INTRODUCTION TO MATHEMATICAL STATISTICS II
Stat 421

Instructor: Dr. Laura Kubatko
Office: 219 Cockins Hall
Office Phone: 247-8846
Office Hours: MWF 12:30-1:30; other times by appointment
E-mail: lkubatko@stat.osu.edu

Text: *Mathematical Statistics with Applications (7th Edition)*, by John E. Freund, Miller and Miller.

Course Objectives: To understand and demonstrate more basic ideas in mathematical statistics, including calculation and evaluation of point estimators, interval estimation, Neyman-Pearson lemma, uniformly most powerful tests, likelihood ratio tests, chi-square, F, and nonparametric tests.

Course Format: Three 65-minutes lectures and one 48-minute recitation per week.

Prerequisites: Stat 420

Grading Policy: Your course grade will be based on homework assignments, two midterms, and a comprehensive final exam. For each midterm you are allowed to bring one standard size sheet of notes (front and back); for the final you are allowed two standard size sheets of notes (front and back). You may also bring a calculator to all exams, but no PDAs, cell phones, or other communication devices will be allowed.

Your final course grade will be based on the following weighting of assessment components:

Homework	30%
Midterm 1 – Wednesday, April 16	20%
Midterm 2 – Friday, May 16	20%
Final exam – Last class meeting, May 30	30%

Homework: There will be seven homework assignments, each due at the beginning of the class on Fridays, except for weeks 8 and 10, when homework is due on Wednesday. Late homework is not accepted.

Academic Misconduct: Please help us to maintain an academic environment of mutual respect, fair treatment, and personal growth. You are expected to produce original and independent work for quizzes and exams. Although students are often encouraged to work together on homework assignments, all students must submit their own written work in their own words. Academic misconduct will not be tolerated and will be dealt with procedurally in accordance with

University Rule 3335-31-02. (This policy can be found at
http://oaa.osu.edu/procedures/1.0.html.)

E-mail Correspondence: In order to protect your privacy, all course e-mail correspondence must be done through a valid OSU name.nn account. If you have not activated your OSU email account, you can activate your account at https://acctmgt.service.ohio-state.edu/cgi-bin/KRB1EntryAdd.

Special Accommodations: All students who feel they may need accommodations based on the impact of a disability should contact the instructor privately to discuss their specific needs. Students with documented disabilities must also contact the Office of Disability Services (ODS) in 150 Pomerene Hall (phone: 292-3307) to coordinate reasonable accommodations for the course. ODS forms must be given to your instructor as early in the quarter as possible to be filled out and returned to you.

Tentative Stat 421 Course Schedule
and Textbook Readings

Day	Date	Lecture Topics	Textbook Readings
M	3/24	Intro and review of 420 topics	---
W	3/26	Intro to point estimation, Efficiency	10.1, 10.2, 10.3
F	3/28	Consistency	10.4
M	3/31	Sufficiency, Robustness	10.5, 10.6
W	4/2	Method of moments estimation	10.7
F	4/4	Maximum likelihood estimation	10.8
M	4/7	Estimation of means	11.1-11.2
W	4/9	Estimation of difference of two means	11.3
F	4/11	Estimation of proportions and differences	11.4, 11.5
M	4/14	Review for Midterm 1	10.1-11.5
W	**4/16**	**Midterm 1**	**---**
F	4/18	Estimation of variances	11.6
M	4/21	Estimation of the ratio of two variances	11.7
W	4/23	Testing a hypothesis	12.1-12.2
F	4/25	Losses & risks, Neyman-Pearson lemma	12.3, 12.4
M	4/28	Neyman-Pearson lemma	12.4
W	4/30	Power of a test, likelihood ratio tests	12.5, 12.6
F	5/2	Likelihood ratio tests	12.6
M	5/5	Hypothesis tests concerning means	13.1-13.2
W	5/7	Tests concerning difference of two means	13.3
F	5/9	Tests concerning variances & proportions	13.4, 13.5
M	5/12	Tests concerning differences among k proportions	13.6
W	5/14	Review for Midterm 2	11.6-13.6
F	**5/16**	**Midterm 2**	**---**
M	5/19	Analysis of rxc table, goodness of fit	13.7,13.8
W	5/21	Nonparametric statistics; sign test	16.1-16.2
F	5/23	Signed rank test, U test	16.3, 16.4
M	5/26	No Class-Holiday	---
W	5/28	Rank-sum tests: H test	16.5
F	**5/30**	**Final Exam**	**All material from course**

NOTE: THE FINAL EXAM WILL BE GIVEN DURING THE LAST CLASS MEETING OF THE QUARTER.