MTH 111 **PRECALCULUS** Spring 2000

GOALS OF THIS COURSE: The primary goal of MTH 111 is to prepare you mathematically for further courses in mathematics, especially calculus. The calculus sequence is often an essential step toward degree and career objectives, so MTH 111 is also such a step. Thus MTH 111 is aimed at the student for whom it will be the first of an important series of courses rather than a last math course. ***This course is NOT a good choice simply to fulfill a general education requirement.*** It demands a very substantial amount of hard work for 3 credits, and we urge you to reconsider taking it if you are not committed to its aim.

EXPECTATIONS: We expect that you will give this course 7-9 hours a week of your undivided attention, in addition to your class time. No kidding! This is an approximate figure of course, but don't assume that you can spend less time than this and still get a grade you'll like. We also expect that you will ATTEND YOUR CLASS.

HOUR TEST AND FINAL EXAM: There will be three hour tests which will be given outside of your regularly scheduled class time. These will be on Wednesday **evenings from 6:00-7:15 PM on Feb. 16, Mar. 29, and Apr. 26.** The place of these tests will be announced by your instructor. All sections will take these exams. The final exam will be scheduled at a common time for all sections. About 80% of the problems on the exams will be similar to problems on the assigned problems list. The remainder will require a little deeper mastery of the material.

CALCULATORS: *You need a graphing calculator.* TI - 86 is recommended.

HELP SESSIONS: In addition to your instructor's office hours, the Math Department has an extensive of walk-in help sessions scheduled in Roosevelt Hall.

GRADING: Your grade will be determined out of a possible of 600 points:

Three hour tests	300 points
Final exam	200 points
Homework and/or classwork	100 points
Total	600 points

BONUS & FREE ADVICE!!

1. COME TO CLASS. You're paying for it; use it.

2. LEARN TO DO ALL THE ASSIGNED PROBLEMS. Remember that most of the exam problems will be like the assigned ones. Make sure you can do them You will have a good head start at exam time.

3. SEEK HELP IF YOU NEED IT. Help is available. Get advice from your instructor.

4. READ THE TEXT. First of all, *there isn't time cover every detail in class.* Secondly, careful reading of the text will give you a model of what good mathematical writing is like; learn it.

5. DEBUG YOUR METHODS. There are a few little things you either never quite learnt or learnt incorrectly. Make conscious effort to find out what they are and fix them. For example, you may think that $x^{-1} + y^{-1} = (x + y)^{-1}$; it isn't. Is $x^{-1} \cdot y^{-1} = (x \cdot y)^{-1}$?
6. BE PRECISE. Many students don't bother with things like equal signs and parentheses. Make a habit of using them. Don't do too many things in your head; when in doubt, write it out.
7. DON'T FOOL YOURSELF about what you know. You may have covered some of these topics in high school but not at the level required in MTH 111. The only reliable way to tell if you understand the material is whether you can do the problems without too much of sweat.

8. DON'T FALL BEHIND. You will spend less time in the end, with better results. Class attendance is essential. If you must miss a class, notify your instructor in advance. No more than two unexcused absences permitted. **Please come to office hours for help as needed.**

KNOW THE FOLLOWING FORMULAS FROM YOUR HIGH SCHOOL DAYS:

1) $(a\pm b)^2 = a^2 \pm 2ab + b^2$ (The square of the sum or the difference).

2) $a^2 - b^2 = (a+b)(a-b)$ (The difference of two squares).

3) $(a\pm b)^3 = a^3 \pm 3a^2b + 3ab^2 \pm b^3$ (The cube of the sum or the difference)

4) $a^3 \pm b^3 = (a \pm b)(a^2 \mp ab + b^2)$ (The sum or the difference of two cubes)

5) $acx^2 + (ad + bc)x + bd = (ax + b)(cx + d)$. (Factoring)

6) $ax^2 + bx + c = 0 \Rightarrow x = [-b \pm \sqrt{b^2 - 4ac}]/2a$ (The quadratic formula)

7) The properties of a right triangle, simple properties of a circle, their areas and perimeters.

8) The area of a triangle. Properties of similar triangles.

9) In analytic geometry, you should know the distance formula, the midpoint formula and the standard equation of a circle.

10) Right triangle trigonometry.

(If you don't know these formulas, you should take MTH 099.)

TEXT: PRECALCULUS by Bittenger, Beecher, Ellenborgen and Penna (Review Chapter 0)

Week of	Sections	Suggested Problems	
01/17	1.1	3,5,7,9,11,15,19,21,23,25,27,29, 35,37,66,73,77	
	1.2	1,3,5,13,15,27,33,35,37,49,59,61	
01/24	1.3	1,3,5,7,9,13,17,21,23,25,31,35,39,41,43	
	1.5	1,5,7,9,11,15,25,27,29,49	
	8.2	3,5,6,7,13 (Just circles)	
01/31	1.6	1,3,5,7,11,25,27,31,33,35,43,47,49	
	1.7	1,3,5,9,11,23,35,41,43,47	
	1.8	1,3,5,7,11,13,15,27,33,53	
02/07	2.1	1,3,13,17,25,27,37.41,51,55,61,67	
	2.2	1,3,13,23,33,39,45,57,61	
	2.4	1,3,5,9,11,13,17,19,25,31,35,37	
02/14	2.5	1,3,5,7,9,15,17,19,23,25,31,33,41,43,55,59	
	2.6	1-6, 9,11,17,19,23,27,37	
	2.7	1,3,5,9,17,21,33,35,38,43,58,59,63	Test 1, Feb. 16

02/21	3.1	1,5,7,11,15,19,27,31,33,37,61,63,65,67	Mon. meets Tues.
	3.2	1,5,9,11,17,21,29,34,49,53	
02/28	3.3	1,5,9,13,19,25,29,33,39,51,69	
	3.4	1,3,7,15,19,23,25,31,37,43,49,71,73,77	
03/06	3.5	1,7,9,17,23,25,31,37,41,51,61,67,69,71,73,81	
	3.6	1,3,6,7,9,15,16	
03/13		SPRING RECESS	
03/20	4.1	1,3,7,13,17,22,23,31,39,55,61,67,71,77	
	4.2	1,5,9,15,20,25,31,41	
	4.3	1,7,13,19,25,31,37,41,39,71,79,83,87	
03/27	4.4	1,3,9,11,17,21,33,39,43,44,45	
	4.5	5,7,13,21,23,35,43,45,49,63,65,69	Test 2, Mar 29
04/03	4.6	1,3,5,7,9,13,19,23,29,35	
	5.1	1,5,9,11,15,19,23,37,43,45.47,61,63,67,69	
04/10	5.2	1,3,5,9,11,13,17,21,25,27,33	
	5.3	1,3,9,11,17,21,27	
04/17	5.4	1,3,9,15,17,21,35,45,61,77	
	5.5	1,3,7,11,19,23,27,31	
04/24	6.1	1,5,9,15,17,27,29	
	6.2	1,5,9,15,17,19,33	Test 3, Apr 26
05/01		Last Class	

YOUR SECTION #_____YOUR INSTRUCTOR_____

INSTRUCTOR'S FICE_ & OFFICE HOURS _____

HOURS OF WALK-IN HELP SESSION _____