Basic Concepts of Mathematics I - MTH 05, Sec. A02–49128

Professor: Dr. Luis Fernández
Class times and room: Tu, Th, Fr, 08:00 to 09:50, BA207.
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Overview of the course.
This course will provide some basic tools that you will need in your studies in math and sciences. **It is important that you master these tools. You will need them in your next courses.**

Some resources:
- **Classes:** It is essential that you go to class if you want to succeed in this course. You need to go to class if you want to keep up with the fast pace of the course. In addition, in class you have the opportunity to ask questions about any material that you have not understood.
- **Math Tutorial Lab:** In the Math Tutorial Lab there are 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 at CP 303; opens 10am to 8pm Monday through Thursday, 10am to 5pm Friday, and 10am to 3pm Saturday and Sunday.
- **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:
- *MTH 05. Basic Concepts of Mathematics I*, by Uma Iyer. **FREE!! It can be dowloaded at:** http://fsw01.bcc.cuny.edu/mathdepartment/Courses/Math/MTH05/book-mth05v4Su16.pdf

Student's responsibilities
- To use the **resources** available (some are above) to attain the main goal: to learn.
- To have **an active participation** in the class by asking and answering questions.
- 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. If you work on 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. **Students who miss more than 6 classes will automatically receive an F in the course**

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 or tests.
- Calculators are not allowed in this course, either during exams or class time.
- **In-class tests will not be repeated**. The only **exception** is if the instructor receives **notice** of the absence (via e-mail, telephone, message, a friend,...) **on the day of the test or quiz**.

Evaluation: To pass the class with a P (Pass), you will need:
- A final average of **70% or higher in the class**. To calculate the final average,
  - The **CEAFE**[1] counts **35%**.
  - 3 **tests** during the term, each worth 25%. Only the **best 2 grades** will be considered, **totalling 50%**.
  - **Homework and class participation counts 15%**. Weekly homework will be done **online** using **WebWork**.

[1] The final exam for all Elementary Algebra Classes throughout the CUNY system is the CUNY Elementary Algebra Final Examination. It is administered by the testing center and it is taken on a computer. It consists of 25 multiple-choice questions (4 choices per question) and the students have 1:50 min. to complete it.

Class plan and assigned exercises. MTH 05. Professor Luis Fernández

DATE	SECTION	TEXT EXERCISES	WEBWORK
Fr 8/25	1.1 Introduction.	**p. 9:** ALL	HW 01
	1.2 Addition and subtraction of real numbers.	**p. 19–21:** 1–25, ODD exercises	HW 02
Tu 8/29	1.2 Addition and subtraction of real numbers (cont.)	**p. 19–21:** 27–57, ODD exercises	HW 03
Th 8/31	1.3 Multiplication and division of real numbers.	**p. 35-38:** ALL ODD exercises	HW 04
Fr 9/1	1.4 Simple exponents, roots and absolute values.	**p. 49–51:** 1–19, ODD exercises	HW 05
Tu 9/5	1.4 Simple exponents, roots and absolute values (cont.)	**p. 49–51:** 21–39, ODD exercises	HW 05
Th 9/7	2.1 Order of operations.	**p. 55:** ALL	HW 05
	2.2 Evaluating algebraic expressions and functions.	**p. 61–62:** ALL	HW 07
Fr 9/8	2.2 Evaluating algebraic expressions and functions (cont.)	**p. 61–62:** ALL	HW 07
Tu 9/12	3.1 Linear equations.	**p. 76:** 1–17 ALL	HW 09
Th 9/14	3.1 Linear equations (cont.)	**p. 76:** 18–40 ALL	HW 09
Fr 9/15	**TEST 1. Covers from 1.1 to 3.1.**		
Tu 9/19	3.2 Transition to algebra.	**p. 91-93:** ALL ODD exercises	HW 06
Th 9/21	NO CLASS.		
Fr 9/22	NO CLASS.		
Tu 9/26	3.3 Literal equations.	**p. 98-99:** ALL ODD exercises	HW 10
	3.4 Linear inequalities in one variable.	**p. 111-112:** 1–20	HW 13
Th 9/28	4.1 Linear equations in two variables.	**p. 121–122:** ALL	HW 14
Fr 9/29	NO CLASS.		
Tu 10/3	4.2 The cartesian coordinate system.	**p. 124:** 1–7	HW 15
	4.3 The graph of a linear equation.	**p. 128–129:** ALL	HW 16
Th 10/5	4.4 Slope.	**p. 136–137:** ALL	HW 17
	4.5 The point-slope form of the equation of a line.	**p. 144–145:** ALL	HW 18
Fr 10/6	4.6 Graphing linear inequalities in two variables.	**p. 150:** 1–10	HW 19
Tu 10/10	4.7 Solving systems of linear equations.	**p. 161–163:** ALL	HW 20, HW 21
Th 10/12	5.1 Integer exponents.	**p. 166:** ALL	HW 22, HW 23
Fr 10/13	Appendix A. Scientific notation	**p. 253:** ALL	HW 24
Tu 10/17	**TEST 2. Covers from 3.2 to 5.1**		
Th 10/19	5.2 Introduction to polynomials.	**p. 170–171:** ALL	HW 25
Fr 10/20	5.3 Addition and subtraction of polynomials.	**p. 174:** ALL	HW 08
Tu 10/24	5.4 Multiplying polynomials.	**p. 177–178:** ALL ODD exercises	HW 26
Th 10/26	5.5 Division by a monomial.	**p. 179:** ALL	HW 26
Fr 10/27	5.6 Factoring polynomials. 5.6.1: Greatest Common Factor.	**p. 181:** ALL, **p. 193:** 1.	HW 27
Tu 10/31	5.6.2: Factoring by grouping.	**p. 183:** ALL, **p. 193:** 2 (a)–(i).	HW 27
	5.6.3: The standard formulas.	**p. 186–187:** ALL, **p. 194:** 2 (j)–(z)	HW 28
Th 11/2	5.6.4: Monic quadratics.	**p. 189:** ALL, **p. 194:** 3 (a), (b), (c), (g)	HW 29
Fr 11/3	5.6.5: Non-Monic quadratics.	**p. 191:** ALL, **p. 194:** 3 (d)–(o)	HW 29
Tu 11/7	5.7 Solving quadratic equations by factoring.	**p. 197:** ALL	HW 30
Th 11/9	5.8 Solving word problems using quadratic equations.	**p. 200–201:** ALL	HW 30
Fr 11/10	6.1 Roots and radicals. The Pythagorean theorem.	**p. 211–212:** ALL ODD exercises	HW 31, HW 32
Tu 11/14	6.2 Operations on radical expressions.	**p. 220:** ALL	HW 33
Th 11/16	**TEST 3. Covers from 5.2 to 6.2**		
Fr 11/17	6.3 Complex numbers.	**p. 230:** ALL	HW 34
Tu 11/21	7.1 Completing the square and the quadratic formula.	**p. 238:** ALL	HW 35, HW 36
Th 11/23	NO CLASS. Thanksgiving Break.		
Fr 11/24	NO CLASS. Thanksgiving Break.		
Tu 11/28	7.2 Introduction to parabolas.	**p. 248:** ALL	HW 37
Th 11/30	Review. Linear equations and inequalities.		
Fr 12/1	Review. Equations in two variables. Systems of equations.		
Tu 12/5	Review. Equations of lines.		
Th 12/7	Review. Factoring.		
Fr 12/8	Review. Radicals. Quadratic equations.		
Tu 12/12	Review for the CEAFE test.		
Th 12/14	Review for the CEAFE test.		