

**Information Sheet**  
**MATH631 Spring 2019**  
**Real Analysis II**

**Instructor:** Radu Balan

**Lectures:** Tuesday, Thursday, 12:30pm-1:45pm, CSI 4122.

**Office Hours:** Tuesdays 3:30pm-4:30pm in MATH 2308 or CSIC 4131, or by appointment

**Contact Information:** Email [rybalan@math.umd.edu](mailto:rybalan@math.umd.edu), Math Building, Room 2308, x55492 / CSCAMM, Room 4131, x51217

MATH 631 Real Analysis II is the graduate level course in mathematics that continues MATH 630 Real Analysis I. It presents in a rigorous manner fundamental concepts in analysis: Abstract measure and integration theory, metric spaces, Baire category theorem and uniform boundedness principle, Radon-Nikodym theorem, Riesz Representation theorem, Lebesgue decomposition, Banach and Hilbert Spaces, Banach-Steinhaus theorem, topological spaces, Arzela-Ascoli and Stone-Weierstrass theorems, compact sets and Tychonoff's theorem.

**Prerequisite:** MATH 630

**Recommended Textbooks:**

*Real Analysis*, H.L. Royden and P.M. Fitzpatrick, Pearson 2010.

*Integration and Modern Analysis*, John J. Benedetto, Wojciech Czaja, Birkhauser 2009

*Real Analysis (A Comprehensive Course in Analysis, Part I)*, Barry Simon, AMS Press 2015

**Grading.** There will be one mid-term exam (100 points), homework assignments (for a total of 100 points), and a final exam (200 points - cumulative). Students are allowed one single-sided formula sheet during the mid-term, and one double-sided formula sheet during the final.

**Homeworks.** Homework must be submitted on the date assigned. Homework must be prepared without consulting any other person. You may however consult any written reference. In this case you should cite the reference. Results taken from the reference should be (re)stated to the notation used in the course. Explanations should be given in complete English sentences. Written work must be legible and clear.

**Academic Integrity.** You are expected to adhere to the University's Code of Academic Integrity, available online at: <https://www.faculty.umd.edu/teach/integrity.html>

**Students with Disabilities:** If you have a documented disability and wish to discuss academic accommodations with me, please contact me as soon as possible.

**Religious Observances.** If you will be absent from class because of religious observances, please submit a list of the dates of your absences within a couple of days.