

South Plains College
Common Course Syllabus: Calculus II (MATH 2414)
Spring 2021

Department: Mathematics, Engineering, and Computer Science

Discipline: Mathematics

Course Number: MATH 2414

Section: 002 (Mondays and Wednesdays, 2:30-4:35pm, Math and Engineering building, room 108)

Course Title: Calculus II

Available Formats: conventional/flex

Campuses: Levelland and Reese. This class meets on the Levelland campus.

Course Description: Differentiation and integration of transcendental functions; parametric equations and polar coordinates; techniques of integration; sequences and series; improper integrals.

Prerequisite: Successful completion with a grade of 'C' or better in MATH 2413

Credit: 4 **Lecture:** 3 **Lab:** 2

Instructor: Jay Driver

Telephone: (806) 716-2780

Office: Math and Engineering building, office 114

Email: The instructor may be emailed through Blackboard or at jdriver@southplainscollege.edu.

Email Policy: All students at South Plains College are assigned a standardized SPC e-mail account. Although personal email addresses will continue to be collected, the assigned SPC e-mail account will be used as the official channel of communication for South Plains College. The Student Correspondence Policy can be found at www.southplainscollege.edu. To access the SPC student e-mail account, log in to portal.office.com. (Copied from SPC Student Guide) Since all students have an assigned SPC email, the instructor will only acknowledge, respond, and send emails to your assigned SPC email. This ensures all correspondence from the instructor is received by the intended recipient.

Virtual/Face-to-Face Office Hours:

- Mondays, 11:00-12pm, 1:30-2:30pm.
- Tuesdays, 2:30-3:30pm.
- Wednesdays, 11:00-12pm, 1:30-2:30pm.
- Thursdays (*virtual office hours only), 2:30-3:30pm.
- Fridays (*virtual office hours only), 9:00am-12:00pm.
- And by appointment (scheduled in Blackboard).

**Virtual office hours may be scheduled in Blackboard.*

Textbook: *Calculus, Volume 2*, Strang and Herman, OpenStax

The following message is from OpenStax.org:

Good news: your textbook for this class is available for free online, in web view and PDF format! You can also purchase a print version, if you prefer, via the campus bookstore or from OpenStax on Amazon.com.

You can use whichever formats you want. Web view is recommended -- the responsive design works seamlessly on any device. If you buy on Amazon, make sure you use the link on your book page on openstax.org so you get the official OpenStax print version. (Simple printouts sold by third parties on Amazon are not verifiable and not as high-quality.)

Calculus Volume 2 from OpenStax, Print ISBN 1938168062, Digital ISBN 194717214X, <http://www.openstax.org/details/calculus-volume-2>

Supplies: You will need a scientific calculator and a small supply of graph paper. Calculators on cell phones, TI-89, TI-92, or TI-Inspire calculators, or any other electronic devices will not be allowed during testing without permission from the instructor. Make certain you have access to a scanner or scanning app such as CamScanner, Scannable, OneDrive, etc. in order to scan your assignments/quizzes and submit them through Blackboard.

Blackboard: Blackboard is the online course management system that will be utilized for this course. This course is supplemented online, so all access to course information and your instructor is through the Internet. This course syllabus, as well as all course materials can be accessed through Blackboard. Login at <https://southplainscollege.blackboard.com/>. The user name and password should be the same as the MySPC and SPC email.

User name: first initial, last name, and last 4 digits of the Student ID

Password: Original CampusConnect Pin No. (found on SPC acceptance letter)

Questions regarding Blackboard support may be emailed to blackboard@southplainscollege.edu or by telephone to 806-716-2180.

This course partially satisfies a Core Curriculum Requirement: None

Core Curriculum Objectives addressed:

- **Communications skills**—to include effective written, oral and visual communication
- **Critical thinking skills**—to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
- **Empirical and quantitative competency skills**—to manipulate and analyze numerical data or observable facts resulting in informed conclusions

Student Learning Outcomes: Upon completion of this course and receiving a passing grade, the student will be able to:

1. Use the concepts of definite integrals to solve problems involving area, volume, work, and other physical applications.
2. Use substitution, integration by parts, trigonometric substitution, partial fractions, and tables of anti-derivatives to evaluate definite and indefinite integrals.
3. Define an improper integral.
4. Apply the concepts of limits, convergence, and divergence to evaluate some classes of improper integrals.
5. Determine convergence or divergence of sequences and series.
6. Use Taylor and MacLaurin series to represent functions.
7. Use Taylor or MacLaurin series to integrate functions not integrable by conventional methods.
8. Use the concept of polar coordinates to find areas, lengths of curves, and representations of conic sections.

Student Learning Outcomes Assessment: Pre- and post-test questions will be used to determine the extent of improvement that the students have gained during the semester.

Course Evaluation: There will be departmental final exam questions given by all instructors. Assignments will count for 20% of the final grade, while exams count for 80% of the final grade. Expect 22 assignments and 4 scheduled exams throughout the course. Your final average in the course will determine the letter grade posted on your transcript. This grade is determined by the following scale:
A (90-100%), B (80-89%), C (70-79%), D (60-69%), F (0-59%).

- Assignments/Quizzes (22 assignments, 12 quizzes) = 20%
- Exam 1 (covering Assignments 0-6) = 20%
- Exam 2 (covering Assignments 7-12) = 20%
- Exam 3 (covering Assignments 13-17) = 20%
- Exam 4 (covering Assignments 18-22) = 20%.

To maximize your potential for successfully completing this course:

- login to Blackboard daily;
- watch the lecture videos and take notes on them;
- thoroughly complete and submit the assignments on time;
- practice the exercises repeatedly until you have full mastery of them.

Attendance/Student Engagement Policy: Attendance and effort are the most important activities for success in this course. The instructor maintains records of the student's engagement throughout the semester. The student will be allowed to miss twenty percent (20%) of class assignments for the semester, *for any reason*. Should this number be exceeded, the instructor has the right to drop the student with a grade of F or an X, depending on the instructor's discretion.

Before arriving for the class meeting, make certain you have

1. worked through the notes and videos for that week's lessons;
2. completed a majority of the assigned exercises.

Upon arriving at the class meeting, we will

1. answer questions over exercises;
2. work through exercises;
3. submit assignments and quizzes.

Major exams will be at specified Wednesday face-to-face meetings in M108 from 8:30-10:35am with the exception of the final exam, which is on Monday, May 10, 8:00-10:00am.

Assignments and Exams: The following is a sequential list of the assignments and exams.

0. Integration Review
1. Volumes of Revolution
2. Lengths of Plane Curves and Surface Area of Revolution
3. Centers of Mass & Work
4. Transcendental Review and Applications
5. Calculus of the Hyperbolic Functions
6. Integration by Parts

Exam 1 (20%)

7. Integrals Involving Powers of Trig Functions
8. Trigonometric Substitution
9. Partial Fractions
10. Numerical Integration
11. L'Hopital's Rule and Improper Integrals
12. The Basics of Differential Equations and Separation of Variables

Exam 2 (20%)

13. Introduction to Sequences and Infinite Series
14. The Integral and Comparison Tests
15. Alternating Series and the Ratio and Root Tests
16. Power Series
17. The Maclaurin and Taylor Series

Exam 3 (20%)

18. An Introduction to Parametric Curves
19. The Calculus of Parametric Curves

- 20. Polar Coordinates
- 21. Area and Arc Length in Polar Coordinates
- 22. Conic Sections in Rectangular Coordinates

Exam 4 (20%)

Assignment Format and Policy: Assignments are given after each lesson and are collected according to the calendar below. For each question on each assignment:

- Write the question number.
- In solving the problem, show all necessary work.
- Clearly mark your answer.
- Check your answers in Blackboard to make certain you are practicing the exercises correctly.
- Write your name at the top of each page of your work.
- Submit the assignment in Blackboard as a single pdf file. (Pdf files can be generated easily using a scanner or many freely available phone apps, like CamScanner, Scannable, or OneDrive.)

Late assignments will be accepted with a 10% deduction. No late quizzes will be accepted. Make certain to complete and submit assignments on time (or early). Early submissions are welcomed! Again, expect a quiz to be administered with each assignment collection. All lessons are due no later than the close of the unit exam.

Exam Format and Policy: There are four (4) units of study in this course. At the conclusion of each unit is a face-to-face examination on specified Wednesdays, 2:30-4:35pm with the exception of the final exam, which is on Monday, May 10, 1:00-3:00pm. If there becomes a quarantine issue or movement of this class to an online setting, then adequate internet supplies will be needed, such as a webcam, microphone, and access to online collaborative tools like Blackboard Collaborate or Zoom.

Tentative Course Calendar: Below is a calendar view of assignment and exam due dates and times.

Date	Topics (assignment is included with each lesson)	Due Date
Wk1: Jan 19-22	Course Introduction Lsn0: Integration Review from Calculus 1 Lsn1: Volumes of Revolution	Wed, Jan 20: Qz1 due by 4:35pm. Lsn 1 due by noon Thur, Jan 21.
Wk2: Jan 25-29	Lsn2: Lengths of Plane Curves and Surface Area Lsn3: Centers of Mass and Work Lsn4: Transcendental Review with Applications	Wed, Jan 27: Qz2 due by 4:35pm. Lsns 2-4 due by noon Thur, Jan 28.
Wk3: Feb 1-5	Lsn5: Calculus of the Hyperbolic Functions Lsn6: Integration by Parts	Wed, Feb 3: Qz3 due by 4:35pm. Lsns 5&6 due by noon Thur, Feb 4.
Wk4: Feb 8-12	Exam 1 (Wed, Feb 10) The exam will begin at 2:30pm and be due by 4:35pm.	Wed, Feb 10, 4:35pm.
Wk5: Feb 15-19	Lsn7: Integrating Powers of Trig Functions Lsn8: Trigonometric Substitution	Wed, Feb 17: Qz4 due by 4:35pm. Lsns 7&8 due by noon Thur, Feb 18.
Wk6: Feb 22-26	Lsn9: Partial Fractions Lsn10: Numerical Integration	Wed, Feb 24: Qz5 due by 4:35pm. Lsns 9&10 due by noon Thur, Feb 25.
Wk7: Mar 1-5	Lsn11: L'Hopital's Rule and Improper Integrals Lsn12: Basics of Diff Eqns and Sep of Variables	Wed, Mar 3: Qz6 due by 4:35pm. Lsns 11&12 due by noon Thur, Mar 4.
Wk8: Mar 8-12	Exam 2 (Wed, Mar 10)	Wed, Mar 10, 4:35pm.

	The exam will begin at 2:30pm and be due by 4:35pm.	
Wk9: Mar 22-26	Lsn13: Introduction to Sequences and Infinite Series Lsn14: Integral and Comparison Tests	Wed, Mar 24: Qz7 due by 4:35pm. Lsns 13&14 due by noon Thur, Mar 25.
Wk10: Mar 29 – Apr 1 (Fri, Apr 2 is Easter Holiday)	Lsn15: Alternating Series, Ratio and Root Tests Lsn16: Power Series	Wed, Mar 31: Qz8 due by 4:35pm. Lsns 15&16 due by noon Thur, Apr 1.
Wk11: Apr 5-9	Lsn17: Maclaurin and Taylor Series	Wed, Apr 7: Qz9 due by 4:35pm. Lsn17 due by noon Thur, Apr 8.
Wk12: Apr 12-16	Exam 3 (Wed, Apr 14) The exam will begin at 2:30pm and be due by 4:35pm.	Wed, Apr 14, 4:35pm.
Wk13: Apr 19-23	Lsn18: Parametric Equations Lsn19: Calculus of Parametric Curves	Wed, Apr 21: Qz10 due by 4:35pm. Lsns 18&19 due by noon Thur, Apr 22.
Wk14: Apr 26-30	Lsn20: Polar Coordinates Lsn21: Area and Arc Length in Polar Coordinates	Wed, Apr 28: Qz11 due by 4:35pm. Lsns 20&21 due by noon Thur, Apr 29.
Wk15: May 3-7	Lsn22: Conic Sections in Rectangular Coordinates	Wed, May 5: Qz12 due by 4:35pm. Lsn22 due by noon Thur, May 6.
Wk16: May 10-13 (Semester ends Thur, May 13.)	Exam 4 (Monday, May 10) This exam is the cumulative final exam that will be from 1:00-3:00pm in M108.	Mon, May 10, 3:00pm.

Academic Integrity (Plagiarism and Cheating Policy): “Complete honesty is required of the student in the presentation of any and all phases of course work. This idea applies to quizzes of whatever length as well to final examinations, to daily reports, and to term papers” (*SPC General Catalog*).

Plagiarism violations include, but are not limited to, the following:

1. Turning in a paper that has been purchased, borrowed, or downloaded from another student, an online term paper site, or a mail order term paper mill;
2. Cutting and pasting together information from books, articles, other papers, or online sites without providing proper documentation;
3. Using direct quotations (three or more words) from a source without showing them to be direct quotations and citing them; or
4. Missing in-text citations.

Cheating violations include, but are not limited to, the following:

1. Obtaining an examination by stealing or collusion;
2. Discovering the content of an examination before it is given;
3. Using an unauthorized source of information (notes, textbook, text messaging, internet, apps) during an examination, quiz, or homework assignment;
4. Entering an office or building to obtain an unfair advantage;
5. Taking an examination for another;
6. Altering grade records;

7. Copying another's work during an examination or on a homework assignment;
8. Rewriting another student's work in Peer Editing so that the writing is no longer the original student's;
9. Taking pictures of a test, test answers, or someone else's paper.

COVID: It is the policy of South Plains College for the Spring 2021 semester that as a condition of on-campus enrollment, all students are required to engage in safe behaviors to avoid the spread of COVID-19 in the SPC community. Such behaviors specifically include the requirement that all students properly wear CDC-compliant face coverings while in SPC buildings including in classrooms, labs, hallways, and restrooms. Failure to comply with this policy may result in dismissal from the current class session. If the student refuses to leave the classroom or lab after being dismissed, the student may be referred to the Dean of Students on the Levelland campus or the Dean/Director of external centers for Student Code of Conduct Violation. Students who believe they have been exposed or may be COVID-19 positive, must contact Health Services, DeEtte Edens, BSN, RN at (806) 716-2376 or dedens@southplainscollege.edu.

Student Code of Conduct Policy: Any successful learning experience requires mutual respect on the part of the student and the instructor. Neither instructor nor student should be subject to others' behavior that is rude, disruptive, intimidating, aggressive, or demeaning. Student conduct that disrupts the learning process or is deemed disrespectful or threatening shall not be tolerated and may lead to disciplinary action and/or removal from class.

Diversity Statement: In this class, the teacher will establish and support an environment that values and nurtures individual and group differences and encourages engagement and interaction. Understanding and respecting multiple experiences and perspectives will serve to challenge and stimulate all of us to learn about others, about the larger world and about ourselves. By promoting diversity and intellectual exchange, we will not only mirror society as it is, but also model society as it should and can be.

Disability Statement: Students with disabilities, including but not limited to physical, psychiatric, or learning disabilities, who wish to request accommodations in this class should notify the Disability Services Office early in the semester so that the appropriate arrangements may be made. In accordance with federal law, a student requesting accommodations must provide acceptable documentation of his/her disability to the Disability Services Office. For more information, call or visit the Disability Services Office at Levelland (Student Health & Wellness Office) 806-716-2577, Reese Center (Building 8) 806-716-4675, or Plainview Center (Main Office) 806-716-4302 or 806-296-9611.

Nondiscrimination Policy: South Plains College does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities. The following person has been designated to handle inquiries regarding the non-discrimination policies: Vice President for Student Affairs, South Plains College, 1401 College Avenue, Box 5, Levelland, TX 79336. Phone number 806-716-2360.

Title IX Pregnancy Accommodations Statement: If you are pregnant, or have given birth within six months, Under Title IX you have a right to reasonable accommodations to help continue your education. To [activate](#) accommodations you must submit a Title IX pregnancy accommodations request, along with specific medical documentation, to the Director of Health and Wellness. Once approved, notification will be sent to the student and instructors. It is the student's responsibility to work with the instructor to arrange accommodations. Contact the Director of Health and Wellness at 806-716-2362 or [email cgilster@southplainscollege.edu](mailto:cgilster@southplainscollege.edu) for assistance.

Campus Concealed Carry: Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in South Plains College buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and South Plains College policy, license holders may not carry a concealed handgun in restricted locations. For a list of locations and Frequently Asked Questions, please refer to the Campus Carry page at: <http://www.southplainscollege.edu/campuscarry.php>

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all South Plains College campuses. Report violations to the College Police Department at 806-716-2396 or 9-1-1.

SPC Bookstore Price Match Guarantee Policy: If you find a lower price on a textbook, the South Plains College bookstore will match that price. The difference will be given to the student on a bookstore gift certificate! The gift certificate can be spent on anything in the store.

If students have already purchased textbooks and then find a better price later, the South Plains College bookstore will price match through the first week of the semester. The student must have a copy of the receipt and the book has to be in stock at the competition at the time of the price match.

The South Plains College bookstore will happily price match BN.com & books on Amazon noted as *ships from and sold by Amazon.com*. Online marketplaces such as *Other Sellers* on Amazon, Amazon's Warehouse Deals, *fulfilled by Amazon*, BN.com Marketplace, and peer-to-peer pricing are not eligible. They will price match the exact textbook, in the same edition and format, including all accompanying materials, like workbooks and CDs.

A textbook is only eligible for price match if it is in stock on a competitor's website at time of the price match request. Additional membership discounts and offers cannot be applied to the student's refund.

Price matching is only available on in-store purchases. Digital books, access codes sold via publisher sites, rentals and special orders are not eligible. Only one price match per title per customer is allowed.

Note: The instructor reserves the right to modify the course syllabus and policies, as well as notify students of any changes, at any point during the semester.