

Department of Mathematics

Title of Course: Precalculus

Course: MAT 206

Semester:

Credits: 4

Class hours: 4

Lab hours (if applicable):

Instructor:

Tel#:

Office:

Email:

Course Description: This course covers basic algebraic and trigonometric skills, graphing algebraic and transcendental functions and Analytic Trigonometry

Prerequisites/Co-requisites: Intermediate Algebra and Trigonometry (MAT 056) or the equivalent with the departmental approval.

Student Learning Outcomes:

- 1) Students will be able to graph, interpret, and analyze linear, quadratic, and other higher order polynomial functions.
- 2) Students will understand quadratic and rational functions and the properties associated with their graphs.
- 3) Students will be familiar with transcendental functions, their respective graphs, and properties.
- 4) Students will be able to verify trigonometric identities and solve trigonometric equations.

Required Text: Precalculus, seventh edition; Roland E. Larson & Robert P. Hostetler; Houghton Mifflin Company, Boston, Massachusetts, 2004

Other Resources: Houghton Mifflin, EDUSPACE

Evaluation & Requirements of Students: At the beginning of the semester, the instructor will advise the student of the determination of the final grade, which will be based on class work, tests, and the final examination. Students are required to attend all scheduled classes.

Outline of Topics:

TOPICS	TEXT PAGES
REVIEW OF FUNDAMENTAL CONCEPTS OF ALGEBRA (Appendix A)	
A.1 Real Numbers and Their Properties	A1 – A10
A.2 Exponents and Radicals (OPTIONAL: Exponents & the Calculator)	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	2 - 13
1.2 Graphs of Equations	4 – 24
1.3 Linear Equations in Two Variables	25 – 39
1.4 Functions	40 – 53
1.5 Analyzing Graphs of Functions	54 – 65
1.6 A Library of Parent Functions	66 – 73
1.7 Transformations of Functions	74 – 83
1.8 Combinations of Functions: Composite Functions	84 – 92
1.9 Inverse Functions	93 – 102
1.0 Mathematical Modeling and Variation	103 – 114
POLYNOMIAL AND RATIONAL FUNCTIONS	
2.1 Quadratic Functions	128 – 138
2.2 Polynomial Functions of Higher Degree	139 – 152
2.3 Polynomial and Synthetic Division	153 – 161
2.4 Complex Numbers	162 - 168
2.5 Zeros of Polynomial Functions	169 - 183
2.6 Rational Functions	184 - 196
7.4 Partial Fractions	533 – 538
EXPONENTIAL AND LOGARITHMIC FUNCTIONS	
3.1 Exponential Functions and Their Graphs	218 – 228
3.2 Logarithmic Functions and Their Graphs	229 – 238
3.3 Properties of Logarithms	239 – 245
3.4 Exponential and Logarithmic Equations	246 – 256
TRIGONOMETRY	
4.1 Radian and Degree Measure	282 – 293
4.2 Trigonometric Functions: The Unit Circle	294 – 300
4.3 Right Triangle Trigonometry	301 - 311
4.4 Trigonometric Functions of Any Angle	312 – 320
4.5 Graphs of Sine and Cosine Functions	321 – 331
4.6 Graphs Other Trigonometric Functions	332 – 342
4.7 Inverse Trigonometric Functions	343 – 352

TOPICS (continued)	TEXT PAGES
ANALYTIC TRIGONOMETRY	
5.1 Using Fundamental Identities	374 – 381
5.2 Verifying Trigonometric Identities	382 – 388
5.3 Solving Trigonometric Equations	389 – 399
5.4 Sum and Difference Formulas	400 - 406

College Attendance Policy

At BMCC, the maximum number of absences is limited to one more hour than the number of hours a class meets in one week. For example, you may be enrolled in a three-hour class. In that class, you would be allowed 4 hours of absence (not 4 days). In the case of excessive absences, the instructor has the option to lower the grade or assign an F or WU grade.

Academic Adjustments for Students with Disabilities

Students with disabilities who require reasonable accommodations or academic adjustments for this course must contact the Office of Services for Students with Disabilities. BMCC is committed to providing equal access to all programs and curricula to all students.

BMCC Policy on Plagiarism and Academic Integrity Statement

Plagiarism is the presentation of someone else's ideas, words or artistic, scientific, or technical work as one's own creation. Using the idea or work of another is permissible only when the original author is identified. Paraphrasing and summarizing, as well as direct quotations, require citations to the original source. Plagiarism may be intentional or unintentional. Lack of dishonest intent does not necessarily absolve a student of responsibility for plagiarism.

Students who are unsure how and when to provide documentation are advised to consult with their instructors. The library has guides designed to help students to appropriately identify a cited work. The full policy can be found on BMCC's web side, www.bmcc.cuny.edu. For further information on integrity and behavior, please consult the college bulletin (also available online).