CALCULUS I - MATH-2413.006
Department of Mathematics & Statistics
Spring 2020

A. COURSE INFORMATION

Course number/section: MATH-2413.006
Class meeting time: MW 2:00 pm - 3:15 pm
Class location: OCNR-258
Course Website: bb9.tamucc.edu

B. INSTRUCTOR INFORMATION

Instructor: Dr. George Tintera
Office location: CI 319
Office hours: Monday and Wednesday, 1 - 2 pm and 2:30 - 5:30 pm
Telephone: (361) 825-6028
e-mail: george.tintera@tamucc.edu
Appointments: Additional times available by appointment - send email

C. COURSE DESCRIPTION

Catalog Course Description
Limits, continuity, derivatives, applications of the derivative, and an introduction to integrals. Contains a laboratory component.

Extended Description
In this course we will learn about derivatives and integrals of functions in one variable. The course begins with limits, and uses them to define the derivative of a function. Differentiation rules are followed by applications of differentiation. Finally, we look at integrals followed by some applications of integrals.

D. PREREQUISITES AND COREQUISITES FOR THE COURSE

Prerequisites
MATH 1314 (College Algebra) and MATH 1316 (Trigonometry), or MATH 2312 (Pre-calculus), or placement into MATH 2413.

Corequisites
MATH 2413.2XY, the lab for the class. Meets various times and days.

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

Required Textbook(s)
WebAssign access code. It is available as a bundle with the textbook or separately as a standalone access code at the bookstore.
Optional Textbook(s) or Other References


Supplies

In addition, you will need a graphing calculator. A scientific or 4-function calculator is needed for the final exam.

F. STUDENT LEARNING OUTCOMES AND ASSESSMENT

Assessment is a process used by instructors to help improve learning. Assessment is essential for effective learning because it provides feedback to both students and instructors. A critical step in this process is making clear the courses student learning outcomes that describe what students are expected to learn to be successful in the course. The student learning outcomes for this course are listed below. By collecting data and sharing it with students on how well they are accomplishing these learning outcomes students can more efficiently and effectively focus their learning efforts. This information can also help instructors identify challenging areas for students and adjust their teaching approach to facilitate learning.

By the end of this course, students should be able to:

1. Calculate and determine the existence of limits using the definition of limit, basic properties, and l'Hospital’s Rule. Use calculations of limits to determine local and end behavior of functions.
2. Calculate derivatives of functions from the definition, by applying appropriate rules, and by using implicit and logarithmic differentiation.
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.
4. Apply derivatives of functions appropriately to: create linearization and differentials of functions; determine and apply related rates of change to solve problems; solve optimization problems; and determine geometric features of graphs of functions.
5. Determine if functions meet hypotheses of theorems and draw appropriate conclusions. Give examples and counterexamples.
6. Use Riemann sums to approximate areas and to estimate accumulations of rates.
7. Use anti-derivatives, the Fundamental Theorem of Calculus, and appropriate $u$ $du$ substitutions to evaluate integrals. Then interpret the results of integration as either a signed area under a curve, or as a function.
8. Recognize and determine the relationships between the graphs of a function, its derivatives and its integral.
G. INSTRUCTIONAL METHODS AND ACTIVITIES

The instructional method is a combination of lectures and student activities. Students are expected to participate through in-class activities, preparation for class meetings, and homework.

H. MAJOR COURSE REQUIREMENTS AND GRADING

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of FINAL GRADE</th>
<th>Grading Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>10%</td>
<td>90-100%</td>
</tr>
<tr>
<td>Labs</td>
<td>25%</td>
<td>80-89.99%</td>
</tr>
<tr>
<td>Quizzes</td>
<td>15%</td>
<td>70-79.99%</td>
</tr>
<tr>
<td>Exams</td>
<td>30%</td>
<td>60-69.99%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20%</td>
<td>0-59.99%</td>
</tr>
</tbody>
</table>

**Homework (10%)** – Homework will be assigned at the end of each lesson through WebAssign. Homework will be available through Friday at 11:59 pm of the following week. Office hours are a great opportunity to ask questions about homework. On-campus free tutoring in the CASA is another way to getting help with the homework. Having someone else do the homework for you will get you the 10 points, but leave you wildly unprepared for the quizzes, tests, final exam, and life, in general.

**Labs (25%)** – The lab part of the course is graded by the TA. You will get a separate handout about that grading.

**Quizzes (15%)** – There will be five or six quizzes through the semester given as mastery assessments. The first offering of each quiz will be in class. Students not getting a score demonstrating mastery (85% or higher) may retake the assessment up to twice at a later date. Students demonstrating mastery on the first attempt get full credit; those demonstrating mastery on a later attempt get 80% of the credit. Students not demonstrating mastery by the by the third try receive no credit.

**Exams (30%)** – There will be three exams, which will be given in class. Calculators will be allowed unless otherwise instructed. Exam dates will be announced at least one week in advance, but a tentative exam scheduled is given.

**Final Exam (20%)** – The final exam will be comprehensive and required of all students. It will be on Friday, May 3, 2019 from 1:45 - 4:15 pm.
I. COURSE CONTENT/SCHEDULE

Tentative course schedule:

<table>
<thead>
<tr>
<th>Week of</th>
<th>TOPIC</th>
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<tbody>
<tr>
<td>Jan 20</td>
<td>MLK Day - No Class, Introduction, 2.1</td>
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<tr>
<td>Jan 27</td>
<td>2.2, 2.3, 2.5</td>
</tr>
<tr>
<td>Feb 3</td>
<td>2.6, 2.7 2.8</td>
</tr>
<tr>
<td>Feb 10</td>
<td>Review, Midterm 1</td>
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<tr>
<td>Feb 17</td>
<td>3.1, 3.2, 3.3</td>
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<tr>
<td>Feb 24</td>
<td>3.4, 3.5, 3.6</td>
</tr>
<tr>
<td>Mar 2</td>
<td>3.7, 3.8, 3.9</td>
</tr>
<tr>
<td>Mar 9</td>
<td>Spring Break</td>
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<tr>
<td>Mar 16</td>
<td>3.8, 3.9, 3.10</td>
</tr>
<tr>
<td>Mar 23</td>
<td>Review, Midterm 2</td>
</tr>
<tr>
<td>Mar 30</td>
<td>4.1, 4.2, 4.3</td>
</tr>
<tr>
<td>Apr 6</td>
<td>4.4, 4.5, 4.7</td>
</tr>
<tr>
<td>Apr 13</td>
<td>Review, Midterm 3</td>
</tr>
<tr>
<td>Apr 20</td>
<td>4.9, 5.1, 5.2</td>
</tr>
<tr>
<td>Apr 27</td>
<td>5.3, 5.4, 5.5</td>
</tr>
<tr>
<td>May 4</td>
<td>5.5, Review</td>
</tr>
<tr>
<td>May 8</td>
<td>Final Exam</td>
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<tr>
<td></td>
<td>1:45 - 4:15 pm</td>
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Note: Changes in this course schedule may be necessary and will be announced to the class by the Instructor. The assignments and exams shown are directly related to the Student Learning Outcomes described in Section F.

IMPORTANT DATES

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>Monday, January 20</td>
<td>MLK Day, No Class</td>
</tr>
<tr>
<td>Tuesday, January 21</td>
<td>Classes begin</td>
</tr>
<tr>
<td>March 9-13, Monday to Friday</td>
<td>Spring Break</td>
</tr>
<tr>
<td>Friday, April 10</td>
<td>Last day to drop a class</td>
</tr>
<tr>
<td>Wednesday, May 6</td>
<td>Last day of classes</td>
</tr>
<tr>
<td>Thursday, May 7</td>
<td>Reading Day - No Classes</td>
</tr>
<tr>
<td>Friday, May 8</td>
<td>Final Exam</td>
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J. COURSE POLICIES

Attendance/Tardiness

- Attendance will be taken each class.
For most students attending class is a faster way of learning the material than trying to catch up on missed material solely from the book.

Tardiness is often disruptive to the whole class and is not appreciated. If you are delayed and arrive late for class please do so quietly.

Cell Phone Use

- Cell phones and such must be turned off before class. They should be in a backpack or purse and not within reach.
- Any use of a cell phone or wireless device, including glancing at a screen, during a test or quiz carries the presumption of cheating. The penalty for the first infraction is a score of 0 on the assignment. The penalty for a second infraction is an F in the class.

Missed Exam

- If you miss an exam for any reason, the score on that exam is 0. The score from the final exam can replace one low score if it is to your advantage.
- If you miss the final exam you will receive a ZERO for that assignment. There are no make-ups for the final exam. PLAN AHEAD!!!
● **Statement of Civility**
Texas A&M University-Corpus Christi has a diverse student population that represents the population of the state. Our goal is to provide you with a high quality educational experience that is free from repression. You are responsible for following the rules of the University, city, state and federal government. We expect that you will behave in a manner that is dignified, respectful and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.

● **Deadline for Dropping a Course with a Grade of W (University)**
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 your academic advisor, the Financial Aid Office, and me, before you decide to drop this course. 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. Please consult the Academic Calendar for the last day to drop a course.

http://www.tamucc.edu/academics/calendar/

● **Grade Appeals 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.

● **Disability Services**
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 (361) 825-5816 or visit Disability Services in Corpus Christi Hall 116.

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.

http://disabilityservices.tamucc.edu/

- **Statement of Academic Continuity**
  In the event of an unforeseen adverse event, such as a major hurricane and classes could not be held on the campus of Texas A&M University Corpus Christi; this course would continue through the use of Blackboard and/or email. In addition, the syllabus and class activities may be modified to allow continuation of the course. Ideally, University facilities (i.e., emails, web sites, and Blackboard) will be operational within two days of the closing of the physical campus. However, students need to make certain that the course instructor has a primary and a secondary means of contacting each student.

L. **OTHER INFORMATION**

- **Academic Advising**
  The College of Science & Engineering requires that students meet with an Academic Advisor as soon as they are ready to declare a major. The Academic Advisor will set up a degree plan, which must be signed by the student, a faculty mentor, and the department chair. Meetings are by appointment only; advisors do not take walk-ins. Please call or stop by the Advising Center to check availability and schedule an appointment. The College’s Academic Advising Center is located in Center for Instruction 350 or can be reached at (361) 825-3928.

**GENERAL DISCLAIMER**

I reserve the right to modify the information, schedule, assignments, deadlines, and course policies in this syllabus if and when necessary. I will announce such changes in a timely manner during regularly scheduled lecture periods.