PRE-CALCULUS MATHEMATICS
MA154 Sections A and C
Fall 2009

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COURSE INFORMATION
Course Description:
This course will prepare students for Survey of Calculus, MA156, or Calculus, MA157. Topics will include: relations, functions, and graphs; polynomial functions; real and complex zeros of polynomial functions; rational functions; inverse functions; exponential and logarithmic functions, equations, and applications; trigonometric functions, identities, equations, and applications. *Prerequisite: Intermediate Algebra (MA151), Math 11, Course 3 or successful completion of the math placement test. Credits: 4.*

Course Student Learning Outcomes
Students will be able to:
1. solve polynomial or rational, logarithmic or exponential, and trigonometric equations and their applications;
2. graph polynomial or rational, logarithmic or exponential, and trigonometric functions; and
3. solve triangles using the laws of sine and cosine.

Materials:
1. Precalculus courseware by Hawkes Learning Systems
2. Scientific Calculator (I will use the TI-30X IIS.)
   - Graphing calculators are ***not*** allowed.
3. Precalculus, 7th ed., Larson and Hostetler (optional)

Student Responsibilities:
1. Tests
- There will be a test on the following dates: October 2, November 6, and December 11.
  - You will have the entire class period for the test.
  - If you are late, you ***will not*** be given extra time.
  - If you will not be in class for a test, you may take the test ***early*** in my office.
    - I require 24 hours advanced notice.

- – If you miss a test, you will get a 0.
    - ▪ ***There are no make-up tests.***
  - – If there is no school on the day of a test, the test will be given in the next class.
- The tests will be handed back during the next class.
  - – You have one day to correct your test on separate paper for extra credit.
    - ▪ You must redo the entire problem not just correct what you got wrong.
    - ▪ Do not write on the test.
    - ▪ You must turn in the test with the corrections.
    - ▪ The corrections are due at the beginning of class. ***No exceptions***.
  - – I will post the solutions to the ANGEL website after the corrections are collected.
  - – The corrections will be handed back as soon as possible.
- If you miss class, your test and corrections will be available at my office.
  - – After a week, I will discard any unclaimed test and corrections.

2. **Homework**
- Computerized Assignments – Hawkes Learning Systems
  - – The course ID is fmccprc.
  - – The homework assignments can be obtained in the WebTest tab.
    - ▪ You must answer all questions and submit the assignment.
    - ▪ The assignment will be graded.
    - ▪ You can then review the assignment to see the correct solutions and how the correct solutions were obtained.
    - ▪ If you are not happy with the score, you can do the assignment as often as you wish and the best score will be used.
  - – I recommend reviewing the "Instruct" and "Practice" in the corresponding section before doing the assignment.
  - – Homework assignments will be due at the beginning of the second class meeting after it is assigned at the start of class.
    - ▪ The software does not allow late homework.
  - – I will review your best attempt and may give partial credit.
  - – If you don't do an assignment, you will get a 0.
- Supplemental Assignments
  - – I will create worksheets for material not covered in the computerized assignments.
    - ▪ I expect to see all work and will not give credit for just answers.
    - ▪ These assignments will be due at the beginning of the second class meeting after it is assigned at the start of class. ***No exceptions.***
  - – These assignments will be posted on the ANGEL website.
  - – If you don't do an assignment, you will get a 0.
  - – I will post the solutions to the ANGEL website after the assignment is collected.
  - – The worksheet will be handed back as soon as possible.
  - – If you miss class, your worksheet will be available at my office.
    - ▪ After a week, I will discard any unclaimed worksheet.

3. Final
- The final exam is cumulative and is tentatively scheduled for December 18 at 8 am.
    - The final exam grade can lower your overall grade.

Course Content & Outline:
1. *FUNCTIONS AND THEIR GRAPHS*
    1. Rectangular Coordinates
    2. Graphs of Equations
    3. Linear Equations in Two Variables
    4. Functions
    5. Analyzing Graphs of Functions
    6. A Library of Parent Functions
    7. Transformations of Functions
    8. Combinations of Functions: Composite Function
    9. Inverse Functions
    10. Mathematical Modeling and Variation
2. *POLYNOMIAL AND RATIONAL FUNCTIONS*
    1. Quadratic Functions and Models
    2. Polynomial Functions of Higher Degree
    3. Polynomial and Synthetic Division
    4. Complex Numbers
    5. Zeros of Polynomial Functions
    6. Rational Functions
    7. Nonlinear Inequalities
3. *EXPONENTIAL AND LOGARITHMIC FUNCTIONS*
    1. Exponential Functions and Their Graphs
    2. Logarithmic Functions and Their Graphs
    3. Properties of Logarithms
    4. Exponential and Logarithmic Equations
    5. Exponential and Logarithmic Models
4. *TRIGONOMETRY*
    1. Radian and Degree Measure
    2. Trigonometric Functions: The Unit Circle
    3. Right Triangle Trigonometry
    4. Trigonometric Functions of Any Angle
    5. Graphs of Sine and Cosine Functions
    6. Graphs of Other Trigonometric Functions
    7. Inverse Trigonometric Functions
    8. Applications and Models
5. *ANALYTIC TRIGONOMETRY*
    1 Using Fundamental Identities
    2 Verifying Trigonometric Identities
    3 Solving Trigonometric Equations
    4 Sum and Difference Formulas
    5 Multiple-Angle and Product-to-Sum Formulas
6. *ADDITIONAL TOPICS IN TRIGONOMETRY*
    1. Law of Sines
    2. Law of Cosines

Grading Method and Scale:
Tests   45%
Homework   30%
Final   25%

A	A-	B+	B	B-	C+	C	D	F
94-100	90-93	87-89	84-86	80-83	77-79	70-76	60-69	0-59

ESSENTIAL POLICIES
Attendance:
- Attendance is an important part of the learning process and will be taken daily.
  – As such, you ***should*** attend the full class every day.
- Except for extenuating circumstances, I will be in class every day.
- If you miss class, it is your responsibility to get any missed work.

Academic Integrity:
- Academic integrity refers to a code of values that support and direct the education process. This code is based on legal, ethical, and educational concerns. Education in large part consists of the acquisition and demonstration of knowledge according to acceptable standards. Students must be familiar with these standards and will be held accountable for their use. Not being familiar with these standards is not an excuse for their breach.
- Cheating will not be tolerated.
  – If you cheat on an assignment, you will receive a 0 for that assignment.
  – Your class average will be decreased 10 points per occurrence.

Students With Disabilities:
- Fulton-Montgomery Community College is committed to providing reasonable accommodations, including core services, to qualified students with disabilities. For additional information or to register for services, go to: http://fmcc.suny.edu/index.php/Future_Students/11/category/students_with_disabilities/

Cell Phones and Laptops:
- Cell phones are ***not*** to be used during class for any purpose.
  – Each time I see you using it, you will use lose 2 points off your final average for the class. I will not give any warnings nor will I notify you of the deduction.
- Laptops are ***not*** to be used in during class.
  – If there is a documented reason why you need one, you must first provide the documentation.

COMMON COURTESIES
1. Talk with your friends before or after not during class.
   – You will get 1 warning and then I will separate you for the rest of the semester.
2. No headphones (or the like) are to be worn in class.