Syllabus for Math 577, Theory of Probability, section 1, Fall 2018

Lecture Take place in Van Dyke Hall, 211, 9:50-11:10 Tuesday and Friday, except the week of Thanksgiving, when there is class only on Wednesday Nov. 21 at the usual time.

All reading assignments are to chapters in text, *A First Course in Probability, Ninth Edition* by Sheldon Ross.

WEEK 1: Sep 4, 7: Introduction to the course, Combinatorics
Reading: Chapter 1.

WEEK 2: Sep 11, 14: Sample spaces and probability measures (The axioms of probability).
Reading: Chapter 2,

WEEK 3: Sep 18, 21: Conditional probability and independence
Reading: 3.1-3.4 in Chapter 3

WEEK 4: Sep 25, 28: Repeated independent trials and random variables
Reading: Sections 3.4 (continued), 3.4 in Chapter 2 and 4.1-4.2 of Chapter 4.

WEEK 5: Oct. 2, 5: Some important types of random variables
Reading: Sections 4.3- 4.7 of Chapter 4.

WEEK 6: Oct 9, 12: More on discrete random variable, intduction to continuous random variables
Reading: Sections 4.8- 4.10 of Chapter 4. Sections 5.1-5.4 of Chapter 5

WEEK 7: Oct 16, 19: Continuous random variables continued.
Reading: Sections 5.5-5.7 of Chapter 5.

First Test, Tuesday Oct. 16. This will cover material from Chapters 1 through 4.

WEEK 8: Oct 23, 26: Joint distributions of random variables. Conditional distributions
Reading: , Sections 6.1-6.5 of Chapter 6

WEEK 9: Oct 30, Nov. 2: Order Statistic and exchangeable random variables
Reading: Sections 6.6-6.8 of Chapter 6,

WEEK 10: Nov. 6, 9: Mathematical expectation
Reading: Sections 7.1-7.4 of Chapter 7.

WEEK 11: Nov. 13, 16: Second Test and mathematical expectation continued

Reading: Sections 7.5-7.9 of Chapter 7 Sections 8.1-8.3 of Chapter 8

Second Test, Tuesday Nov. 13. This will cover material from Chapters 5 through 7, Section 4.

WEEK 12: Nov 21:   The fundamental limit theorems
Reading: Sections 8.1-8.3 of Chapter 8 Sections 8.3-8.6 of Chapter 6

WEEK 13: Nov 27, 30:   The fundamental limit theorems continued
Reading: Sections 8.3-8.6 of Chapter 6

WEEK 14: Dec 4, 7:   Applications of the fundamental limit theorems and stochastic processes
Reading: Chapter 9.

WEEK 15: Dec 11:   Review
Reading: Sections 3.1-3.5 of Chapter 7

FINAL EXAM: Dec. 21, 8:00-11:00 a.m.