

Course Syllabus: Math Analysis I

MATH 5A-55131

Instructor: Mr. Steven Zook

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Reedley College

Fall 2019

Office Hours: MTWF 11am – 12pm

W 9am-10am

Meeting Room: CCI 201

Meeting Days: M-F

Meeting Time: 12:00 pm – 12:50 pm

Course Description: Introduction to calculus, analytic geometry, differentiation and integration of polynomial, exponential, logarithmic and trigonometric functions; limits; curve sketching and applications.

Course Prerequisites: MATH 4A and 3A or equivalent

Course Advisories: English 125 and 126

Student Learning Outcomes:

Upon completion of this course, students will be able to:

1. Evaluate limits using graphical, analytical, and tabular techniques.
2. Calculate and interpret the derivatives of algebraic, trigonometric, and transcendental functions.
3. Translate problems from the physical, life, and social sciences into mathematical models and apply appropriate techniques to solve.
4. Calculate the integrals of algebraic, trigonometric, and transcendental functions.

Objectives:

In the process of completing this course, students will:

1. Analyze and sketch the graphs of simple functions.
2. Determine the domain and range of compound and composite functions.
3. Calculate limits and determine the continuity of functions.
4. Find the derivative of a function as a limit.
5. Differentiate polynomial, trigonometric, rational, exponential, and logarithmic functions.
6. Solve related rates and extrema problems using the derivative.
7. Evaluate a definite integral as a limit.
8. Perform calculations using the Fundamental Theorem of Calculus.
9. Perform indefinite and definite integration including the use of substitution.

Required Text: Anton, Howard, Calculus – Early Transcendentals, 11th Edition, 2015. ISBN: 978-1-1188-8382-2

This text is required for reading, studying, and completing homework assignments.

Required Course Material: You will need a **graph paper notebook** to complete the homework. Homework must be neatly completed on graph paper. Additionally, you will need a **ruler** for graphing straight lines and coordinate planes. Graphs of functions are very important in calculus and accurate graphing skills must be developed.

Office Hours: I will be holding regular office hours. I want to be available to you if you need assistance outside of class. Please visit me during the scheduled times for drop-in questions. You may come unannounced during those times. If the scheduled office hours do not suit your schedule, you may arrange a time to meet me in my office. Please don't hesitate to take advantage of these since I want you to succeed – it's what I am here for.

Attendance: As a student, you are expected to attend all classes for the entire period. Please be on time and ready to start when class is scheduled to begin. I ask this out of respect for your classmates and me. **Ten (10) absences** may result in a drop from the course. If you decide to drop, it is your responsibility to drop the class officially through the Administration and Records office. In failing to do so, you run the risk of receiving a failing grade.

Drop Deadline: Friday, October 11

Assignments & Exams:

All **homework** assignments will be completed by hand on pencil and paper. Homework assignments will be due weekly on the due date **at the beginning of class** and will cover topics from the previous week. If you submit your homework late, there is a **20% penalty for each day** that the assignment is late. Homework that is more than one week late will not receive any credit.

I expect your homework to be organized and written neatly on graph paper with all necessary work written out completely. Please write your full name on all pages and multiple pages must be stapled together. Additionally, remove any loose edges along the perforation if the pages are out of a spiral notebook. Lastly, please number the problems you complete.

There will be regular **quizzes** that will be completed in class. These will be announced at the end of the previous class period. Quizzes will always be given at the beginning of class and there are **no make-ups** allowed for late or absent students.

There will be a **project** this semester that will require work and intellectual investment beyond the minimum. The project will be aligned with the content we are working through in class at the time it is assigned. Details on this assignment will be available on Canvas and will be given two weeks before it is due. It will require the full time to complete adequately and no late assignments will be accepted.

There will be **five exams** during the semester and the dates they will be held are in the course calendar and they will cover the specified content. There will be **no make-up exams** allowed although it will be possible to schedule a time to take an exam early, **if it is prearranged**. The sixth exam will be held during finals week. The lowest exam score will be dropped.

Assignment Categories and Weighting

<i>Assignment</i>	<i>Weighting</i>
Homework	20%
Quizzes	10%
Project	10%
Exams (6 @ 10% each)	60%

Final Grades

<i>Letter Grade</i>	<i>Percent</i>
A	90-100
B	80-89
C	70-79
D	60-69
F	0-59

SPECIAL NEEDS REQUESTS: If you have a verified need for an academic accommodation or materials in alternate media (i.e., Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act, please contact me as soon as possible.

Please refer to the RC Catalog for the Policies on Academic Dishonesty, Cheating, and Plagiarism, pg. 48-49.

Course Outline and Schedule

- Week 1: Course Introduction
Review: Functions
Begin Chapter 1: Limits and Continuity
- Week 2: **Homework 1** due on Thursday, Aug. 22
- Week 3: **Homework 2** due on Wednesday, Aug. 28
- Week 4: No class: Monday, Sept. 2
Homework 3 due on Wednesday, Sept. 4
Exam 1, Thursday, Sept. 5 (Chapter 1)
Begin Chapter 2: The Derivative

- Week 5: **Homework 4** due on Wednesday, Sept. 11
- Week 6: **Homework 5** due on Wednesday, Sept. 18
- Week 7: **Homework 6** due on Wednesday, Sept. 25
- Week 8: **Homework 7** due on Tuesday, Oct. 1
Exam 2, Tuesday, Oct. 1 (Chapter 2)
Begin Chapter 3: Topics in Differentiation
- Week 9: **Homework 8** due on Wednesday, Oct. 9
- Week 10: **Homework 9** due on Wednesday, Oct. 16
- Week 11: **Homework 10** due on Wednesday, Oct. 23
Exam 3, Thursday, Oct. 24 (Chapter 3)
Begin Chapter 4: The Derivative in Graphing and Applications
- Week 12: **Project due on Thursday, Oct. 31**
- Week 13: **Homework 11** due on Wednesday, Nov. 6
- Week 14: No class: Monday Nov. 11
Homework 12 due on Wednesday, Nov. 13
Exam 4, Thursday, Nov. 14 (Chapter 4)
Begin Chapter 5: Integration
- Week 15: **Homework 13** due on Wednesday, Nov. 20
- Week 16: **Homework 14** due on Wednesday, Nov. 27
No class: Thursday Nov. 28, Friday Nov. 29
- Week 17: **Homework 15** due on Wednesday, Dec. 4
- Week 18: **Exam 5, Wednesday, Dec. 11 (Chapter 5)**

I will do my best to follow the schedule depending on how quickly we can cover the topics. However, the events in bold will take place on their specified dates.

If I make any changes, I will announce them in class and post them on Canvas.