Math 1011Q: Introductory College Algebra and Mathematical Modeling

Spring 2011

I would advise you Sir, to study algebra, if you are not already
an adept in it: your head will be less muddy, and you will leave
off tormenting your neighbors about paper and packthread....

-- Samuel Johnson

Coping with Math anxiety
-- a great article for you

Math Links for Information and Fun
-- find out the links between math and everything

Math 1011 News and Announcements
-- for students currently enrolled in the course



Instructor's Resources
-- Group Projects, Handouts, Sample Exams, etc.



Student's Handouts
-- take with you for your next Q course

Name	Section	Office	Office Hours
Sarah Glaz glaz@math.uconn.edux (click on link and remove end x)	**Faculty Contact**	MSB 202 (860) 486 9153	T, Th 12:45-1:45 and by appointment
Kathryn Watson Kathryn.Watson@uconn.edux (click on link and remove end x)	**Instructor and Coordinator** 002 M,W,F 12:00-12:50 MSB 311 & W 4:00-5:30 MSB 311 (+ a 2-hour Review Session before the Final Exam)	MSB 234 (860) 486 2091	M,W 2:00-3:30 and by appointment (+ additional office hours before tests)

General Information

Math 1011Q is a course designed to serve as preparation for all the other Q courses offered at UConn. It emphasizes two components, the mastery of each is equally important for success in any course employing mathematics. The first component is made up of the collection of fundamental algebraic concepts and their manipulations. Most of this material is taught in High Schools and Community Colleges under the name Intermediate Algebra or Algebra II. Math 1011Q covers this material using a college algebra approach. The second component consists of using these algebraic concepts for solving multi-step problems from other disciplines. This practice is called Mathematical Modeling, and is the part of the course that gives Math 1011Q its unique interesting flavor, liveliness and usefulness beyond a

usual Intermediate Algebra course. Students work on mathematical modeling projects in small groups. Math 1011Q is the permanent replacement for the course formerly numbered Math 101. Math 1011Q earns students 3Q credits which count towards graduation.

Who Should Take Math Math 1011Q

All students whose high school algebra needs reinforcement. In particular, students who did not take a course in Intermediate Algebra prior to enrollment at UConn, or had taken such a course and obtained a grade of C or lower, or had not taken a course in mathematics for a number of years, are strongly advised to take Math 1011Q, before attempting to enroll in any other Q Course. It is a small investment of your time, that earns you 3 Q credits which count towards graduation, and repays you with a successful completion of your other Q courses at UConn.

Textbook

Intermediate Algebra, by K. Elayn Martin-Gay, 5th edition
Available at UConn's bookstore in a package which includes a Student Solution Manual

Other Requirements

A simple Scientific Calculator, for example TI-30Xa.

Expectations

You are expected to attend all classes. To encourage attendance there are occasional assignments due at the end of the class, or one-question quizzes at the beginning of the class. You are responsible for everything that happens in class. If you miss a class, you are expected to find out what happened either from your Instructor or from your classmates. You are also expected to work outside of class about 4 hours per week. Most of all, I hope that as the course progresses you will get excited about what you are learning and delight in your own, perhaps unexpected, ability to solve mathematical problems.

Homework

Individual homework assignments are assigned after every section, collected every Tuesday, and returned the following class. These appear in the Syllabus table below. In addition there are weekly assignments of group projects provided as handouts in class. Group assignments are graded, individual assignments carry exam points (this will be explained in class). The majority of homework assignments are done outside of class, but we devote 30 to 50 minutes every week, usually on Mondays, to questions related to difficulties in the homework. You are encouraged to work with other students in this class on all your homework assignments.

Calculator Policy

No calculators are allowed during exams or quizzes. All calculations required in these instances can reasonably be done by hand. Calculators will be used for mathematical modeling group projects using real data, and other in-class and homework assignments where hand calculations may be too time consuming.

Tutoring Options and Online Practice Worksheets

You are welcome and encouraged to come to your instructor with any difficulties arising in this class. If you have difficulties coming to the scheduled office hours, talk with your instructor about finding

another time when you can meet. If you feel you need additional help, there are a variety of other tutoring options:

The UConn Q Center: Free drop-in tutoring available at the Q Center's various locations. Check the Q Center's website for schedule.
The Q Center also maintains a list of private tutors.

Prentice Hall Tutoring Center: Free text-specific online and phone tutoring Sunday - Thursday. Access Code in your textbook package.

Online Helpful Websites: Websites providing help in the form of explanations, examples, sample exams, worksheets, and online answers to questions:
Ask Dr. Math: At the Math Forum @Drexel University.
Math for morons like us: From the ThinkQuest Library.
Eraserdog.com: Worksheets (Click on link, select "see all answers," then click on "retrieve worksheet")

Exams Schedule

There will be three in-semester, in-class exams and a Final Exam. None is strictly cumulative, but there is overlap of material between the exams. **NO MAKE-UP EXAMS** unless there is a very serious emergency for which you provide proof.

Exam 1: Wednesday, February 9, 4:00-5:30, in class
Exam 2: Wednesday, March 16, 4:00-5:30, in class
Exam 3: Wednesday, April 13, 4:00-5:30, in class
Final Exam: TBA

For help with location of the Final Exam Building click on The Campus Map.
UConn Final Exam Policy.

Grading Policy

Homework, Quizzes, and Group Projects: about 12%. Each Exam (including the Final Exam): about 22%.

Syllabus

Expect the course to cover every week, 2 to 4 sections from the textbook, and one Group Project selected from the table below. The table below provides a list of individual homework assignments for each section of the book. The actual homework assignments may vary according to progress in class. In addition, a number of fun and interesting group projects highlighting applications of the material will be handed out in class every week-- usually on Mondays. Those will be selected from the activities labeled Group Projects in the table below. You will work on them together in small groups during class time, and complete them as out-of-classroom homework projects. Instructors of Math 1011Q may find the Group Projects by clicking on the Instructor's Resources icon at the top of the page. If you forgot the password send an e-mail to Sarah Glaz.

Office Hours and Review Sessions In Final Exam Week (attendance optional) **Review Session: TBA**

Office Hours: TBA		
Section	**Topic**	**Individual Homework Assignments**
Introduction		Math-autobiography
Chapter 1		
1.2	Algebraic expressions and sets of numbers	page 14-16: 1,5,7,31-36,59,61,67,77,82-84,87
1.3	Operations with real numbers	page 26-29: 1,9,11,17,21,27,31,35,37,45,47,53,67,73,79
Review	Fractions, percentages, unit conversion (in: Chapter 1 handouts)	1. Calculate 15% of 723. 2. If 9.8 is 12% of your grade, find your grade. 3. Find the height in meters of a person 5'6" tall.
1.4	Properties of real numbers	page 37-39: 3,9,15-20,45,51,53,61,83,87,99
Group Project	Are irrationals rational?	after 1.2
Group Project	Calculate your BMI	after1.4
Group Project	Analyze newspaper circulation	If time permits
Chapter 2		
2.1	Linear equations in one variable	page 54-55: 1,11,13,17,23,26,35,43
2.2	Introduction to problem solving	page 62-67: 1,5,11,13
2.3	Formulas and problem solving	page 72-75: 1,5,49
2.4	Linear inequalities and problem solving	page 84-87: 1,3,7,11,43,45,55,63
2.6	Absolute value equations	page 99: 5,9,15,21,53,61
Group Project	Algebraic poetry -- Lilavati's swarm	after 2.2
Group Project	Algebraic poetry -- The rose-red city	If time permits
Group Project	Calculate your income	after 2.4
Exam 1		
Chapter 3		
3.1	Graphing equations (include material from 3.3)	page 126-129: 1,3,5,7,9,17,19,27,33,37
3.2	Introduction to functions	page 141-145: 1,3,11,23,25,29,35,37,55,57,59,61
3.4	The slope of a line	page 163-166: 5,19,25,27,37,39,61,63,67,91
3.5	Equations of lines	page 173-177: 1,13,25,41,42,44,47
Group Project	Hurricane season (and Tracking Chart)	If time permits
Group Project	Three swimmers	after 3.1
Group Project	Cigarette ads	after 3.4
Group Project	Life expectancy	after 3.5
Chapter 4		

4.1	Linear equations in two variables	page 212-215: 1,3,7,13,17,21
Group Project	Which Honda should you buy?	If time Permits
Group Project	Photos of all sizes	after 4.1
Exam 2		
Chapter 5		
5.1	Exponents	page 263-265: 1,7,13,19,27,43,63
5.2	More exponents	page 269-271: 1,7,9,19,39,55
5.3	Polynomials and polynomial functions	page 280-283: 17,23,37,39,43
5.4	Multiplying polynomials	page 289-291: 1,5,19,23,27
5.5	The greatest common factor	page 295-297: 3,9,11,13
5.6	Factoring trinomials (use quadratic formula for roots from 8.2)	page 304-305: 15,25,27,47
5.7	Factoring special products	page 310-312: 1,9,39,53
5.8 (partial)	Solving quadratic equations (via quadratic formula and roots)	page 324-328: 5,9,13
Group Project	The largest box	A Special Largest Box (Spring 2006) (after 5.4)
Group Project	Factoring trinomials completely	after 5.7
Group Project	Free falling from bridges	If time permits
Chapter 6		
6.1	Multiplying and dividing rational expressions	page 348-350: 1,17,37,41,47,63
6.2	Adding and subtracting rational expressions	page 357-359: 3,17,26,27,29
Group Project	Calculate your areas	after 6.2
Group Project	Calculate your lottery winning	If time permits
Exam 3		
Chapter 7		
7.1	Radicals and radical functions	page 419-420: 3,9,19,25,39,43,45,53,75
7.2	Rational exponents	page 426-428: 1,11,19,29,39,41,47,51,61,65
7.6 (partial)	Radical equations	page 456-459: 1,9,11,13 (with 7.2),53,59 (with 7.1)
Group Project	Skid marks	after 7.6
Group Project	Run Fido, Run!	after 7.6
Chapter 9		
9.3	Exponential functions	page 563-565: 1,5,18,20,21,27,35,37
9.4	Logarithmic functions	page 571-572: 29,31,41,45,51,69
9.5	Properties of logarithms	page 577-578: 1,9,17,21,35,43,53,55,57
9.7 (partial)	Exponential and logarithmic	page 589-590: 13,14,15,27 (with 9.4),31,32,33

	equations	(with 9.5)
Group Project	The black bear population	after 9.4
Group Project	Puzzled by Logs?	after 9.7
Optional Topics		
5.1	Scientific notation	page 282-284: 73,79,81,91
5.2	More scientific notation	page 289-291: 57,61
Group Project	Very large and very small numbers	
4.2	Linear Equations in Three variables	page 233-234: 5,7,9,13
Group Project	Tacos anyone?	
9.6	Logarithms and Change of Base	page 633: 17,23,29,41,47,49
Group Project	How long it takes to double your money?	
Final Exam		

Academic Integrity

A fundamental tenet of all educational institutions is academic honesty; academic work depends upon respect for and acknowledgment of the research and ideas of others. Misrepresenting someone else's work as one's own is a serious offense in any academic setting and it will not be condoned. Academic misconduct includes, but is not limited to, providing or receiving assistance in a manner not authorized by the instructor in the creation of work to be submitted for academic evaluation (e.g. papers, projects, and examinations); any attempt to influence improperly (e.g. bribery, threats)any member of the faculty, staff, or administration of the University in any matter pertaining to academics or research; presenting, as one's own,the ideas or words of another for academic evaluation; doing unauthorized academic work for which another person will receive credit or be evaluated; and presenting the same or substantially the same papers or projects in two or more courses without the explicit permission of the instructors involved. A student who knowingly assists another student in committing an act of academic misconduct shall be equally accountable for the violation, and shall be subject to the sanctions and other remedies described in The Student Code.

Support Services

- Counseling and Mental Health Services 486-4705 (after hours, use 486-3427)
- Career Services 486-3013
- Alcohol and Other Drug Services 486-9431
- Office of Student Services 486-3426
- Center for Students with Disabilities 486-2020 (voice), 486-2077 (TDD)



This page is maintained by Sarah Glaz
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