

**MATH 1B— CALCULUS, SECOND COURSE —SPRING SEMESTER 2022**  
**Section 4559, Kunde 114, 5:30pm-8:00pm TTh, 5 Units**

1

**Instructor:** Mark Ferguson. Office: Kunde Hall, Room 211. Email: [mferguson@santarosa.edu](mailto:mferguson@santarosa.edu)

**Important Notes:**

- Office Hours: 8:00 pm – 9:15 pm, MW in Kunde 204; TTh in Kunde 114
- Canvas will not be used.
- Email will be checked on normal class days.
- Unauthorized use of smartphone/device 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) phones 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/CAS 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 8<sup>th</sup> 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, Second Course:** Topics include methods of integration, conic sections, polar coordinates, infinite sequences and series, parametric equations, solid analytic geometry, and vectors.

**Course Outline of Record**

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

**Prerequisites, Required and Optional Materials**

**Prerequisite:** Successful completion of MATH 1A, Calculus 1, or equivalent.

**Required Materials:** The textbook (below) and a graphing calculator/access to a CAS.

**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 (when it's open). Bring your SRJC ID to check out the text.**

**Class Structure/Content**

- We will cover topics from chapters 7, 8, and 10 - 13 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
HW Quiz 1 Thursday of Week 4	50			50	
Exam 1 Thursday of Week 7	100			150	
HW Quiz 2 Thursday of Week 10	50			200	
Exam 2 Thursday of Week 13	100			300	
HW Quiz 3 Thursday of Week 16	50			350	
Take Out Lowest Quiz Score	-50			300	
Final Exam on Tuesday, May 24, 4:00pm-6:45pm	150			450	

### Activity Details

**Homework Quizzes (Three at 50 points each; only two count toward your grade... no makeups; only given during scheduled time).** These quizzes will be held in class. These quizzes will be written assuming you have completed the homework that is relevant to the quiz. No notes or homework or calculators or smart phones or neighbors are allowed to use on the quiz, but a page of notes will be provided to you prior to the quiz for your review. In addition, the same page of notes will be provided to you during the quiz. Quizzes are usually returned, graded, no later than one week of the quiz 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 13. 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

Provided by the SRJC Math Lab; Link: <https://mathematics.santarosa.edu/online-math-lab-tutoring>

**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 17	Monday & Tuesday No Classes 7.1: Integration by Parts 7.2: Trigonometric Integrals	7.1: 1,3,9,11,15,17,25,31,51,55,61,67,71 7.2: 1,3,5,7,13,31,33,35,55,65
2	January 24	7.3: Trigonometric Substitution 7.4: Integration of Rational Functions by Partial Fractions	7.3: 1-11 odd, 25, 33,35,37,41,43 7.4: 1,3,7,9,17,21,53,65,67
3	January 31	7.5: Strategy for Integration 7.8: Improper Integrals	7.5: 1-45 odd 7.8: 1-21 odd, 41, 43, 49, 51, 57, 67, 71
4	February 7	Thursday — HW Quiz 1 8.2: Area of a Surface of Revolution 8.5: Probability	8.2: 1-15 odd, 25, 27, 31, 35 8.5: 1-17 odd
5	February 14	Thursday No Classes 10.1: Curves Defined by Parametric Equations 10.2: Calculus with Parametric Curves	10.1: 1-27 odd, 35 10.2: 1-47 odd
6	February 21	Monday No Classes 10.3: Polar Coordinates 10.4: Areas and Lengths in Polar Coordinates 10.5: Conic Sections	10.3: 7-17 odd, 21, 25, 29, 31, 33, 55-63 odd 10.4: 1-13 odd, 25-33 odd, 45-49 odd 10.5: 1-37 odd
7	February 28	Thursday — Exam 1 11.1: Sequences 11.2: Series	11.1: 1-17 odd, 23-55 odd, 65, 83, 85, 87 11.2: 1-63 odd, 69, 71, 75
8	March 7	11.3: The Integral Test and Estimates of Sums 11.4: The Comparison Tests	11.3: 3-41 odd 11.4: 1-35 odd
9	March 14	11.5: Alternating Series 11.6: Absolute Convergence and the Ratio and Root Tests	11.5: 1-29 odd 11.6: 1-27 odd, 35, 37, 45

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<b>Week Number</b>	<b>Date (Week Beginning Monday...)</b>	<b>Section Number and Title from Our Text Read these sections before they are covered</b>	<b>Homework Exercises—Work these exercises after we've covered the section in class</b>
<b>10</b>	March 28	Thursday — HW Quiz 2 11.7: Strategy for Testing Series	11.7: 1-35 odd
<b>11</b>	April 4	11.8: Power Series 11.9: Representations of Functions as Power Series	11.8: 1-27 odd, 31, 35 11.9: 3-27 odd, 37
<b>12</b>	April 11	11.10: Taylor and Maclaurin Series 11.11: Applications of Taylor Polynomials	11.10: 3-25 odd, 27, 31, 33, 35, 37, 45, 47, 49, 57, 59, 63, 65 11.11: 3-27 odd
<b>13</b>	April 18	Thursday Exam 2 12.1: Three-Dimensional Coordinate Systems 12.2: Vectors	12.1: 1-19 odd, 23-37 odd 12.2: 1-5 odd, 9-27 odd, 31, 33, 35, 37
<b>14</b>	April 25	12.3: The Dot Product 12.4: The Cross Product	12.3: 1-11 odd, 15-19 odd, 29, 31, 39, 41, 49, 51 12.4: 1-19 odd, 27-35 odd, 39, 41
<b>15</b>	May 2	12.5: Equations of Lines and Planes 12.6: Cylinders and Quadric Surfaces	12.5: 3-37 odd, 41, 45, 51, 57 12.6: 1-7 odd, 21-39 odd, 43, 45
<b>16</b>	May 9	Thursday— HW Quiz 3 13.1: Vector Functions and Space Curves 13.2: Derivatives and Integrals of Vector Functions	13.1: 1-13 odd, 17, 19, 21-26, 41-49 odd 13.2: 1-25 odd, 35-39 odd
<b>17</b>	May 16	13.3: Arc Length and Curvature 13.4: Motion in Space: Velocity and Acceleration	13.3: 1-31 odd, 39, 47, 49, 51 13.4: 1-15 odd, 19, 23, 25
<b>Finals</b>	May 23	Final Tuesday, May 24, 4:00 pm - 6:45 pm	