

Campbellsville University  
MTH 431-01  
Foundations of Analysis II

TEXTBOOK: Introduction to Analysis 5<sup>th</sup> ed. by Gaughan

INSTRUCTOR: Chris Bullock  
OFFICE: CH 314  
OFFICE PHONE: 789-5243  
E-MAIL: [ctbullock@campbellsville.edu](mailto:ctbullock@campbellsville.edu)  
OFFICE HOURS: MWF 12-1 and 2-3  
TR 2-3:15  
or by appointment

1. DESCRIPTION OF COURSE: This course is a continuation of MTH 430. Topics included in this course include differentiation, Riemann integration, sequences of functions, numerical series, power series, and an introduction to differentiation and integration of multivariable functions. Prerequisite: MTH 430. Students must have upper division standing.
2. COURSE OBJECTIVES: As a result of successfully completing this course, students will satisfy the following mathematics program goal: Students will construct and communicate, in writing, logical arguments using appropriate mathematical language and terminology. In this course, the subject of calculus will be developed rigorously using principles of mathematical justification. Students will gain an understanding of the historical development of calculus. This course will also equip students for further study in advanced mathematics.
3. COURSE OUTLINE:
  - Chapter 3: Continuity of a Function at a Point  
Algebra of Continuous Functions  
Uniform Continuity; Open, Closed, and Compact Sets  
Properties of Continuous Functions
  - Chapter 4: The Derivative of a Function  
The Algebra of Derivatives  
Rolle's Theorem and the Mean Value Theorem  
L'Hospital's Rule
  - Chapter 5: The Riemann Integral  
Classes of Integrable Functions  
Riemann Sums  
The Fundamental Theorem of Integral Calculus  
Algebra of Integrable Functions

Note: Topics may be added or deleted due to time constraints.

4. EVALUATION: There will be a total of four tests including a final exam. Each test will be worth 100 points. Also, there will be a homework grade worth 100 points. Thus, there will be a total of 500 attainable points in this class. The grading scale will be as follows:

90-100% A  
80-89% B  
70-79% C  
60-69% D  
0-59% F

Homework will be assigned and graded after almost every class meeting. Each homework assignment will consist of a variable number of questions. The percentage of earned points out of the total possible points will be recorded for each assignment. At the end of the semester, these homework grades will be averaged to get the final 100-point homework grade. This grade will then be averaged with the four test grades to obtain the final grade for the class.

5. REQUIREMENTS: The tentative dates for the exams are as follows:

Exam #1: Sep 26

Exam #2: Oct 19

Exam #3: Nov 14

Final: Dec 12 from 11-12:30

6. ATTENDANCE: Campbellsville University has an attendance policy which states that a student who misses two weeks worth of a class (for any reason) receives a warning. Thus, any student missing 6 class periods in this class will receive a warning. Any student who misses four weeks worth of a class (for any reason) is automatically withdrawn from the class with a failing grade. Thus, any student missing 12 class periods in this class will be withdrawn from the class. PLEASE NOTE THAT, BY THIS POLICY, ANY ABSENCE COUNTS, WHETHER EXCUSED OR UNEXCUSED.

Attendance will be recorded by me every class period at the beginning of class. If you are late for class, you will be counted absent.

You must notify me in advance if you are going to miss a test. You may contact me by phone or by e-mail. Make-up exams are possible if I am notified in advance and if I think the excuse is reasonable.

7. ADDITIONAL SOURCES:

Advanced calculus / William F. Trench.

8. **DISABILITIES:** Disability Statement: Campbellsville University is committed to reasonable accommodations for students who have documented learning and physical disabilities, as well as medical and emotional conditions. If you have a documented disability or condition of this nature, you may be eligible for disability services. Documentation must be from a licensed professional and current in terms of assessment. Please contact the Director of Disability Services at (270) 789-5450 to inquire about services.

9. **SECURITY:** Campus Security: Cell Phone: (270) 403-3611; Office: (270) 789-5556

10. **TITLE IX STATEMENT:** Campbellsville University and its faculty are committed to assuring a safe and productive educational environment for all students. In order to meet this commitment and to comply with Title IX of the Education Amendments of 1972 and guidance from the Office for Civil Rights, the University requires all responsible employees, which includes faculty members, to report incidents of sexual misconduct shared by students to the University's Title IX Coordinator.

Title IX Coordinator:

Terry VanMeter

1 University Drive

UPO Box 944

Administration Office 8A

Phone – 270-789-5016

Email – [twvanmeter@campbellsville.edu](mailto:twvanmeter@campbellsville.edu)

Information regarding the reporting of sexual violence and the resources that are available to victims of sexual violence is set forth at:

[www.campbellsville.edu/titleIX](http://www.campbellsville.edu/titleIX)