

MATHEMATICS 1010

INTERMEDIATE ALGEBRA

FALL 2008

Instructor. Bobby Hanson

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Office Hours. I am usually available right after class, or by appointment.

Class. TTh 12:25 P.M. — 2:10 P.M., JFB 103.

Text. INTERMEDIATE ALGEBRA by Larson and Hostetler, 4th edition.

Course Web Page. <http://www.math.utah.edu/~bobby/1010>

Prerequisites. Effective Spring 2008, students who do not complete a prerequisite math course with a **C** or better will not be allowed to advance to the next level math course en route to completion of **QA** and **QB** requirements. Students who register prior to receiving a grade will be dropped from math courses after grades are posted in cases where prerequisite grades are not met. For Math 1010 the prerequisites are: an **ACT** score of 18-22, an **SAT** score of 430-530, or a passing grade in Math 950.

Course Outline. In this course we will review elementary algebra: linear equations, inequalities and systems of equations. We will study polynomials, rational expressions and equations, and radicals including complex numbers (the so-called “imaginary numbers”). We will also see exponential functions and logarithms.

Course Objectives. Our objectives for this course include:

- become comfortable with the notion of using a symbol, such as x , y , Δ , ξ , to represent a number whose value we do not know;
- gain proficiency at algebraic manipulations;
- use these algebraic manipulations to solve linear and quadratic equations;
- get used to using mathematics to solve “word” problems (FYI, in the “real world,” there are only word problems, nothing else).

Homework (30%). Homework will be assigned weekly, and will be done by way of the **WeBWorK** system in the math department. **WeBWorK** is a www based computer system developed at Rochester University that enables students to answer questions online via a web browser. The system tells you whether or not your answer is correct, and lets you try again if your answer is wrong. The purpose of **WeBWorK** is to help you learn by doing. You do need to have access to a web browser such as firefox or internet explorer. There are many places on campus that provide such access. You may also have access from your home. There will be a link to the **WeBWorK** homepage at my course website:

<http://www.math.utah.edu/~bobby/1010>

We will have an in-class demonstration on the **WeBWorK** homework system within the first two weeks of the semester. There are only 4 course meetings you **must** attend, and this is one of them (the others being the two midterms and the final exam).

Calculators. Calculators will not be allowed on any of the exams, and are therefore not required for this course.

Exams (20% each). There will be two midterm exams in the class. Exam 1 is on Thursday, October 9; Exam 2 is on Tuesday, November 25. Please plan your vacation schedules around these dates. I will not give make-up exams in this class. If you have a valid reason for missing an exam (illness, accident, etc., including a doctor’s note, police report, etc.) then I will compute your grade based on all other work. Otherwise, you will score a zero on a missed exam.

Final Exam (30%). The Final Exam will be held on December 17, 3:30 P.M. to 5:30 P.M. The exam will be comprehensive. You must take this exam to pass the class. This is a departmental final exam. This means that **ALL** students enrolled in all sections of Math 1010 take the final exam at this time. Do not ask to take the final exam at another time.

Grading.

Grade	Minimum Score
A	90%
A–	85%
B+	80%
B	75%
B–	70%
C+	65%
C	60%
C–	55%
D+	50%
D	45%
D–	40%
E	0

Deadlines. You can drop the class by phone or web through Wednesday, September 3, and the class will not appear on your transcript. You can withdraw from the class by phone or web, but will be charged tuition, through Friday, October 24; and a **W** will appear on your transcript for this course.

Free Tutoring. Tutoring is offered by the Mathematics Department free of charge on a drop-in basis. The Math Center is located in the basement between buildings JWB and LCB. It is open 8:00 a.m. to 8:00 p.m. Monday through Thursday, and 8:00 a.m. to 6:00 p.m. Friday. It is closed on weekends and University holidays.

ADA. The Americans with Disabilities Act requires reasonable accommodations be provided for students with physical, cognitive, systemic, learning and psychiatric disabilities. Please contact me at the beginning of the semester to discuss any such accommodations for this course.

Day.	Date.	Announcements/Lecture Description.
Week 1		
Tuesday	Aug 26	§1.1 Real Numbers; §1.2 Operations
Thursday	Aug 28	WeBWork Demonstration (Attend this class!); §1.4 Algebraic Expressions
Week 2		
Tuesday	Sept 2	§2.1 Linear Equations; §2.2 Problem Solving
Thursday	Sept 4	§2.3 Business and Scientific Problems; (§2.4;) §2.5 Absolute Value
Week 3		
Tuesday	Sept 9	§3.1 Coordinates; §3.2 Graphs of Equations.
Thursday	Sept 11	§3.3 Graphs of Linear Equations; §3.4 Equations of Lines
Week 4		
Tuesday	Sept 16	§3.6 Relations and Functions
Thursday	Sept 18	§3.7 Graphs of Functions
Week 5		
Tuesday	Sept 23	§4.1 Systems of Equations
Thursday	Sept 25	§4.2 Linear Systems in Two Variables
Week 6		
Tuesday	Sept 30	§5.1 Integer Exponents; §5.2 Adding and Subtracting Polynomials
Thursday	Oct 2	§5.3 Multiplying Polynomials; §6.5 Dividing Polynomials
Week 7		
Tuesday	Oct 7	Review
Thursday	Oct 9	Exam 1. May include any material covered up to this point
Week 8		
Tuesday	Oct 14	FALL BREAK
Thursday	Oct 16	FALL BREAK
Week 9		
Tuesday	Oct 21	§5.4 Factoring by Grouping; §5.5 Factoring Trinomials
Thursday	Oct 23	§6.1 Rational Expressions and Functions; §6.2 Multiplying and Dividing Rational Expressions
Week 10		
Tuesday	Oct 28	§6.3 Adding and Subtracting Rational Expressions; §6.4 Complex Fractions
Thursday	Oct 30	§6.6 Solving Rational Equations; (§6.7)
Week 11		
Tuesday	Nov 4	§7.1 Radicals and Rational Exponents; §7.2 Simplifying Radical Expressions
Thursday	Nov 6	§7.3 Adding and Subtracting Radical Expressions; §7.4 Multiplying and Dividing Radical Expressions
Week 12		
Tuesday	Nov 11	§7.5 Radical Equations and Applications; §7.6 Complex Numbers
Thursday	Nov 13	§8.1 Solving Quadratic Equations: Factoring
Week 13		
Tuesday	Nov 18	§8.2 Completing the Square; §8.4 Graphs of Quadratic Equations
Thursday	Nov 20	§8.5 Applications of Quadratic Functions
Week 14		
Tuesday	Nov 25	Exam 2. May include any material covered up to this point
Thursday	Nov 27	THANKSGIVING
Week 15		
Tuesday	Dec 2	§9.1 Exponential Functions; §9.2 Composite and Inverse Functions
Thursday	Dec 4	§9.3 Logarithmic Functions; §9.4 Properties of Logarithms
Week 16		
Tuesday	Dec 9	§9.4 Properties of Logarithms (cont'd)
Thursday	Dec 11	§9.5 Solving Exponential and Logarithmic Equations; §9.6 Applications
Week 17		
Wednesday	Dec 17	Final Exam 3:30 P.M. to 5:30 P.M. You <i>MUST</i> take the Final Exam at this date and time!