Introduction to Analysis 8 Math 4301-001 and 5310-001
Department of Mathematics and Statistics
Fall 2019

A. COURSE INFORMATION

Course number/section: Math 4301-001 and Math 5310-001
Class meeting time: TR 5:30-6:45pm
Class location: IH 158
Course Website: bb9.tamucc.edu

B. INSTRUCTOR INFORMATION

Instructor: Dr. Aubrey Rhoden
Office location: CI 213B
Office hours: TWR 1-3 pm
Telephone: 361-825-3445
e-mail: aubrey.rhoden@tamucc.edu
Appointments: Appointments outside of office hours are available by request

C. COURSE DESCRIPTION

Catalog Course Description
This course is an advanced treatment of the foundations of calculus, stressing proofs of theorems. Topics include: properties of the real numbers, metric spaces, sequences, series, limits, convergence, continuity, the derivative, and the Riemann integral.

D. PREREQUISITES FOR THE COURSE

Prerequisites
Math 2415 and Math 3313

Corequisites
None

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

Required Textbook(s)

Supplies
Paper and pen or pencil

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 course’s 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. 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 theorems from the lecture.
5. Prove that a given function is continuous.
6. Prove the existence of limits for functions and sequences.
7. Verify whether a function satisfies all of the assumptions of a theorem.
G. INSTRUCTIONAL METHODS AND ACTIVITIES

Weekly Quizzes and Homework: Homework will be assigned each week through webassign and is due on Sundays. You will be given in-class (during lab meetings) quizzes which assume your having completed and mastered the homework.

Attendance: Attendance for this course and its associated labs is required. Excellent attendance records as well as positive group evaluations will help your grade in that borderline course-grade decisions will be influenced by these records. It is in your best interest to arrive on time to class (quizzes take place during the first ten minutes of lab and homework is due at the beginning of class).

H. MAJOR COURSE REQUIREMENTS AND GRADING

Note: Blackboard does not average with these percentages.

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<th>ACTIVITY</th>
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<td>Midterm 3</td>
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<td>Final Exam</td>
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<td>Homework</td>
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<td>Quizzes</td>
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<th>LETTER GRADE</th>
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I. COURSE CONTENT/SCHEDULE

Important dates:

August 26 Classes Begin
September 2 Labor Day
September 4 Last Day to Late Register
September 18 Midterm 1
October 16 Midterm 2
November 9 Last Day to Drop
November 13 Midterm 3
November 27 Reading Day-No Class
November 28-29 Thanksgiving Holiday
December 4 Last Day of Classes
December 10 Final Exam 4:30 - 7:00 pm

Schedule:

Week 1 starting Aug. 26 Properties of Real Numbers
Week 2 starting Sep. 2 Properties of Real Numbers
Week 3 starting Sep. 9 Metric Spaces
Week 4 starting Sep. 16 Metric Spaces and Test 1
Week 5 starting Sep. 23 Numerical Sequences
Week 6 starting Sep. 30 Numerical Sequences
Week 7 starting Oct. 7 Subsequences and Limits
Week 8 starting Oct. 14 Limits and Test 2
Week 9 starting Oct. 21 Continuity
Week 10 starting Oct. 28 Differentiability
Week 11 starting Nov. 4 Integrability
Week 12 starting Nov. 11 Integrability and Test 3
Week 13 starting Nov. 18 Sequences of Functions and Thanksgiving
Week 14 starting Nov. 25 Series of Functions
Week 15 starting Dec. 2 Review
Week 16 starting Dec. 9 Final Exam

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.

J. COURSE POLICIES

Attendance/Tardiness
Attendance for this course is required.

Late Work and Make-up Exams
Late work is not accepted unless previously approved. In the event of an excused absence
for an exam, it is the student’s responsibility to arrange for a time to make up the exam as soon as possible.

**Extra Credit**
Extra credit will be given on some assignments for completing advanced problems, but there will be no extra credit assignments given to students on an individual basis to improve a grade.

**Cell Phone Use**
Cell phone use is not allowed during class.

**Laptop Use**
Laptop or tablet use is not allowed during class.

**Food in Class**
Food is not allowed in the classroom.

**Missed Exam**
All absences from class or exams will be considered unexcused unless they are documented in advance as excusable with the instructor or as soon as possible in the case of emergencies. No credit will be awarded for work missed resulting from unexcused absences.

**Participation**
Participation in class discussion is important, and students that actively participate generally gain a better understanding of the material.

K. **COLLEGE AND UNIVERSITY POLICIES**

- **Academic Integrity (University)**
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 failing grade.

- **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.

- **Statement of Civility**
  Texas A&M University-Corpus Christi has a diverse student population that rep-
 resents 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 follow-
  ing 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 particip-
ation WILL NOT automatically result in your being dropped from the class. Please
consult the Academic Calendar (http://www.tamucc.edu/academics/calendar/) for
the last day to drop a course

- **Grade Appeals (College of Science and Engineering)**
  As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Proce-
dures, a student who believes that he or she has not been held to appropriate
academic standards as outlined in the class syllabus, equitable evaluation proce-
dures, 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 ap-
peal. 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.