South Plains College Common Course Syllabus: MATH 2413 Revised August 2020

Department: Mathematics, Engineering, and Computer Science

Discipline: Mathematics

Course Number: MATH 2413

Course Title: Calculus I

Available Formats: conventional/flex

Campuses: Levelland and Reese

Course Description: Limits and continuity; the Fundamental Theorem of Calculus; definition of the derivative of a function and techniques of differentiation; applications of the derivative to maximizing or minimizing a function; the chain rule, mean value theorem, and rate of change problems; curve sketching; definite and indefinite integration of algebraic, trigonometric, and transcendental functions, with an application to calculation of areas.

Prerequisite: Successful completion with a grade of 'C' or better in MATH 2412 or successful completion with a grade of 'C' or better in MATH 1314 and MATH 1316.

Credit: 4 Lecture: 3 Lab: 2

Textbook: Calculus, Volume 1, Strang and Herman, OpenStax

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

This course partially satisfies a Core Curriculum Requirement: Mathematics Foundational Component Area (020)

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. Develop solutions for tangent and area problems using the concepts of limits, derivatives, and integrals.
- 2. Draw graphs of algebraic and transcendental functions considering limits, continuity, and differentiability at a point.
- 3. Determine whether a function is continuous and/or differentiable at a point using limits.
- 4. Use differentiation rules to differentiate algebraic and transcendental functions.

- 5. Identify appropriate calculus concepts and techniques to provide mathematical models of real-world situations and determine solutions to applied problems.
- 6. Evaluate definite integrals using the Fundamental Theorem of Calculus.
- 7. Articulate the relationship between derivatives and integrals using the Fundamental Theorem of Calculus.

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 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.

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: Should be provided by the Vice-President of Student Services over email.

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 <u>activate</u> 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 <u>email cgilster@southplainscollege.edu</u> 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.

MATH 2413 - Calculus I Syllabus

Instructor: Jason Groves Office: M107 (Levelland)

e-mail: jgroves@southplainscollege.edu Phone: 806-716-2739

Office Hours: MW: 11:30 am - 1 pm, F: 8am - 9:30 am (virtual)
TR: 9 am - 10:30 am, F: 9:30 am - 11 am (Levelland)

or by appointment

Materials: Calculus, Volume 1 OpenStax CNX. This text my be retrieved at

https://openstax.org/details/books/calculus-volume-1 (a direct link is also available on blackboard). Suitable writing instruments and paper for taking notes and completing assignments. Graphing paper is recommended but not required. Calculators with exponential and logarithmic functions are required. Graphing Calculators are permitted but not required. Knewton—Alta will be required for doing homework. You will also need a computer or other device with reliable broadband internet access to attend class remotely and to complete assignments in Knewton—Alta or submit written assignments via blackboard. Students must also have access to a scanner, or to a scanning app on their smartphone (iOS-based devices should have this natively in their camera apps. Android users can download GeniusScan for free.)

IT IS THE RESPONSIBILITY OF THE STUDENT TO BE FAMILIAR WITH SOUTH PLAINS COLLEGE POLICIES. BELOW ARE ITEMS SPECIFIC TO THIS COURSE

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

Participation 20%Exams 60%Final Exam 20%

Class Attendance: Students are expected to be in class and prepared for the day's lesson. Students are responsible for the material covered in this course, whether or not they are in class for any reason. As this is a synchronous hybrid course, students must attend in-person on the day they are assigned, and must attend remotely using the blackboard collaborate link if they are assigned remote attendance for that day. In the event that a student assigned in-person attendance cannot attend due to illness or a postive COVID-19 test, they should attend remotely if healthy enough to do so. This attendance is tracked by the instructor in order to be responsive to student needs and to uphold the academic integrity of the course.

Participation: Participation consists of homework, quizzes, and all other graded assignments that are not exams.

Homework: Knewton—Alta will be used in this course. Homework is expected to be done daily. Written assignments may also be given as necessary where long-form answers are required, work needs to be shown, or Knewton—Alta is not sufficient. Any long-form answers must have all work shown in an organized fashion, and all answers must be given in complete, grammatically correct sentences that convey a logical thought process (see the document "Writing in Mathematics" for more details and examples) and answer the question or address the issue. Late work is not accepted. Homework done online may be attempted as many times as you wish before the due

date. Knewton—Alta is an adaptive learning program. So even though you are allowed to attempt problems as many times as you like, a sufficient number of incorrect answers will bring up topics that cover prerequisite material to the questions you were working on. Getting correct answers after will bring the difficulty level (and content) back up to where it is supposed to be for the homework. It may certainly be the case that what started as 15 problems has become 25 or more because the earlier material is not properly understood. Please be conscientious when doing your homework to avoid moving too far backward in the assignments. If there are problems, please contact me - this is one of the main purposes of office hours.

Quizzes: Quizzes will be given as necessary to determine the collective standing of the class. Quizzes will usually be announced in advance, but this is not a requirement; pop-quizzes may be assigned.Quizzes may be given in class (with a digital version for remote students) or online via Knewton—Alta

Exams: There will be four midterm exams given during this course. During exams cell phones, laptops, and other such objects should be turned off and put away. Math solving apps (e.g. "PhotoMath," "Mathway") are strictly prohibited. There is no tolerance for violations. Students who break these rules will be asked to leave the exam (counted as an absence) and receive a zero for their exam grade. *Makeup exams are not given*.

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 in this classroom on Tuesday, December 8

Extra Credit: Extra Credit assignments are not offered in this course. Occasionally bonus problems may appear on exams.