MASTER COURSE OUTLINE

Prepared By: Date: September 2017

COURSE TITLE

Precalculus I

GENERAL COURSE INFORMATION

Dept.: MATH&   Course Num: 141   (Formerly: MATH 151)
CIP Code: 27.0102   Intent Code: 11   Program Code:
Credits: 5
Total Contact Hrs Per Qtr.: 55
Lecture Hrs: 55   Lab Hrs: 0   Other Hrs: 0
Distribution Designation: Math Science MS, Symbolic or Quantitative Reasoning SQR

COURSE DESCRIPTION (as it will appear in the catalog)

This course will present the following concepts: college level algebra, introduction to functions and graphing, the graphs and properties of polynomial, rational, radical, exponential and logarithmic functions.

PREREQUISITES

MATH 099

TEXTBOOK GUIDELINES

College level text or worksheets at the discretion of the instructor

COURSE LEARNING OUTCOMES

Upon successful completion of the course, students should be able to demonstrate the following knowledge or skills:

1.   Simplify expressions of several variables.
2.   Apply appropriate methods to solve complex equations.
3.   Apply transformations to graphs and relations.

INSTITUTIONAL OUTCOMES

IO2 Quantitative Reasoning: Students will be able to reason mathematically.

COURSE CONTENT OUTLINE

1.   College Algebra
      a.   Manipulate expressions (exponents, radicals, factoring, rationals, complex numbers, complete the square)
      b.   Solve equations (radicals, quadratics, linear formulas, absolute value)
2.   Functions and Graphs
      a.   Function notation and domain
      b.   Algebra of functions
      c.   Inverse functions
      d.   Graphs with transformations of functions

3. Common Functions and Properties
    a. Square root (graphs and translations)
    b. Polynomial (graph, synthetic division, real zeros, complex zeros, fundamental theorem of algebra)
    c. Rational (graphs and asymptotes, partial fractions)
4. Exponents and Logarithms
    a. Simplify and solve exponential equations (including natural base)
    b. Use the properties of logarithms to simplify expressions and solve equations
    c. Applications of logarithms and exponents

DEPARTMENTAL GUIDELINES *(optional)*
In order to give the instructor the greatest flexibility in assigning a grade for the course, grades will be based on various instruments at the instructor's discretion. However, to maintain instructional integrity there must be four class exams (including a final) or three class exams and a project (a project may be substituted for the final). At least 60% of the grade will be based on quantifiable work (exams, homework, quizzes, etc.). The remaining portion of the grade may be based on non-quantifiable work, attendance, projects, journal work, etc., at the instructor's discretion.

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DIVISION CHAIR APPROVAL   **DATE**