MASTER COURSE OUTLINE

Prepared By: Date: November 14, 2018

COURSE TITLE
Precalculus II

GENERAL COURSE INFORMATION

Dept.: MATH&   Course Num: 142   (Formerly: MATH 152)
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)
In preparation for calculus this is a comprehensive study of trigonometry, circular functions, right triangle
trigonometry, analytical trigonometry. Sequences, series and induction are also covered.

PREREQUISITES
MATH& 141 or concurrent enrollment in MATH& 141

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. Apply trigonometric functions to the solution of triangles and application problems
2. Manipulate trigonometric functions to prove identities and solve equations
3. Employ summations, sequences, and series in mathematical induction

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

COURSE CONTENT OUTLINE
1. Trigonometry
    a. Angles and their measure
    b. Right triangles and trigonometric functions
    c. Trigonometric functions of real numbers
    d. Graphs of sine and cosine
    e. Graphs of other trigonometric functions
    f. Additional graphing techniques
    g. Applications of trigonometry
2. Analytic Trigonometry

      a. Applications of the fundamental identities
      b. Verifying trigonometric identities
      c. Solving trigonometric equations
      d. Sum and difference formulas
      e. Multiple-angle formulas and product-sum formulas
3. Additional applications of trigonometry
      a. Law of sines and cosines
      b. Trigonometric form of complex numbers
      c. DeMoivre's theorem and nth roots
      d. Volumes and areas
      e. Hyperbolic trigonometric functions (optional)
4. Sequences and Series
      a. Sequences and summation notation
      b. Arithmetic sequences and series
      c. Geometric sequences and series
      d. Mathematical induction

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**