

Mat 222
Spring 2024 Syllabus

Instructor: Mr. McCarthy

Text: Calculus: Early Transcendentals, 4th Edition

Schedule: MWF 9:30 – 10:20

Grading: Final grade for the course will be determined according to the following scale:

Tests – 40% : There will be three tests over the course of the semester as indicated in the course outline below.

Exam – 30% : The exam will be given on the week of 5/20 and cover all of the material listed in the course outline.

Homework – 30% : Homework will be given on a weekly basis, and will be due at the beginning of class each Monday. Late homework will not be accepted without a legitimate excuse.

Course Description:

MAT 222 is the study of integral calculus. It begins with the basic applications of integration such as areas and volumes. Strategies for integrating different types of functions will be covered, as well as the application of integration to various sciences, especially physics and statistics. The second part of the semester deals with sequences and series, strategies for evaluating series, and concludes with Taylor and Maclaurin series and their applications to physics.

Course Schedule:

Wk.	Dates	Topics	Sections
1	1/15 – 1/19	Area Between Functions, Volume	6.1 – 6.3
2	1/22 – 1/26	Work, Average Value, Integration By Parts	6.4 – 7.1
3	1/29 – 2/2	Trig. Integrals, Trig. Sub, Partial Fractions	7.2 – 7.4
4	2/5 – 2/9	Improper Integrals, Arc Length, Surface Area	7.8 – 8.2
5	2/12 – 2/16	Applications of Integrals, <i>Test 1 (2/16)</i>	8.3 – 8.5
	2/19 – 2/23	College Retreat – No Classes	
6	2/26 – 3/1	Differential Eqns., Separable Eqns., Exp. Growth	9.1 – 9.4
7	3/4 – 3/8	Linear Eqns., Parametric Eqns.: Tangents, Areas	9.6 – 10.2
8	3/11 – 3/15	Arc Length and Area, Polar Coordinates	10.3–10.5
9	3/18 – 3/22	Conic Sections, <i>Test 2 (3/22)</i>	10.6
	3/25 – 3/29	Easter Break – No Classes	
	4/1 – 4/5	Easter Break – No Classes	
10	4/8 – 4/12	Sequences, Series, Integral Test and Estimates	11.1 – 11.3
11	4/15 – 4/19	Comparison Tests, Alt. Series, Abs. Convergence	11.4 – 11.6
12	4/22 – 4/26	Ratio and Root Tests, Power Series, Functions,	11.6 – 11.9
13	4/29 – 5/3	Taylor and Maclaurin Series, Binomial Series	11.10-11.11
14	5/6 – 5/10	Applications of Taylor Series, <i>Test 3 (5/10)</i>	11.12
15	5/13 – 5/17 5/17	Semester Study Day – No Classes	
	5/20 – 5/24	Final Exams	