

## MATH 231 - ADVANCED CALCULUS I

**Semester:** Fall 2025  
**Instructors:** Ferit Öztürk; *office: tb260-b, phone: 6532; ferit.ozturk@boun*  
*office hours to be announced (tba).*

**Course webpage:** [feritozturk.github.io/here/f25m231.html](https://feritozturk.github.io/here/f25m231.html)

**Assistants:** tba; *office: tb121, phone: 6954;*  
tba; *office: tb121, phone: 6954;*  
PS schedule tba.  
*office hours: tba.*

**Exams & Grading:** (35 %) Midterm exam 1                      tba  
(35 %) Midterm exam 2                      tba  
(30 %) Final exam                              tba

No make-up for midterms unless you have a serious excuse.  
Make-up for final exam covers all topics.  
A student may take ONLY ONE make-up.

If math231 is not a must course for you, think twice before sending me a consent request.  
If somebody whispered to you that you must take math231 to improve in mathematics,  
most probably it is not correct. If you are not in maths track but eager to  
learn advanced maths, it is better you started with math111.

**Course Schedule:** Tue and Thur; 13:00-14:40, @TB310  
**Textbook:** *Advanced Calculus*, G. B. Folland;  
Third edition

**Topics:** Sequences and functions,  
Limit,  $\liminf$ ,  $\limsup$ ,  
Continuity,  
Completeness, compactness, connectedness,  
Bolzano-Weierstrass, Heine-Borel Theorems,  
Extreme Value Theorem,  
(first 5 weeks up to now)  
Differentiation, derivatives for functions of several variables,  
Differentiation of composite functions,  
Mean value theorem,  
Taylor's Theorem,  
Implicit function theorem and its applications,  
Surfaces and curves in space.