Course Information
Meeting Time & Place: TR 12:00-2:30 PM, IH 268
Professor: Dr. Mufid Abudiab
Office: CI 306
Office Phone: 361-825-6019
E-mail: mufid.abudiab@tamucc.edu
Office Hour: TR 2:30-4:00PM

Course Description
This 4-credit course focuses on single-variable differential calculus. Emphasis is on technical skills, conceptual foundations, and applications of differentiation.

Math 2414 (Catalog Description): Limits, continuity, derivatives, applications of the derivative, and an introduction to integrals through differential equations. The course counts as the mathematics component of the University Core Curriculum. It contains a laboratory component.

Student Learning Outcomes
By the end of this core curriculum class, the student should:
1. Understand the scientific method and your place in the scientific community.
2. Be able to collaborate effectively as both an effective leader and follower.
3. Be able to apply mathematical concepts to new situations.
4. Communicate mathematics in interdisciplinary topics verbally and in writing.
5. Use mathematics to analyze data and translate data into visual representations.
6. Take personal responsibility and become a self-directed college learner.
7. Use technology effectively.

By the end of this course, the student should be able to:
1. Calculate limits and apply limit concepts to continuity, derivatives, and other contexts.
2. Calculate derivatives of functions from the definition, by applying rules to a standard catalog of functions, for implicitly defined functions, and for related rates.
3. Interpret derivatives as slopes of tangent lines and instantaneous rates of change. Relate units of a derivative to the units of the dependent and independent variable. Also, find and apply linearization and differentials of functions.
4. Apply derivatives to optimization of functions, determining geometric features of graphs of functions, and sketching graphs of functions.
5. Interpret and apply hypotheses of theorems and draw appropriate conclusions.
6. Use Riemann sums to approximate areas and estimate accumulations of rates; use antiderivatives and the Fundamental Theorem of Calculus to evaluate integrals.

Major Course Requirements
Successful completion of MATH 1314 (College Algebra) and 1316 (Trigonometry), or MATH 2312 (Pre-Calculus), or placement beyond MATH 2312 are pre-requisites for this course. The
following assessments will be given during the semester: two examinations (20% each), final exam (20%), labs (20%), Quizzes (10%) and Homework (10%). The course will be a combination of interactive lecture, small-group activities, technology-assisted investigations, homework, and recommended work between students and the instructor outside of class. All participants are expected to actively engage in all class activities by contributing ideas and thoughtfully evaluating others’ contributions.

Required or Recommended Readings
*Calculus: Early Transcendentals, 7th Ed.*, by Stewart, ISBN 0538497904 is the optional text. WebAssign access (with new textbook or purchased separately) is required and will be used for homework and quizzes.

Course Policies
- Course grade will be based upon the percentage of the total possible points that a student earns and the following grading scale: A: >90% of total points, B: >80% of total points, C: >70% of total points, D: >60% of total points.
- The class web page will include a list of topics that will be studied during each class meeting.
- Attendance is mandatory. Attendance will be checked each class period.
- I am available during regular office hours or through special arrangement.
- Each student is expected to take notes during lectures, and keep a record of his/her assignments, tests and over all grades.
- Homework is assigned online regularly through Web Assign that can be accessed at www.webassign.net (you need to buy an access code) and due as specified. Late homework will not be accepted. If you have problems accessing the system please let me know as soon as possible.
- Online quiz will be assigned regularly through Web Assign that can be accessed at www.webassign.net (you need to buy an access code) and due as specified.
- In exams, students are expected to demonstrate concept mastery through individual in-class unit tests. Student individual work will be graded for partial credit, but exams may not be retaken or made-up if missed.
- If one of the semester tests is missed, its score will be replaced by the score on the final exam. The opposite is not true. A missed final exam will result of a score of 0 points. You can’t miss more than one semester test. A second missed semester test will result of a score of 0 points for that test.
- The final exam will be a comprehensive examination over all material covered during the semester. *Absolutely no early final examination, so make travel arrangements accordingly.*
- Attendance will be taken each class. Talking during class time and tardiness are often disruptive to the whole class and are not appreciated. If you are delayed and arrive late please do so quietly. Excessive tardiness, disruptive talking, disruptive behavior or performing activities not related to the class will be counted as absences and may cancel bonus points at the end of the semester that usually is helpful to determine borderline grades.
- The lab portion of the course is led by a teaching assistant and designed to help you master the concepts and skills learned during the classroom. The lab has a syllabus and policies which supplement this syllabus.
• Last day of class is **July 21**, 2015.
• Final Exam is an individual comprehensive summative evaluation of course learning outcomes. The final exam cannot be made-up if missed. If you have a conflict with the scheduled time, contact me at least one week prior to discuss scheduling options. The final exam time is **July 21**, 2015, 12-2:30PM.

**Academic Integrity/Plagiarism.**
University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in failing the course.

**Dropping a Class**
I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult with me before you decide to drop to be sure it is the best thing to do. Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. (June 19th, 2015) is the last day to drop a class with an automatic grade of “W” this term.

**Preferred methods of scholarly citations**

**Classroom/professional behavior**
Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

**Grade Appeals (College of Science and Engineering)**
As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules website at http://www.tamucc.edu/provost/university_rules/index.html, and the College of Science and Engineering Grade Appeals webpage at http://sci.tamucc.edu/students/GradeAppeal.html. For assistance and/or guidance in the grade appeal process, students may contact the chair or director
of the appropriate department or school, the Office of the College of Science and Engineering Dean, or the Office of the Provost.

**Disabilities Accommodations**
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please call or visit Disability Services at (361) 825-5816 in Driftwood 101. If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.

**Changes**
The instructor may amend the syllabus at any time prior to the final exam by announcing the changes in class.

**Tentative Course Outline**

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<th>Topic</th>
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<td>The Tangent and Velocity Problems, and The Limit of a Function</td>
<td>2.1, 2.2</td>
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<td>6/4</td>
<td>Calculating Limits and the Precise Def. of a Limit and Continuity</td>
<td>2.3, 2.4, 2.5</td>
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<tr>
<td>6/9</td>
<td>Limit at Infinity, Horizontal Asymptotes, and Derivatives &amp; Rates of Change</td>
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<td>6/11</td>
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<td>6/18</td>
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<td>6/23</td>
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<td>Related Rates, Linear Approx. and Differentials</td>
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<td>Max. and Min. Values and Test 2</td>
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<td>The Mean Value Theorem, Derivative Effect on Graph Shape</td>
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<td>Indeterminate Forms &amp; L ’Hospital, and Curve Sketching &amp; Technology</td>
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<td>Ant-derivatives, and General Review</td>
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<td><strong>Final Exam</strong></td>
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