Spring 2021 Analytical Geometry – Calculus II 3450:222

Instructor: Dr. Stefan Forcey EMAIL: sforcey@uakron.edu
Class and Office: Website, Teams, Zoom PHONE: 972-6779

Class and Office hours: MoTuWeFr: Section 004 = 10:45-11:35, Section 005 =11:50-12:40
Zoom any time by appointment!

Text and Coverage: Calculus Early Transcendentals, J. Stewart, edition 8, Chps. 6-11.

Website for schedule, homework problems and announcements:
http://www.math.uakron.edu/~sf34/class_home/calc/calc2/calc2spring21.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. So if you get a 49 out of 50 on Test 1 then you earn (49/50)*200 = 196 points. The final exam also replaces the lowest of the 3 test scores, if it helps!

150 pts: Homework, quizzes (15%)
600 pts: 3 Tests at 200 pts each. (60%)
250 pts: Final Exam (25%)

900 pts. guarantees an A
800 pts. guarantees a B
700 pts. guarantees a C
600 pts. guarantees a D
(+,- at my discretion)

Course Outline with dates:

- Jan 11. Day 1.
- Jan 17: Last day to add.
- Jan 18: No class for MLK day
- Chapter 6: Areas and Volumes
- Chapter 7: Integration methods
- Jan 24: Last day to drop.
- Feb 16: No class on Pres. day.
- TEST 1
- Feb. 28: Last day to w/draw.
- Chapter 11: Sequences and Series
- Apr. 12-16: Spring break.
- TEST 2
- Chapter 8: Curves and Surfaces
- Chapter 10: Parametric and Polar
- TEST 3.
- April 30: Last class.
- Tuesday, May 4, 2021, Comprehensive Final Exam.

Evaluation Procedure:

- When graded, quizzes and homework will be given a grade out of ten or twenty points, where full credit will be assigned when the graded problems (if any) have correct answers with all correct work shown. Points may be subtracted for each graded problem with an incorrect answer, incorrect work, or not all work shown. The quiz/homework average will be calculated by dropping a total of 15 raw quiz points which means that I'll calculate your percentage by first adding up to 15 points back on to your raw score, limited by the maximum number of hw/quiz points possible. This will have the effect of making a 100% quiz average possible despite missed work.

EXAMS

- There will be 3 closed book tests and the final exam during the semester over the material from lectures, homework and the book. No test may be taken early or late. The final total test score will use the 3 highest of 4 percentages: 3 percentage test grades and the final exam percentage grade. This will have the effect of allowing one missed test to be replaced by the final exam. The exams will be administered via the online proctoring service Respondus, which you'll access (for free) through Brightspace. You will need to be on a computer with a webcam and a microphone when you take the exam, so IF YOU DO NOT HAVE ACCESS TO A COMPUTER WITH WEBCAM AND MICROPHONE, PLEASE LET ME KNOW AS SOON AS POSSIBLE. (In addition, there are potential issues with using Respondus with Chromebooks, these issues will supposedly be resolved soon, but if you only have access to a Chromebook, please let me know) The regular exams will be 50 minutes, with an extra 15 minutes to handle any technical issues. You will download the exam on Brightspace, complete the exam on paper with Respondus, and then upload your completed exam on Brightspace in the allotted time. The first week of class we will have a "syllabus quiz" which will mimic the exam setup so that you can get the hang of it.

Please note, calculators, notes, textbook, anything online, friends, etc, are not permitted on the exam. Pencil and paper only. (You will be given access to a basic calculator through Respondus during the exam, which you're welcome to use, but I doubt you'll need to.) Any perceived attempt at cheating will be dealt with harshly.

- **No notes, formula sheets or books may be used on the Final or any test.**

Homework may not be copied, but collaboration and research are allowed. All other work is individual. 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