

Master Course Syllabus

MATH 2413 Calculus I (2701015919)

*****NOTE TO STUDENT*****

Student success is our number one priority at Coastal Bend College and we realize that prompt, effective communication plays a significant role in achieving that goal. It is vitally important that you have the proper contact information for your instructor. This should include their phone number, email address, and if applicable, their office number, and office hours. If you ever have any problems contacting your instructor, or do not receive a prompt response to your inquiries, please contact the Division Chair of STEM, or the Dean of Transfer and General Education, as soon as possible. Their contact information is provided below:

<p>Mark L. Secord, Dean of General and Transfer Education 361-354-2408 secordm@coastalbend.edu</p>	<p>Richard E. Cowart, EdD., Division Chair of STEM 361-592-1615 ext. 4024 recowart@coastalbend.edu</p>
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We wish you all the best in your education and encourage you to contact us if you have any questions or concerns.

Keeping student success in sight, faculty in each of the courses will review with students, course information with specific reading schedules, assignments, and testing information during the first week of class. Additionally, the course information will be posted to Blackboard (THECB 60x30TX compliance).

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.

Semester Hours Credit: 3

Lecture/Lab Hours: 3-0

Prerequisite: MATH 2412 with grade of C or better, or both MATH 1314 and MATH 1316 with grades of C or better. Students are responsible for reading and following all college course prerequisites to ensure that they have been met for continued enrollment, otherwise the student must meet with their advisor to drop the course and make immediate and necessary changes to their schedule.

Textbook(s): (Required) MyMathLab Student Access. 4th ed. Pearson

ISBN: 9780321199911

(Optional) Briggs, Williams and Cochran, Lyle (2011). *Calculus, 2nd Edition*. Pearson

ISBN-13: 9780321977304

Student Learning Outcomes:

Upon successful completion of this course, students will:

1. Develop solutions for tangent and area problems using the concept 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.

Course Outline:

- **Unit 1 (Ch 2) Limits**
 - HW 2.1 The Idea of Limits
 - HW 2.2 Definitions of Limits
 - HW 2.3 Techniques for Computing Limits
 - HW 2.4 Infinite Limits
 - HW 2.5 Limits at Infinity
 - HW 2.6 Continuity
 - HW 2.7 Precise Definition of Limits
- **Unit 2 (Ch 3) Derivatives**
 - HW 3.1 Introducing the Derivative
 - HW 3.2 Working with Derivatives
 - HW 3.3 Rules of Differentiation

- HW 3.4 The Product and Quotient Rules
- HW 3.5 Derivative of Trigonometric Functions
- HW 3.6 Derivatives as Rates of Change
- HW 3.7 The Chain Rule
- HW 3.8 Implicit Differentiation
- HW 3.9 Related Rates

- **Unit 3 (Ch 4) Applications of the Derivative**
 - HW 4.1 Maxima and Minima
 - HW 4.2 What Derivatives Tell Us
 - HW 4.3 Graphing Functions
 - HW 4.4 Optimization Problems
 - HW 4.5 Linear Approximations and Differentials
 - HW 4.6 Mean Value Theorem
 - HW 4.7 L'Hôpital's Rule
 - HW 4.8 Newton's Method
 - HW 4.9 Antiderivatives

- **Unit 4 (Ch 5) Integration**
 - HW 5.1 Approximating Area under Curves
 - HW 5.2 Definite Integrals
 - HW 5.3 Fundamental Theorem of Calculus
 - HW 5.4 Working with Integrals
 - HW 5.5 Substitution Rule

- **Unit 5 (Ch 7) Logarithmic and Exponential Functions**
 - HW 7.1 Inverse Functions
 - HW 7.2 The Natural Logarithmic and Exponential Functions
 - HW 7.3 Logarithmic and Exponential Functions with Other Bases
 - HW 7.4 Exponential Models
 - HW 7.5 Inverse Trigonometric Functions
 - HW 7.6 L'Hôpital's Rule and Growth Rates of Functions

Evaluation Methods: Please see individualized instructor policies for course evaluation methods. Students will be assessed on the same measure, across each discipline, as per CBC guidelines.



Technical Support:

Email Support:	helpdesk@coastalbend.edu cabrigo@coastalbend.edu
Telephone Support:	866-722-2838 ext. 2508 (Toll Free) 361.354.2508 (Direct Line)
Live Chat:	Fall/Spring Hours: Monday-Thursday 8 a.m. to 8 p.m.; Friday 8 a.m. to 5 p.m. Summer Hours: Monday-Thursday 7 a.m. to 6 p.m.

Tutoring Services: Coastal Bend College offers free tutoring services to all CBC students who need academic assistance. Services include One-on-One, Group, and Online tutoring to all current CBC students. The Tutoring Coordinator’s office is at CBC-Beeville in the Student Success Center (SSC), Room 140 which is in the R.W. Dirks building. The SSC’s hours of operation are Monday -Thursday from 8 am – 8 pm. Tutoring services are also available at all the CBC site locations and students can visit the site’s SSC. For questions regarding tutoring services, please contact the CBC Tutoring Coordinator at (361) 354-2838 ext. 2578 or visit us at our website at: <http://coastalbend.edu/tutoring/>.

Beeville	Alice	Kingsville	Pleasanton
3800 Charco Road Beeville, TX 78102 1-866-722-2838	704 Coyote Trail Alice, TX 78332 1-866-891-2981	1814 Brahma Blvd. Kingsville, TX 78363 1-866-262-1615	1411 Bensdale Pleasanton, TX 78064 1-866-361-4222

Grady C. Hogue Learning Resource Center (Library): Located on the Beeville campus, the operation hours are Monday - Thursday 8:00 a.m. - 6:00 p.m.; Friday 8:00 a.m.- 5:00 p.m.

(Summer semesters will observe the CBC campus operation hours.) For locations and hours of CBC library in Alice, Kingsville, and Pleasanton sites please visit the library web page links below.

Grady C. Hogue Learning Resource Center (Library): <http://lrc.coastalbend.edu/about>

Online Catalog : <http://lrc.coastalbend.edu/catalog>

Library Website: <http://lrc.coastalbend.edu/about>

Hours and Locations: <http://lrc.coastalbend.edu/hours>

Pleasanton Public Library: <https://pleasanton.biblionix.com/>

115 N. Main St., Pleasanton, TX 78064

Monday – Friday 9:00 a.m. – 6:00 p.m.

Saturday 9:00 a.m. – 1:00 p.m.

Financial Aid: Resources available for students for financial aid, work study, and veteran benefits. For additional information, visit our website at www.coastalbend.edu/finaid or contact us at 361-354-2238. Office hours: Monday-Thursday 7-6 and Friday 8-5 (THECB 60x30TX compliance.)

ADA Statement: No qualified individual with a disability shall, by reason of such disability, be excluded from participation in or be denied the benefits of the services, programs, or activities of the College District, or be subjected to discrimination by the College District. Nor shall the College District exclude or otherwise deny equal services, programs, or activities to an individual because of the known disability of an individual with whom the individual is known to have a relationship or association. 42 U.S.C. 12132; 28 CFR 35.130(g).

See at: [GA \(Legal\)](#)

Student with Disabilities: Please notify your instructor of any modification/adaptation you may require to accommodate a disability-related need. You will need to provide documentation to the Director of Student Services so the most appropriate accommodations can be determined. Specialized services are available through the Office of Disability Services (SSB 4.104, 471-6259). For more information contact (361) 354-2300.

Scholastic Dishonesty: Each student is charged with notice and knowledge of the contents and provisions of Coastal Bend College's rules and regulations concerning student conduct. All students shall obey the law, show respect for properly constituted authority, and observe correct standards of conduct. Scholastic dishonesty shall constitute a violation of these rules and regulations and is punishable as prescribed by Coastal Bend College Policies FLB (Local) and FM (Local). Scholastic dishonesty shall include, but not be limited to, cheating on a test, plagiarism, and collusion.

See at: [FLB \(Local\)](#) and [FM \(Local\)](#).

Use of E-mail for Official Correspondence to students: All students should be familiar with the college's official email student notification policy. Students are expected to check their CBC email on a frequent and regular basis



to stay current with college-related communications, recognizing that certain communications may be time-critical.

Copyright Law and Intellectual Property Rights Policy: Copyright is the right of an author, artist, composer or other creator of a work of authorship to control the use of his or her work by others. Protection extends to literary works, musical works, dramatic works, pantomimes and choreographic works, pictorial and graphic works, sculpture, motion pictures and other audiovisual works, sound recordings and architectural works. Generally speaking, a copyrighted work may not be reproduced by others without the copyright owner's permission. The public display or performance of copyrighted works is similarly restricted. Generally, the unauthorized reproduction, performance or distribution of a copyrighted work is copyright infringement and may subject the infringer to civil and criminal penalties. The Fair Use Doctrine outlines exceptions to this Law and is outlined in Coastal Bend College Policy, [CT \(Legal\)](#).

Coastal Bend College, its faculty, students and employees must comply with Copyright Law. Detailed information on Copyright Law and Intellectual Property Rights is available in Coastal Bend College Policy [CT \(Legal\)](#) and [CT \(Local\)](#).

Questions regarding this information should be directed to the Director of Library Services at: library@coastalbend.edu or the Office of Marketing and Public Relations at: socialmedia@coastalbend.edu.

Intellectual Property: Student /Third Party Works: Rights to copyrightable or patentable works created by a student or a third party, that is, not a College District employee, shall reside with the author/ creator. Detailed information on Copyright Law and Intellectual Property Rights is available in Coastal Bend College Policy [CT \(Legal\)](#) and [CT \(Local\)](#).

Questions regarding this information should be directed to the Director of Library Services at: library@coastalbend.edu or the Office of Marketing and Public Relations at: socialmedia@coastalbend.edu.

NOTE: The College website (www.coastalbend.edu) serves as the main source with the most current version of the Coastal Bend College Board Policies and the Coastal Bend College Catalog.