Bemidji State University

MATH 4410: Introduction to Analysis

A. COURSE DESCRIPTION
   Credits: 3
   Lecture Hours/Week: 0
   Lab Hours/Week: 0
   OJT Hours/Week: *
   Prerequisites: None
   Corequisites: None
   MnTC Goals: None
   Functions, sequences, and properties of limits. Topics from calculus including continuity, differentiation, and integration. Open and closed sets, cluster points, and other topological properties. Prerequisites: MATH 2210 and MATH 2472.

B. COURSE EFFECTIVE DATES: 07/31/2012 - Present

C. OUTLINE OF MAJOR CONTENT AREAS
   1. Real Numbers: Field axioms and the Completeness Axiom
   2. Sequences of real numbers; convergence/divergence
   3. Limits and continuity of real-valued functions
   4. Differentiation and Integration
   5. Topics from topology

D. LEARNING OUTCOMES (General)
   1. develop a deeper understanding of the set of real numbers and various limit expressions.
   2. analyze the structure of the real number system and logical underpinnings of calculus.
   3. apply the Mean Value Theorem and the Fundamental Theorem of Calculus.
   4. continue to develop skills both in analytical thinking and in the writing of proofs.
   5. effectively communicate mathematical ideas and understanding.
   6. exhibit advanced communication skills in both classroom discussions and their written work.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies
   None

F. LEARNER OUTCOMES ASSESSMENT
   As noted on course syllabus

G. SPECIAL INFORMATION
   None noted