BERGEN COMMUNITY COLLEGE
DIVISION 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

GENERAL EDUCATION 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.**

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

TEXTBOOK: **Precalculus: with CalcChat® and CalcView®**, 10th Edition, Larson, Cengage Learning Publisher.

COURSE CONTENT:

TOPIC	CHAPTER	SECTIONS
Bounded and Unbounded Intervals, the piecewise definition of Absolute Value (Online)	Appendix	A.1 (Stress Ex. 8, page A5 and problems 37, 38)
Solving Inequalities, Some Algebra of Calculus (Online)	Appendix	A.6 (pages A61 - A62), A.7 (pages A69 - A71)
Functions and their Graphs	1	1.1 (page 7), 1.2 (pages 14-16), 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 6	All 6.1-6.2

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 at http://www.bergen.edu/classcancellations A list is also posted in a glass case near A-129, the main corridor on the first floor and in Ender Hall. If a cancelled class is not listed, it should be reported to the Mathematics Department Office or the Adjunct Office (C-107).

WEBSITE: Go to http://www.bergen.edu/academics/academic-divisions-departments/mathematics for more information regarding the Mathematics Department.

STUDENT SUPPORT SERVICES:

Learning Assistance Center	Room: L-125	879-7489
Math and Science Walk-In	Room: L-131	879-7489
Office of Specialized Services	Room: L-115	612-5269