Math 5A-53344 Calculus I

Semester/Year: Spring 2022	**Instructor**: Kelly Winter
Units: 5	**Phone number:** (559) 638-0300 ext 3471
Location: CC1-200	**Email**: Canvas Inbox
Zoom Office Hrs: Tuesday & Thursday 9am-10am	**In person Office Hrs:** MW 10-11am, F 1-2pm (office location MAS 135)
Length: 18 weeks (Jan. 10-May 20)	This class is in person and meets Monday, Wednesday and Friday 11:30am - 12:55pm.
Prerequisite: Math 3A or 4B and Math 4A	
Basic Skills Advisory: Eligibility for English 1A or 1AH	
Final Exam: Due Friday, May 20th	

Welcome to Calculus I

It is my desire to help each one of my students succeed and gain confidence in their calculus skills. I believe that all students can succeed if they stay organized, set aside consistent DAILY work time, complete all assigned work, ask questions, write good notes, and prepare for exams. I am here to guide you through the course, answer questions and encourage you to work hard.

There are many excellent resources available to you in person and virtually through Reedley College. Other students in class are a good resource and I would encourage you to form small groups to study and do homework together in person or virtually. If you have an unanswered question, please utilize the ZOOM sessions or office hours where I will be available to answer questions from Homework and notes, and prepare for exams. You can also email me questions and I can either type a response or send a quick video explanation as well.

Other available resources: The Math Center is functioning ONLINE and IN PERSON this semester. You can meet one-on-one with a tutor. We have great tutors available for Calculus. Please utilize this incredible resource. More information will be available on Canvas. Use the link RC Tutoring Services on the left to enroll in the RC Math Center canvas page for all of the information.

Course Description

This course is an introduction to calculus, analytic geometry, differentiation and integration of polynomial, exponential, logarithmic and trigonometric functions. Topics include limits, curve sketching and applications.

Student Learning Outcomes

MATH-5A SLO1: Evaluate limits using graphical, analytical, and tabular techniques.
MATH-5A SLO2: Calculate and interpret the derivatives of algebraic, trigonometric, and transcendental functions.
MATH-5A SLO3: Translate problems from the physical, life, and social sciences into mathematical models and apply appropriate techniques to solve
MATH-5A SLO4: Calculate the integrals of algebraic, trigonometric, and transcendental functions.

Textbook Open Stax Calculus Volume 1. This is a free textbook available online throughout the course in modules.

Other Course Materials/Technology

MyOpenMath: Our class will rely heavily on the use of online materials. To access our course materials and homework assignments, you will need to log in to MyOpenMath via Canvas. This is a FREE program that allows you to do your homework and assessments online with support. You will need to register the first time you click on an assignment.

Scanning App: You must also be able to scan your work from exams. There are many free scanning options on most smart phones. I know iphones have a scanning option from the Notes app. I have also used the free app Genius Scan and Adobe Scan. Please make sure whatever scanning app you use that you can scan multiple pages into ONE document. It is very difficult to grade exams when I have to download multiple files for one assignment.

Desmos.com: We will utilize desmos.com for graphing. You may also use a graphing calculator to check work but you must be able to complete the work without one, and show your work for assignments and exams.

Screencast-O-Matic: This is a FREE video website that allows you to create a video of your computer screen. We will have a couple of assessments that require you to create a screen cast of your work. There are other websites that can do the same thing so if you are familiar with another video maker program you are welcome to use another.

Communication Policy I will be available in the math center on days we have class and on Zoom other days for questions. Please see canvas for dates/times/zoom links. If you have questions outside of these times you can send me an email through Canvas inbox or set-up another time for a Zoom meeting. I will respond within 24 hours, and if I have not responded in this time, please re-send your email to make sure that I did receive it.

Attendance Policy: Your attendance is tracked by your participation and completion of materials online. By Friday, January 14 you must complete your autobiography or you may be dropped from the course. Please email me if you are having trouble and need additional time. My intention is to find out which students are not active in the course and give those "seats" to the students on my waitlist.

Late Assignments: Each week there will be homework assigned online in MyOpenMath. Each week's assignments open on Monday morning and are due the following Monday evening by midnight. This gives you plenty of time to work through each assignment and get help on questions that you may get stuck on. You are given three attempts to answer each question correctly in MyOpenMath before you will be marked down. Please use "Similar Question" in order to restart a question and receive full credit. All students in this course should spend a minimum of **15 hours per week** outside of the classroom on homework, studying, reading the text and preparing for exams.

These weekly deadlines will keep you on track for completing the course. If you are unable to meet these deadlines please email me and I will extend your times, however, you should not take advantage of this as it will make it more difficult to complete the course with less time.

Exams and Final Exam: There will be online tests in MyOpenMath, however, you must complete the test on paper with pencil, and work must uploaded to the appropriate Canvas assignment using scanning apps such as Genius Scan or Camscanner. I will use your work to assign partial credit for the exams. You may request a make-up if you are unsatisfied with your grade. The test must be completed by the due dates. Test corrections can be done for partial credit as allowed by instructor. When you upload your work for the exam you may add a note for the questions that you missed and re-do them for partial credit. The final exam can be used to replace a test score.

Assignment Point Values

Assignment	Value
Homework & Quizzes	20%
Chapter Exams &	80%

Final Grades

Letter Grade	%
A	89.5 -100
B	79.5 – 89.4
C	69.5 - 79.4
D	59.5 - 69.4
F	0-59.4

Grading Policies/Rubrics

Please monitor your grade on Canvas. It is your responsibility to make sure that your grade is accurate. If there is a discrepancy, please email me ASAP.

ACADEMIC DISHONESTY

Students at Reedley College are entitled to the best education that the college can make available to them, and they, their instructors, and their fellow students share the responsibility to ensure that this education is honestly attained. Because cheating, plagiarism, and collusion in dishonest activities erode the integrity of the college, each student is expected to exert an entirely honest effort in all academic endeavors. Academic dishonesty in any form is a very serious offense and will incur serious consequences.

Cheating is the act or attempted act of taking an examination or performing an assigned, evaluated task in a fraudulent or deceptive manner, such as having improper access to answers, in an attempt to gain an unearned academic advantage. Cheating may include, but is not limited to, copying from another's work, supplying one's work to another, giving or receiving copies of examinations without an instructor's permission, using or displaying notes or devices inappropriate to the conditions of the examination, allowing someone other than the officially enrolled student to represent the student, or failing to disclose research results completely.

Plagiarism is a specific form of cheating: the use of another's words or ideas without identifying them as such or giving credit to the source. Plagiarism may include, but is not limited to, failing to provide complete citations and references for all work that draws on the ideas, words, or work of others, failing to identify the contributors to work done in collaboration, submitting duplicate work to be evaluated in different courses without the knowledge and consent of the instructors involved, or failing to observe computer security systems and software copyrights. Incidents of cheating and plagiarism may result in any of a variety of sanctions and penalties, which may range from a failing grade on the particular examination, paper, project, or assignment in question to a failing grade in the course, at the discretion of the instructor and depending on the severity and frequency of the

incidents.

NOTE: 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 or section 504 of the Rehabilitation act please contact me as soon as possible.

Please refer to SCCCD polies for guidance on all matters relating to this course.

Objectives: In the process of completing the course, the student will:

I. analyze and sketch the graphs of simple functions.
II. determine the domain and range of compound and composite functions.
III. calculate limits and determine the continuity of functions.
IV. differentiate polynomial, trigonometric, rational, exponential, and logarithmic functions.
V. solve related rates and extrema problems using the derivative.
VI. perform calculations using the Fundamental Theorem of Calculus.
VII. perform indefinite and definite integration including the use of substitution.

Course Outline

1. Functions
   1. Algebra and trigonometry review
   2. Functions and the analysis of graphs
   3. Properties of functions
   4. Compound functions and composite functions
   5. Applications of linear functions
   B. Limits and Continuity
   1. Intro to limits (intuitive)
   2. Computational techniques
   3. Theory of limits
   4. Continuity
   5. Squeezing theorem and limits involving trig functions
   C. Derivatives
   1. Secant lines, tangent lines, rate of change
   2. The definition of the derivative
   3. Find the derivative of a function as a limit
   4. Techniques of differentiation
   5. Derivatives of trig functions
   6. The Chain Rule
   7. Find the equation of the tangent line to a function
   8. Differentials
   D. Logarithmic and Exponential Functions
   1. Inverse functions
   2. Logarithmic and exponential functions
   3. Implicit differentiation
   4. Derivatives of logarithmic and exponential functions
   5. Derivatives of inverse trigonometric functions
   6. Related rates
   7. L'Hopital's Rule

E. Analysis of Functions and their Graphs
1. Increasing, decreasing functions and concavity
2. Relative extrema; First and Second Derivative Tests
3. Producing graphs of functions
F. Applications of the Derivative
1. Absolute maxima and minima
2. Applied maxima and minima problems
3. Applications to rectilinear motion
4. Rolle's Theorem
5. Mean Value Theorem for Derivatives
G. Integration
1. Finding areas under curves
2. The indefinite integral
3. Integration by substitution
4. Reimann Sums
5. The definite integral
6. Evaluate the definite integral as a limit
7. The Fundamental Theorem of Calculus