

Youngstown State University  
Department of Mathematics and Statistics

Course Outline for Math 1513

Course Title: Algebraic and Transcendental Functions

Course Credit: 5 s.h.

Text: J. Douglas Faires, James DeFranza, PRECALCULUS, 4<sup>th</sup> ed., Brooks / Cole

Prerequisite: At least Level 4 on the Mathematics Placement Test and high school geometry, or Math 1504.

Course Description: Function concepts including trigonometric, exponential and logarithmic functions.  
Application problems and supplemental precalculus topics.

Course Objectives:

1. To gain complete familiarity with the function concept as well as to learn particular features of the most important standard functions in mathematics.
2. To strengthen one's overall understanding of the skills related to algebra and geometry.
3. To prepare for taking calculus, physics, and introductory engineering courses.

CHAPTERS

1 - 3 Algebraic Functions

TOPICS

Real line (interval and set notation), coordinate plane, equations and graphs, functions, linear functions, quadratic functions, polynomial functions, rational functions, complex numbers, composition of functions, inverse functions.

4 Trigonometric and Inverse  
Trigonometric Functions

Geometric prerequisites, trigonometric definitions, right triangle problem solving, circular functions and graphing, inverse trigonometric functions, law of sines, law of cosines, identities, and trigonometric equation solving.

5 Exponential and  
Logarithmic Functions logarithms

Review of exponents, exponential functions,  
and logarithmic functions, Applications

6 Conic Sections

Parabolas, ellipses, and hyperbolas in rectangular coordinates

Evaluation of Student Learning: Tests, quizzes, graded homework, and/or other means. See instructor's grading policy for details.

**Students with Disabilities:** In accordance with University procedure, if you have a documented disability and require accommodations to obtain equal access in this course, please contact the Office of Equal Opportunity and Disability Services at the beginning of the semester or when given an assignment for which an accommodation is required. Students with disabilities must verify their eligibility through the Office of Disability Services in Wick House (330) 941-1372 intake procedure.

**Need Help? Stop in the Mathematics Assistance Center, 3090 Cushwa Hall for free services.**

Semester: Spring 2007

Last Day to Withdraw with a "W": Thursday, March 29, 2007