

MATH 1A— CALCULUS, FIRST COURSE —SPRING SEMESTER 2023
Section 4547, Kunde 104, 1:30pm-4:00pm TTh, 5 Units

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Instructor: Mark Ferguson. Office: Kunde Hall, Room 211. Email: mferguson@santarosa.edu

Important Notes:

- Office Hours: 8:00 pm – 9:15 pm, MW in Kunde 203; TTh in Kunde 202
- Canvas will not be used.
- Email will be checked on normal class days.
- Unauthorized use of smart device/computer during class → points deduction.
- Give yourself the best chance of succeeding by:
 - Meeting the prerequisites
 - Providing a good faith effort
 - Communicating often and taking the time to formulate good questions
 - Having patience
 - Exhibiting academic integrity
 - Visiting Office Hours
 - Striving to be “impossible to be misunderstood”
 - Realizing that your work will be graded in accordance with a college-level, STEM-based class

Also:

- Our classroom is a place reserved for learning. Being kind, open-minded, respectful, patient, and tolerant are qualities conducive to learning. It is expected that you will be prepared to learn and exhibit these behaviors.
- It is critical that students work on homework frequently throughout the semester.
- No active (ear, cell, smart) devices or computers are allowed during class. Please turn them off and put them away.
- This syllabus is intended to give the student guidance to what/how/when topics will be covered and assessed during the semester and will be followed as closely as possible. However, I reserve the right to modify, supplement, or make changes to the syllabus as needed. Continued registration in this course means that you agree to the policies and procedures outlined in this syllabus.
- Students are expected to frequently use technology to explore mathematics throughout our course; therefore, a graphing calculator/computer algebra system is required. You are welcome to choose any that works sufficiently for our course, however TI graphing calculators/computer algebra systems will likely be used in class. Graphing calculators will not be used in traditional testing settings. Let me know if you have questions regarding technology.
- Students are required to have a text for our course. Our text is available nowadays in many different forms; e.g., as a traditional textbook, in electronic format, etc. You are welcome to choose the one that works best for you; you may have a preference or there may be cost savings with one format versus another.
- I will be teaching the course with the 8th edition of our textbook. If you choose an earlier/different version, it is up to you to reconcile the differences between editions.

Academic Integrity—All written work is to be original; plagiarism of any kind will result in a failing grade on that assignment. Students who plagiarize or cheat may be suspended [for one or two class meetings] and referred to the Vice President of Student Services for discipline, in cases of egregious violation.

Attendance—Attending class greatly increases the likelihood of success in our course, however I believe that adult college students know this (or, are learning this), and will make their own choice regarding attendance. There are no points associated with attendance. I am required to follow College Policy regarding attendance: A student may be dropped from any course when that student’s absences exceed ten percent (10% constitutes an “excessive” number of absences for this course) of the total hours of class time. Students who fail to attend the first class meeting may be dropped from the course. Students who enroll in the course and do not attend the first two class meetings are declared “No-Show” and will be dropped from the course.

Course Description

Calculus, First Course: Limits and continuity, differentiation, applications of the derivative, integration, applications of the integral.

Course Outline of Record

This is available online: go to the SRJC homepage and search for MATH 1A under the course outlines link.

Prerequisites, Required and Optional Materials

Prerequisite: Successful completion of MATH 27 (precalculus) or higher (or equivalent).

Required Materials: The textbook (below) and a graphing calculator/access to a computer algebra system.

TEXT: Calculus, Early Transcendentals, Eighth Edition by James Stewart, Cengage Learning, 2016.

Study Guides/Student Solutions Guides are helpful to many, but are optional

***Our text is on reserve at the Doyle Library at the Reserve Desk. Bring your SRJC ID to check out the text.**

Class Structure/Content

- We will cover topics from chapters 2-5 and parts of 6, 7, 8, and 9 out of our text (I will try to keep you apprised of any changes). With a few exceptions, we will cover one or two sections per day.
- My goal is to have a typical day in class go as follows: We will discuss a new topic for a while, and then, time permitting, work on some exercises together. We'll take a break and then do the same thing for the remaining time. You will likely need a pencil and paper every day in class. You are expected to work on homework outside of class almost every day—as often as you need—in order to succeed in the class. Your success depends greatly on the amount of work that you put into the class.
- The quizzes, exams and final will be comprised of topics we discuss in class AND the assigned homework so, PLEASE COME TO CLASS AND KEEP UP WITH THE HOMEWORK (including readings).

Activities & Points—Keep Track of Your Grade

Activity	Points Possible	Your Points	Your Cumulative Points	Cumulative Points Possible	Your Cumulative Percentage
Take-Home Quiz 1 Due Thursday of Week 4	50			50	
Exam 1 In Class Thursday of Week 7	100			150	
Take-Home Quiz 2 Due Thursday of Week 11	50			200	
Exam 2 In Class Thursday of Week 14	100			300	
Take-Home Quiz 3 Due Thursday of Week 17	50			350	
Take Out Lowest Quiz Score	-50			300	
Final Exam on Thursday, May 25, 1:00pm-3:45pm	150			450	

Activity Details

Take-home Quizzes (Three at 50 points each; only two count toward your grade)

You will be allowed at least one week to finish each quiz. You will only be allowed to use class resources on this quiz. Only your top two quiz scores will be counted toward your grade. No quiz make-ups are available. Quizzes are usually returned, graded, after one week of the due date. Students are asked to review their graded quizzes and wait at least 48 hours to discuss questions and ask for further feedback on graded quizzes.

Exams (Two at 100 points each)

These will be taken in our classroom on **Thursday** of week 7 and week 14. You will be notified of the exam topics and the materials you can use on the exams prior to each exam. These exams may only be taken at a different time with advanced notice and must be taken prior to the original scheduled date. Exams are usually graded and returned no later than one week of the exam date. Students are asked to review their graded exams and wait at least 48 hours to discuss questions and ask for further feedback on graded exams.

Note: in case of an emergency immediately before (only) one of these exams, it is possible to use a portion of your Final Exam percentage (only the topics on the Final Exam, as determined by me, that are associated with the exam that you missed), provided that:

- Sans the exam you miss, you have a passing grade going into the Final Exam.
- You have regular attendance and have been providing a good faith effort in our class, as determined by me.
- The distribution of points according to topics may be different on your Final Exam as opposed to the Standard Final Exam (below).

Standard Final Exam (150 points)

Be prepared for a mostly cumulative final exam. It will be written to take about 2.5 hours and will be given at the College-designated time. You will be notified of the exam topics and the materials you can use on the final prior to the final. The final can only be taken at a different time with advanced notice and must be taken prior to the original scheduled date. Final exams are not returned to the students; however, you are welcome to come by during the following semester to review your final exam.

Note: in case of an emergency immediately before the Final Exam, it is possible to take an Incomplete Grade for the class, provided that you have a passing grade going into the Final Exam, and take the Final Exam during a subsequent semester.

Grading Policy

Graded exams may be discussed at least 48 hours after they have been returned to you. Letter grades will be assigned on a scale no stricter than the following:

Letter Grade	Percentage
A	90 to 100
B	80 to 89
C	70 to 79
D	60 to 69
F	0 to 59

Tutoring and Ways to Find Help with Math

Provided by the SRJC Math Lab; Link: <https://mathematics.santarosa.edu/tutorial-resources>

Accommodations for Students with Disabilities—If you need disability related accommodations for this class, such as a note taker, test taking services, special furniture, etc., please provide the Authorization for Academic Accommodations (AAA letter) from the Disability Resources Department (DRD) to me as soon as possible. You may also speak with me privately during office hours about your accommodations. If you have not received authorization from DRD, it is recommended that you contact them directly. DRD is located in the Bertolini Student Center, Third Floor, Room 4844 on the Santa Rosa campus. Also, DRD's link: <https://drd.santarosa.edu>

Ideal Schedule and List of Text Homework Exercises

(Note that the ideal schedule is just that—ideal. Our actual pace may cause us to run a little behind or ahead of the ideal schedule throughout the semester... hopefully we stay ahead more often than behind!)

Week Number	Date (Week Beginning Monday...)	Section Number and Title from Our Text Read these sections before they are covered	Homework Exercises—Work these exercises after we've covered the section in class
1	January 16	Monday & Tuesday No Classes 2.1: The Tangent and Velocity Problems 2.2: The Limit of a Function	2.1 p.82: 1,4,7. 2.2 p.92: 1,2,4,5,7,8,11,13,16,17,21,22,23,27,31,32,36,39,40,42,44,47,52.
2	January 23	2.3: Calculating Limits Using the Limit Laws 2.4: The Precise Definition of a Limit	2.3 p.102:1,2,6,11,12,14,18, 20, 21, 23, 27, 28, 50, 65. 2.4 p.113: 1-16, 19, 20, 22, 25, 27, 41, 42
3	January 30	2.5: Continuity 2.6: Limits at Infinity; Horizontal Asymptotes	2.5 p.124: 3,5,7,9,13,17,19, 22, 23, 24, 33, 39, 46, 53, 56. 2.6 p.137: 3,5,10,15,18,21,22,24,27,36,29,54.
4	February 6	Thursday—Take-Home Quiz 1 Due 2.7: Derivatives and Rates of Change 2.8: The Derivative as a Function	2.7 p.148: 3,5,8,11,13,14,15,17, 20, 21, 29, 33, 35, 39, 41, 43. 2.8 p.160: 2,3,6,7,9,10,12,16,17, 23, 27, 29, 41, 42, 49, 51, 53.
5	February 13	Thursday No Classes 3.1: Derivatives of Polynomials and Exponential Functions 3.2: The Product and Quotient Rules	3.1 p.180: 7,10,11,15,17,18,21,23, 25, 27, 30, 37, 55, 62. 3.2 p.188: 3,4,6,7,12,19,27,33,34,35,44,49.
6	February 20	Monday No Classes 3.3: Derivatives of Trigonometric Functions 3.4: The Chain Rule 3.5: Implicit Differentiation	3.3 p.196: 1,4,8,13,14,22,23,25,29,33,35,40,43. 3.4 p.204: 1,3,8,11,13,21,31,38,44, 45, 47, 52, 55, 58, 63, 65, 69. 3.5 p.215: 4,7,13,17,20,25,28,31,45,50,58,67.
7	February 27	Thursday—Exam 1 In Class 3.6: Derivatives of Logarithmic Functions 3.9: Related Rates	3.6 p.223: 3,6,9,12,15,21,26,30,33,36,39,42,50. 3.9 p.249:2,3,5,6,7,10,12,14,16,20,25,33,39,45.
8	March 6	3.10: Linear Approximations and Differentials 3.11: Hyperbolic Functions 4.1: Maximum and Minimum Values	3.10 p.256: 1, 2, 11(a), 14(a), 15, 16, 17, 25, 28, 32, 33. 3.11 p.264: 3,9,17,35,37,41,45,51. 4.1 p.283: 3,4,6,9,12,15,16,20,25,26,35,36,40, 44,45,46,50,53,55,59,66,69.
9	March 13	4.2: The Mean Value Theorem 4.3: How Derivatives Affect the Shape of Curves 4.4: Indeterminate Forms and l'Hospital's Rule	4.2 p.291: 1,7,9,12,13,14,16,17,19,25. 4.3 p.300: 1,3,5,8,12,13,16,20,31,35,41,48,52,59,65. 4.4 p.311: 1,8,9,13,16,21,24,27,28, 46,49,51,53,58,63,69,87.

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10	March 27	4.7: Optimization Problems 4.9: Antiderivatives	4.7 p.337: 9,12,14,16,22,24,25,34,35,51,73,76. 4.9 p.355: 4,5,10,13,19,26,30,34,35,44,47,66,74.
11	April 3	Thursday—Take-Home Quiz 2 Due 5.1: Areas and Distances 5.2: The Definite Integral	5.1 p.375: 3,5,6,7,11,13,15,16,20,21. 5.2 p.388: 1,4,5,7,9,15,19,25,27,30, 33, 35, 37, 39, 49, 53.
12	April 10	5.3: The Fundamental Theorem of Calculus 5.4: Indefinite Integrals and the Net Change Theorem	5.3 p.399: 3,13,18,20,21,24,25,26, 27, 29, 31, 32, 37, 38, 39, 58. 5.4 p.408: 2,5,7,12,13,16,18,22,24, 27, 30, 33, 35, 36, 41, 49, 50.
13	April 17	5.5: The Substitution Rule 6.1: Areas Between Curves	5.5 p.418: 5,10,12,15,20,22,25,31,32, 36, 37, 40, 42, 43, 45, 50,55,57,59,60,62,69,70. 6.1 p. 434: 2,3,6,9,10,15,17, 18, 20, 21, 29, 35, 50, 53.
14	April 24	Thursday—Exam 2 In Class 6.2: Volumes 7.6: Integration Using Tables and Computer Algebra Systems	6.2 p. 446: 3,6,9,12,15,18,23,24,26,31, 34, 49, 54, 55, 58. 7.6 p. 512: 9-14, 34, 37-40
15	May 1	7.7: Approximate Integration 8.1: Arc Length	7.7 p. 524: 1,2,3,5,6,7,11,12,16,19. 8.1 p. 548: 2,4,7,9,10,13,16.
16	May 8	9.1: Modeling with Differential Equations 9.3: Separable Equations	9.1 p. 1-6, 9, 14, 15 9.3 p. 605: 1,4,5,6,9,11,13,14,16,18,19.
17	May 15	Thursday—Take-Home Quiz 3 Due Catch up, loose ends	
Finals	May 22	Final Thursday, May 25, 1:00 pm - 3:45 pm	