MATH 22200 : Calculus for Technology
Course Syllabus

General Information

Text: Peter Kuhfittig, Technical Calculus with
Analytic Geometry, 5th Edition

Calculator: Calculator is not necessary and hence not allowed
for quizzes, tests and the Final Exam

Prerequisites: Math 22100 with a grade C- or higher

Additional information can be found on the Math Home Page
http://www.math.iupui.edu

This course has a DEPARTAMENTAL FINAL EXAM

Course Objective

The objective of Math 22200 is to provide a solid, practical, working
knowledge of calculus and its applications to various scientific and technical
fields.

Course Outline:

1. Derivatives of the logarithmic function and the exponential functions
   (as a REVIEW of Math 22100)
2. L'Hopital Rule and other Applications
3. Integration by Standard forms
   a. The general power formula
   b. The logarithmic form
   c. The exponential form
   d. Basic trigonometric forms
   e. Other trigonometric forms
   f. Inverse trigonometric forms
4. Methods of Integrations
   a. Integration by parts
   b. Integration by substitution
   c. Integration by trigonometric substitution
   c. Integration of rational functions
5. Expansion of functions in series
   a. Infinite series, Maclaurin series
   b. Certain operations with series
c. Computations by use of series
d. Taylor’s series
e. Fourier series
6. First-order differential equations
   a. Solution of Differential equations
   b. Separation of variables
c. The linear differential equations of the first order
d. Applications
7. Higher-order differential equations
   a. Higher-order homogeneous equations
   b. Second-order homogeneous equations
c. Repeated or complex roots
d. Nonhomogeneous equations
e. Applications
8. Laplace’s method of solving differential equations