Stat 709 (Fall semester)

Chapter 1

1. Measure space, measurable function, and integration 9/6
   No discussion on 9/7
2. Integration theory and Radon-Nikodym derivative 9/11
3. Densities, moments, inequalities, and generating functions 9/13
   Discussion 9/14
4. Conditional expectation, independence, conditional independence 9/18
5. Conditional distribution, Markov chains, and martingales 9/20
   Discussion 9/21
6. Convergence modes and relationships 9/25
7. Uniform integrability and weak convergence 9/27
   Discussion 9/28
8. Convergence of transformations and law of large numbers 10/2
9. The law of large numbers and central limit theorem 10/4
   Discussion 10/5

Chapter 2

10. Models, data, statistics, and sampling distributions 10/9

HW quiz and review for the first exam 10/11

First exam 10/12 (discussion time)

11. Sufficiency and minimal sufficiency 10/16
12. Completeness 10/18
    Discussion 10/19
13. Statistical decision and inference 10/23
14. Inference and asymptotic approach 10/25
    Discussion 10/26

Chapter 3

15. UMVUE: functions of sufficient and complete statistics 10/30

16. UMVUE: conditioning on sufficient and complete statistics 11/1
17. Characteristic of UMVUE and Fisher Information bound 11/2 (Discussion time)
    Discussion 11/6

HW quiz and review for the second exam 11/8

Second exam 11/9 (discussion time)

18. U- and V-statistics 11/13
19. Construction of unbiased or approximately unbiased estimators and method of moments 11/15
    Discussion 11/16
20. Linear model, LSE, and UMVUE 11/20
21. Properties and robustness of LSE 11/27
22. Weighted LSE and linear mixed effects models 11/29
    Discussion 11/30
23. Ridge regression and LASSO 12/4
24. Variable selection in linear models 12/6
    Discussion 12/7

HW quiz and review for the final exam 12/11

Final exam 12/17