Math 142 **Effective Spring 2016**

Text: Thomas' Calculus: Early Transcendentals (13th ed), Thomas, Weir, and Hass, Pearson, 2014

Prerequisites: A grade of C or better in Math 141

Learning Outcomes: A student who successfully completes Calculus II (Math 142) should continue to:

- Develop as an independent learner with the ability to approach problems from a conceptual viewpoint
- Utilize more than one idea in a single problem, and to apply appropriate calculus skills to problems in context.
- Master concepts and gain skills needed to solve problems related to techniques of integration, sequences and series, Taylor polynomials and series, parametric and polar coordinate curves.

The following table is designed for a TuTh class schedule with 28 meetings per semester. Pacing must be adjusted for other schedules.

Lecture #	**Text Sections**	**Topics**
1	5.4 , 5.5	Review definite integrals, Fundamental Theorem,
	5.6, 8.1	Substitution
2	8.2	Integration by parts
3	8.3	Trig integrals
4	8.4	Trig substitution
5	8.5	Partial fractions
6	8.7	Numerical integration
7	8.8	Improper integrals
8	Review	
9	Exam 1	
10	10.1	Sequences
11	10.2	Series
12	10.3	Integral test
13	10.4	Comparison tests
14	10.5	Ratio and root tests
15	10.6	Alternating series
16	Review	
17	Exam 2	
18	10.7	Power series
19	10.8	Taylor and Maclaurin series
20	10.9	Remainder estimation
21	10.10	Applications of Taylor polynomials
22	11.1	Parameterized plane curves
23	11.2	Tangents and arc length
24	Review	
25	Exam 3	
26	11.3, 11.4	Polar coordinates
27	11.5	Area and arc length in polar coordinates
28	Review	