Math 1011Q:
Introductory College Algebra and
Mathematical Modeling
Spring 2013
Room 237, Tu, Th –9:55 am – 12:00 noon

Office Hours Mon, Wed 8 - 11:30, Fri 8:30 - noon or by arrangement

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General Information

Math 1011Q (former number Math 104Q) 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 became a permanent course last year, and is a replacement for the course formerly numbered Math 101. Math 1011Q earns students 3 Q credits which count towards graduation.

Who Should Take 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 quizzes. 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 class, and returned within a week. 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 time every class 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:

UConn Tutoring in the Jeremy Richards Library: Free tutoring by appointment. Check online at http://stamfordstudentlife.uconn.edu/srcal_schedule.html for schedule.

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. The final will be cumulative, and 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:	**4th week, in class**
Exam 2:	**8th week, in class**
Exam 3:	**12th week, in class**
Final Exam:	**Announced**

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

Syllabus
Expect the course to cover 2 to 4 sections every week 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. 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.

Date '13	Section	Topic	Individual Homework Assignments
1/22/2013	Introduction		Math-autobiography
	Chapter 1		
	1.2	Algebraic expressions and sets of numbers	p. 14-16: 2,5,7,31-36,62,63,67,77,82-84,87
1/24/2013	1.3	Operations with real numbers	p. 26-29: 5,11,21,23,47,51,55,59,85,89,99,103
	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.
1/29/2013	1.4	Properties of real numbers	p. 37-39: 5,11,21,23,47,51,55,59,85,89,99,103
	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		
1/31/2013	2.1	Linear equations in one variable	p. 54-55: 1,11,13,17,23,26,35,43
2/5/2013	2.2	Introduction to problem solving	p. 62-63: 7, 9 15 & 17
2/7/2013	2.3	Formulas and problem solving	p. 72-75: . 3, 7, 11, & 49
2/12/2013	2.4	Linear inequalities and problem solving	p. 84-87: 4, 6, 9,13, 17, 49, 51 57, 64
2/14/2013	2.6	Absolute value equations	p. 99: 7, 11, 15, 17, 23, 57, 63
	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
2/19/2013	Exam 1		
	Chapter 3		
2/21/2013	3.1	Graphing equations (include material from 3.3)	p. 126-129: 3, 7, 18, 21, 29, 39, 51
2/26/2013	3.2	Introduction to functions	p. 141-145: 4, 5, 6, 24,26,30, 34,37, 38, 57, 59
2/28/2013	3.3	Graphing linear functions	p. 151:36, 37, 45, 49, 52

	3.4	**The slope of a line**	**p. 163-166: 7, 21, 27, 29, 41, 42, 59, 63, 69**
3/5/2013	**3.5**	**Equations of lines**	**p. 173-177: 3, 7, 9, 15, 17, 27, 43, 49, 51**
	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		
3/7/2013	**4.1**	**Linear equations in two variables**	**p. 212-215: 1,3,7,13,17,21,23,25**
	Group Project	**Which Honda should you buy?**	**If time permits**
	Group Project	**Photos of all sizes**	**after 4.1**
3/12/2013	**Exam 2**		
	Chapter 5		
3/14/2013	**5.1**	**Exponents**	**p. 263-265: 1,7,13,19,27,43,63,73,79,81,91**
3/14/2013	**5.2**	**More exponents**	**p. 269-271: 1,7,9,19,39,55**
3/26/2013	**5.3**	**Polynomials and polynomial functions**	**p. 280-283: 17,23,37,39,43**
3/28/2013	**5.4**	**Multiplying polynomials**	**p. 289-291: 1,5,19,23,27,57,61**
3/28/2013	**5.5**	**The greatest common factor**	**p. 295-297: 3,9,11,13**
4/2/2013	**5.6**	**Factoring trinomials (use quadratic formula for roots from 8.2)**	**p. 304-305: 15,25,27,47**
4/2/2013	**5.7**	**Factoring special products**	**p. 310-312: 1,9,39,53**
4/4/2013	**5.8 (partial)**	**Solving quadratic equations (via quadratic formula and roots)**	**p. 324-328: 5,9,13**
	Group Project	**The largest box**	**A Special Largest Box (after 5.4)**
	Group Project	**Factoring trinomials completely**	**after 5.7**
	Group Project	**Free falling from bridges**	**If time permits**
	Chapter 6		
4/9/2013	**6.1**	**Multiplying and dividing rational expressions**	**p. 348-350: 1,17,37,41,47,63**
4/9/2013	**6.2**	**Adding and subtracting rational expressions**	**p. 357-359: 3,17,26,27,29**
4/11/2013	**6.5**	**Solving Equations containing rational expressions**	**p. 381-382: 3,13,16,47**
	Group Project	**Calculate your areas**	**after 6.2**

	Group Project	**Calculate your lottery winning**	**If time permits**
4/11/2013	**Exam 3**		
	Chapter 7		
4/16/2013	**7.1**	**Radicals and radical functions**	**p. 419-420: 3,9,19,25,39,43,45,53,75**
4/18/2013	**7.2**	**Rational exponents**	**p. 426-428: 1,11,19,29,39,41,47,51,61,65**
4/18/2013	**7.3**	**Simplifying Radical expressions**	**p. 435: 1,31,35,73**
4/23/2013	**7.4**	**Adding, subtracting, and multiplying radical expressions**	**p. 441-442: 3, 9, 15,27,49,58,69**
4/25/2013	**7.6 (partial)**	**Radical equations**	**p. 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		
4/25/2013	**9.3**	**Exponential functions**	**p. 563-565: 1,5,18,20,21,27,35,37**
4/25/2013	**9.4**	**Logarithmic functions**	**p. 571-572: 29,31,41,45,51,69**
4/30/2013	**9.5**	**Properties of logarithms**	**p. 577-578: 1,9,17,21,35,43,53,55,57**
4/30/2013	**9.7 (partial)**	**Exponential and logarithmic equations**	**p. 589-590: 13,14,15,27 (with 9.4),31,32,33 (with 9.5)**
	Group Project	**The black bear population**	**after 9.4**
	Group Project	**Puzzled by Logs?**	**after 9.7**
	Group Project	**Very large and very small numbers**	
	Group Project	**Tacos anyone?**	
	Group Project	**How long it takes to double your money?**	
5/2/2013	**Review**		
	Final Exam	**As set by the registrar!**	

Academic Integrity

A fundamental tenet of all educational institutions is academic honesty; academic work depends upon respect for and acknowledgement 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.