MATH 4483, Introduction to Real Analysis  
Spring 2009, 2:00 – 2:50, MWF, BUR 208

Instructor: Dr. Karla Oty  
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Office Hours (Tentative):  
MWF 10:00 – 11:30 and 1:30 – 1:50  
TR 1:30 – 2:45  
and by appointment

Prerequisites: MATH 2244 (Calculus III) and MATH 2613 (Foundations of Mathematics).

Text: **Understanding Analysis**  

Objectives: At the end of this course, the student should be able to (1) demonstrate competence in different types of mathematical proofs including direct proofs (such as “epsilon-delta” proofs), proofs by contradiction, and proofs by contrapositive; (2) have a rigorous foundation for basic topics in analysis such as limits, sequences, series, continuity, differentiability, and integration; (3) express and communicate mathematics in clear and precise mathematical expressions, symbols, and sentences; (4) understand and use the basic definitions in analysis; (5) read and follow proofs in analysis; (6) construct counterexamples in analysis; and (7) prove basic theorems on convergence, continuity, uniform continuity, and compactness.

Class Procedures: This class is conducted using both lecture and class participation. Regular attendance and participation are strongly encouraged for students to get the maximum benefit from class. You are responsible for all material covered in class and it is your responsibility to keep up with any material missed. You should expect to spend at least 6 hours per week outside of class on homework, studying for quizzes, reading the textbook and handouts, and studying for exams.

An atmosphere conducive to learning will be maintained. Students are expected to exhibit maturity, responsibility, and integrity. Students are expected to adhere to the Code of Student Conduct as outlined in the Student Handbook. Cell phones, pagers, and other electronic devices should be turned off or turned to silent mode during class. Any student who talks on their cell phone or uses the cell phone for text messaging during class will be asked to drop the class.

In the event that school or the class is canceled for any reason, assignments, quizzes, or tests that were scheduled for the canceled day will be due or taken on the next day that the class meets.

Information concerning this class, including assignments, due dates, and what was covered in class, can be found at [http://www.cameron.edu/~koty](http://www.cameron.edu/~koty). I will also post solutions to selected homework problems, tests, and practice tests at this site. If you have missed class for any reason, this should be your first resource for finding out what you missed.
**Homework, Quizzes, and In-class Activities:** Homework assignments should be neatly written with problems clearly labeled, should show the steps used to arrive at the answer or the steps needed for the proof, and should be the student's own work. Occasionally, instead of collecting homework, an in-class quiz consisting of selected problems from the homework will be given. Quizzes may be announced or unannounced. Additional quizzes may be given and may be announced or unannounced.

Many of the homework problems will be formal proofs. We will discuss the aspects that formal proofs should contain and work on writing the different types of proofs in this class. If you have questions on the homework or material covered in class, please get your questions answered before the next class period by visiting with me during my office hours.

On certain days, activities will be conducted in class to help you master the material that we have discussed. I feel that it is important for you to participate in these activities in class. Some activities may be group activities designed to help you learn the material using your peers as resources and some activities may be collected in class and graded. Students may not make up any activities if they are not in class during the time allotted for the activity.

Students are encouraged to work together to help their learning in this class. However, the homework that is turned in should be your own work, not copied off of another student's paper. Copied homework will receive a grade of 0.

Assignments will be given in class and are due at the beginning of the specified class period. Late papers will **not** be accepted and makeup assignments will not be allowed. Late quizzes will not be given. Instead I will drop **four** of your homework/quiz/class activities scores for **excused** absences. If at the end of the semester, you have not used your four excused absences drops, I will drop your lowest homework, quiz, or in-class activities scores until you have a total of four scores dropped. If you know that you are going to miss class, you can send your assignments to me via another person, email, or to the departmental fax machine (580-581-2616). If you know that you are going to miss a quiz, you may make arrangements with me to take the quiz early.

After your four excused absences drops, the remaining homework, quiz, and class activities scores will be averaged. This average will be counted twice in computing your overall grade in the course.

**Examinations:** There will be three examinations each worth 100 points and a final worth 200 points. If you must miss an examination for any reason, it is your responsibility to notify me before the exam so that, when appropriate, suitable alternate arrangements can be made. I will drop one test score (but not the final). If you miss an examination for any reason without making prior arrangements with me before the examination, this will be the examination that will be dropped. If a second examination is missed, it will be recorded as a 0. The final exam for this class is scheduled for Wednesday, May 6 from 3:00-5:00 p.m.

**Cheating:** Punishment for cheating will be at the discretion of the instructor. The instructor reserves the right to assign a course grade of F for cheating.
Extra Credit: Extra credit assignments are at the discretion of the instructor. Any extra credit opportunities will be available to the entire class. Extra credit opportunities represent supplemental material and are not intended to replace the class requirements.

Assessment: All students enrolled in MATH 4483 are required to participate in assessment by taking the Major Field Achievement Test in Mathematics. The primary purpose for the administration of an assessment test at this point is to measure the level of mathematical growth of majors as they conclude the theoretical course in the major. *To receive a passing grade in this class, you must successfully complete this exam.* Your performance on the exam will be scored as bonus points on the final exam. More details regarding the bonus points will be provided before the assessment test.

Course Grade: Your final average score will be the sum of your two highest exam scores, your final exam score and your homework/quiz/class participation score divided by 6. The grading scale will be

90-100 A  
80-89 B  
70-79 C  
60-69 D  
59 or below F

The instructor reserves the right to lower the grading scale, but will not raise it.

I will post your grades on a password protected website for you to view your grades over the web. Names are entered as they appear on the roster – *Lastname, Firstname Middle Initial.* Your student i.d. code is your password. If you do not wish to view your grades over the web, let me know and I will remove your scores. If you wish to use another password, you must let me know in writing and I will change it. Scores on the final exam will only be distributed by the website or in person.

Please see the Common Syllabus Supplement for additional information regarding classes at Cameron University.
IMPORTANT DATES (16 WEEK SESSION)

Classes Begin 1/12/09
Last date to enroll or add 1/20/09
Last date to drop with no transcript entry 1/26/09
Last date to drop with full refund 1/26/09
Penalty for late payment begins 2/27/09
Last date to withdraw with an Automatic W 4/13/09
Last date to apply for May Graduation 3/25/09
Last date to withdraw from a class 4/27/09
Final Exams 5/5/09-5/8/09
Session Ends/Commencement 5/8/09
Final grades posted, 4 p.m. 5/12/09

SPRING SEMESTER HOLIDAYS

Martin Luther King Holiday 1/19/09
Spring Break 3/16/09 - 3/20/09

HELPFUL NUMBERS (Area code 580)

See http://www.cameron.edu/info/contact.html for a complete listing.

Admissions Office 581-2289
Bookstore 581-2375
CU-Duncan 877-282-3626
Career Services 581-2209
Continuing Ed/Outreach 581-2610
Counseling Center 581-2244
Financial Assistance 581-2293
Ft. Sill Admissions 355-8211
International Students 591-8019
Library 581-2410
Online Help Desk 581-2338
Public Safety, Non-emergency 581-2237
Public Safety, Emergency 581-2911
Registrar 581-2238
School of Business 581-2267
School of Ed and Beh Sci 581-2339
School of Liberal Arts 581-2491
School of Science & Tech 581-2308
Student Activities 581-2217
Student Housing 581-2392
Student Services 581-2244
Student Support Services 581-2352
Testing Center 581-2502
Veterans Affairs 581-2301

CAMPU S SAFETY

Public Safety - The Office of Public Safety is located in Room 100, South Shepler Center. For non-emergency contact, please use (580) 581-2237. For an emergency, please dial x2911 (on campus) or (580) 581-2911 (off campus). Call boxes are also available at prominent locations around campus.

Weather – It is the policy of CU that classes will meet as scheduled. Inclement weather conditions may occasionally create problems for students. The potential inability to attend class, as a result of poor travel conditions, should be discussed between faculty and students before a problem arises. Should inclement weather conditions or other circumstances dictate closing of the university, a delay in start time or event cancellations, announcements will be made through various media. A listing of media outlets used for weather notices is available under the heading Weather Policy in the Student Handbook and online at http://www.cameron.edu/student/services/handbook. In the absence of any announcement, classes will be held as scheduled. In all instances of inclement weather and/or hazardous travel, please use your best judgment concerning your own personal safety before coming to the university.

Emergency Communication System – The Emergency Communication System allows CU to send time-sensitive notifications via voice messages, emails, and text messages. The service will help us provide a safer environment, enhance emergency preparedness and keep our faculty, staff and students better informed. Students should update their contact information on MyCU. Emergency messages from CU will display caller ID (580) 581-2200 and the email sender will be notice@cameron.edu.

ACADEMIC INTEGRITY STATEMENT

Each student is expected to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain complete honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of academic dishonesty, including cheating and plagiarism, will be subject to disciplinary action. Additional information is provided in the Cameron University Code of Student Conduct

http://www.cameron.edu/student/development/student_conduct/
MyCU
Access your MyCU account to check your grades as well as your enrollment schedule, your current charges and payments, and your transcript. MyCU may also be used to pay university bills online through the “My Info” tab and then selecting “Online Payment”. You may also modify your access code and view closed and cancelled classes. To access your account you must use your access (student) ID number and your access code which was assigned when you completed the enrollment process. Your access ID is the unique 6 digit number found on your student ID. For more information about MyCU contact the Office of Admissions at (580) 581-2230.

STUDENT EMAIL
Student email accounts and other services may be found at http://studentmail.cameron.edu The User Name Construction link provides information about user names and passwords. Students should check their Cameron email regularly regardless of whether or not they have other email accounts. A student who wishes to be contacted at an address other than Cameron email should be sure to keep a current preferred address on record in MyCU. Please note that MyCU email addresses and accounts are distinct from BlackBoard accounts for online courses, changing an address in one location does not automatically change the address in the other location.

DISABILITY STATEMENT
It is the policy of Cameron University to accommodate students with disabilities, pursuant to federal and state law. Students with disabilities who need classroom accommodations must make their requests by contacting the Office of Student Development at (580) 581-2209, North Shepler Room 314.

PRIVACY/FERPA STATEMENT
Student records are filed in a variety of offices as listed in the Student Handbook. To protect the rights of students and graduates, CU releases restricted information to other persons or agencies only as provided by FERPA. A student may choose to release information to a third party by completing a FERPA waiver. Forms and information are available in the Office of the Dean of Student Services, North Shepler 324, (580) 581-2244.

COUNSELING CENTER
Any student enrolled in at least six hours may receive mental health counseling free of charge by contacting Student Services at 581-2244. All appointments and discussions are confidential and subject to FERPA and HIPAA regulations.

ATTENDANCE POLICY
A student is responsible for the content of each course in which s/he is officially enrolled. At the beginning of each course the instructor will define and quantify attendance standards, procedures for verifying unavoidable absences, and methods of dealing with missed assignments and examinations. It is the student’s responsibility to note these instructions and follow them consistently and carefully.

DROPPING OR WITHDRAWING
All students should check with their advisor and financial aid before dropping or withdrawing from a class. Dropping or withdrawing from a course can be processed at the Enrollment Counter or at CU-Duncan. Dropping - A student may drop a class on or before the last day to drop with a full refund. Classes dropped during this period will not appear on the transcript. Dropping before the last day to drop with a full refund can be processed by the faculty advisor. Withdrawing from a class with an automatic W - A student may withdraw from a class on or before the last date to withdraw with an automatic W. Withdrawing from a class without an automatic W - If a student drops after the last date to withdraw with an automatic W but on or before the last date to withdraw, it is the instructor’s discretion as to whether the grade assigned will be a W or an F. Students should obtain the instructor’s signature with the assigned grade on a drop slip. Complete Withdrawal - A student may withdraw from all classes on or before the last date to withdraw. To process a complete withdrawal, obtain an OFFICIAL withdrawal form from the Registrar’s Office in North Shepler 2nd Floor. Obtain instructors’ signatures for all courses. Obtain Financial Assistance Office clearance and signature if receiving financial aid. Return to the Registrar’s Office to process the withdrawal; take the form to the Business Office Cashier or One Stop in North Shepler for final clearance. CU-Duncan students may complete the withdrawal process on the Duncan campus.

INCOMPLETE GRADE
An incomplete grade of “I” may be given at an instructor’s discretion to a student who is not able to complete work because of circumstances beyond the student’s control. The student must have satisfactorily completed a substantial portion of the required coursework for the semester. Students who receive an “I” will have until the time agreed upon between the instructor and the student to complete the required work for the course, not to exceed one year from the end of the semester in which the course was taken.