Alexandria Technical and Community College

MATH 2232: Calculus II

A. COURSE DESCRIPTION
   Credits: 4
   Lecture Hours/Week: 4
   Lab Hours/Week: 0
   OJT Hours/Week: 0
   Prerequisites:
   This course requires the following prerequisite
   MATH 1426 - Calculus I
   Corequisites: None
   MnTC Goals: Goal 04 - Mathematical/Logical Reasoning
   This course is the second in a sequence of courses. Topics include techniques of differentiation and integration, applications of integration, transcendental functions, sequences and series, the polar coordinate system, and parametric curves.

B. COURSE EFFECTIVE DATES: 11/16/2020 - Present

C. OUTLINE OF MAJOR CONTENT AREAS
   1. Differentiate exponential and logarithmic functions.
   2. Integrate exponential and logarithmic functions.
   3. Integrate trigonometric functions.
   4. Apply the Fundamental Theorem of Calculus.
   5. Integrate by substitution.
   6. Calculate the area between curves using integration.
   7. Integrate expressions using integration by parts, trigonometric substitution, partial fraction
   8. Evaluate improper integrals.
   10. Evaluate convergence/divergence of series.
   11. Determine whether a sequence converges.
   12. Find Taylor and Maclaurin polynomial approximations of elementary functions.

D. LEARNING OUTCOMES (General)
   1. Illustrate historical and contemporary applications of mathematical/logical systems.
   2. Clearly express mathematical/logical ideas in writing.
   3. Apply higher-order problem-solving and/or modeling strategies.
   4. Employ creativity and effective problem-solving skills in a variety of mathematical contexts.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies
   Goal 04 - Mathematical/Logical Reasoning
   1. Illustrate historical and contemporary applications of mathematical/logical systems.
   2. Clearly express mathematical/logical ideas in writing.
   3. Apply higher-order problem-solving and/or modeling strategies.
F. LEARNER OUTCOMES ASSESSMENT
   As noted on course syllabus

G. SPECIAL INFORMATION
   None noted