

# MA 224 - PROBABILITY

Fall 2019

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<b>Instructor:</b> Thomas Koch	<b>Time:</b> W 6 - 7:50 p.m.
<b>Email:</b> thomas.koch@cooper.edu	<b>Place:</b> Rm 503

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**Office Hours:** Before class (5-6), or by appointment as needed.

**Textbook:** Probability and Statistical Inference, 7<sup>th</sup> ed. by Robert Hogg and Elliot Tannis

## Tentative Course Outline:

1. Chapter 1 - Axioms of Probability, Basic Concepts, Enumeration, Conditional Probability, Independence, Baye's Theorem
2. Chapter 2 - Discrete R.V.'s, Expectation, Bernoulli Trials, Moment Generating Function, Poisson R.V.
3. Chapter 3 - Continuous R.V.'s, Uniform, Exponential, Gamma, Chi-Square, Normal Distributions
4. Chapter 4 - Distributions of Two R.V.'s, Correlation, Conditional Distributions, Bivariate Normal Distributions
5. Chapter 5 - Functions of One Random Variable, Transformations of Two Random Variables, Several Independent Random Variables, M.G.F. Technique, Central Limit Theorem
6. Chapter 6 - (time permitting) Confidence Intervals

**Grading Policy:** Homework (25%), Midterm (35%), Final (40%)

## Important Dates:

Midterm ..... 10/16/19  
Final Exam ..... 12/11/19

## Class Policy:

- Homework is due before class via email. Homework must be legible, or I will ask you to resubmit it with the late penalty. 20% is taken off every day it is late.
- You are strongly recommended to *not* rely on a solutions manual for the homework. It will lead to poor performance on the exams.
- Participation is factored in, but can only help you.
- You are strongly recommended to try all items marked "HW" in class, as one of these will be randomly selected for the exam.

## Supplemental Texts:

1. Problem-Solving Methods in Combinatorics, by Pablo Soberon Bravo
2. Real Analysis for Graduate Students, 2<sup>nd</sup> Ed., by Richard F. Bass