Math 232 Goals and Description Fall 2011

Goals of the Course

- To develop an understanding of the logical structure and style of mathematics by:

  (a) Using reason in an orderly, cogent fashion.

  (b) Writing clear, well organized solutions to problems.

  Structure refers to the foundations of mathematics and to the techniques used to build on those foundations. Style refers to the clarity, elegance, efficiency, and precision desirable in mathematical expression.

- To develop ability to use mathematical tools to solve problems and to transfer this knowledge to analogous situations by:

  (a) Using algebra, limits, and derivatives to classify properties of exponential, logarithmic, trigonometric, and inverse trigonometric functions.

  (b) Using integration to solve problems involving areas, volumes, and lengths, and physics problems.

- To develop computational skills such as:

  (a) Solving equations and inequalities involving exponential and trigonometric functions.

  (b) Approximating Riemann sums and using integration techniques to calculate definite and indefinite integrals.

- To develop an understanding of the theory of calculus and algebraic structures by knowing:

  (a) The theory of exponential and logarithmic functions and their properties, and the unit circle definitions and properties of trigonometric and inverse trigonometric functions.

  (b) The definitions of Riemann sums and definite and indefinite integrals, and how they are related by the Fundamental Theorem of Calculus.

Nature of the Course Content

MATH 232. Calculus with Functions II. 4 Credits. Offered fall and spring. A continuation of MATH 231. Calculus topics include limits and derivatives of transcendental functions, the theory of integration and basic integration techniques. *Prerequisite: MATH 231 with a grade of C- or better. NOTE: MATH 231-232 together are equivalent to MATH 235 for all prerequisites. Not open to students who have already earned credit in MATH 235.*