Spring 2010
Title of course: Precalculus (MAT 206-123)
Credits: 4
Instructor: Marcos Zyman
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Course description: This course covers basic algebraic and trigonometric skills, graphing algebraic and transcendental functions, and analytic trigonometry.

Prerequisites: Intermediate algebra and trigonometry (MAT 056) or the equivalent with departmental approval.


Grading: There will be frequent quizzes, 3 tests, and a final exam. I will drop the lowest of the 3 tests. NO MAKEUPS will be given, (except for a documented medical emergency). Homework will be assigned but not collected. All quizzes and tests will be based on the homework. Keep in mind that doing every assigned problem is the key to learning the material, and ultimately doing well in this course. No extra projects will be given during or after the course. Your grade will be computed as follows. Average of tests: 55 %, final exam: 40 %, quizzes: 5 %.

Attendance: You are required to attend every class. According to BMCC policy the maximum number of absences is limited to one more than the hours a class meets in one week (in our case this is 5 hours, not 5 classes). In case of excessive absences I have the option to lower your grade or assign a WU at the end of the semester.

Course outline:
Review of fundamental concepts of algebra (App. A)
A.1 Real numbers and their properties A1-A10
A.2 Exponents and radicals A11-A22
A.5 Solving equations A46-A59
A.6 Solving inequalities in one variable A60-A69
Functions and their graphs
1.1 Rectangular coordinates pp. 2-13
1.2 Graphs of equations  pp. 4-24
1.3 Linear equations in two variables  pp. 35-39
1.4 Functions  pp. 40-53
1.5 Analyzing graphs of functions  pp. 54-65
1.6 A library of parent functions  pp. 66-73
1.7 Transformations of functions  pp. 74-83
1.8 Combinations of functions: composite functions  pp. 84-92
1.9 Inverse functions  pp. 93-102

**Polynomial and rational functions**

2.1 Quadratic functions  pp. 128-138
2.2 Polynomial functions of higher degree  pp. 139-152
2.3 Polynomial and synthetic division  pp. 153-161
2.4 Complex numbers  pp. 162-168
2.5 Zeros of polynomial functions  pp. 169-183
2.6 Rational functions  pp. 184-196
2.7 Partial fractions  pp. 533-538

**Exponential and logarithmic functions**

3.1 Exponential functions and their graphs  pp. 218-228
3.2 Logarithmic functions and their graphs  pp. 229-238
3.3 Properties of logarithms  pp. 239-245
3.4 Exponential and logarithmic equations  pp. 246-256

**Trigonometry**

4.1 Radian and degree measure  pp. 282-293
4.2 Trigonometric functions: the unit circle  pp. 294-300
4.3 Right triangle trigonometry  pp. 301-311
4.4 Trigonometric functions of any angle  pp. 312-320
4.5 Graphs of sine and cosine functions  pp. 321-331
4.6 Graphs of other trigonometric functions  pp. 332-342
4.7 Inverse trigonometric functions  pp. 343-352

**Analytic trigonometry**

5.1 Using fundamental identities  pp. 374-381
5.2 Verifying trigonometric identities  pp. 382-388
5.3 Solving trigonometric equations  pp. 389-399
5.4 Sum and difference formulas  pp. 400-406