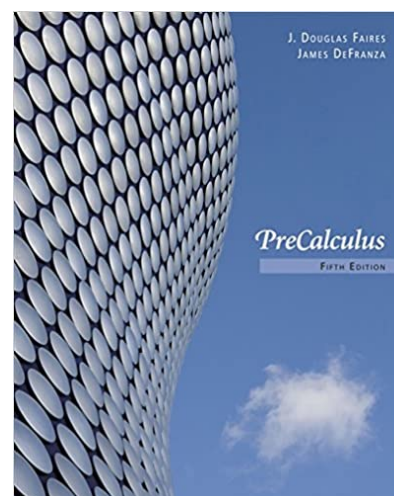


**Course Description:** This course provides students with the background necessary for the study of calculus. Includes a review of algebra, trigonometry, exponential and logarithmic functions, coordinates and graphs. Each of these tools is introduced in its cultural and historical context. The concept of the rate of change of a function will be introduced.

**Text:** *PreCalculus, 5<sup>th</sup> Edition*, Faires & DeFranza, 2010:  
ISBN-13: 978-0840068620  
ISBN-10: 084006862X

## Course Topics

- **Prerequisites**
- **Functions**
  - 1.1 Introduction
  - 1.2 The Real Line
  - 1.3 The Coordinate Plane
  - 1.4 Equations and Graphs
  - 1.5 Using Technology to Graph Equations
  - 1.6 Functions
  - 1.7 Quadratic Functions
- **New Functions from Old**
  - 2.1 Introduction
  - 2.2 Other Common Functions
  - 2.3 Arithmetic Combinations of Functions
  - 2.4 Composition of functions
  - 2.5 Inverse Functions
- **Algebraic Functions**
  - 3.1 Introduction
  - 3.2 Polynomial Functions
  - 3.3 Finding Factors and Zeros of Polynomials
  - 3.4 Rational Functions
  - 3.5 Other Algebraic Functions
  - 3.6 Complex Roots of Polynomials
- **Trigonometric Functions**
  - 4.1 Introduction
  - 4.2 Measuring Angles
  - 4.3 Right-Triangle Trigonometry
  - 4.4 The Sine and Cosine Function
  - 4.5 Graphs of the Sine and Cosine Functions
  - 4.6 Other Trigonometric Functions
  - 4.7 Trigonometric Identities
  - 4.8 Inverse Trigonometric Functions



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- 4.9 Additional Trigonometric Applications
  
- **Exponential and Logarithm Functions**
  - 5.1 Introduction
  - 5.2 The Natural Exponential Function
  - 5.3 Logarithm Functions
  - 5.4 Exponential Growth and Decay