

## COURSE SYLLABUS (2 Page)

**Course Number:** MATH 1242

**Course Name:** Calculus II

**Credits and Contact Hours:** 3

**Instructor:** Staff

**Textbook:** Essential Calculus: Early Transcendentals, by James Stewart, 2<sup>nd</sup> Edition (2013).  
Cengage Learning, ISBN: 9781133112280

**Catalog Description:** Methods for evaluating definite integrals, applications of integration, improper integrals, infinite series, Taylor series, power series, and introduction to differential equations.  
*Most Recently Offered (Day): Spring 2016, Fall 2015, Summer 2015*  
*Most Recently Offered (Evening): Summer 2016, Spring 2016, Spring 2015*

**Pre-Requisites/Co-Requisites:** MATH 1241 with grade of C or above.

**Course is: Required (R)**

**Goals:** To develop student knowledge of fundamentals of Calculus: evaluation of definite integrals, applications of integration, improper integrals, infinite series, Taylor series, and power series.

### **Student Outcomes Addressed:**

A. an ability to apply knowledge of mathematics, science, and engineering

### **Course Topics:**

- Areas and distances
- The definite integral
- Evaluating definite integrals
- The Fundamental Theorem of Calculus
- The substitution rule
- Integration by parts
- Integration with partial fractions (simple forms: ratios of polynomials with a quadratic denominator)
- Integration using tables and computer algebra systems
- Approximate Integration (including error bounds)
- Improper integrals
- More about Areas
- Volumes
- Arc Length
- Average Value of a Function

- Work
- Moments and Centers of Mass
- Sequences
- Series
- The integral and comparison tests
- Other convergence tests
- Power series
- Representations of functions as power series
- Taylor and Maclaurin series
- The Binomial series