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Course Description

The first Calculus course in a three-course sequence. Topics include: functions, limits, continuity, techniques and applications of differentiation and integration, mean value theorem, Fundamental Theorem of Calculus, definite integrals.



Calculus is the outcome of a dramatic intellectual struggle which has lasted for twenty-five hundred years.

— Richard Courant —

AZ QUOTES

Calculus is the study of how things change. It gives us a formal system to compare change, to describe change, and to analyze change. I will place an emphasis on the basic principles of Calculus and consistently ask you to refer back to these basic principles of Calculus in order to gain depth of understanding. This may be the first course for which you feel like you can't practice or memorize your way through the material. Understanding is essential to application. It is never enough in mathematics to merely replicate procedures, you must be able to deftly use the basic set of Calculus tools to solve a variety of problems. The best Calculus students develop an intuition for the concepts through exploration and open-mindedness.

LIFE IS A MATH EQUATION.
IN ORDER TO GAIN THE MOST,
YOU HAVE TO KNOW HOW TO
CONVERT THE NEGATIVES
INTO POSITIVES.

Basic Course Information

Prerequisites: Math 241 and Math 260

Instructor: Kristin Webster, Phd (Dr. Webster)

Class Meetings: MWF 8:00 – 9:40am via Zoom

Office Hours: Tu & Th 7:45 – 10:05am and Th 11:15 am – 12:05 pm via Pronto

Final Exam: Friday, December 17, 2021, 7:00 – 9:00am

Instructor Contact Info:

Email: webstek@lacc.edu , Canvas email or Pronto private message.

Zoom Classroom Policies:

- It's important that we all treat one another with respect and kindness in Zoom, just as we would in person. For any misconduct, I will report the incident to LASC's disciplinarian.
- These Zoom sessions are a great opportunity for us to interact, discuss, and learn together, and I'm looking forward to these meetings together!

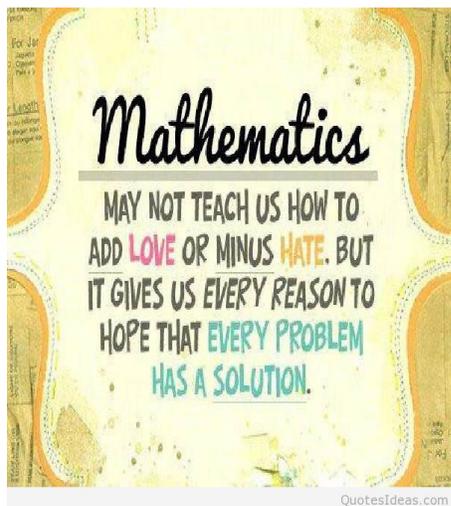
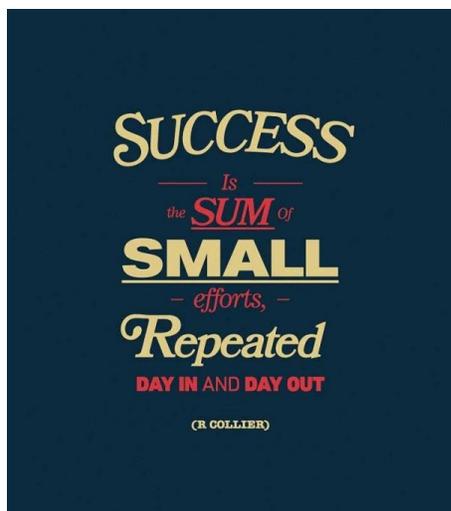
Attendance Policy: Only students who have been admitted to the college and are in approved active status may attend classes. Attendance is strongly recommended but not required. There are no make-ups for missed class activities, tests or late assignments. Students are responsible for announcements made in class in their absence including changes made to assignments or test dates.

Students should attend every meeting of all classes for which they register. To avoid being dropped from class, students should contact the instructor via email when they are absent for emergency reasons.

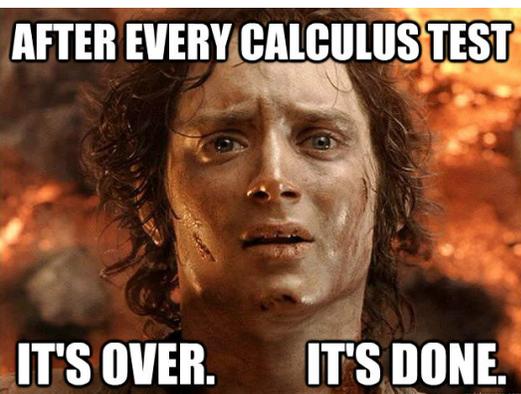
An instructor may exclude a student who is absent for more hours than the class meets per week or 20% of the total class hours. In this class, students will be dropped for missing 3 consecutive Zoom meetings or 5 total Zoom meetings. In addition, an instructor may equate three or more late arrivals or early departures from class as an absence for purposes of class attendance. **Please Note: Students who are pre-registered in a class and miss the first meeting may lose their right to a place in the class.** Students are responsible for dropping a class that they stop attending. If the class is not dropped, the student may receive an "F" in that class and be responsible for enrollment fee. Any drops or exclusions that occur between the 4th week and the 12th week will result in a "W" on the student's record. Drops are not permitted beyond the 12th week. A grade ("A", "B", "C", "D", "F", "INC", "P", or "NP") will be assigned to students who are enrolled past the 12th week even if they stop attending class. For further details, refer to "W" section of "Grading Symbols and Definitions."

Textbook: Calculus, 11th Edition, Larson & Edwards. ISBN: 9781337275347

Course Materials: Paper, Pen/Pencil, Scientific Calculator, some type of device that enables you to upload documents, such as a scanner or cell phone camera.



Assignments:



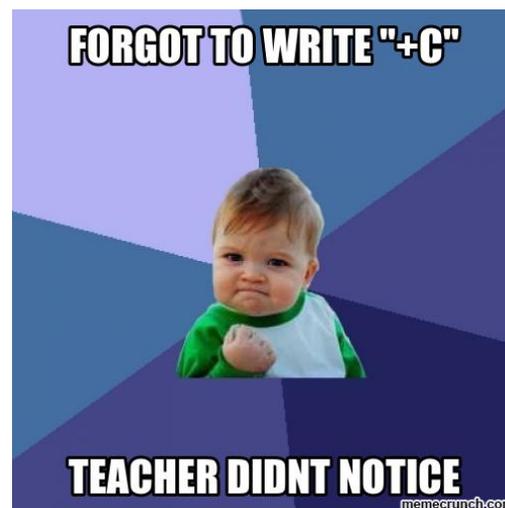
1. **Homework** - Assignments will be posted on Canvas on Fridays. Homework will be uploaded weekly on Wednesdays – starting the second week of class. Students are expected to complete all assigned problems but homework grades may reflect completion or grading of only a selection of problems.
2. **Weekly Quizzes** – Every Friday (other than test days) there will be a 20-30 minute quiz consisting of material from the previous weeks' homework. The lowest quiz score will be dropped
3. **Attendance** – Zoom meetings are required and quality of attendance will be graded. In order to get full credit, you must attend AND participate. There are up to 3 points per class for attendance and participation. A rubric will be posted on Canvas. Attendance grades will not be given on test days.
4. **Discussion Boards** – You will be required to complete 5 Chapter related discussion boards which include a response to a prompt and also responding to at least two of your classmates. There will be a specific rubric posted for each discussion board based on that week's requirements.
5. **Tests** – 5 Chapter tests will be held periodically through the semester. Test dates will be posted on Canvas and are subject to change. **No makeups permitted.**
6. **Final Exam:** Friday, December 17, 2021, 7:00 – 9:00 am

Points:

Attendance & Participation	86 Points
Homework Assignments	140 Points
Weekly Quizzes	100 Points
Tests (best 4 of 5):	400 Points
Final Exam:	200 Points
Total:	1000 Points

Grading Scale:

If your total is at least:	Your grade is:
900 Points	A
800	B
700	C
600	D
Less than 600	F



Student Learning Outcomes

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

1. Use and interpret derivatives algebraically, graphically, and numerically to model rates of change in application problems (for example, velocity, acceleration, population growth)
2. Use and interpret integrals algebraically, graphically, and numerically to model summation in application problems (for example, distance traveled, average value, and areas of geometric figures).



Topics:

Pre-Calculus Review: Algebra; Functions; Trigonometry

- Perform algebraic operations with polynomials, rational, radical, and trigonometric expressions.
- Analyze and graph functions.
- Solve equations.

Limits and Continuity

- Compute the limit of functions using numerical, graphical, and algebraic approaches and use the definition of limit to determine the continuity and differentiability of algebraic and trigonometric functions.
- Interpret the derivative as slope of tangent line to the graph of the function at a given point. Derivatives of Algebraic, Trigonometric, and logarithmic and exponential Functions.
- Find the derivative of a function as a limit.
- Compute or estimate the derivative of a function given a formula, graph, or table.
- Calculate derivatives of functions including trigonometric, exponential and logarithmic, using the differentiation formulas such as power, product, quotient, chain rule, implicit differentiation.
- Differentiation of inverse function.

Applications of the Derivative

- Interpret the derivative as an appropriate rate of change in a given real world context.
- Find equation of tangent line to the graph of function at a given point using the derivative of function and tangency point (slope of the tangent line).
- Find higher order derivatives.
- Apply the first and second derivative tests to determine the interval of increasing, decreasing, concavity, extrema, and points of inflection, find asymptotes, and limits at infinity to sketch the graph of a function.
- Explain the Mean Value and Rolle's Theorems and their application.
- Compute extrema of a function and solve optimization application problems using the derivative.
- Use Newton's method to approximate the real zeroes of a function.

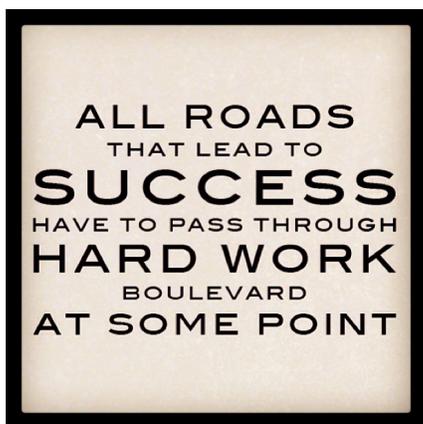
Integration

- Evaluate or approximate a definite integral as a limit.
- Evaluate a definite integral as a limit (Riemann sum).
- Find indefinite integrals using basic integration rules.
- Recognize properties of an integral.
- Evaluate a definite integral using the Fundamental Theorem of Calculus.
- Integrate functions using the substitution method.
- Apply integration to find area.
- Define definite integral as antiderivative.
- Calculate basic antiderivatives.

Exponential, Logarithmic and Other Transcendental Functions

- Find the derivative and anti-derivative of the logarithmic, exponential, inverse trigonometric, and hyperbolic functions.
- Indeterminate forms and L'Hopital's Rule

Tips for Success



1. Students should plan on spending at least 8-12 hours studying and practicing problems outside of class.
2. It is never enough in math to only be able to get the answers. You must also work at understanding the underlying concepts as well.
3. Find resources on the internet to help you understand.
<https://www.youtube.com/user/CenterofMath> is my favorite for Calculus. There are many others.
4. Work in (virtual) groups whenever possible. This gives you opportunities to discuss and explain and get insights from your peers.
5. Ask questions from your instructor or a tutor.

Frequently Asked Questions

1. *My algebra skills (i.e. factoring, solving equations, graphing) are a bit shaky, will this affect my ability to pass this class?*

Absolutely. Calc requires that you use your Algebra skills very fluidly. You should know which tools you need to solve any equation. One of the most important things to know from Algebra classes are Domain and Range, a subject that many students have only a cursory knowledge in. We will do “Just-In-Time” review of PreCalculus skills but make sure that you are striving to deepen your ability to use your Algebra skills well

2. *Is there extra credit?*

Nope. Please don't ask. There are already “extra points” worked into the grading scheme. No additional opportunities will be offered.

3. *I missed class, can I make up the test (assignment, quiz, etc.)?*

No. Sorry. No make ups allowed. There is a bit of wiggle room already built into the grading policy.

4. *I did the homework but I am (insert excuse here, sick, having internet trouble, etc.), can I hand it in late?*

No. There are no late assignments accepted. If you cannot upload the assignment to Canvas under the assignments, you may email it to webstek@laccd.edu or upload it through the Canvas inbox. I recommend uploading your assignment as soon as it's done so that you have time to troubleshoot tech issues.

Student Resources:

- NetTutor is 24 hour online tutoring help provided for multiple subjects for LACCD students through Canvas. Click on the “NetTutor” link on our Canvas page to access the service.
- Tutoring is also provided via Academic Connections.

Office Hours for LATTTC Online Tutoring Services

- Monday - Thursday from 9:00a.m. - 6:00p.m.
- Friday 9:00a.m. - 2:00p.m.

[View Our Tutoring Schedule](#)

Click here to register or for more info:

<http://www.lattc.edu/services/academic/academic-connections>

Additional Information

Disclaimer: Syllabus/Schedule subject to change.

Academic Honesty Policy: Violations of academic integrity of any type by a student provide grounds for disciplinary action by the instructor or college. Violations of Academic Integrity include, but are not limited to, the following actions: cheating on an exam, plagiarism, working together on an assignment, paper or project when the instructor has specifically stated students should not do so, submitting the same term paper to more than one instructor, or allowing another individual to assume one's identity for the purpose of enhancing one's grade. For more information on the Standards of Student Conduct refer to the college catalog available in hard copy and online at <http://www.lattc.edu>.

Disability Support Services (DSS) Accommodation: Students with disabilities who seek academic accommodations should first promptly contact the Disabled Students Programs and Services (DSPPS) office, Mariposa Hall, Room 100, (213) 763-3773,

- Email DSPPSLATTTC@LATTTC.EDU to make a request for accommodations. For more information, please refer to LACCD Administrative [Regulation E-100](#) (“Criteria for Serving Students with Disabilities”).
- <http://www.lattc.edu/services/support/dsps/students-rights-and-responsibilities>

Fall 2021 – Calc I – Schedule

Date	Topic
Monday - 8/30/2021	Syllabus Overview 1.1 A Preview of Calculus.
Wednesday - 9/1/2021	1.2 Finding Limits Graphically and Numerically.
Friday - 9/3/2021	1.3 Evaluating Limits Analytically. Quiz 1
Monday - 9/6/2021	Labor Day – No CLASS
Wednesday - 9/8/2021	1.4 Continuity and One-Sided Limits HW 1 DUE
Friday - 9/10/2021	1.5 Infinite Limits Quiz 2
Monday - 9/13/2021	Chapter 1 Review
Wednesday - 9/15/2021	Chapter 1 Test
Friday - 9/17/2021	2.1 The Derivative and the Tangent Line Problem. Quiz 3
Monday - 9/20/2021	2.2 Basic Differentiation Rules and Rates of Change
Wednesday - 9/22/2021	2.3 Product and Quotient Rules and Higher-Order Derivatives.
Friday - 9/24/2021	2.4 The Chain Rule. Quiz 4
Monday - 9/27/2021	2.5 Implicit Differentiation
Wednesday - 9/29/2021	2.5 Implicit Differentiation
Friday – 10/1/2021	Chapter 2 Review Quiz 5
Monday - 10/4/2021	Chapter 2 Test
Wednesday - 10/6/2021	3.1 Extrema on an Interval
Friday- 10/8/2021	3.2 Increasing and Decreasing Functions and the First Derivative Test. Quiz 6
Monday -10/11/2021	3.3 Concavity and the Second Derivative Test.
Wednesday - 10/13/2021	3.4 A Summary of Curve Sketching.
Friday – 10/15/2021	3.5 Limits at Infinity Quiz 7
Monday -10/18/2021	3.6 Optimization Problems.
Wednesday - 10/20/2021	3.7 Newton's Method.
Friday – 10/22/ 2021	3.8 Differentials. Quiz 8
Monday -10/25/2021	Chapter 3 Review
Wednesday - 10/27/2021	Chapter 3 Test

Fall 2021 – Calc I – Calendar continued

Date	Topic
Friday – 10/29/2021	4.1 Antiderivatives and Indefinite Integration. Quiz 9
Monday - 11/1/2021	4.2 Area.
Wednesday - 11/3/2021	4.3 Riemann Sums and Definite Integrals.
Friday - 11/5/2021	4.3 Riemann Sums and Definite Integrals, continued. 4.4 The Fundamental Theorem of Calculus. Quiz 10
Monday - 11/8/2021	4.4 The Fundamental Theorem of Calculus.
Wednesday - 11/10/2021	4.5 Integration by Substitution
Friday - 11/12/2021	Chapter 4 Review Quiz 11
Monday - 11/15/2021	Chapter 4 Test
Wednesday - 11/17/2021	5.1 The Natural Logarithmic Function: Differentiation
Friday - 11/19/2021	5.2 The Natural Logarithmic Function: Integration. Quiz 12
Monday - 11/22/2021	5.3 Inverse Functions.
Wednesday - 11/24/2021	5.4 Exponential Functions: Differentiation and Integration
Friday - 11/26/2021	No Class – Thanksgiving Holiday
Monday - 11/29/2021	5.5 Differentiation. Bases Other than e and Applications.
Wednesday - 12/1/2021	Chapter 5 Review/Catch-up
Friday - 12/3/2021	Chapter 5 Review Quiz 13
Monday - 12/6/2021	Chapter 5 Test
Wednesday - 12/8/2021	Final Exam Review
Friday- 12/10/2021	Final Exam Review
Friday -12/17/2021	Final EXAM 7:00 -9:00 am

Important Dates

Fall 2021: Traditional Semester

Session Period	August 30 - December 19
M-F Classes Begin	August 30
Sat Classes Begin	September 4
Applications Accepted Beginning	Now
Finals	Dec 13 – Dec 19 (See Finals Schedule)

Last Day To/For

Recency Petitions	Deadline to enroll
Third Attempt Petitions	Deadline to enroll
Prerequisite Clearance/Challenge Petitions	Deadline to enroll
Add	Online: Aug 31- Sep 12 with permission number from instructor
Audit	Begin accepting on Sept 13
File Pass / No Pass	Sept 12
Drop without fees or get a refund	Sept 12
Drop without a "W"	Sept 12
Drop with a "W"	Nov 21
Grades Due	Dec 28

*NOTE: Short-term courses and other accelerated program classes have different deadlines. **Please check your student information portal for drop dates and deadlines.***

Fall Semester 8-Week 1	August 30 - October 24
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Fall Semester 8-Week 2	October 25 - December 19
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Fall 2021: Holidays/Campus Closed

Labor Day	September 6
Veteran's Day	November 11
Thanksgiving	November 25-26
Non-Instructional Days (College open)	November 27-28, December 20-23, 25-26 & 28-29, January 1 & 2
Winter Holiday	December 24, 27, 30-31, January 3