

**COURSE DESCRIPTION**  
**REAL ANALYSIS II**  
**MA 646-2F**  
**SPRING 2024**

DEPARTMENT OF MATHEMATICS  
UNIVERSITY OF ALABAMA AT BIRMINGHAM

**Course Instructor:** Rudi Weikard  
**Office:** UH 4032  
**Phone#:** 934-3720  
**E-mail:** weikard@uab.edu  
**Zoom:** <https://uab.zoom.us/my/rudi.weikard>  
**Office Hours:** Drop in anytime or call or e-mail for an appointment.

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**Meeting times:** TT 3:30 pm – 4:45 pm  
**Meeting location:** UH 4002  
**Textbook:** No textbook required. Lecture notes will be provided.

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**Important dates:**

**First day of classes:** January 8  
**Martin Luther King Holiday:** January 15  
**Last day to Drop/Add:** January 16  
**Spring Break:** March 10 – 16  
**Final exam, Part I:** April 18  
**Last day of classes:** April 19  
**Final exam, Part II:** April 23, 4:15 pm – 6:45 pm  
**Grades available online:** May 1

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**Course content:**

- The Lebesgue-Radon-Nikodym theorem
  - Radon functionals on locally compact Hausdorff spaces
  - Differentiation
  - Functions of bounded variation and Lebesgue-Stieltjes measures
  - Additional topics
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**Methods of teaching and learning:**

- 28 class meetings of 75 minutes consisting of investigations and discussions of concepts, theorems, and examples. Time for one in-class exam is also included.
  - Students are expected to undertake at least 8 hours of private study and homework per week.
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*Date:* December 28, 2023.

**Aims of the course:**

The course aims for students to attain a deep understanding of the concepts of measure and integral and their applications as evidenced by their ability to reason through the proofs of many or most standard theorems.

**Assessment procedures:**

- Final grades are determined by participation in class during the course (50%) and by a final exam (50%).
- The final exam occurs in two parts. The first part will take place in class during the last class meeting (April 18). The second part occurs on Tuesday, April 23.
- During the term your contributions are counted leading to a number  $S$ . Let  $H$  be the highest number of contributions achieved by anyone. Your course participation score is going to be  $S/H$  if we cover all material or  $80S/(100H)$  if not.
- Your course performance is the average of your course participation score and your final exam grade (each is a number between 0 and 100).
- Your final grade is determined according to the following table:
 

Course performance:	90-100	70-89	50-69	below 50
Final Grade:	A	B	C	F

**Course policies:**

- Please make sure that you are able to receive e-mail through your Blazer-ID account. Official course announcements may be sent to that address.
- If you wish to request a disability accommodation please contact DSS at 934-4205 or at [dss@uab.edu](mailto:dss@uab.edu).
- Exams are closed books.
- Class attendance is expected. If you need to leave class early, it is polite to tell the instructor before the class starts.

**Disability Support Services**

UAB is committed to providing an accessible learning experience for all students. If you are a student with a disability that qualifies under the Americans with Disabilities Act (ADA) and/or Section 504 of the Rehabilitation Act, and you require accommodations, please contact Disability Support Services for information on accommodations, registration and procedures. Requests for reasonable accommodations involve an interactive process and consist of a collaborative effort among the student, DSS, faculty and staff. If you are registered with Disability Support Services, please contact me to discuss accommodations that may be necessary in this course. If you have a disability but have not contacted Disability Support Services, please call (205)934-4205 or visit <http://www.uab.edu/dss>.

**Title IX Statement** The University of Alabama at Birmingham is committed to providing an environment that is free from sexual misconduct, which includes gender-based assault, harassment, exploitation, dating and domestic violence, stalking, as well as discrimination based on sex, sexual orientation, gender identity, and gender expression. If you have experienced any of the aforementioned conduct,

we encourage you to report the incident. UAB provides several avenues for reporting. For more information about Title IX, policy, reporting, protections, resources and supports, please visit the UAB Title IX webpage for UAB's Title IX Sex Discrimination, Sexual Harassment, and Sexual Violence Policy; UAB's Equal Opportunity and Discriminatory Harassment Policy; and the Duty to Report and Non-Retaliation Policy.