Math 1B: Integral Calculus
Fall 2020, CRN 26048, Section 50Z
This is an online course.

Instructor Information

Instructor:	Andrew Jianyu YU
Email:	yujian@fhda.edu
Office Location:	E37 (E Quad, Room 37)
Office Hours:	Tuesday and Thursday 12:00 PM to 1:30 PM

This is an online class. The due date of all the assignment follows the U.S. Pacific Standard Time (PST). Please check your time zone and the difference if you are taking this class outside of the Pacific Standard Time zone.

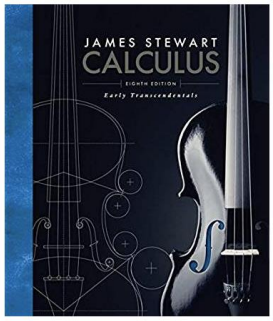
Course Description

Fundamentals of integral calculus

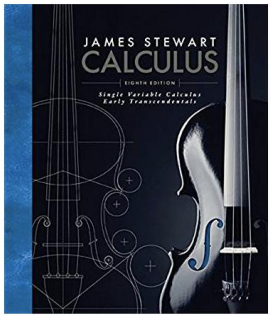
Prerequisite

Math 1A or Math 1A Honor
Note: This class is not open to students with credit in Math 1B Honor
Advisory: EWRT 211 and READ 211 (or LART 211), or ESL 272 and 273

Textbook



Calculus: Early Transcendental, by James Stewart, 8th Edition; Book Length 1368 pages; ISBN-10: 9781285741550, ISBN-13: 978-1285741550, ASIN 1285741552; Publisher: Cengage Learning; Publication date: February 4th, 2015
This textbook is a full version, which contains chapter 1 to chapter 17. It is sufficient for the entire calculus sequence. Math 1A covers chapters 1, 2, 3, and 4. Math 1B covers chapters 5, 6, 7, 8, and 9. Math 1C covers chapter 11, 12, and 13. Math 1D covers chapter 14, 15, and 16.



Single Variable Calculus: Early Transcendental, by James Stewart, 8th Edition; Book Length 960 pages; ISBN-10: 9781305270336, ISBN-13: 978-1305270336; Publisher: Cengage Learning; Publication date: January 1st, 2015
This textbook contains chapters 1 to 11 of the full Calculus version, which is only sufficient for Math 1A and 1B.

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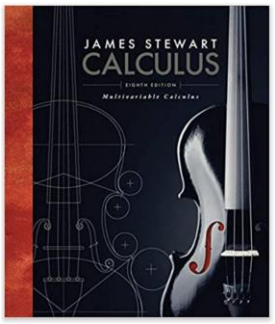
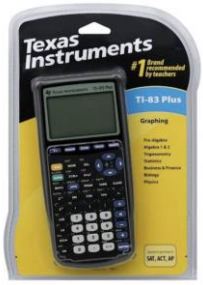
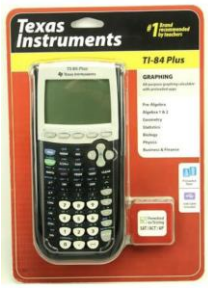


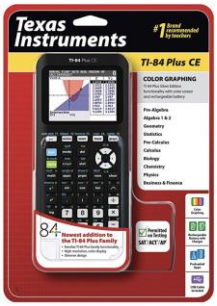
Multivariable Calculus: Early Transcendental, by James Stewart, 8th Edition; Book Length 624 pages; ISBN-10: 9781305266643, ISBN-13: 978-1305266643; Publisher: Cengage Learning; Publication date: June 15th, 2015
This textbook contains chapters 12 to 17 of the full Calculus version, which is only sufficient for Math 1C and 1D.

Calculator

TI-83 Plus TI-84 Plus TI-84 Plus CE TI-Nspire







Graphing calculator is **recommended** for the course. TI-84 Plus or Plus CE is highly recommended. This calculator is widely used in math, science, and engineering courses. You are required to bring a physical calculator to the exam, and sharing calculator is considered as cheating incident. Using the calculator apps on your phone is strictly prohibited on the exam. Do not purchase the TI-Nspire Graphing Calculator (around $150) because it is too advanced for this course. Instructions will not be provided for TI-Nspire.

Technical Requirements

- **Your Email:** Please check your email regularly. If possible, connect your email with an app in your smartphone. I will send the homework, lecture notes, and announcement through email. Note that these materials will also be posted on Canvas. You are welcome to ask me any questions related to lecture, homework, or personal emergency through email.
  Subject of my emails "Math 1B: _____"
  Please keep a record of all the email with the subject above until the semester/quarter is officially finished. You are required to use the same subject time when you send me an email because I have more than 100 students every semester/quarter.
- **Canvas:** All the lecture notes, homework, solutions, and announcements will be posted on Canvas under the "File" tab.

WebAssign Class Key and Self-Enrollment

Go to www.webassign.net to register for your account. Please take the advantage of the free trial and do not pay anything yet. All the purchases are non-refundable.

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All the homework, quizzes, and exams will be held on WebAssign. If you are still on your free trial, pay the full price before the deadline. Otherwise, you will be removed from the system. Be aware that the due dates follow the U.S. Pacific Standard Time (PST). If you are outside of this time zone, please check the difference between the two time zones.

Scanning Your Paperwork

If an assignment is expected to finish on paper, you have to download the assignment from Canvas, print the assignment, and completed the assignment. If you do not have a scanner at home, use a free app called Genius Scan. It allows you to take pictures of your work and merge multiple pictures into one PDF document. *Submitting multiple pictures is not allowed. Points will be deducted if you do so.*

Asynchronous Lectures and Expected Preparation

All the lectures will be recorded in advanced and posted on my YouTube channel called "**Lemon Math**". All the lecture videos will be stored in a **playlist** called "**Integral Calculus**". If you wish, click "subscribe" to see the latest update of the videos. If you have any questions regarding the lecture, send me an email and I will response to your email as soon as possible.

Canvas

There are a few places that you have to visit frequently on Canvas.

- **Modules**
  An individual module will be created for each week. Inside each module, you will see the overview and content of that week, all the lecture videos that I want you to watch, and assignments that I want you to complete.
- **Files**
  If I want to share lecture notes, tables, or any documents with you. The documents will be posted on the Files tab. At this point. The syllabus is posted on Files.

- **Discussion**
  If we want to have a discussion regarding any topics, we will do this in the Discussion tab.

Attendance
The course is in a virtual mode. You are expected to maintain a good self-discipline to finish the assignments on time because late works will receive no credits.

Homework, 15% of the Course Grade
Problems will be assigned from each section taught in lecture. You are required to finish most of the homework on WebAssign. If an assignment is required to be written on paper, you have to scan your work, merge all the images into one PDF document with multiple pages, and submit to Canvas. The lowest homework score will be dropped at the end of the course.

Quiz, 20% of the Course Grade
A quiz will be assigned and graded on WebAssign at the due date of every homework. All the quizzes are open-book and open-notes. Quiz is an individual assignment. You are required to do your own work. Group-work is strictly prohibited. The lowest quiz score will be dropped at the end of the course.

Midterm, 35% of the Course Grade (Two midterms in this course)
All the midterms will be assigned and graded on WebAssign. Midterm date will be announced in advanced. All the midterms are open-book and open-notes. Midterm is an individual assignment. You are required to do your own work. Group-work is strictly prohibited. Dropping the lowest scare is not applicable on midterms. If you seek for assistances to complete the exam, your exam score is zero and you will get an F in this course.

Final Exam, 30% of the Course Grade
A comprehensive final exam will be assigned and graded on WebAssign. Although this is also an open-book and open-notes exam, you must do your own work. Group-work is strictly prohibited. If you seek for assistances to complete the exam, your exam score is zero and you will get an F in this course.

Policy Check Point:

1. The due dates follow the United States Pacific Standard Time (PST). If you are taking this course outside PST zone, please check the difference between the two time zones.
2. You are expected to check the due dates on your WebAssign account at least once a day to plan accordingly. Also, you are expected to check our Canvas page to see announcements and week module regularly.
3. Your instructor do not negotiate due dates and do not accept late work, especially sending late work through email for credits.

Tutoring at the Student Success Center (SSC)

The Student Success Center (SSC) has moved services into virtual rooms via Zoom for all forms of tutoring and workshops. Please visit the following website for details. https://www.deanza.edu/studentsuccess/

Grading Rubrics

Your course grade will be assigned in the following standard:

A: 100% to 92%	A-: 91% to 90%	
B+: 89% to 86%	B: 85% to 82%	B-: 81% to 80%
C+: 79% to 74%	C: 73% to 70%	
D: 69% to 60%	F: below 60%	

Extra Credit Assignment

There are no extra credit assignments in this course to improve your grade. Please do not ask for any.

Academic Integrity

Academic dishonesty will not be tolerated. Any student attempting to defraud the instructor on a quiz, exam, final exam, or any other assessment item designated as an individual assignment will receive a zero on that assignment. This score is irreplaceable. If a cheating incident is detected on your work, the rest of your works in the course will be closely monitored and examined.

Course Content

Chapter 5: Integrals

Section 5.1: Areas and Distances
Section 5.2: The Definite Integral
Section 5.3: The Fundamental Theorem of Calculus
Section 5.4: Indefinite Integrals and the Net Change Theorem
Section 5.5: The Substitution Rule

Chapter 6: Applications of Integration

Section 6.1: Areas Between Curves
Section 6.2: Volumes
Section 6.3: Volumes by Cylindrical Shells
Section 6.4: Work
Section 6.5: Average Value of a Function

Chapter 7: Techniques of Integration

Section 7.1: Integration by Parts
Section 7.2: Trigonometric Integrals
Section 7.3: Trigonometric Substitution
Section 7.4: Integration of Rational Functions by Partial Fractions
Section 7.5: Strategy for Integration
Section 7.6: Integration Using Tables and Computer Algebra Systems
Section 7.7: Approximate Integration
Section 7.8: Improper Integrals

Chapter 9: Differential Equations

Section 9.1: Modeling with Differential Equations
Section 9.2: Direct Fields and Euler's Method
Section 9.3: Separable Equations
Section 9.4: Models for Population Growth

Course Objectives

A. Analyze and explore aspects of the integral calculus.
B. Analyze and evaluate the definite integral as a limit of a Riemann sum and examine its properties
C. Examine the Fundamental Theorem of Calculus
D. Find definite, indefinite, and improper integrals using various techniques
E. Examine applications of the definite integral in Mathematics
F. Examine some applications of the definite integral to other subjects, such as, physics, economics and biology. Required applications include probability, center of mass, and work done by force.
G. Examine differential equations

Academic Calendar:

September 21: First day of fall quarter
October 3: Last day to add classes
October 4: Last day to drop classes without a W
October 16: Last Day to request "Pass/No Pass" for 12-week classes
November 11 (Wednesday): Veterans Day holiday, campus closed
November 13: Last day to drop classes with "W"
November 26 to 29: Thanksgiving holiday, campus closed
December 1: Last day to file for fall degree or certificate
December 7 to 11: Final exam's week

Important Note: It is student's responsibility to drop or withdraw the class if that student decides not to finish the class. After the last day to withdraw is passed, student cannot withdraw from the class.

The professor reserves the right to make changes to the syllabus, including project due dates and test dates (excluding the officially scheduled final examination), when unforeseen circumstances occur. These changes will be announced as early as possible so that students can adjust their schedules.

Student Learning Outcome(s):

*Analyze the definite integral from a graphical, numerical, analytical, and verbal approach, using correct notation and mathematical precision.
*Formulate and use the Fundamental Theorem of Calculus.
*Apply the definite integral in solving problems in analytical geometry and the sciences.