SYLLABUS FOR MTH30, SECTION 6431

NIKOS APOSTOLAKIS

Syllabus

- **Professor:** Dr. Nikos Apostolakis
- **Class times and room:** Tu, Th, 6:00–7:50, CP 308.
- **Course page:** http://xrl.us/neapos/teaching/sp11/Math30/30sp11.html
- **Office & Tel.:** CP 122. (718) 289-5100, Ext. 5482
- **Office hours:** Tu, Th 2:30–3:30.
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Overview of the course: This course will provide some basic tools that you will need in your studies in maths and sciences. It is important that you master these tools as you will need them in your next courses.

Some resources:

- **Classes:** One purpose of attending classes is to learn faster than if you study on your own with a book. In addition, classes have the advantage of being interactive: you can ask if you need a clarification. To take full advantage of classes you need to review the previous class and look work out the exercises after the class. Otherwise classes are quickly forgotten.
- **Math Tutorial Lab:** The Math Tutorial Lab is a room where you will find permanent tutors for all maths courses. If you want to have the opportunity to ask questions as they arise while you do your homework, this is the place to go. It is located at CP 303 and is open 11–3 and 4–8 Monday to Thursday and 11–2 Friday and Saturday.
- **Meetings with the instructor:** If you have not understood something well and need help, or for any other matters concerning the course, you can also talk to the instructor. Please write an e-mail to the address above to arrange a time, or go to office hours.
- **Textbook:** The textbook for this class is: *Precalculus Essentials* (Third Edition), by Robert E. Blitzer, Prentice-Hall. Additional material will be handed in class when appropriate.
- **SAGE Computer Algebra System:** During this course we will use computers to understand the material better. Using a computer one can see lots of examples and illustrate many of the concepts of the course. We will use them in many lectures, and students will need to use them to work in special homework.
- **Calculator:** A scientific calculator (with trigonometric functions *sin*, *cos*, etc), is also required.

Student's responsibilities:

- To use the resources available (some are above) to attain the main goal: to learn.
- To prepare each class by studying the material in the previous class, solving the recommended exercises and reading ahead in the text (or in internet) the material that will be presented.

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- To work on many exercises, as it is impossible to learn mathematics without doing so. The main purpose of the exercises is not quite to find the answer, but to learn from them. Therefore, if you work in an exercise for a long time without finding a correct answer, do not feel frustrated, instead consider how much you have learned in the process.
- To ask questions during class or tutorials about anything that has not been understood. EVEN IF YOU THINK THAT YOUR QUESTION IS TOO TRIVIAL, I GUARANTEE THAT MANY OTHER STUDENTS WILL BENEFIT FROM THE ANSWER. So when in doubt do your classmates a favor and ASK!
- To be in class on time and do all the in-class exams. Attendance will be taken 5 minutes after the hour. Students arriving after this time will be marked as 'late'. The responsibility of catching up with material covered during a missed class lies entirely with the student.

Instructor's responsibilities:

- To act as facilitator of the learning process of the students, and to assist with any question that students may have about the material.
- To give tests and exams of appropriate difficulty. To grade tests and exams promptly and explain the students the meaning of their grades.

Classroom Rules:

- Cell phones, music devices and laptops are not allowed during class time.
- Talking about matters not related with math is not allowed during class time. Students must be quiet except when discussing mathematics during class time. It is strongly encouraged, however, that students participate and discuss the subject that is being studied in each class.
- In-class tests and quizzes will not be repeated. The only exception, in some situations, is if the instructor receives notice of the absence (via e-mail or telephone) before the time of the test or quiz.

Exams and homework:

- There will be two in-class tests during the term, each worth 20% of the final grade.
- In addition to the exams there will be many quizzes. The grade for quizzes and class participation is 20% of the final grade.
- The final exam will count 40% of the final grade. Additionally *in order to pass the class, it is required that you receive a passing grade in the final exam.*
- Homework will be assigned and collected each week.

Plan of the Class and Assignments

DATE	SECTION	RECOMMENDED EXERCISES
Tu 2/1	Introduction, Review	Work ont he Review Quiz
Th 2/3	1.2, Basics of Functions and their Graphs	p. 159: 11-31 (odd), 45, 47, 53 -57, 71, 72, 75, 76
Tu 2/8	1.3, More on Functions and their Graphs	p. 173: 11, 15, 17, 23, 69-76, 81
Th 2/10	1.6, Transformations of Functions	p. 216: 1-87 (odd)
Tu 2/15	1.7, Combinations of Functions	p. 229: 5-11, 17-33, 49-57, 81-88
Th 2/17	1.8, Inverse Functions	p. 240: 1-5, 11-25, 29-37
Tu 2/22	2.2, Quadratic Functions	p. 298: 9-55 (odd)
	2.3,Polynomial Functions and Their Graphs	p. 312: 3-7, 15-20, 21, 25, 27-33, 37, 39, 41-47
Th 2/24	2.4, Dividing Polynomials; Remainder and Factor Theorems	p. 324: 13, 15, 17-25, 33-41
Tu 3/1	2.5, Zeroes of Polynomial Functions	p. 335: 1-17, 19, 21, 23, 25-31 (odd)
Th 3/3	2.6, Rational Functions and Their graphs	p. 354: 1-7, 9-14, 21-35, 37, 41, 49, 55, 63
Tu 3/8	REVIEW	Prepare questions for the review
Th 3/10	FIRST TEST	
Tu 3/15	2.7, Polynomial and Rational Inequalities	p. 366:1-23 (odd), 43-45, 55-57, 69, 70
Th 3/17	3.1, Exponential Functions	p. 396: 11-17, 19-24, 25-31, 35-37, 41, 43
	3.2, Logarithmic Functions	p. 410: 1-29, 43, 44, 47-53, 55, 59, 63, 71, 75-79, 81-89
Tu 3/22	3.3, Properties of Logarithms	p. 421: 1-27, 35, 37, 41-57, 67, 71-77
Th 3/24	3.4, Exponential and Logarithmic Equations	p. 432:1-21, 27-43, 49-57, 67-69, 85, 87
Tu 3/29	4.1, Angles and Radian Measure	p. 472:1-10, 13-28, 41-56, 60-63
Th 3/31	4.2, Trigonometric Functions: The Unit Circle	p. 486: 1-55
	4.3, Right Triangle Trigonometry	p. 498: 3-15, 21-31
Tu 4/5	4.4, Trigonometric Functions of Any Angle	p. 513:1-21, 23-27, 35-43, 61-73
	4.5 Graphs of Sine and Cosine Functions	p. 533:1-25 (odd), 43-49
Th 4/7	4.7 Inverse Trigonometric Functions	p. 563: 1-11, 19-41, 47-53, 63-67
Tu 4/12	5.1 Verifying Trigonometric Identities	p. 594: 1-35
Th 4/14	5.2, Sum and Difference Formulas	p. 603: 1, 3, 5, 13, 15, 21, 23, 33, 35
Tu 4/19	NO CLASS. SPRING RECESS	
Th 4/21	NO CLASS. SPRING RECESS	
Tu 4/26	NO CLASS. SPRING RECESS	
Th 4/28	REVIEW	Prepare questions for the review
Tu 5/3	SECOND EXAM	
Th 5/5	5.5, Trigonometric Equations	p. 636: 11, 15, 19, 25, 39, 41, 57, 59
Tu 5/10	REVIEW FOR THE FINAL	Prepare questions for the review
Th 5/12	REVIEW FOR THE FINAL	Prepare questions for the review
Tu 5/17	REVIEW FOR THE FINAL	Prepare questions for the review