class <i>VACATION!</i>
10	Nov 30 4.1/4.2	Dec 1 <i>No Class</i>	Dec 2 4.2	Dec 3 <i>No Class</i>	Dec 4 4.2/Review
11	<u>FINAL</u> Dec 7	<u>EXAM</u> Dec 8 <b>Final Exam</b> <b>10:15-12:45</b>	<u>WEEK</u> Dec 9	Dec 10	Dec 11

Last day to...

- ① Drop course, 75% refund, no W recorded.
- ② Add this course
- ③ Withdraw from this course, 50% refund, W recorded.
- ④ Withdraw from the course, 0% refund, W recorded; change grade option for the course.

**HOMEWORK/QUIZZES:** Homework is due at the beginning of the class and quizzes are typically completed at the beginning of class. Quizzes will be announced at least one class period in advance. No late/make-up homework or quiz make-ups are allowed. Illegible work will receive no credit – which means that you may need to re-write your homework before you turn it in. The lowest score from the homework/quiz/worksheet section will be dropped from the grade calculations.

# Math 211 – Fall 2009 – CRN 15823

**QUESTIONS FROM THE CLASSROOM (QFC'S):** *Due at the end of each chapter.* QFC's are located at the end of each chapter in the textbook. These activities are designed to make you think about how you will approach different topics in YOUR future classroom. These allow me to assess how you will handle situations in your class. QFC's should include the following:

1. Thorough answers in complete sentences – one word responses or those without justification will be given no credit.
2. Answer the student's question by showing me that you understand the question and the mathematics behind it. This involves thoroughly answering the question and possibly generalizing the results to other situations.
3. A correct and thorough explanation of any misconceptions/misunderstandings the "student" has.
4. A few sentences showing how you would respond to the "student" about what they have done mathematically or what they have asked. A hypothetical dialogue is acceptable here may be quite beneficial for you as a future teacher.

**WRITTEN PAPERS:** These papers will be written on chapters from the Liping Ma supplemental book. I expect papers to be clearly written and free of grammar and spelling errors. Papers should be typed, professional looking, and have a cover sheet with important information (name, date, etc.).

**EXTRA CREDIT:** I do offer some extra credit by completing the "Brain Teasers" activities throughout the chapters and due on the day of the test for the sections covered. Remember, the homework will count for more points than the "Brain Teasers" so *ONLY DO THESE WHEN THE REST OF YOUR HOMEWORK IS COMPLETE!* Other extra credit opportunities may be assigned throughout the term. I'll give extra credit for any errors discovered in the textbook – the first two students to contact me with the error (through email) will receive extra credit. The total for all extra credit will not exceed 5% of the overall course grade, and can only be used to better your grade if you earn 70% or higher for your overall course grade.

**READINESS QUIZ:** The readiness quiz will be a review of the material from previous courses. A readiness quiz assesses your current level of ability with elementary school mathematics. You should know all of the topics on the following list before entering this course. Each course has expectations of students, and I expect you to be fluent in the basic math skills covered in grades K – 8. No calculator will be allowed for the readiness quiz, and you will need to be procedurally competent with the following topics:

- The binary operations of addition, subtraction, multiplication, and division and their use with whole numbers, integers, fractions, percents, and decimals.
- Basic skills with algebraic properties. Examples: commutative property, associative property, distributive property of multiplication over addition, identity properties of addition/multiplication, inverse properties (when they exist), etc.
- Solving algebraic equations in one variable and word problems that may require algebra.
- Proportional reasoning and the ability to use ratios to solve problems.
- Basic geometry terms such as perimeter, area, and length.

**MID-TERM EXAMS:** The mid-term exams will each be 50 minutes in length. If you miss an exam, you must contact me immediately. By calling ahead, we may be able to make up the exam on a different day. No exam grades are dropped, but midterm exams may have corrections. All academic dishonesty rules apply to all aspects of the course including exams and possible corrections. It may be the case that some copies of old exams from previous terms are put on Blackboard for your review – answers may or may not be included. The goal of this would be to allow you to see the way I tend to ask questions on an exam and to practice on an actual test.

# Math 211 – Fall 2009 – CRN 15823

**FINAL EXAM:** The final exam will be 120 minutes. The final exam is comprehensive and will include all material taught in Math 211. It is held during the normal class time so it should not conflict with your other final exams. Do not ask to take the final exam on a different day/time unless you have more than 3 exams on that date (this is UO school policy).

## **HOW TO STUDY MATHEMATICS:**

- **Attend Class.** Sometimes life will present challenges that are clearly more important than Math 211. Do your best to attend each class session even though attendance is not a direct part of your grade. It may be difficult to learn the material on your own so seek help when a class is missed.
- **Read the text.** Before you come to class read over the textbook sections that will be discussed that day. Mathematics requires active processing of the information after each paragraph or two. Ask yourself questions about what you have read. **DO NOT USE THE TEXTBOOK AS MERELY A LIST OF HOMEWORK PROBLEMS.** The textbook is a tool that can enhance your learning; even if you don't like the way it is written you can still learn much from it.
- **Do the homework.** Before doing the homework try to read the book again (at least skim the section) to pick up major concepts which are covered. Review the notes and examples from class. It is best to attempt the homework as soon as possible after class. Study a little each day rather than "cramming". Do not immediately give up if you reach a problem that you can not solve quickly. Try to find a related example or review the concepts involved.
- **Prepare for the tests.** Study concepts rather than specific problems. Remember, you will not see the exact problem from the homework on a test, but the same concepts will be tested.
- **Seek conceptual understanding.** If you don't understand a concept, ask questions until it becomes more clear. I will do my best to explain things in different ways until the concept is grasped. If you don't seem to be "getting it", ask me to explain it a different way or to do another example. If you don't ask, then I won't know that you're struggling – if no one has further questions, then I believe you understand (right or wrong), and we will move on. It is important that you do not allow yourself to be in a position of trying to catch up.

**IMPORTANT NOTE:** When you come to see me with questions, I will ask you questions to determine what you know and/or don't know. Some students are offended by this questioning technique and only want me to do the problem. Hopefully by clarifying my expectations ahead of time, the frustration will be reduced. The best way to help yourself learn is to get better at asking yourself questions.

- What do I not understand? Is there another way of looking at this problem?
- What concepts are involved, and do I understand those concepts?
- If I can't even get started on a problem, why? Did I read the textbook, and if so, do I understand what has been said?
- Do I have enough time to succeed? What distractions make it hard for me to concentrate?
- What terminology is giving me problems? Remember, mathematics is a language and new words are essential to understanding different new concepts.

**The Last Word:** *Many students are confused about the purpose of the Math 211-212-213 sequence. These math courses **are content courses**, teaching mathematical concepts and requiring understanding of how and why math concepts work. These courses **are not methods courses** -- where future teachers will learn how to teach the mathematical concepts. Before a future teacher learns how to teach, they should completely understand the concepts and content to be taught.*

# Math 211 – Fall 2009 – CRN 15823

## NEW INFORMATION FOR FALL 2009 – SYLLABUS CHANGES AND MODIFICATIONS DUE TO H1N1 (swine flu)

The University of Oregon has put out memorandums for all faculty indicating that the H1N1 flu may impact 20-30% of all students, faculty and staff. The following measures are recommended for everyone and should be followed to prevent and/or minimize the impact of the flu:

- The virus can spread from person to person so always practice good hygiene by washing your hands often with soap and water, especially after coughing or sneezing. Alcohol-based hand cleaners are also effective when soap and running water are not available.
- Practice respiratory etiquette by covering your mouth and nose when you cough or sneeze. If you don't have a tissue, cough or sneeze into your elbow or shoulder, not into your hands.
- Avoid touching your eyes, nose, or mouth unless you have just washed your hands. This will help you avoid inoculating yourself with the flu virus or other germs.
- Know the signs and symptoms of the flu which include fever and cough or sore throat. A fever is any temperature taken with a thermometer that is greater than or equal to 100 degrees Fahrenheit. Possible signs of fever include feeling warm, having a flushed appearance, or sweating and/or shivering.
- Stay home if you have the flu or flu-like symptoms. Do not return to campus until 24 hours after you no longer have a fever. This should prevent passing of the virus to others.
- The incubation period is 2-4 days, and transmission of the virus can take place up to one day before symptoms even begin through 7 days after the symptoms began.
- Consider the seasonal flu vaccine to avoid other variations of the flu. The swine flu vaccine will not be available for priority and high-risk people until late October in Oregon (or later) and not available to the general public until possibly as late as December.

### **COURSE MODIFICATIONS – IN CASE OF AN OUTBREAK:**

The virus has been declared a pandemic and with the projected rates of infection, this could have a drastic effect on our course should an outbreak occur. The following course modifications are put into place to ease the possible problems that may arise from an outbreak:

- There will be no mandatory attendance policy; this will keep any sickness from negatively affecting your grade.
- The number of automatic homework/worksheet/quiz scores that will be dropped is increased from 2 to 5. This would cover 2 weeks worth of homework & all students will have this option. This also means that students will not need to present proof of illness/doctor's notes.
- If there are a significant number of people missing class due to the flu, we are asked by the University to come up with "Alternative Instructional Approaches" which emphasize non face-to-face communication. I have chosen Blackboard as our Alternative Approach.
- Students will be notified by email and through Blackboard announcements of any changes to class attendance and/or lecture schedules. I will attempt to present lecture notes in PDF form with solid explanations of the main topics to be covered. Further, I will make myself available for 1-2 hours to directly answer questions in the Blackboard Discussion Board. In this way, students can read, respond, and ask questions while in a safe area – and have responses given as quickly as possible.

Hopefully these changes will not occur, but they are here as an alternative in case of an outbreak.

# Math 211 – Fall 2009 – CRN 15823

## Homework List – Math 211

Section	Required	Recommended
1.1	1-3, 8-10, 12, 15, 22-24, 27-28	1-4, 8-16, 18-20, 22-30, 35
1.2	3, 6-11, 14, 16-18, 21, 23, 27, 35	1-12, 14, 16-23, 26-31, 34-38
1.3	1, 3-5, 7-9, 12-15	1, 3-16, 21-23 and TIMMS
1.4	1, 4-5, 7-9, 13-20	1-10, 12-21, 27
QFC Ch. 1	1, 3, 4, 5, 6	<i>Chapter Review: 1-32</i>
2.1	2-5, 7-8, 11-13, 16, 18-22, 25	1-13, 15-22, 25, 27
2.2	1, 4-8, 10, 14-16, 19, 22, 25, 28, 31-33	1-11, 13-16, 18-22, 24-37, 40, 44-45
2.3	2-3, 5-6, 10-11, 34	2-7, 9-13, 17-23, 30, 34, 36-42
2.4	3-8, 11-12, 18-19, 26, 32-34, 37-39	1-13, 18-24, 26-27, 30-34, 36-42, 51-52
2.5	1-2, 5, 10-12, 15-17, 22-24, 26-30	1-5, 10-17, 19-30, 32, 42-44
QFC Ch. 2	2, 5, 7-8, 12 and either 1 or 11.	<i>Chapter Review: 1-31</i>
3.1	1-3, 6-8, 10, 14, 16, 20, 22, 25, 30-31	1-8, 10-16, 20, 22, 24-27, 30-31, 38, 40
3.2	1, 3-4, 8, 10, 12, 17, 19, 26-27, 29-30	1, 3-20, 24-27, 29-31, 36-37, 40-44
3.3	2-3, 5-7, 11, 15-16, 21, 23-24, 29-33, 38-42	1-3, 5-11, 15-18, 21-25, 27-43, 51-55
3.4	1-3, 8-10, 15, 17-18, 22-24, 28	1-18, 21-24, 28, 33-36
QFC Ch. 3	1, 4, 6, 9, 12	<i>Chapter Review: 1-39</i>
4.1	1, 4, 16-19, 21-23, 25, 27-28, 30-33, 44	1-6, 8-19, 21-34, 36, 43-47
4.2	4, 6-10, 15-17, 19-27, 29, 31-32, 35, 37, 42	1-4, 6-11, 13, 15-35, 37-39, 41-42, 45-48, 54-59
QFC Ch. 4	1, 2	<i>Chapter Review: 1-12</i>

You are required to complete each assignment on separate pages; start a new assignment on a fresh page. Again, as the syllabus states, you must make sure that the homework is legible. If I can not read the pages, you will receive no credit.

### **Homework Guidelines:**

- Use pencil so that you may erase any mistakes. If you choose to use pen, do not make mistakes. If you make mistakes in pen, do not scribble them out – start over on a clean page.
- Staple multiple pages together in the upper left hand corner. Do not use paper clips or fold the edges. The homework should look like you care.
- Include your name, Math 211, chapter and section for the homework, and the date.
- If there are any ripped edges from notebooks, trim them before you turn the assignment in.
- Neatness counts in the effect that if the homework is not legible, no credit will be given.
- *Failing to follow the homework guidelines will result in lower points on your assignment.*

I strongly recommend ALL review exercises in each section are completed. The answers are in the back of the book for these and it gives you a chance to review as you go along. Also, in the textbook are small boxes titled “Now Try This!” which I encourage you to attempt as you read through the book. The answers for these are also included in the back of the book.