Calculus with Analytic Geometry 2

Spring 2021 | San Diego City College

MATH 151 | CN 50494 | Online

Instructor Lan Hong | lhong@sdccd.edu

Student Hours: MW 8:00-9:30am

Welcome Students!

Let's start with some random tidbits on your instructor: my name is Lan Hong. My hobbies include hiking and listening to instrumental music. I am addicting to playing sudoku. As for my academic background, I earned B.A. degree in mathematics at UCSD and M.A./Ph.D. degrees at UC Davis. I have been teaching math for 21 years (6 years at UCD and 15 years at City College). I enjoy teaching and learning. I have just finished my training on online teaching and I'm excited to apply what I have learned. I look forward to working with you this semester. Please check our Canvas course shell for links to wide range of resources and supportive services available to you.

Course Description:

This is a continuation of Mathematics 150. We will mostly cover chapters 6 and 8 through 12. The course includes more advanced topics in analytic geometry, differentiation and integration of algebraic and transcendental functions, infinite series, Taylor series, and parametric equations. This course also covers a general introduction to the theory and applications of power series, techniques of integration, and functions in polar coordinates, as it serves as a basis for multi-variable calculus and differential equations, as well as most upper division courses in mathematics and engineering. It is intended for the transfer student planning to major in mathematics, computer science, physics, chemistry, engineering and economics

Prerequisite: Math 150 with grade of "C" or better, or equivalent.

Required Materials:

- Text: Calculus, Early Transcendentals 3rd Ed. Author: Briggs, Cochran, and Gillett. ISBN: 0135904188 (MML + Ebook) Bundle is required.
- *MyMathLab access code is needed for accessing online materials. It is included in the bundle.*

- Note: Our campus bookstore offers a package that bundles the textbook with a MylabAndMastering Access Code. Another option is to purchase the access code via Pearson MylabAndMastering website.

Optional weekly meetings MW 8-9:30am:

During these sessions, we answer questions regarding course materials and homework assignments. We reinforce the content from the videos and course materials. We also explore the concepts presented further as well as go over important examples to help you master the content. In previous semesters, students found these meeting very helpful and saving them a lot of time.

Zoom ID: 952 5906 6934 , passcode: m151spr21. Or Zoom url: https://cccconfer.zoom.us/j/95259066934?pwd=WmN3cUFkUzhkMEhZNkxrNlVMNWh3Zz09

Important Dates:

Add/drop deadline: Fri 2/16
Pass/No Pass deadline: Fri 3/8
Withdrawal deadline: Fri 4/16

Holidays: 2/12, 4/2 (no class/meeting)
Spring break 3/29 - 4/1

Need Help?

If you are confused or have any concerns about the course, *please do not hesitate to ask right way.* I strongly encourage you to use the free **online tutoring services** at the Math Center and the Tutorial Center.

- Math Center: http://www.sdcity.edu/academics/academic-resources/mathcenter/index.aspx
- Tutorial Center: http://www.sdcity.edu/students/services/tlc/index.aspx
- Use discussion board forums. Please post your questions and response to other students' posts. The more active you are on discussion board, the more you learn. Your active participation also helps in case your grade is on border-line.
- Email me and/or setting up one on one meeting with me.
  I check email and online posts daily Mon – Fri and try to respond to your inquiries within 24 hours. I might not log in or response to email over the weekend/holiday unless it is urgent matter.

Attendance Requirements:

Attendance for this online course is based on your frequency of working in the course and your progress through the course materials. You are expected to spend on average 12 hours per week in this course. Depending on your academic background, some of you might have to spend much more than this average time. Materials covered in this course is very dense and students might fall behind easily. It is imperative that in order to maximize on your chances for success, you must make sure you have the time available to spend in this class. To be successful in an online course, you need to have discipline, commitment, and time management skills.

Failure to submit more than one exam or more than three homework assignments on time constitutes non-attendance and lack of progress, and thus you may be dropped from the course for lack of progress. It is the instructor's discretion to withdraw a student after the add/drop deadline for not satisfying attendance requirements.

Student Responsibilities:

- Check your emails, discussion forums, and announcements REGULARLY (I.e, daily).
- It is the student's responsibility to drop all classes in which he/she is no longer participating. Do not simply stop logging in and assume that I will drop you from the course.
- Students who remain enrolled in a class beyond the published withdrawal deadline, as stated in the class schedule, will receive an evaluative letter grade in this class (A, B, C, D, F).
- Stay on top of assignments and test due dates.
- Participate in discussion forums.
- Help each other via threaded discussions in order to learn from each other. Your participation in the discussion forums will enhance your learning experiences. Having regular and substantive interaction with instructor and classmates is vital to your success in this course.
- I will monitor the forums and I might participate in the discussions that you post. I intervene only after students have been given the opportunity to answer their classmates' questions. Any email

that I receive where I feel that the rest of the class can benefit from, I will post on the appropriate discussion board.

- Keep in mind: the more active you are online, the more you will learn from this class. Most importantly, do not get behind; seek help.

Grading Policy:

Average scores of homework and exams will be weighted as follow:

Online Homework: 15%; Written Assignments: 15%; Midterm: 50%; Final: 20%

Letter grade will be assigned based on the following scale:

A: 90-100%; B: 80-89%; C: 70-79%; D: 60-69%; F: 0-59%.

Online Homework (15%): Homework assignments that are done entirely online on Pearson MylabAndMastering. You must watch videos and take notes before you are allowed to open homework exercise problems. Each assignment has set due date to make sure that you are on track. You MUST submit your initial homework by the assignment's due date. However, you can go back and redo problems after the due date to improve your score. Do not let yourself get behind. If you stay on top of assignments due date, you have very high chance of success in the course.
Remark: Make sure that you really understand and know how to do problems. While the Learning Aids is available on homework, it is NOT available on tests.

Written Assignments (15%): The main goal is to get you to practice writing mathematical solution to problems. You need to write out on paper entire solution to each problem you are assigned from the online software. Basically, you will get a problem come up on MyLab; you work out on paper-pencil the entire solution, enter the answer for that problem in the online system; and submit the paper-pencil portion on the day that the written assignment is due. MyMathLab immediately grades all your homework. So, you can always check your answers and redo problems until you get them correct. More details regarding format and due dates are posted on Canvas shell.

Midterms (50%): There will be three 120-minute online midterms. Midterm 2 is a proctored exam (see proctored exam below). Midterms 1 and 3 must be completed within each designated 72-hour period. No make-ups will be allowed unless you provide official documentation for an approved excused absence. Since there is only ONE attempt on these exams, I will give you practice exams.

Final (20%): *Proctored final exam is comprehensive.*

Proctored exams: Midterm 2 and the final are online proctored exam using Zoom. Basically, you log into Zoom meeting with video and audio enable on your smartphone or another device that is not connected to the computer that you use to take the exam. I place you (and only you) in a "breakout room". Periodically, I join your room to check on you to make sure everything is alright and to answer any clarifying question you might have. These exams will be scheduled meetings, where you have to request to take the exam during one of a number of testing time slots, which I will publish when we get closer to the exam dates.

Academic Environment:

All students have the right to a safe learning environment free from interference or disruption. Students are expected to adhere to district Procedure BP 3100, Student Rights, Responsibilities, and Code of Conduct. Students are expected to be honest and ethical at all times in their pursuit of academic goals. All work you submit must be your own. Any violation of

academic code of conduct will be referred for disciplinary action in accordance with Procedure 3100.2, Student Disciplinary Procedures.

DisAbility Support Services:

Students with disabilities who may need academic accommodations are encouraged to discuss their authorized accommodations from DSPS with the professors early in the semester so that accommodations may be implemented as soon as possible. In this online/remote learning format, I have made every effort to make this course accessible to all students, including students with disabilities. If you encounter a problem accessing anything in this course, please contact me immediately by email so that I can support you. You may also contact the college's disAbility Support Programs and Services (DSPS) Department at www.sdccd.edu/dsps to apply for services. Email: citydsps@sdccd.edu, Phone: 619-388-3994

Student Learning Outcomes:

Upon successful completion of the course, student will be able to:

- ***I. Computations:*** Students will successfully perform computations with integration techniques, differential equations, and infinite sequences and series. Objectives include:
  1. Solve first-order separable differential equations and initial value problems.
  2. Solve application problems involving first-order separable differential equations, such as exponential growth and decay.
  3. Solve integral problems by first examining the integral, then selecting and applying the appropriate technique of integration.
  4. Identify, analyze, and evaluate improper integrals.
  5. Evaluate the limits of functions which have the indeterminate forms "zero/zero" and "infinity/infinity" using L'Hôpital's Rule.
  6. Derive the Taylor series of a given function using a variety of techniques.
  7. Calculate the radius of convergence of a given power series.
  8. Apply Taylor's Theorem and Taylor polynomials to approximate to a certain degree of accuracy, the values of functions at non-trivial points.
- ***II. Applications:*** Students will successfully apply computation techniques learned in Math 151. Objectives include:
  1. Apply integration to physics problems relating to mass, centers of mass, work, and fluid force.
  2. Solve application problems involving first-order separable differential equations, such as exponential growth and decay.
  3. Compare the different convergence tests, including the Integral Test, the Ratio Test, the Root Test, the Comparison Test, the Limit Comparison Test, the Alternating Series Test, and the Divergence Test.
  4. Assess the convergence of a series by formulating the comparison of the given series to a known series.
  5. Assess if an alternating series converges absolutely, converges conditionally, or diverges.

Weekly Schedule:

Week 2/1 - 2/7	Review Calculus 1	
Week 2/8 - 2/14	Sections 4.7, 6.5	
Week 2/15 - 2/21	Sections 6.6, 6.7, 8.1	
Week 2/22 - 2/28	Sections 8.2, 8.3	TEST 1 (2/26 - 3/1)
Week 3/1 - 3/7	Sections 8.4, 8.5, 8.6	
Week 3/8 - 3/14	Sections 8.7, 8.8	
Week 3/15 - 3/21	Sections 8.9, 9.1	
Week 3/22 - 3/28	Sections 9.3, 10.1	TEST 2 (3/25 - 3/28)
Week 3/29 -4/4	**Spring Break**	
Week 4/5 – 4/11	Sections 10.2, 10.3	
Week 4/12 - 4/18	Sections 10.4, 10.5	
Week 4/19 - 4/25	Sections 10.6, 10.7	
Week 4/26 - 5/2	Sections 10.8, 11.1	TEST 3 (4/30 - 5/3)
Week 5/3 - 5/9	Sections 11.2, 11.3	
Week 5/10 – 5/16	Sections 11.4, 12.1	
Week 5/17 - 5/23	Sections 12.2, 12.3	
Week 5/24 - 5/29	Section 12.4	FINAL EXAM (5/27 - 5/29)