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# Statistics 7201

## Probability Theory

### Autumn 2017

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#### CONTACT INFORMATION

**Lecturer** Radu Herbei [herbei (at) stat.osu.edu]  
Office hours: Mondays 12:00-1:00, Thursdays 9:30-12:30 and by appointment.

#### CLASS INFORMATION

**Location:** Lecture: MWF 10:20am – 11:15am, JR0143.  
**Website:** <http://osu.instructure.com>  
**Required text** *A Probability Path* by Sidney Resnick, Birkhäuser, 2005.  
<https://link.springer.com/book/10.1007/978-0-8176-8409-9>

#### OTHER REFERENCES:

- *Probability and Measure*, by Patrick Billingsley, Wiley, 1995.
- *A Course in Probability Theory*, by K. L. Chung, Academic Press, 1990
- *Probability: Theory and Examples*, by R. Durrett, Duxbury Press.
- *Probability for Statisticians*, by G. Shorack, Springer.

Please read these books as the course progresses, as I will not cover everything in class.

#### COURSE DESCRIPTION AND OBJECTIVES

Statistics 7201 is a measure-theoretic probability course, which introduces probability from a general and rigorous mathematical viewpoint. This course complements other courses on this topic that you may have had, and will help you gain a deeper and more thorough understanding of probability and its relevance in statistics and in the real world. Students will also develop skills in constructing rigorous proofs.

#### PREREQUISITES

You will need to be able to work with limits. Experience in theorem proving, real analysis and advanced calculus is a plus.

#### EVALUATION

Homework 20%, Midterm exam I – 25%, Midterm exam II – 25% , Final exam 30%.

#### HOMEWORK

Homework will be assigned regularly, however it will not be collected for grading, rather, we will have weekly short quizzes. For each quiz, I will randomly select a few problems from the latest homework assignment.

#### MIDTERM AND FINAL EXAM

There will be two **midterms** and one **final exam**. All exams are in-class and closed book. The final exam will be comprehensive.

**Midterm I** will be on **Friday, September 29, 2017** in class.

**Midterm II** will be on **Friday, November 3, 2017**, in class.

The **Final exam** will be on **Tuesday, December 12, 2017, 10:00am – 11:45am**, in class.

#### ATTENDANCE POLICY

It is strictly required to attend all the classes. It is the student's responsibility to make up for the material covered in class during any absence.

#### SPECIAL ACCOMMODATIONS

If you need any accommodations based on the impact of a documented disability, contact the instructor privately to discuss specific needs, within a week. You should also contact the Office of Disability Services to coordinate special accommodations.

#### ACADEMIC MISCONDUCT

Academic misconduct **will not be tolerated** and will be dealt with procedurally in accordance with university policy.

#### DISCLAIMER

**This syllabus should be taken as a fairly reliable guide for the course content. However, you cannot claim any rights from it and in particular I reserve the right to change the methods of assessment. Official announcements will ALWAYS be those made in class.**