BERGEN COMMUNITY COLLEGE
SCHOOL OF MATHEMATICS, SCIENCE AND TECHNOLOGY
DEPARTMENT OF MATHEMATICS

COURSE SYLLABUS

MAT-180 PRECALCULUS: COLLEGE ALGEBRA AND TRIGONOMETRY

COURSE DESCRIPTION: Precalculus is a study of coordinate geometry, functions and graphing, polynomial and rational functions, exponential, logarithmic, trigonometric, and inverse trigonometric functions; analytic geometry, and applications.

CREDITS/HOURS: 4 credits   4 hours

PREREQUISITE: MAT-160 with a grade of C better or by proficiency examination

GEN'L ED COURSE: Yes

STUDENT LEARNING OBJECTIVES:

Upon successful completion of this course the student will be able to:

1. Solve polynomial and rational equations and inequalities.
2. Solve exponential and logarithmic equations.
3. Evaluate trigonometric functions.
4. Verify trigonometric identities.
5. Solve trigonometric equations.
6. Solve and find areas of triangles using trigonometric formulas.
7. Analyze graphs of trigonometric and inverse trigonometric functions.
8. Graph constant, linear, absolute value, square root, polynomial, rational exponential, logarithmic, and trigonometric functions.
9. Solve real-world applications using various functions such as: linear, rational, exponential, logarithmic, and trigonometric.

ASSESSMENT MEASURES: Each of the above listed student learning objectives will be assessed by,
1. Written assignments and/or quizzes.
2. Written examinations
3. Other, as announced by the instructor

NOTE: **A <u>COMPREHENSIVE</u> <u>DEPARTMENTAL</u> FINAL EXAMINATION WILL COUNT 25% OF THE COURSE GRADE.** To be eligible to take the final exam, a student must have passed at least <u>one</u> in class exam OR have at least a 50% average on the in class exams that the student completed according to the instructor's exam policy.

COURSE GRADE: Students should refer to the instructor's grading policy which will be distributed during the first meeting of the class.

TEXTBOOK: <u>Precalculus: A Concise Course</u>, 2nd ed., 2011, Larson; Houghton Mifflin Company

COURSE CONTENT:

TOPIC	CHAPTER	SECTIONS
Bounded and Unbounded Intervals, the piecewise definition of Absolute Value (Online)	Appendix	A.1 (Stress Ex. 4,page A4 and problems 47, 48)
Solving Inequalities, Some Algebra of Calculus (Online)	Appendix	A.6 (pages A64 - A65), A.7 (pages A70 - A74)
Functions and their Graphs	1	1.1 (pages 7 and 8), 1.2 (pages 18 and 19), 1.4 - 1.9
Polynomials and Rational Functions	2	2.1 - 2.7
Exponential and Logarithmic Functions	3	All
Trigonometry	4	All
Analytic Trigonometry	5	All

NOTE: Functions, exponential functions, and logarithmic functions are introduced in MAT-160, Intermediate Algebra. Because of their importance, they are also included and extended here. Emphasis should be placed on the new material.

REFERENCES:
1. Student Solutions Manual to accompany required textbook.
2. College Algebra, Spiegel, Schaum's Outline Series, McGraw- Hill
3. Trigonometry, Ayres, Schaum's Outline Series, McGraw-Hill
4. Precalculus, 6th ed., Cohen, Brooks Cole Publishing
5. Precalculus, 7th ed., Sullivan, Pearson Education

ELECTRONIC DEVICES: **The Department of Mathematics prohibits the use of cell-phones, PDA's, laptops, headphones, IPODs and other such devices in mathematics classes unless otherwise specified in the grade policy provided by the instructor at the beginning of the semester.**

FACULTY ABSENCE PROCEDURE: "CLASS CANCELLATIONS" may be found by clicking on the bottom of the Bergen Community College website, www.bergen.edu. A list is also posted in a glass case near A-129, the main corridor on the first floor and in Ender Hall. Students may consult these listings before going to class. If a cancelled class is not listed, it should be reported to the Dean's Office (A-325) or the Evening Office (L-113).

WEBSITE: Go to www.bergen.edu/math for more information regarding the Mathematics Department.