

Math 371 – 1

Fall 2009

Instructor: Erin Chamberlain

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Lecture: 9:00-9:50 am, MWF, 121 TMCB

Office Hours: Daily 1-2 pm, or by appointment

Textbook: *Abstract Algebra, An Introduction*, Second Edition, by Thomas W. Hungerford, Brooks/Cole, ISBN 978-0-03-010559-3

Grading: Homework 20%, Reading assignments 5%, Three midterms 15% each, Final exam 30%

Exams: In the testing center. The final exam will be in the testing center during final exam week. The final exam will cover all the material studied this semester.

Homework: Homework will be assigned each day and due at 4:30 pm in the box in my office (or under the door) on the class day after it is assigned. Homework assignments will be posted on the course webpage. Your homework should be neat and should include enough detail that another student from the class could follow your arguments. Homework that is not stapled, is excessively sloppy, or is written on paper torn from a spiral notebook may receive less than full credit. Late homework will not be accepted. Working in groups on homework is encouraged, but each student should write up each problem, without looking at other students' written solutions. The lowest three homework assignments will be dropped.

Reading Assignments: Each student will set up a blog for this class. There will be a reading assignment due each day before class with a corresponding blog entry. Each blog is due by 11:59pm of the day before the lecture. For example, you should post about the reading for Wednesday's lecture before midnight Tuesday night. See the Reading Assignment handout for more information.

Electronic Devices: Do not use mobile phones or permit them to ring during class. Calculators may be used on homework; if you use a calculator or computer on your assignment, you should indicate this. Calculators will probably not be very helpful. Only testing center calculators may be used on exams.

Prerequisites: Math 190 (Fundamentals of Mathematics) and Math 343 (Elementary Linear Algebra). Many problems in this course will be theoretical and will involve proofs, so it is essential that a student be familiar with methods of mathematical proof. Other topics you should be familiar with from prior courses include basic logic and set theory, functions, mathematical induction, and equivalence relations.

This is a 3 credit class. The BYU Catalog states that "The expectations for undergraduate courses is three hours of work per week per credit hour for the average student who is appropriately prepared; much more time may be required to achieve excellence." Thus, an average student should expect to spend at least 6 hours per week outside of lecture on working problems, reading the textbook, reviewing concepts, and completing assignments.

Preventing Sexual Harassment: Sexual discrimination or harassment (including student-to-student harassment) is prohibited both by the law and by BYU policy. If you feel you are being subjected to sexual discrimination or harassment, please bring your concerns to me or lodge a complaint with the Equal Employment Office (D-240C ASB) or with the Honor Code Office (4440 WSC, 422-2847).

Students with Disabilities: BYU is committed to providing reasonable accommodation to qualified persons with disabilities. If you have any disability that may adversely affect your success in this course, please contact the University Accessibility Center office (2170 WSC) at 422-2767. Services deemed appropriate will be coordinated with the student and instructor by that office.

Honor Code: In keeping with the principles of the BYU Honor Code, students are expected to be honest in all of their academic work. Academic honesty means, most fundamentally, that any work you present as your own must in fact be your own work and not that of another. Violations of this principle may result in a failing grade in the course and additional disciplinary action by the university. Students are also expected to adhere to the Dress and Grooming Standards. It is the university's expectation, and my own expectation in class, that each student will abide by all Honor Code standards. Please call the Honor Code Office (4440 WSC) at 422-2847 if you have questions about those standards.

Homework Assignments

#	Due	Assignment
1	Sept. 2	Section 1.1: 5, 7; Section 1.2: 12, 14, 15, 20, 25
2	Sept. 4	Section 1.2: 32; Section 1.3: 12, 18, 20, 23
3	Sept. 9	Section 2.1: 15, 19, 20, 26a, 32
4	Sept. 11	Section 2.2: 1, 2, 7, 9, 10
5	Sept. 14	Section 2.3: 2, 4, 5, 6, 8
6	Sept. 16	Section 3.1: 11, 18, 22, 24, 30
7	Sept. 18	Section 3.1: 5, 13, 17, 29, 31
8	Sept. 21	Section 3.2: 8, 10, 25, 30, 31
9	Sept. 23	Section 3.3: 10, 14, 23, 29, 33
	Sept. 25	No Homework due because of the midterm
10	Sept. 28	Section 4.1: 5, 6, 13, 17, 18
11	Sept. 30	Section 4.2: 5acef, 13; Section 4.3: 9, 21, 23
12	Oct. 2	Worksheet
13	Oct. 5	Section 4.4: 6, 13, 17, 28, 30
14	Oct. 7	Section 5.1: 2, 3, 8, 10, 13
15	Oct. 9	Section 5.2: 2, 8, 9, 11, 14
16	Oct. 12	Section 5.3: 1, 2, 3, 8, 11
17	Oct. 14	Section 6.1: 3, 15, 18, 20, 25
18	Oct. 16	Section 6.1: 30, 38, 40; Section 6.2: 7, 11
19	Oct. 19	Section 6.2: 5, 12, 14, 24, 29
20	Oct. 21	Section 6.3: 2, 6, 10, 13, 15
		No Homework due because of the midterm
21	Oct. 26	Section 9.4: 2, 4, 6, 7, 12
22	Oct. 28	Section 7.1: 2, 4, 14, 21, 25
23	Oct. 30	Section 7.1: 11, 16, 20, 26, 28
24	Nov. 2	Section 7.2: 14, 22, 30, 32, 35
25	Nov. 4	Section 7.3: 12, 21, 25, 30, 32, 35
26	Nov. 6	Section 7.4: 10, 19, 23, 26, 28
27	Nov. 9	Section 7.5: 6, 10, 11, 17, 21
28	Nov. 11	Section 7.5: 12, 15, 20, 23, 24
29	Nov. 13	Section 7.6: 6, 14, 18, 21, 26
30	Nov. 16	Section 7.7: 5, 10, 15, 19, 23
31	Nov. 18	Section 7.8: 1, 6, 10, 19, 24
		No Homework due because of the midterm
32	Nov. 23	Section 7.9: 2, 3, 13, 23, 24
33	Nov. 24	Section 7.9: 6, 27; Section 7.10: 3, 4, 6
34	Nov. 30	Section 8.1: 6, 17, 18, 23, 28
35	Dec. 2	Section 8.2: 7, 8, 9, 12, 19
36	Dec. 4	Section 8.3: 7, 9, 14, 18, 23
37	Dec. 7	Section 8.4: 1, 9, 10, 14, 15
38	Dec. 9	Section 8.5: 2, 6, 8, 10, 11

Reading Assignments

Instructions:

- Set up a blog for this class and do the first two assignments by 11:59PM Sept. 2.
- Complete each reading assignment listed below before the lecture.
- Write a blog entry for each reading assignment.
 - The title of the blog entry should be (Section Number), due on (Date). So, for example, your first blog entry will be titled Introduction, due on September 2.
 - A blog entry should have two parts:
 - (Difficult) Answer the question “What was the most difficult part of the material for you?” Note that “nothing” is not an acceptable answer. If nothing challenges you, then you should think about the material at a deeper level and generate some honest questions.
 - (Reflective) Write something reflective about the reading. This could be the answer to the question “What was the most interesting part of the material?” or “How does this material connect to something else you have learned in mathematics?” or “How is this material useful/relevant to your intellectual or career interests?” or something else.
- The blog posting is due by 11:59 PM on the day before lecture. For example, you should post about the reading for Wednesday’s lecture before midnight Tuesday night.
- Blog posts will be graded according to the following scheme:
 - 0 Points: No blog submission on time.
 - 1 Point: Submission of both parts (Difficult and Reflective) on time, but first part (Difficult) is irrelevant or does not sufficiently show that reading has been done.
 - 2 Points: Submission of both parts (Difficult and Reflective) on time, demonstrating that you have done the reading and thought about it.

Setting up a blog:

Note: These instructions should only be followed once. Once you’ve created a blog, just add new posts to it for each reading assignment.

- Open your browser to www.blogger.com
- Click on the orange box with “Create a blog”. If you already have a blog, please create a new one for this class; I’ll be dumping all entries into a feed reader, and would like to see only entries related to the course.
- Follow the instructions. Make sure you note your account details (username, password, url).
- The default settings are correct, so you don’t have to change anything, although you may if you wish. Please leave comments and full blog feeds enabled.
- For your first blog post, please answer the Introduction questions below (Assignment 1).
- Once you have made your first blog post, send me an email with the URL for the main page of your blog. Include your full name in the email message, especially if your name does not appear on your blog.

Make sure you do all of this and Assignment 2 (Sections 1.1-1.3) by 11:59PM on Tuesday September 2.

Reading Assignments

Each assignment is due by 11:59PM of the day listed.

#	Due	Assignment
1	Sept. 1	Answer the following: <ul style="list-style-type: none"> • What is your year in school and major? • Which post-calculus math courses have you taken? • Why are you taking this class? (Be specific.) • Tell me about the math professor or teacher you have had who was the most and/or least effective. What did s/he do that worked so well/poorly? • Write something interesting or unique about yourself. • If you are unable to come to my scheduled office hours, what times would work for you?
2	Sept. 1	Read and blog about Sections 1.1-1.3
3	Sept. 3	Read and blog about Section 2.1
4	Sept. 8	Read and blog about Section 2.2
5	Sept. 10	Read and blog about Section 2.3
6	Sept. 13	Read and blog about Section 3.1
7	Sept. 15	We will continue Section 3.1, so there is no new reading. Please write responses to some or all of the following questions: <ul style="list-style-type: none"> • How long have you spent on the homework assignments? Did lecture and the reading prepare you for them? • What have you liked or disliked about the class thus far? What contributes most to your learning? • What do you think would help you learn more effectively or make the class better for you?
8	Sept. 17	Read and blog about Section 3.2
9	Sept. 20	Read and blog about Section 3.3
10	Sept. 22	As you study for the exam, write responses to the following questions: <ul style="list-style-type: none"> • Which topics and theorems do you think are the most important out of those we have studied? • What kinds of questions do you expect to see on the exam? Thinking about the answers to these questions can help guide your study. Remember also that the mathematics department's learning outcomes for Math 371 state that students <ul style="list-style-type: none"> ➤ Should know all relevant definitions, correct statements of the major theorems (including their hypotheses and limitations), and examples and non-examples of the various concepts. The students should be able to demonstrate their mastery by solving non-trivial problems related to these concepts, and by proving simple (but non-trivial) theorems about the ... concepts, relate to, but not identical to, statements proven by the text or instructor.
11	Sept. 24	Read and blog about Section 4.1
12	Sept. 27	Read and blog about Sections 4.2-4.3
13	Sept. 29	Read and blog about Section 4.4 (the reading is slightly ahead of the lecture)

14	Oct. 1	Read and blog about Section 4.5-6. (We won't discuss these sections in class.)
15	Oct. 4	Read and blog about Section 5.1
16	Oct. 6	Read and blog about Section 5.2
17	Oct. 8	Read and blog about Section 5.3
18	Oct. 11	Read and blog about Section 6.1
19	Oct. 13	Read and blog about Section 6.2 up through the middle of page 147.
20	Oct. 15	Read and blog about the rest of Section 6.2
21	Oct. 18	Read and blog about Section 6.3
22	Oct. 20	As you study for the exam, write responses to the following questions: <ul style="list-style-type: none"> • Which topics and theorems do you think are important out of those we have studied? • What do you need to work on understanding better before the exam? • Come up with a mathematical question you would like to see answered or a problem you would like to see worked out in class on Wednesday.
23	Oct. 22	Read and blog about Section 9.4
24	Oct. 25	Read and blog about Section 7.1 up through the first full example on page 164
25	Oct. 27	Read and blog about the rest of Section 7.1
26	Oct. 29	Read and blog about Section 7.2
27	Nov. 1	Read and blog about Section 7.3
28	Nov. 3	Read and blog about Section 7.4
29	Nov. 5	Read and blog about Section 7.5 up through Corollary 7.27
30	Nov. 8	Read and blog about the rest of Section 7.5
31	Nov. 10	Read and blog about Section 7.6
32	Nov. 12	Read and blog about Section 7.7
33	Nov. 15	Read and blog about Section 7.8
34	Nov. 17	As you study for the exam, write responses to the following questions: <ul style="list-style-type: none"> • What do you need to work on understanding better before the exam? • Come up with a mathematical question you would like to see answered or a problem you would like to see worked out in class on Wednesday.
35	Nov. 19	Read and blog about Section 7.9
36	Nov. 22	Read and blog about Section 7.10
37	Nov. 23	Read and blog about Section 8.1
38	Nov. 29	Read and blog about Section 8.2
39	Dec. 1	Read and blog about Section 8.3
40	Dec. 3	Read and blog about Section 8.4
41	Dec. 6	Read and blog about Section 8.5
42	Dec.8	If you have not done so, complete student ratings for this course at studentrating.byu.edu . Complete any extra credit blog entries for math talks you went to but did not write up yet. Look over the review sheet handed out in class and come up with a mathematical question you would like to see answered or a problem you would like to see worked out in class on Wednesday. (Specific problem numbers from the book are helpful.) What do you need to work on understanding better before you take the final exam?

If for whatever reason you are uncomfortable doing a certain assignment on your blog (for instance, if you'd rather not have your answers to specific questions out thereon the Internet), you may send me that particular assignment by email.