I. COURSE INFORMATION
1. Meeting Time & Place: TR 5:30 – 6:45 PM in CI 122
2. Professor: Dr. Diane Denny
3. Office Phone: 825-3485
4. Office Address: CI 313
5. e-mail Address: diane.denny@tamucc.edu
6. Web Page Address: Not applicable.
7. Office Hours:
   MW 3:30 – 5:00 PM
   TR 12:00 – 1:30 PM
   Others by appointment

II. COURSE DESCRIPTION
This course is an advanced treatment of the foundations of calculus, stressing proofs of theorems. Topics include: topology, metric spaces, sequences, limits, continuity, differentiability, and integrability.

III. PREREQUISITES FOR THE COURSE
MATH 3470 and MATH 3313.

IV. TEXTBOOK AND OTHER SUPPLIES REQUIRED
The required textbook for the course is "A Friendly Introduction to Analysis", Single and Multivariable, second edition, by W.A.J. Kosmala. Handouts will be provided which will be used to cover some of the course topics.

V. STUDENT LEARNING OUTCOMES
At the end of the course the student should be able to:
1. Correctly state the definitions from class.
2. Correctly state the theorems from class.
3. Prove theorems of similar complexity to those from the homework.
4. Explain the key ideas of the more elaborate proofs from the lecture.
5. Prove that a given function is continuous.
6. Prove the existence of limits for functions and sequences.
7. Prove that a given function is integrable.
8. Prove that a given function is differentiable.
9. Verify whether a function satisfies all of the assumptions of a theorem.

VI. INSTRUCTIONAL METHODS AND ACTIVITIES
Methods and activities for instruction: using a lecture format for the class.

VII. EVALUATION AND GRADE ASSIGNMENT
Evaluation and grade assignment will be based on homework, tests, and a cumulative
The methods of evaluation and the criteria for grade assignments are:

<table>
<thead>
<tr>
<th>Evaluation</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Three tests</td>
<td>45%</td>
</tr>
<tr>
<td>Homework</td>
<td>35%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20%</td>
</tr>
</tbody>
</table>

Grading Scale:
- A = 90.00 – 100%
- B = 80.00 – 89.99%
- C = 70.00 – 79.99%
- D = 60.00 – 69.99%
- F = below 60%

VIII. TENTATIVE COURSE SCHEDULE

<table>
<thead>
<tr>
<th>Week</th>
<th>Topics</th>
<th>Section and/or handout</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>topology of the real numbers</td>
<td>handout</td>
</tr>
<tr>
<td>2</td>
<td>topology of the real numbers, metric spaces</td>
<td>handout</td>
</tr>
<tr>
<td>3</td>
<td>compactness Heine-Borel theorem, numerical sequences, limits, convergence</td>
<td>handout, 2.1</td>
</tr>
<tr>
<td>4</td>
<td>numerical sequences, limits, convergence</td>
<td>handout, 2.2, 2.3</td>
</tr>
<tr>
<td>5</td>
<td>numerical sequences, limits, convergence, TEST 1</td>
<td>2.4</td>
</tr>
<tr>
<td>6</td>
<td>Cauchy sequences, subsequences, cluster points, Bolzano-Weierstrass Theorem</td>
<td>handout, 2.5, 2.6</td>
</tr>
<tr>
<td>7</td>
<td>numerical series, convergence</td>
<td>7.1, 7.2, 7.3</td>
</tr>
<tr>
<td>8</td>
<td>limits of functions</td>
<td>handout, 3.1, 3.2</td>
</tr>
<tr>
<td>9</td>
<td>continuity of functions</td>
<td>handout, 4.1, 4.3</td>
</tr>
<tr>
<td>10</td>
<td>continuity of functions , TEST 2</td>
<td>4.4</td>
</tr>
<tr>
<td>11</td>
<td>differentiability of functions</td>
<td>5.1, 5.2</td>
</tr>
<tr>
<td>12</td>
<td>integrability of functions</td>
<td>6.1, 6.2</td>
</tr>
<tr>
<td>13</td>
<td>integrability of functions , TEST 3</td>
<td>6.3</td>
</tr>
<tr>
<td>14</td>
<td>sequences of functions, uniform convergence</td>
<td>8.1, 8.2, 8.3</td>
</tr>
<tr>
<td>15</td>
<td>Review</td>
<td></td>
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</tbody>
</table>

The Final Exam is scheduled for December 4.

IX. CLASS POLICIES

Attendance will be taken each class. If you have to miss an exam, it is your responsibility to contact me no later than the day after the exam. A valid written excuse is required in order to make up a missed exam. Homework will be assigned every week, and is due at the start of class one week after the day the homework was assigned. Late homework will receive a 15% late penalty and will only be accepted if it is turned in before the start of class on the next class day after the day it was due; otherwise, late homework will not receive any credit. The lowest homework grade will be dropped. Any student missing the final exam for any reason will get a score of zero. Any excused absences from the final exam may be made up in the next semester by eligible students; a grade of I will be temporarily assigned.
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 a grade of zero on that assignment or test for each student involved.

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. November 7 is the last day to drop a class with an automatic grade of "W" this term.

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.
(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 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.

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.