

**MATH 431 – 11955**  
3 credit hours

**Intermediate Analysis**  
T R 2:20 – 3:40

**Fall 2008**  
TCCW 369

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**Prerequisite** MATH 317 or permission of instructor.

**Professor** Dr. David K. Neal TCCW 315 745-6213 david.neal@wku.edu

**Office Hrs** MW 1:45 – 3:00; TR 12:45 – 2:15; or by appointment.

**Course Description** MATH 431 is an introduction to the concepts of real analysis. The course covers standard material on the real number system, metric spaces, limits, sequences, functions, and continuity. Material on differentiation, series, integration, and sequences and series of functions will be covered as time allows.

MATH 431 is an upper-division course for serious, dedicated students who are prepared and willing to study challenging mathematics at a leading American university. Such students are characterized by being intelligent, attentive, self-motivated, hard-working, and high-achieving. Moreover, these students do not skip class.

**Text (optional)** *Methods of Real Analysis – Second Edition*, by Goldberg.  
(Not required; recommended as a reference only.)

Course notes will be provided in pdf format at  
<http://www.wku.edu/~david.neal/431/>

### Homework

Exercises will be assigned daily with some problems to be turned in for a grade. On these problems, students are expected to do their own work; plagiarism and allowing plagiarism are not allowed and will result in a grade of 0 for the assignment. A repeat offense will result in the offending students being dismissed from the class. Late homework will not be accepted for credit.

Virtually all problems will require you to write a proper mathematical proof. All proofs should be written elegantly and neatly in a formal mathematical style. Complete sentences of explanation are required. Do not simply write an equation; you must explain what the equation is giving and/or why it is being used. Moreover, all equations must be properly aligned with no scratch outs.

### Tests

Each test will be based on class lectures and assigned homework. Details of the tests will be outlined about a week and a half in advance of the tests. The tests will be closed-book with no formula sheets allowed and no calculators allowed.

### Test Dates

**Test 1:** Tues Sep 30      **Test 2:** Thurs Nov 13

**Final Exam:** Friday December 12 1:00 – 3:00 PM.

## Attendance Policy

Registration in this course obligates you to be regular and punctual in class attendance. Therefore, every student is expected to attend every class. If you miss a class, then you must provide a legitimate, documented, written excuse upon returning to class in order for the absence to be excused. If you accrue two unexcused absences, then you will automatically receive an F in this course if you do not withdraw on your own.

Examples of legitimate documentation for excused absences are: (i) A physician's written professional opinion that you were physically unable to attend class. (A routine medical or dental appointment is not an excused absence because such appointments can be rescheduled.) (ii) A funeral parlor notice for the services on the date of absence for a member of your family or other loved one. (iii) A copy of a court summons that requires you to appear before the bench on the date of your absence. (iv) A police report that states that you were involved in a motor vehicle accident that prevented you from arriving to campus on time. (v) Notice from the Athletics Department of your participation in an official NCAA-sanctioned athletic event. (Participation in intramural events are not excused absences.) (vi) Notice of your participation in an official university function that requires your mandatory attendance. (vii) Required military duty as certified by your commanding officer.

Some other examples of *unexcused* absences are: (i) Field trips. (ii) Family vacations. (iii) Appointments or meetings with university officials. (iv) Job/school interviews. (v) Couldn't find parking. (vi) Oversleeping. (vii) Hangover. (viii) Bad-hair day. (ix) Feeling lousy. (x) Didn't feel like coming. (xi) Had something else to do. (xii) Tug (xiii) etc. etc. etc.

## Make-Up Policy

Students are expected to take all tests in class on the days that they are scheduled. No rescheduling will occur. If you miss a test, then you will receive a grade of 0 for that test. However, if you have a legitimate, documented, excused absence for the day of the test, as described above in the Attendance Policy, then you will be allowed to take a make-up. The make-up will have to be scheduled at *my* convenience due to the time required for me to draft a new exam and due to the block of time required of me to proctor a make-up.

**Grades will be assigned as follows:**

**Assignments:** 40%      **Two Tests:** 20% each      **Final Exam:** 20%

**A:** Average 95%    **B:** 87.5%    Avg < 95%    **C:** 80%    Avg < 87.5%    **F:** Avg < 80%

Curves to this grading scale will be reserved solely for students who have *zero* unexcused absences.

### **Withdrawal Date**

October 14, 2008 is the last day to withdraw from the course with a grade of W or to change enrollment from credit to audit.

### **Disability Services**

Students with disabilities who require accommodations, academic adjustments, and/or auxiliary aids or services for this course must contact the Office for Student Disability Services in DUC A-200. The OFSDS telephone number is 745-5004 (or 745-3030 TTY). Please do not request accommodations directly from the professor without a letter of accommodation from the Office for Student Disability Services.

Please feel free to see me if you ever need any other help with the class or if you'd like to discuss any other matter. Good luck in the course!