CLASS OUTLINE FOR MATH 115

Instructor: Nick Marsden, Ewing 258

Text: Precalculus, Fifth Edition, by Larson & Hostetler

CHAPTER P: PREREQUISITES

#	Text	Time	
1	P.4	1	Rational Expressions
2	P.5	1	Solving Equations
3	P.6	1	Solving Inequalities

CHAPTER 1: FUNCTIONS AND THEIR GRAPHS

#	Text	Time	
4	1.3	2	Functions
5	1.4	1	Analyzing Graphs of Functions
6	1.5	1	Shifting, Reflecting and Stretching Graphs
			TAKE-HOME TEST
7	1.6	1	Combinations of Functions
8	1.7	1	Inverse Functions
		1	TEST 1, Lessons 1 to 8

CHAPTER 2: POLYNOMIAL AND RATIONAL FUNCTIONS

#	Text	Time	
9	2.1	1	Quadratic Functions
10	2.2	1	Polynomial Functions of Higher Degree
11	2.3	1	Polynomial and Synthetic Division
12	2.5	2	Zeros of Polynomial Functions
13	2.6	1	Rational Functions
			TAKE-HOME TEST

CHAPTER 3: EXPONENTIAL AND LOGARITHMIC FUNCTIONS

#	Text	Time	
14	3.1	.5	Exponential Functions and Their Graphs
15	3.2	1.5	Logarithmic Functions and Their Graphs
16	3.3	1	Properties of Logarithms
17	3.4	1	Exponential and Logarithmic Equations
18	3.5	3	Exponential and Logarithmic Models
		1	TEST 2, Lessons 9 to 18

CHAPTER 4: TRIGONOMETRY

#	Text	Time	
19	4.1	1	Radian and Degree Measure
20	4.3	1	Right Triangle Trigonometry
21	4.2+4.4	2	Trigonometric Functions: The Unit Circle
22	4.5	1	Graphs of Sine and Cosine Functions
23	4.6	1	Graphs of Other Trigonometric Functions
24	4.7	1.5	Inverse Trigonometric Functions

CHAPTER 5: ANALYTIC TRIGONOMETRY

#	Text	Time	
25	5.1	1.5	Using Fundamental Identities
26	5.2	1	Verifying Trigonometric Identities
		1	TEST 3, Lessons 19 to 26

27	5.3	2	Solving Trigonometric Equations
28	5.4	2	Sum and Difference Formulas
29	5.5	2	Double and Half Angle Formulas
			TAKE-HOME TEST

CHAPTER 10: CONICS

#	Text	Time	
30	Notes	1	Circles
31	10.2	1.5	Parabolas
32	10.3	1.5	Ellipses
33	10.4	1	Hyperbolas
34	Notes	1	Systems of Equations Involving Conics
		1	TEST 4, Lessons 27 to 34

CALCULUS

#	Text	Time	
35		1	Limits
36		1	The Secant line; Average Velocity
37		1	The Tangent line
38		1	The Derivative Function
39		1.5	Differentiation Rules for Polynomials; Instantaneous Velocity
40		1.5	Graphing Polynomial Functions
41		1	Max/Min Problems
		1	TEST 5, Lessons 35 to 41

Review: 3 hours

Final exam, Lessons 1 to 41

FIRST DAY HANDOUT FOR NICK MARSDEN'S MATH 115 STUDENTS

Welcome to my class. I hope that the term goes well for you. Please take some time to read the following. I think you will find it helpful and informative.

A. SOME GENERAL COMMENTS

1. HOW IMPORTANT IS REGULAR ATTENDANCE? It is essential that you attend every class. If for some reason you miss a class, you will need to act quickly to get caught up. Get a copy of the notes from one of your classmates. Work through the notes very carefully.

2. PLEASE try to arrive a minute or two before class is scheduled to begin. This will give you an opportunity to get your notes out, and to prepare mentally for the class.

3. HOW MUCH TIME SHOULD I BE SPENDING ON MATH EVERY WEEK? If up to date, a typical student will need to spend a minimum of 60 minutes per day. It is highly preferable that this be done before the next class.

4. CALCULATORS. Graphing and programmable calculators may not be used on any test or on the final exam.

B. HOW TO GET HELP

1. For the first two weeks of the course, I intend to spend up to 20 minutes each day going over homework problems and any other questions you may have. After that period, we will not be able to afford that much time, but I will fit as many of your questions as I can.

2. Please come to my office (Ewing 258) for help. You may make an appointment, or just drop in. I am usually free every day from 9:30 to 10:20 and 12:30 to 1:20. When you come, bring your notes from the lesson where you are having problems. If you missed that class, I would apreciate your getting a copy from someone. I like to refer to the notes when I am giving help.

3. I strongly urge you to find one or more people in this class who you can study with. For many people, learning mathematics in a social setting with their peers can be very rewarding and productive.

4. Free tutoring is available in The Mathlab, Ewing 224. The lab is open all day and sometimes over the weekend. Although the lab is a great place to go when you are confident of the subject matter in general but you just need a little push in the right direction, I would strongly suggest that you use me first, especially at the beginning of the course. Between us we can work out a strategy for determining what kinds of questions you should always bring to me, and what kinds could be safely answered in the lab.

(over)

C. EVALUATION PROCEDURES FOR THE COURSE

1. TERM MARK. You will be doing a number of take-home tests. These can be done in consultation with other students in your class, but with the help of nobody else. They will be overdue if not handed in at the beginning of the class on the due date, but can be handed in up to one day late with only a one mark deduction.

   The term mark is the average of the scores on your in-class tests. However, if your take-home test scores are satisfactory (overall average is at least 70%), you will be allowed to throw out your worst test before the average is calculated.

   If you miss an in-class test for ANY reason, you will get a zero. There will be no make-ups. But with decent take-home test scores, that zero will be tossed out.

2. FINAL EXAM. The final exam for this course is to be written by all students on the day and time scheduled. The examinations for this term will be held Dec 9-17, 2002 (including Saturday Dec 14). Please make sure you are available during this period.

3. MARK FOR THE COURSE. Your course mark is the larger of:

   a) The average of your term mark and your final exam mark (each is worth 50%)
   b) Your final exam mark

   The Math Department reserves the right to raise your course mark if it is judged that your in-class tests and final exam were more difficult than those in other years or other sections.

4. LETTER GRADE. Your course mark is then translated to a letter grade using the following table:

A+ 95%	B+ 80%	C+ 65%
A 90%	B 75%	C 60%
A- 85%	B- 70%	D 50%

D. USING THIS COURSE AS A PREREQUISITE

You will need a recent B in this course in order to proceed to Math 100. You should be advised that the success rate for students in Math 100 who have not received at least a B in Math 115 or Math 12 is very low.

You will also need a recent B in order to proceed to Math 110.

A Recent C in Math 115 is sufficient for entry to Math 108, but you can expect with this sort of mark to have to work very hard.

E. FREE LEARNING SKILLS WORKSHOPS

The College offers workshops in topics such as Time Management, Reading Textbooks, Note-taking, Assisting Memory, Studying for Exams, and Exam Writing. These are held in Paul 107. Individual appointments are also available in Dawson 202. For more information, call 370-3583.

F. TWO MORE THINGS

I strongly encourage you to do all your writing (notes, tests, and final exam) in pencil. That way, you will be able to make corrections without leaving a mess.

Also, if you cannot read something that I wrote down on the board, please ask me right away. Or, ask me at the end of the class. Do not leave the room until all questions on my writing have been answered.