

MATH 282, Analytic Geometry and Calculus III, Spring, 2014 Walla Walla University

BULLETIN DESCRIPTION: Study of sequences, series, polar coordinates, parametric equations, and vectors. Prerequisite: Prerequisite: A grade of C- or better in MATH 281, 4 credits (quarter) .

INSTRUCTOR: Dr. Kenneth L. Wiggins, 336 KRH, 527-2088, ken.wiggins@wallawalla.edu

OFFICE HOURS: 3 M, 2 Tu, 3 W, 2 Th, 1 F, Other Office hours by appointment

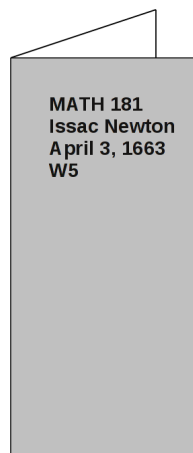
OBJECTIVES: After finishing this course, the student should be able to organize and effectively communicate ideas involving:

- sequences and series
- representing functions as infinite series
- polar coordinates and parametric equations
- vectors and vector calculus

TEXTBOOK: *Calculus*, 2nd ed., Jon Rogawski, 2012, WH Freeman and Company, ISBN 1-4292-3190-4

ASSESSMENT: All assessment will be based on both correctness and quality, including the quality of your presentation.

Category		Weight	
Homework & quizzes		25%	
Three tests		45%	
Final exam		30%	
Grade	Percent	Grade	Percent
A	91-100%	C	70-74%
A-	89-90%	C-	65-69%
B+	86-88%	D+	62-64%
B	83-85%	D	58-61%
B-	80-82%	D-	55-57%
C+	75-79%	F	0-54%



HOMEWORK: The surest way to succeed in MATH 282 is to study each day. To aid you in your study, homework problems will be assigned each day. Most of this homework will be done on the computer, but you will hand in a weekly written assignment. Be sure to show

all work neatly and indicate your answers clearly. The weekly assignments are given specifically for you to practice clear and precise presentations. Please fold your paper homework lengthwise and label it as illustrated in the diagram above. Your written homework will be due Friday mornings at the beginning of class.

QUIZZES: Occasionally quizzes may be given over the lectures and homework.

TESTS: Three 50-minute examinations will be given during the quarter. These will cover the lectures and the homework, and you will take these tests without calculators.

FINAL EXAMINATION: This test is scheduled for Wednesday, June 11, noon-1:50 PM. Attendance is required, so make your travel plans early with this appointment in mind.

CLASS ATTENDANCE: Students are expected to attend all classes. In addition, students are expected to give their full attention to the class discussions, and to be courteous, respectful, and supportive of the learning environment. In order to be counted present, students be on time and they remain in the classroom during the entire class period. Cell phones, computers, personal organizers, and all other electronic devices are not to be used by students during class. Modifications to the homework assignments or test schedule may be announced in class.

DISABILITIES: If you have a physical and/or learning disability and require accommodations, please contact your instructor or the Special Services office at 527-2366. This syllabus is available in alternative print formats upon request. Please ask your instructor.

SPECIAL CONSIDERATION FOR EXTRA EFFORT: Your lowest test grade will be dropped and replaced with your final examination grade if you meet the following conditions: You must

- Be present, on time, and attentive for at least 37 or the 39 scheduled class sessions
- Turn in at least 95% of the homework on time.
- Make a higher grade on the final examination than you did on your lowest test.

ACADEMIC INTEGRITY: Some collaboration on homework is allowed, but the work you submit for grading must be your own. Any type of cheating on a test or examination, including but not limited to copying another student's work or using unauthorized notes or electronic equipment, will result in a zero grade for the test or a failing grade for the quarter, and possibly further disciplinary action taken by the Associate Vice President for Academic Administration.

TEACHING CERTIFICATION: Those seeking Washington state teaching certification please see <http://math.wallawalla.edu/teacherEd/>.

TOPICS BY WEEK:

Week 1

- Sequences
- Infinite Series
- Convergence of Infinite Series

Week 2

- Absolute and Conditional Convergence
- The Ratio and Root Tests
- Power Series

Week 3

- Taylor Series
- Taylor Series Continued
- Parametric Equations

Week 4

- Arc Length and Speed
- Polar Coordinates
- Area and Arc Length in Polar Coordinates

Week 5

- Conic sections
- Rotation of the axes
- Vectors in the plane

Week 6

- Vectors, now in 3D
- Dot product
- Cross product

Week 7

- Planes, now in 3D
- Quadric surfaces
- Cylindrical and spherical coordinates

Week 8

- Vector functions
- Calculus of vector functions
- Arc length and speed returns

Week 9

- Curvature
- Motion in 3D

Week 10

- Planetary motion