South Plains College
Common Course Syllabus: MATH 1325
Revised August 2021

Department: Mathematics, Engineering, and Computer Science

Discipline: Mathematics

Course Number: MATH 1325

Course Title: Calculus for Business and Social Sciences

Available Formats: conventional, hybrid, and internet

Campuses: Levelland, Reese, and Dual Credit

Course Description: This course is the basic study of limits and continuity, differentiation, optimization and graphing, and integration of elementary functions, with emphasis on applications in business, economics, and social sciences. This course is not a substitute for MATH 2313 or 2413, Calculus I.

Prerequisite: Successful completion with a grade of 'C' or better in MATH 1324 or MATH 1314.

Credit: 3 **Lecture:** 3 **Lab:** 0

Textbook: *Mathematics with Applications in the Management, Natural, and Social Sciences*, Lial, Hungerford, Holcomb, and Mullins, 2019, 12th Edition, Prentice Hall/Pearson Education

Supplies: Please see the instructor's course information sheet for specific supplies.

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. Apply calculus to solve business, economics, and social sciences problems.
2. Apply appropriate differentiation techniques to obtain derivatives of various functions, including logarithmic and exponential functions.
3. Solve application problems involving implicit differentiation and related rates.
4. Solve optimization problems with emphasis on business and social sciences applications.
5. Determine appropriate technique(s) of integration.

6. Integrate functions using the method of integration by parts or substitution, as appropriate.
7. Solve business, economics, and social sciences applications problems using integration techniques.

Student Learning Outcomes Assessment: A 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.

Attendance/Student Engagement Policy: Attendance and engagement are the most critical activities for success in this course. The instructor maintains records of the student's attendance and submission of assignments throughout the semester. The student is expected to attend at least eighty percent (80%) of the **total** class meetings **and** submit at least eighty percent (80%) of the **total** class assignments to have the best chance of success. If the student fails to meet these minimum requirements, the instructor <u>may</u> remove the student from the class with an X, upon their discretion, to help the student from harming their GPA. If the student can not receive an X, the instructor will assign an F.

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 Syllabus Statement: It is the policy of South Plains College 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. There will be no requirement for face coverings at any location on any South Plains College campus or classroom. Faculty, staff, or students may continue to wear a mask voluntarily, but there will be no requirements for face coverings in any circumstance. 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 rcanon@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.

Calculus for Business and Social Sciences, Fall 2022

Instructor: Jason Groves   **Office:** AG107 (Levelland)
e-mail: jgroves@southplainscollege.edu
Phone: 806-716-2739
Office Hours: Virtual Meetings only: Mon 7:30 pm, Tues/Thurs 8 pm - 9pm,
Physical (Levelland): Mon - Thurs 11 am - Noon
Physical (Downtown) Mon/Wed/Thurs 2:15 pm - 3:15 pm, Fri 9 am - Noon
or by appointment

Students are responsible for knowing the policies of SPC as an institution, and this information is available in the student handbook. Policies that are applied to all sections of this course per the Department of Math and Engineering are found in the common course policies preceding this document. Below are the course policies specific to this course section and this instructor.

Prerequisites: Successful completion of MATH 1314 or MATH 1324 (grade of C or better) or equivalent.

What is a "Hybrid Course?" A hybrid course is a course that combines the flexibility of online courses with the immediacy of instruction available in traditional in-person or face-to-face courses. By reducing the number of in-class meetings, students can complete the coursework on their own (subject to the regular due dates). Students who expect to succeed in a hybrid course will make sure to complete coursework ahead of the deadline, and attend every class meeting.

Materials: The following materials are required for this course

Writing: Pencil and paper are required for taking notes during videos, while reading the text, or during class meetings, as well as taking quizzes and exams. Generally, I recommend having a spiral notebook dedicated to notes and solving problems for this class, and a folder for receiving returned/graded work.

Textbook: We will be using Mathematics with Applications in the Management, Natural, and Social Sciences by Lial, Hungerford, Holcomb, Mullins in this class. You will find a digital copy of this on Blackboard if necessary.

Calculators: You will need a calculator with e^x and ln keys will be required. These can be found on scientific calculators (inexpensively obtained from Wal-Mart or any other big-box store) or graphing calculators. Online options such as Wolfram Alpha (`wolframalpha.com`), Desmos (`www.desmos.com` Desmos also has smartphone apps) or GeoGebra (`www.geogebra.org`). Smartphone apps such as Panecal or ClassCalc are also available for low cost (or free). All are great for doing homework or studying. ***Please note that computer software and mobile apps will not be allowed on exams.***

Computer: Access to a computer with stable internet connection will be required for viewing course materials as well as using other software (see "Calculators" above and "Blackboard" below). The use of Chromebooks or other computers running the Chrome Operating System (ChromeOS) is discouraged, as ChromeOS is not always compatable with the software we may be using during this course. Students who do not have a computer may find success using mobile devices in some cases, and also have access to suitable computers via the computer labs found at every SPC campus.

Blackboard: Blackboard (accessible via the SPC website) will be used as a central hub for the course. Students will find this syllabus, and all other course materials, as well as assignments, grading rubrics, etc. Students should be checking Blackboard daily for announcements and updates, and to access the homework. Blackboard utilizes students' SPC email, thus students should also be checking their SPC email regularly.

MyMathLab: We will be using MyMathLab for you to practice concepts and do many assignments. Instructions for registration/login are available on Blackboard. Make sure you have full access as soon as possible.

Assessment: Grading will be done according to the standard 10 percent scale (i.e. 100% - 90% is an A, etc.) with assignments weighted as follows:

Homework	10%
Quizzes	15%
Case Studies	15%
Tests	40%
Final Exam	20%

Grades are calculated by taking the average of all of the grades in that assessment type, and then weighing them according to the proportions given above. Details of each assessment type are given below.

Class Attendance: As stated above, this is a hybrid course with both online and in-person components. Attendance to the in-person meetings is required. Students should be involved with working the course material as often as possible in order to develop mastery of the topics presented. If a student misses more than 4 in-class days without communication or arrangements made with the instructor that student may be dropped from the course with an X or an F (depending on the student's current course average).

If you wish to drop the course on your own (which gives a mark of W) see the drop materials in the Course Resources section of Blackboard. The last day to drop the course is Thursday, December 1 (12/1).

Be sure to plan their work time in such a way that you have seen and attempted as much of the material as possible before the class meetings. This way you will have questions to ask, and class time can be allocated to help all students where they are. Further, it has been well documented that spreading out study and regular, consistent practice over a longer period of time helps to retain knowledge, create new connections, and gain additional insights into the material.

Homework: Daily homework is essential to developing mastery over the topics presented in this course. Homework assignments are due every Thursday with that week's quiz. All homework assignments are available from the first day of classes. Homework problems may be attempted an unlimited number of times in order to achieve mastery over the topic. Each homework assignment has embedded within it various videos and interactive figures to help students understand the concepts, which they can then apply directly to the homework. Unlimited repetition allows for self-assessment and mastery. A primary use of the homework is to start building an intuition regarding each of the topics discussed in this course. This intuition can then be used to gain insights into material in future classes, so it is essential that students achieve as much mastery over the topics as possible. For best results, students should keep a notebook of all correctly worked homework problems to use as a study guide for quizzes, exams, and projects. Homework assignments close at the due date, and will not be extended except at the discretion of the instructor.

Quizzes: Quizzes will be given at every class meeting (except exam days) as a way to gauge class understanding, and will be turned in at the end of class. Quizzes are not dropped and cannot be made up.

Case Studies: Case Studies are assignments found in Blackboard. All work must be shown, and all explanations of steps or interpretations of results must be given in complete sentences. Due dates are given on the course calendar as well as on Blackboard, and late work will not be accepted (student will receive a 0).

Exams: Midterm exams are given during this course. These exams will be held exclusively during the classroom sessions of the course. Questions will consist of problems similar to the assigned quizzes, as well as conceptual questions for students to tie concepts together. Students caught cheating will be dropped from the class with an F and disciplinary action will be pursued.

Students must show all work when taking exams. All work should be done neatly and in pencil.

Final Exam: The final exam is comprehensive, and a required part of the course. Failure to take the final exam results in an automatic F. The Final Exam will be held Monday, December 12 at 5:30 pm

Email: The email at the header of the syllabus is the best way to get into contact with me. This email is also available on Blackboard in the "Instructor Information" section of the Blackboard course. This should be used as often as necessary to ask questions, schedule appointments for office hours (physical or virtual) or turn in written assignments in the event that Blackboard or Gradescope are down. You may also email incomplete parts of assignments in order to get feedback on how to proceed.

All emails should be formatted with the course number and section, and an adequate heading (i.e. "Math 1324-151 project questions" or "Math 1324-151 Chapter 3 Case Study"). Failure to format the subject line properly may result in emails being caught by SPC's email filter. Neither the instructor nor SPC is responsible for emails lost due to improper formatting.

Be sure to confirm that all relevant attachments are sent with the email and that the body of the email contains all relevant information for that correspondence.

Students that have questions while doing homework on MyMathLab may use the "Ask Your Instructor" link found in the "Question Helps" menu at the top of the problem being worked on. This sends the instructor an email link to the specific version of the problem being worked, and allows a space for the student to describe the issue they have encountered. Emails sent this way have already been marked as "safe" and will not be caught by email filters.

Showing Work: In all written assignments submitted (exam work, case studies, projects) work of one kind or another needs to be shown in order for the instructor to properly assess how much of the content has been properly learned and implemented. *When submitting written work any question or component that does not have work associated with it will be given reduced (or no) credit.* The Course Resources area has further instructions and examples of properly showing work.

Civility in the classroom: Students are expected to assist in maintaining a classroom environment that is conducive to learning. Given that this is an online course, "the classroom" is defined as any set of interactions that students will have with one another (primarily discussion boards). Students who are found to be intentionally hurtful or disrespectful, or repeatedly detract from the focus of the discussion boards will have their grade in this category penalized (up to zero credit for a discussion assignment), and may be administratively dropped from the course (with an X or F) for creating a hostile learning environment.

It is important to note the role that students play in their own mathematical education. Just as everybody has had (and continues to have) different life experiences, we all have different mathematical experiences as well. And while it is important that the systems and institutions that people interact with (of which this class is one) are impartial, to expect such from human beings borders on impossible. To that end, it is imperative that all students give space for their classmates to come into the material from where they are, and that we seek to understand each other. The most important capacity students can give each other is the space to be wrong, and to be guided out of misconceptions or errors. Both instructor and student are not just the product of their own hard work and thinking, but also of what their environments (both past and present) allowed them to work or think hard about.

Students in disagreements over results or processes must disagree professionally. Blanket statements ("you're wrong" or "that doesn't work") cannot be given without explicit evidence, and should still be framed more in terms of your own understanding: phrases like "I think the problem is asking for..." or "did you consider..." are more appropriate phrases to use when correcting and/or helping other students. People cannot escape their biases, but everybody can recognize that people do not always look at a problem the same way. As the saying goes: "Above all else, be kind."

Honesty: "Scholastic dishonesty" includes but is not limited to cheating, plagiarism, collusion, falsifying academic records, misrepresenting facts, and any act designed to give unfair academic advantage to the student. Incidents of academic dishonesty will be promptly reported and dealt with.

The ethics and appropriateness of the use of apps such as photomath on quizzes are discussed in one of the first discussion assignments. That being said, it is the policy of this class that use of these apps is strictly prohibited on all quizzes and exams.

Student Resources: To schedule a face-to-face or virtual meeting with SPC tutors, go to the SPC webpage, click Student Services, and click on Tutoring. There students may choose at which center they wish to have tutoring or if they wish to have a virtual session (face-to-face sessions only require an open spot, while virtual sessions require 4 hours notice). Click the Booking link and log in with SPC credentials. Students can then choose the subject and tutor.

Students also have access to the use of Tutor.com for a few hours each week. Students can access Tutor.com directly from the blackboard homepage, or from the Help section of this Blackboard course.

		Topics	Sections
Week 1	8/29 - 9/1	Limits	11.1, 11.2
Week 2	9/5 - 9/8	Rates of Change	11.3, 11.4
Week 3	9/12 - 9/15	Derivative Rules	11.5 - 11.8
Week 4	9/19 - 9/22	Exam 1, First and Second Derivative Tests	12.1, 12.2
Week 5	9/26 - 9/29	Optimization	12.3
Week 6	10/3 - 10/6	Exam 2, Curve Sketching	12.6
Week 7	10/10 - 10/13	Impicit Differentiation, Related Rates	12.4, 12.5
Week 8	10/17 - 10/20	Antiderivatives/Indefinite Integrals	13.1 - 13.3
Week 9	10/24 - 10/27	Exam 3, Definite Integrals	13.4, 13.5
Week 10	10/31 - 11/3	Applications of the Integral	13.6
Week 11	11/7 - 11/10	Differential Equations	13.7
Week 12	11/14 - 11/17	Multivariable Functions	14.1, 14.2
Week 13	11/21 - 11/24	Thanksgiving Break	
Week 14	11/28 - 12/1	Optimization	14.3, 14.4
Week 15	12/5 - 12/8	AMA - Review for Final Exam	
Week 16	12/12 - 12/15	Final Exam - 5:30 pm	