MATH 155 Math: A Way of Thinking
Syllabus and Course Information
Spring 2011

Instructor: Sheldon Lee **Email**: shlee@viterbo.edu
Office: RC 213
Office Hours: Mon 1 - 2, Tues 11 - 12, 1 - 2, Wed 1 - 2, Thurs 9 - 10, 2 - 3, Fri 1 - 2
Meeting Times: 12:10 - 1:00 p.m. MWF, MRC 436, Final Exam: Tuesday 5/10, 7:40 - 9:40 a.m.

Textbook: Using *and Understanding Mathematics: A Quantitative Reasoning Approach* (5th edition), by Bennett and Briggs.

Catalog Course Description: An investigation of topics including the history of mathematics, number systems, geometry, logic, probability, and statistics. There is an emphasis throughout on problem-solving. Prerequisite: placement score into 110 or grade of C or higher in 001. General education course: G9.

Workload: To do well in this class, you must have enough time to read, study, and do homework - roughly 8 - 12 hours per week outside of class.

Course Content: We will cover the following material from the text:
Chapter 1 Thinking Critically
Chapter 2 Approaches to Problem Solving
Chapter 3 Numbers in the Real World
Chapter 8 Growth: Linear, Exponential, Logarithmic
Chapter 4 Managing Your Money
Chapter 5 Statistical Reasoning
Chapter 7 Probability: Living with the Odds

Technology
A basic scientific calculator will be useful for this course. Calculators will be allowed on some, but not all of the exams.

Grading scale
90% and above - A 80 – 89.9% - B 70 – 79.9% - C 60 – 69.9% - D

Graded item	**Percent of overall grade**
Assignments and quizzes	30%
Participation, attendance and board work	10%
3 Midterm exams	40%
Comprehensive Final Exam	20%

Blackboard: I will use this to periodically update your grades, usually after every test. I will also use it to post assignments, course notes, and solutions when applicable.

Assignments and quizzes (30%)
Assignments consist of homework, group assignments, quizzes, labs, writing assignments, and projects. Homework will be collected on a regular basis. I will look over a small subset (3 or 4 problems per set) to give feedback, and will also check that you have completed all of the problems. Students should turn in work in a timely manner, so that they do not get behind. Late assignments will be penalized 20% of

the possible points for each class period late, up to a maximum of three periods. If you cannot be in class, you can place your solutions under my door before the time they are due. Of all the homework, quiz, and group assignment scores, the lowest three will be dropped. For this reason, no make-up quizzes or group assignments will be allowed even if you have a valid reason or let me know ahead of time. Labs and writing assignments will also be given throughout the semester. For these, you will typically be given one or two weeks to complete the assignment, and you will be able to work with one or two other people. These assignments are worth more than the regular homework assignments and quizzes, and the grades cannot be dropped.

Participation, attendance, in-class activities, and board work (10%)
You are expected to attend class on a regular basis, and keep me informed if you cannot attend. Once you have had 4 unexcused absences, every unexcused absence from that point onward will incur a penalty of 5% from the participation grade. You are also expected to work problems in groups when asked, and periodically present solutions on the board to the other groups.

Exams
There are three midterm exams and one cumulative final exam. Calculators may or may not be allowed, depending on the test. On each test, you may use one side of a $8.5 \times 11''$ sheet of notes *without worked out examples*, to be turned in with the test. All tests must be taken in the regular classroom at the scheduled times. I will replace your lowest test score with your final exam score if it is better. If your final exam score is lower than all three regular tests, then no adjustments will be made. The final exam will be held on Tuesday, May 10, from 7:40 – 9:40 a.m. This exam must be taken at this time unless approved in writing by the Dean.

Where to get help
Since this is mathematics, you will probably get stuck often. Do not panic, this is all part of the learning process. You will likely need a support group which may include other students or tutors. The Learning Center has tutors available and is located in MRC 332. Please feel free to stop by my office for help at any time. In addition, I will periodically post hints and solutions to problems on the course web site.

Course Goals and Objectives
Because this course may be taken as part of the General Education requirements, the specific General Education Core Abilities are listed:

(a) Thinking: Students engage in the process of inquiry and problem solving.

(b) Ethical Decision Making: Students respond to ethical issues, using informed value systems. Students understand how academic honesty in mathematics requires deductive reasoning. Students honestly challenge themselves to understand the material. Practice academic honesty in mastering the material for the course on one's own without cheating.

(c) Communication: Students speak and write to suit varied purposes, audiences, disciplines, and contexts. Students communicate solutions to problems in writing on assignments, quizzes, and exams, using appropriate mathematical language and format. Students read text and reference materials, and use calculators to solve problems and communicate solutions.

Americans with Disabilities Act: If you have a disability and require auxiliary aids, services, or accommodations for this class, please inform me and Jane Eddy, the disabilities (ADA) coordinator (MRC 332; 796-3194) within 10 days to discuss your needs for the semester.

Tentative schedule

Week	Date	Topic Covered	Assignment due
1	17-Jan	1A Recognizing Fallacies	
	19-Jan	1B Propositions and Truth Values	
	21-Jan		1A
2	24-Jan	1C Sets and Venn Diagrams	
	26-Jan		1B
	28-Jan	1D Analyzing Arguments	
3	31-Jan		1C
	2-Feb	2A Units	
	4-Feb	2B Standardized Units	1D
4	7-Feb	2C Problem Solving	2A
	9-Feb		2B
	11-Feb		
5	14-Feb	**Test 1**	
	16-Feb	3A Uses and Abuses of Percentages	
	18-Feb	3B Putting Numbers in Perspective	
6	21-Feb	3C Dealing with Uncertainty	3A
	23-Feb	3D Index Numbers	3B
	25-Feb	3E How Numbers Deceive	3C
7	28-Feb		3D
	2-Mar	8A Growth: Linear versus Exponential	3E
	4-Mar	8B Doubling Time and Half-Life	
7-Mar - 11-Mar		SPRING BREAK	
8	14-Mar	8D Logarithmic Scales	8A
	16-Mar		
	18-Mar	**Test 2**	
9	21-Mar	4A Taking Control of Your Finances	
	23-Mar	4B The Power of Compounding	
	25-Mar	4C Savings Plans and Investments	4A
10	28-Mar	4D Loans	4B
	30-Mar	4E Income Taxes	4C
	1-Apr		4D
11	4-Apr	5A Fundaments of Statistics	
	6-Apr	Lab 1: Graphs	
	8-Apr	5B, 5C, 5D Group Assignment	5A
12	11-Apr		
	13-Apr		
	15-Apr	**Test 3**	Ch 5 Group Assignment, Lab 1
13	18-Apr	7A Fundamentals of Probability	
	20-Apr	7B Combining Probabilities	
	22-Apr	EASTER BREAK	
14	25-Apr		
	27-Apr		7A
	29-Apr	7C The Law of Large Numbers	
15	2-May	7D Assessing Risk	7B
	4-May		7C
	6-May		
16	10-May	**FINAL EXAM**	