MATH 1080

Division: Natural Science and Mathematics
Department: Mathematics
Course: MATH 1080
Title: Pre-Calculus
Catalog Description:

An axiomatic development of the real number system, logarithms, systems of equations, complex numbers, theory of equations, matrices, progressions, and the binomial theorem to include a study of circular and triangular trigonometry. Graphing calculator required.

General Education Requirements: Math
Semesters Offered: Fall, Spring
Credit/Time Requirement: Credit: 5; Lecture: 5; Lab: 0
Clock/Hour Requirements: 0
Offered for Non-Credit: No
Prerequisites: A grade of B in Math 1010 or equivalent or an Math ACT of 25 or a C or better in Math 1050 or equivalent.

Justification:

Math 1080 is the college algebra/trigonometry course providing the material for many students in their various majors. It also fulfills General Education Requirements. It is similar to courses offered by the other colleges and universities in the state. This course is also a useful semester long review for good students returning to school after an extended period of time.

Student Learning Outcomes:

Upon successful completion of this course, students will:

- know and understand the relevant theorems used in this course that allow them to complete problem solutions
- be able to manipulate all facets of the complex number system in arithmetic, algebraic and trigonometric systems
- be able to use the principles of analysis found in the theory of equations to continue in the study of calculus
- develop understanding and recognition of applications of mathematics in various sciences

Content:

This course will include:Functions and graphing of:polynomial, rational, exponential and logarithmic equations, and non-function exploration of conics.Trigonometric functions to include: analysis and applications in various number systems.Discussion of sequences and series and an introduction to probability.

General Education Outcomes:

6) Apply computational skills to a variety of contexts.
Homework exercises and exam problems require computational skills in a variety of theoretical and applied situations. Students receive feedback on graded homework and exams to improve their understanding and ability.

Key Performance Indicators:

- weekly quizzes (short answers): 0%-20% of the final grade
- examinations: 40%-60% of the final grade
- 1 final examination: 15%-20% of the final grade
- daily home work assignments: 5%-20% of the final grade
- student presentations in class: 0%-10% of the final grade

Representative Text and/or Supplies:

- Sullivan, *Precalculus,* current edition.

--or similar text

Optimum Class Size: 25
Maximum Class Size: 36

Signatures:

I hereby submit this course syllabus:

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Jonathan Bodrero, M.S., Assistant Professor

I hereby find this course consistent with the goals and resources of the Mathematics Department:

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Kari Arnoldsen, PhD, Professor, Chair

I hereby find this course consistent with the goals and resources of the Natural Science and Mathematics Division:

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Dan Black, EdD, Associate Professor, Dean

I have discussed the need for library resources related to this class with the person submitting the syllabus:

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Lynn Anderson, MLIS, Technical Services Librarian (Main Campus)

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Michelle Olsen, MLS, Campus Librarian (Richfield Campus)