

Math 1010 – Intermediate Algebra

Instructor: Anna Macquarie

Class meetings: MTWF 9:40am - 10:30am

Office Hours: Tuesday 10:30am - 11:30am, Thursday 2:00pm - 3:00pm

Office Location: Leroy Cowles Building (LCB) loft (4th floor)

E-mail address: macquari@math.utah.edu

Website: www.math.utah.edu/~macquari

Materials:

- Text: *Intermediate Algebra*, 5th edition, by Larson and Hostetler (ISBN 9780547102177) – bookstore has 50% guaranteed buyback program even on used textbook (buy used one for \$153 and receive \$92.5 at buyback: total cost \$60.5). They also carry a digital book that is about \$40 cheaper than a used book.
- Supplementary notes available on www.math.utah.edu/online/1010
- Clicker response card by Turning Technologies to be purchased in the bookstore. We recommend that you purchase the NXT response card.

Course Objectives: The essence of algebra is to use variables instead of just numbers. This enables us to describe things in general rather than in particular, it helps us set up and solve problems, and it is instrumental in constructing a link between formulas and pictures which in turn much amplifies our problem solving ability. During this class you will become used to the idea of having variables represent parameters and unknowns, and will become competent at simple algebraic manipulations. You will learn how to apply the basic techniques of solving linear and quadratic equations. Your repertoire of functions will increase to include rational, exponential and logarithmic functions. Throughout the course you will be using mathematics to solve problems which originate in the world around us.

Supplemental Instruction: The Learning Enhancement Program offers Supplemental Instruction, often referred to as SI, which provides organized study sessions which are open to any student in the course and are led by undergraduates who are selected and trained to be SI leaders. The main goal of the SI program is to help students learn the course material and improve their course grade. Your SI leader will schedule 3 meetings per week convenient to the majority of your schedules. More information will be available first day of class.

Why This Class Is So Weird: Attendance counts, and the structure is "flipped".

- Attendance is taken daily with clickers.
- You are to read the text or watch videos online (posted on Canvas) before class. You will have a short clicker quiz on the material you read/watched, every day.
- Class time will be spent working on problems and fine-tuning your understanding.

Weekly Homework/Quizzes: I will assign weekly homework that will not be collected. However, there will be a written quiz administered every Friday (except on the days of the midterm), which will be based off of the weekly homework problems. **There will be no make up quizzes for ANY REASON.** However, your two lowest written quiz scores will be dropped. This way, you may miss two Fridays without any punishment.

Midterms: There will be three midterm exams and a final comprehensive departmental exam at the end of the semester. **Make-up tests will not be allowed.** Make sure to communicate timely about any conflict you may have with the announced dates.

Tutoring Lab: T. Benny Rushing Mathematics Student Center (adjacent to JWB and LCB), RM 155
M - H 8am - 8pm, F 8am – 6pm, closed Saturdays, Sundays and holidays.

They are also offering group tutoring sessions. If you're interested, inquire at the

<http://www.math.utah.edu/ugrad/tutoring.html>

The University Tutoring Center, 330 SSB, offers inexpensive (\$6/hour) private tutoring. A list of private tutors is also available from the Math Department office.

Computer Lab: Also in the T. Benny Rushing Mathematics Student Center, RM 155C.

M – H 8am – 8pm, F 8am – 6pm. You can print all the course materials there for free (if asked note that it is for your MATH1010 class).

Calculators: You are welcome to use a calculator on your homework, but there will be **NO calculators allowed on any of the exams.** So you should try doing your homework without a calculator, too, for practice.

Grading: The grades will be calculated as follows:

- Attendance and Reading Quizzes 20% (assessed by Clickers)
- Weekly Quizzes 15 % (Written, every Friday)
- Midterms 35% (Three total)
- Final Exam 30% --- You have to take the final to pass the course!

Canvas: All the course materials can be found on Canvas (<http://learn-uu.uen.org> or access via CIS). You will find your grades there as well. To log in, you use the same student id and password that you use for Campus Information System. I do my best to update the grades on a regular basis and keep everything accurate. However, I would advise you to check your grades often to make sure there were no data entry mistakes. I'm always happy to correct any mistakes I've made. You just need to let me know about them.

Grading Scale: The grade scale will be the usual:

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

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| Midterms: Exam 1: Feb 1 Exam 2: March 1 Exam 3: April 12 Final: 5/1, 3:30 - 5:30 | Other dates: Drop date: 1/16/13 Withdraw date: 3/1/13 Holidays: 1/21/12, 2/18/13, 3/10/13 - 3/17/13 | Reading quiz given every class (clickers) |
| | | Written Quiz given every Friday (based on homework) |

The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the

[Center for Disability Services](#), 162 Union Building, 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations.

Course Outline: NOTE THAT WE JUMP AROUND THE TEXTBOOK! PAY CLOSE ATTENTION!

| | Topic | Suggested Problems from Text |
|------------|---|---|
| Ch1 | Fundamentals Of Algebra | |
| 1.1 | The Real Number System | 3,7,11,13,17,23,33,47,29,65,69,77,85,89, 95-98 |
| 1.2 | Operations With Real Numbers | 7,13,16,19-33 odd,45-123 odd, 139, 141, 145-156 |
| 1.3 | Properties Of Real Numbers | 45-54 all, 73, 74, 75, 77 |
| 1.4 | Algebraic Expressions | 1-13 odd, 25-71 odd, 75, 79, 80, 81, 85, 87, 91, 99 |
| 1.5 | Constructing Algebraic Expressions | 1-59 odd, 69-72 all, 79, 80 |
| Ch5 | Polynomials and Factoring | |
| 5.1 | Integer Exponents And Scientific Notation | 1-113 odd, 153-156 all |
| 5.2 | Adding And Subtracting Polynomials | 1-9 odd, 23-26, 27-33 odd, 43, 47, 69-77 odd, 109 |
| 5.3 | Multiplying Polynomials | 1-35 odd, 87, 89, 91, 99, 101-104 all, 111, 112 |
| 5.4 | Factoring Polynomials | 3, 5, 11, 13, 17, 23, 29, 31, 39, 53, 55-69 odd, 77-83 odd, 143, 144, 145 |
| 5.5 | Factoring Trinomials | 29-49 odd, 67-97 odd, 115, 117, 125-130 all |
| Ch7 | Radicals and Rational Exponents | |
| 7.1 | Radicals and Rational Exponents | 1-8 all, 15-115 odd |
| 7.2 | Simplifying Radical Expressions | 1-73 odd, 74 |
| 7.3 | Adding and Subtracting Radical Expressions | 1-63 odd |
| 7.4 | Multiplying Radical Expressions | 1-97 odd |
| Ch2 | Linear Equations and Inequalities | |
| 2.1 | Linear Equations | 1-57 odd, 71-78 |
| 2.2 | Linear Problems | 3,5,11,15-27 odd,43,59,51 |
| 2.4 | Linear Inequalities | 1-23 odd, 35-57 odd, 79-87 odd, 121-128 |
| 2.5 | Absolute Value Equations and Inequalities | 1-65 odd, 77-87 odd, 93, 94, 95 |
| Ch3 | Graphs and Functions | |
| 3.1 | The Rectangular Coordinate System | 1-11 odd, 21-45 odd. 55, 57, 59, 61-77 odd |
| 3.2 | Graphs Of Equations | 1-49 odd, 57-91 odd |
| 3.6 | Relations and Functions | 1-95 odd |
| 3.7 | Graphs of Functions | 1-75 odd |
| 3.3 | Slope and Graphs of Linear Equations | 1-81 odd |
| 3.4 | Equations of Lines | 1-77 odd, 95, 96, 97, 98 |
| CH6 | Rational Functions | |
| 6.1 | Rational Expressions and Functions | 3,9,13,15,23,27,29,47,55,61,75,83 |
| 6.2 | Multiplying and Dividing Rational Expressions | 3,7,11,23,25,27,31,37,47,49,63,67 |
| 6.3 | Adding and Subtracting Rational Expressions | 1,7,13,17,23,31,41,47,51,63,77,81 |

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| Ch4 | Systems Of Equations | |
| 4.1 | Systems Of Equations | 1-21 odd, 27-47 odd, 53-73 odd, 95, 97, 103-106 all 117-123 odd |
| 4.2 | Linear Systems In Two Variables | 1-29 odd, 41-47 odd, 61, 63, 71, 75, 82 |
| Ch5 | Polynomials And Factoring | |
| 5.6 | Solving Polynomial Equations By Factoring | 1-81 odd, 98, 11-117 all |
| Ch8 | Quadratic Equations and Functions | |
| 8.1 | Strategies For Solving Quadratic Equations | 1-41 odd, 65,67,69,73,75, 101-105 all, 107-113 odd |
| 8.2 | Completing the Square | 17-31 odd, 33, 35, 53, 54, 61, 87, 88 |
| 8.3 | The Quadratic Formula | 5-11 odd, 12, 13, 15, 23, 25, 27, 49-53 all, 56, 97 |
| 7.6 | Complex Numbers | 1,5,15,19,27,35,43,51,55,57,63,65 71,77,85,99,103,111,119,123,135,137 |
| 8.5 | Applications Of Quadratic Equations | 3, 4, 15, 16, 17, 18, 29, 30, 42, 43, 45-53 odd |
| Ch9 | Exponential , Logarithmic Functions | |
| 9.1 | Exponential Functions | 1-8 all,17-20 all,31-45 odd,59-62 all,63,65,95-99 all |
| 9.2 | Composite And Inverse Functions | 1-25 odd, 26, 35-43 odd, 61-73 odd, 75-78 all, 113-119 |
| 9.3 | Logarithmic Functions | 1-45 odd, 53-81 odd, 95-98 all, 131-140 all |
| 9.4 | Properties Of Logarithms | 1-23 odd, 47-107 odd |
| 9.5 | Solving Exponential and Logarithmic Equations | 1, 2, 5, 7-117 every other odd |
| | REVIEW | |