

MATHEMATICS 14-02, ANALYTIC GEOMETRY AND PRE-CALCULUS MATHEMATICS

1. BASICS

Location: F114

Time: MTWR 9:10-10:10

CUNYFirst Code: 16394

Text: *Precalculus (2nd Edition)*, Author: Ratti and McWaters.

Instructor: Alfred Dolich.

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Office Hours: Tuesday, Wednesday, Thursday 10:20-11:20

Web Page: www.dolich.com

2. COURSE DESCRIPTION

This course is a basic pre-calculus course intended for students who intend to continue on to calculus or other mathematics electives. Topics covered include: function theory, analytic geometry, polynomial and rational functions, exponential and logarithmic functions, trigonometric functions, and the use of a scientific calculator. See the end of the syllabus for a detailed course schedule.

3. ASSESSMENT AND COURSE STRUCTURE:

The course will have four midterms and a final exam. The dates of the midterms are included in the course schedule included in this syllabus. The final exam will be given at the date and time determined by the college. Please note that students will be allowed to use scientific calculators on all tests but will not be allowed to use graphing calculators or telephones. As I intend to assign the homework problems from the textbook it is necessary that all students have access to a textbook. This course also emphasizes the use of a scientific calculator so it is recommended that each student have one although I do not intend on specifying a specific model. I will generally post all announcements made in class (including homework assignments and this syllabus) on the class webpage maintained at my personal site: www.dolich.com. I will be computing final grades according to the following scheme:

Four Midterms Exams 15 % each, Homework 20 %, Final Exam 20 %

Grades will be assigned according to the following scale:

90-100% A, 80-89% B, 70-79% C, 60-69% D, 0-59% E

4. HOMEWORK POLICY

I intend to give weekly homework assignments, typically assigned at some point during the week and collecting roughly a week after being assigned. A list of all assigned homework problems is included with the syllabus. I will assign homework by indicating which sections the problems the assigned problems are to be completed. Failure to complete at least half of all homework assignments will lead to a student's final grade being lowered by two full grades (i.e. were a student earning a B at the end of the semester but they had completed less than half of the homework assignments, they receive a D). A student who fails to hand in more than 75% of the homework automatically fails the course. Also I plan on dropping at least one, maybe two, of the lowest homework grades for the semester (this depends upon how many homework assignments I end up collecting). Also **I ACCEPT NO LATE HOMEWORK**

5. TEST POLICIES

I DO NOT plan on dropping any test scores. There are no makeup tests. A student who misses a test with a written university acceptable excuse (for example a note from your mom does not count) will have the rest of the tests re-weighted in assigning the final grade. For example a student who misses one test with a legitimate excuse will have the three remaining test count 20% each in the final grade, rather than the typical 15 %. A student who misses a test without a written university acceptable excuse receives a 0.

6. ATTENDANCE POLICY

I will take attendance before every class. A student with more than six unexcused absences will automatically have his or her grade lowered by a full letter grade. Further absences will have even more drastic effects on a students grades, I will warn any student prior to this situation arising. Being more than ten minutes late or leaving early without an excuse also qualifies as an absence.

7. OTHER POLICIES

- I will maintain a course web-page at www.dolich.com where I will post any and all relevant announcements from class.
- Attendance: All students are expected to attend class.
- There will be **NO** extra credit given in the class, don't ask.
- **NO** later homework will be accepted whatsoever, I will drop the lowest one or two homework assignments from the final grade calculation.

- Please make sure any cell phones are off during class, wearing headphones of any kind is not permitted in class, if you choose to do so you will be asked to leave and this will count as an unexcused absence.
- All information in the syllabus is subject to change as circumstances warrant. This syllabus does not constitute a contract.
- As your first homework assignment you are required to read, sign, and return this syllabus to me by the end of the week.

8. COURSE SCHEDULE

Day	Topic	Section
1	Real Numbers and their properties	P.1
2	Review: Integer exponents, polynomial	P.2, P.3
3	Review: Factoring Polynomial	P.4
4	Review: Rational expressions	P.5
5, 6	Review: Rational exponents and radicals	P.6
7	Review: Linear equations in one variable	1.1
8,9	Complex numbers	1.3
10,11	Quadratic equations, equations in quadratic form	1.4, 1.5
12	Examination # 1	
13, 14	Linear, polynomial and rational inequalities	1.6, 1.7
15	Equations and inequalities involving absolute	1.7
16	Review: The coordinate plane	2.1
17, 18	Graphs of equations, circles- its standard, canonical, and general form	2.2
19, 20	Lines	2.3
21	Examination # 2	
22-25	Relations and functions, properties of functions, transformations of functions, algebra of functions, injective functions, surjective functions, invertible functions	2.4-2.9
26,27	Polynomial and rational functions	3.1, 3.2
28,29	Synthetic division, the remainder and factor theorem, zeros of polynomials	3.3, 3.4
30	The complex zeros of a polynomial function, the fundamental theorem of algebra, factorization theorem for polynomials	3.5
31-33	Rational functions, vertical asymptotes, horizontal asymptotes, slant asymptotes, graphs of rational functions	3.6
34	Polynomial and rational inequalities	3.7
35	Examination # 3	
36-41	Exponential and logarithmic functions	Chapter 4
42-47	Conic sections: parabola, ellipse, hyperbola	Chapter 10
48	Examination #4	

9. HOMEWORK PROBLEMS

Section	Problems
P.1	47 , 51, 52, 65, 66, 73, 82, 120, 129, 137
P.2	19, 20, 24, 25, 39, 41, 61, 67, 77, 80
P.3	14, 19, 23, 30, 50, 51, 68
P.4	16, 18, 24, 25, 39, 40, 55, 64, 87, 92, 97, 98, 102
P.5	15, 21, 31, 36, 51, 56, 71, 76, 87
P.6	27, 32, 34, 40, 43, 54, 59, 61, 67, 73, 85, 92, 94, 104, 111
1.1	13, 25, 35, 39, 43, 46, 55, 62, 64
1.3	21, 28, 31, 37, 38, 41, 44, 53
1.4	29, 31, 36, 43, 46, 57, 67, 68, 69, 82, 83, 89, 91
1.5	7, 14, 21, 26, 29, 33, 43, 46, 55, 56, 58, 63, 71, 80, 81
1.6	27, 34, 35, 48, 64, 69, 84
1.7	13, 21, 27, 29, 37, 44, 49, 52, 59
2.1	14, 16, 24, 31
2.2	9, 13, 39, 40, 50, 56, 59, 62, 72
2.3	11, 16, 17, 23, 28, 40, 43, 46, 47, 54, 71, 79
2.4	11, 23, 24, 33, 40, 47, 51, 52, 57, 65, 77
2.5	12, 20, 29, 31, 41, 43, 50, 57, 67, 83
2.6	18, 20, 28
2.7	10, 12, 19, 29, 30, 44, 57, 71, 73, 89
2.8	9, 13, 20, 33, 42, 52, 64
2.9	10, 19, 21, 32, 37, 41, 46, 55, 61
3.1	15, 16, 17, 28, 29, 32, 47, 57, 61
3.2	12, 13, 26, 31, 32, 43, 44, 49, 60, 61, 62
3.3	7, 11, 13
3.4	11, 13, 20, 31, 47, 51
3.5	9, 17, 18, 20, 25, 33, 37
3.6	11, 13, 19, 28, 29, 37, 39, 43, 45, 47, 55, 57, 58, 66, 71, 72
3.7	1, 3, 13, 25, 27, 41, 50, 51, 63, 74, 81
4.1	20, 22, 27, 29, 32, 43, 46, 51, 62, 67, 74, 76
4.2	10, 11, 15, 17, 19, 27, 41, 50
4.3	7, 15, 17, 27, 29, 30, 25, 47, 49, 50, 60, 61, 85, 88, 92, 97
4.4	16, 17, 18, 24, 35, 46, 50, 55, 57, 77
4.5	13, 19, 22, 29, 31, 39, 47, 57, 64, 70, 77
10.2	12, 13, 14
10.3	11, 17, 25, 30, 33
10.4	10, 11, 14, 19, 28, 38

10. STUDENT SIGNATURE

I have read and understand this syllabus.

Print Name:

Signature: