Summer 2023 Analytical Geometry – Calculus II MATH:222
INSTRUCTOR: Dr. Stefan Forcey   EMAIL: sforcey@uakron.edu
OFFICE: CAS 275   PHONE: 972-6779
OFFICE HOURS: Lots by appointment!
Text and Coverage: E-book: Calculus Early Transcendentals, J. Stewart, edition 9, Chps. 6-11.
Website for schedule, notes, homework problems and announcements:
https://sforcey.github.io/sf34/class_home/calc/calc2/calc2sum23n.htm

GRADING POLICY:
1000 points possible. For each of these three categories the fraction of points you receive is the same fraction that you earn out of the total possible. If you get 4/5 of the problems correct on test 1, you earn (4/5)*230 = 184 points.

310 pts: WebAssign (31%)   900 pts. guarantees an A
460 pts: 2 Tests at 230 pts each. (46%)   800 pts. guarantees a B
230 pts: Final Exam (23%)   700 pts. guarantees a C
                                      600 pts. guarantees a D
                                      (+,- at my discretion)

Course Outline with dates:

- May 15. Day 1.
- Chapter 6: Areas and Volumes
- Chapter 7: Integration methods
- May 22: Last day to drop.
- June 2: TEST 1
- May 29: Memorial Day
- June 9: Last day to w/draw.

- June 19: Juneteenth
- Chapter 11: Sequences and Series
- June 23: TEST 2
- July 4: Independence Day.
- Chapter 8: Curves and Surfaces
- Chapter 10: Parametric and Polar
- July 7: Last day.
- July 7: TEST 3

Academic honesty:
No notes, formula sheets or books may be used on any Test or the Final.
Homework may not be copied or done by someone other than the student, but tutoring assistance, collaboration and research are allowed. All other work, especially on Tests and Final is individual, without any assistance. Any incidence of academic dishonesty carries a minimum penalty of a non-removable zero for that work. No active cellular phones, pagers, media players, computers or other electronic communication devices are permitted during the tests. Usage of or an attempt to use any of these devices during exams carries a minimum penalty of a non-removable zero for that exam.

Learning Outcomes for 3450:222 Analytic Geometry and Calculus II

Students are expected to be able to:

(1) Communicate mathematical results through the proper use of mathematical notation and words

(2) Use basic integration techniques, including substitution, integration by parts, trig integrals, trig substitution, and partial fractions

(3) Apply integration techniques to solve problems regarding volume, surface area, length of a curve, and other applications

(4) Understand sequences and series, including tests of convergence and divergence of series

(5) Work with power series and their basic properties

(6) Understand parameterized curves and polar coordinates.

Tentative Section Outline

Section	Topic	Suggested Homework
6.1	Areas Between Curves	1-11 odd, 17-29 odd
6.2	Volumes	1-29 odd, 39, 41, 49, 56-59
6.3	Volumes by Cylindrical Shells	1-19 odd, 29, 37, 39, 41
6.5	Average Value of a Function	1-9 odd, 15, 17, 19
7.1	Integration by Parts	1-41 odd, 57, 61, 63
7.2	Trigonometric Integrals	1-41 odd, 57, 61, 63
7.3	Trigonometric Substitution	1-29 odd, 33, 37
7.4	Integration of Rational Functions by Partial Fractions	1-39 odd
7.5	Strategy for Integration	Try some odds!
7.7	Approximate Integration	7, 11, 15
7.8	Improper Integrals	1, 5-41 odd, 49, 51, 53
11.1	Sequences	1-55 odd, 75-79 odd
11.2	Series	1, 15-41 odd, 51-63 odd
11.3	The Integral Test and Estimates of Sums	3-29 odd
11.4	The Comparison Tests	1-31 odd
11.5	Alternating Series	3-19 odd
11.6	Absolute Convergence and the Ratio and Root Tests	3-29 odd
11.7	Strategy for Testing Series	1-37 odd
11.8	Power Series	1-27 odd
11.9	Representations of Functions as Power Series	1-29 odd
11.10	Taylor and Maclaurin Series	5-15 odd, 19-25 odd, 35-43 odd, 73, 75
8.1	Arc Length	9-19 odd
8.2	Area of Surface of Revolution	1a, 3a, 5, 7, 11, 13, 15
10.1	Curves Defined by Parametric Equations	1-15 odd, 19, 21, 24, 25, 27, 28
10.2	Calculus With Parametric Curves	1-19 odd, 25, 29
10.3	Polar Coordinates	1-45 odd, 54, 55-61 odd
10.4	Area and Arc Length in Polar Coordinates	1-11 odd, 17,19, 23, 25, 29