Intermediate Algebra and Trigonometry - MTH 06, Sec. B12 (47545)

Professor: Dr. Luis Fernández
Class times and room: Tu, Th, 9:00 to 11:45, PH 23.
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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 do a lot of work on your own before each class (by reviewing the previous class and looking ahead) and after each class (by making sure that you understood everything and working on the exercises). 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 123 and opens 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:
- *Elementary and Intermediate Algebra*, by S. Barrato and B. Bergman. McGraw Hill, 5th Edition (2nd EDITION OR OLDER IS FINE TOO).
- *Trigonometry*, by M. Corral, Schoolcraft College. Available for free at http://mecmath.net/trig/trigbook.pdf.
- **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: <u>to learn</u>.
- 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.
- 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 classs 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'. **Students with more than 6 absences will not be allowed to take the in-class tests.** Their grade will only be based on the final exam.

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.
- In-class tests and quizzes will not be repeated. The only exception is if the instructor receives notice of the absence (via e-mail, telephone message, friend, etc.) **on the day of the test or quiz at the latest**.

Exams and homework:
- Homework assignments will be done using **WebWork**. Please see the course webpage for instructions. In addition, some weeks there may be a short quiz based on the homework assigned for that week. The grade for **homework and quizzes will count 10%**.
- There will be three **in-class tests** during the term, **each worth 25%** of the final grade. Only the best 2 grades will be considered, **totaling 50%**.
- The **final exam** will count **40%** of the final grade.

Class plan and assigned exercises. MTH 06. Professor Luis Fernández

Use this to prepare each class in advance. Note that dates may change depending on how fast we advance.

DATE		SECTION	EXERCISES
Tu	1/30	7.1 Roots and Radicals	**pp. 560–561:** 1–67 odd, optional 59–77 odd
Th	2/1	7.2 Simplifying Radical Expressions	**p. 573:** 1–73 odd
		7.3 Operations on Radical Expressions	**pp. 584–585:** 1–85 odd
Tu	2/6	7.4 Solving Radical Equations	**pp. 593–595:** 1–9 odd, 15–49 odd, 81–89 odd
Th	2/8	7.5 Rational Exponents	**pp. 603–604:** 1–105 odd
Tu	2/13	7.6 Complex Numbers	**pp. 611–613:** 1–85 odd
Th	2/15	8.1 Solving Quadratic Equations	**pp. 634–639:** 1–81 odd, 89–97 odd, 107–113 odd
Tu	2/20	NO CLASS: CLASSES FOLLOW A MONDAY SCHEDULE	
Th	2/22	8.2 The Quadratic Formula. REVIEW FOR TEST 1.	**pp. 652–654:** 1–83 odd
Tu	2/27	**FIRST IN-CLASS TEST**	
Th	3/1	8.3 An Introduction to Parabolas	**pp. 666–668:** 1–53 odd
Tu	3/6	8.4 Problem Solving with Quadratics	**pp. 678–680:** 1–21 odd, 41–44
Th	3/8	9.1 Simplifying Rational Expressions	**pp. 698–700:** 1–77 odd
Tu	3/13	9.2 Multiplying and Dividing Rational Expressions	**p. 710:** 1–41 odd
Th	3/15	9.3 Adding and Subtracting Rational Expressions	**pp. 722–723:** 1–59 odd
Tu	3/20	9.4 Complex Fractions	**p. 731:** 1–39 odd
Th	3/22	9.6 Solving Rational Equations. REVIEW FOR TEST 2.	**pp. 762–766:** 1–101 odd
Tu	3/27	**SECOND IN-CLASS TEST**	
Th	3/29	10.4 Exponential Functions	**pp. 819–820:** 1–49 odd
Tu	4/3	NO CLASS: SPRING RECESS (3/30 to 4/8)	
Th	4/5	NO CLASS: SPRING RECESS (3/30 to 4/8)	
Tu	4/10	10.5 Logarithmic Functions	**pp. 832–833:** 1–73 odd
Th	4/12	T.S. 1.1. Angles.	**T.S. pp. 5–6:** 1–15 odd.
		T.S. 1.2. Trigonometric Functions of an Acute Angle	**T.S. pp. 12–13:** 1–33 odd.
Tu	4/17	T.S. 1.3. Applications and Solving Right Triangles	**T.S. pp. 20–23:** 1,4,7,14,15,17,19,21,23,27
Th	4/19	T.S. 1.4. Trigonometric Functions of Any Angle	**T.S. p. 31:** 1–39 odd
Tu	4/24	T.S. 1.5. Rotations and Reflections of Angles	**T.S. p. 37:** 1–13 odd
Th	4/26	T.S. 4.1. Radians and Degrees	**T.S. p. 89:** 1–11.
		T.S. 4.2. Arc Length. REVIEW FOR TEST 2.	**T.S. p. 94:** 1–6.
Tu	5/1	**THIRD IN-CLASS TEST**	
Th	5/3	T.S. 5.1. Graphing the Trigonometric Functions	**T.S. p. 108:** 13,14,15
Tu	5/8	T.S. 5.1. Graphing the Trigonometric Functions (cont.)	**T.S. p. 108:** 1–5, 9, 10
Th	5/10	T.S. 3.1. Basic Trigonometric Identities	**T.S. p. 70:** 1,2, 5–15 odd
Tu	5/15	REVIEW FOR THE FINAL	

Note: "T.S." means *Trigonometry Supplement*, available at the yellow webpage.

REMEMBER: The exercises listed correspond to the material that will be covered on the date they are listed.

Before each class, read the section that corresponds to that class and attempt some of the exercises. This way when you hear the explanations in the class you will understand the material much better.