AGEC 2403. Quantitative Tools for Agribusiness

Instructor: **Qiuqiong Huang**

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Office hours (@ 221 Agriculture Building): Flexible. Usually afternoons [2-5pm] before problem set due dates.

By Appointment [You can always stop in and ask questions anytime the light is on in my office. If I am busy when you stop by, we will arrange for a mutually convenient time to meet. It is also a good idea to email or phone to schedule appointments].

TA: Jacob Killion // aeabta04@uark.edu

Email TA if there is an error in grading (e.g., points added up incorrectly; you think you did not get partial credits).

Lecture hours: Tuesdays and Thursdays, 9:30AM - 10:45AM, AGRI 115

Objectives of the course: Understand basic statistical terms such as mean and standard deviation; Learn basic statistical analysis skills including data description, hypotheses testing and linear regressions; Correctly interpret statistical results and apply statistics to examine real-world problems.

Prerequisites: Principles of Microeconomics (AGEC 1103 or ECON 2023 or ECON 2143); Survey of Calculus (MATH 2043) or Finite Mathematics (MATH 2053).

Required Textbook: Lind, D. A., W. G. Marchal, and S. A. Wathen. *Statistical Techniques in Business & Economics*, 16th ed. McGraw-Hill Irwin, 2014

Note you could alternatively use the 14th or 15th edition of this textbook. Table of Content of the 16th edition is posted on Blackboard for you to check page numbers of different editions.

Textbook Learning Resources:

- Answers to odd-numbered exercises are at the end of the textbook.
- The textbook publisher provides online multiple choice quizzes for each chapter. Your answers will be graded automatically. It is a good way to test your knowledge. Below is the link: http://highered.mcgraw-hill.com/sites/0078020522/student_view0/

Software: Excel will be used for the class computer exercises. For those of you who do not have a personal computer, you may go to any of the labs on campus and use the computers there or any computer that has Excel. Excel version 10 or above is recommended.

Course website: Most course materials will be posted on **Blackboard** (Syllabus, Class notes, Problem Set answers, In-class exercises answers, Exam info etc.)

Class marks/grades are recorded on Blackboard so that students can verify that the marks have been recorded correctly. But, a current class grade is not reported on Blackboard so do not even look for it. With my drop policy, it is too difficult to get an up-to-the-moment exact grade. Because the course is at the 2000 level, an early grade will be issued around the 6th or 7th week of the semester.

Problem Sets (11 Problem Sets)

- **LATE PROBLEM SETS**: In order to allow me to post answer keys promptly on Blackboard and allow the TA to return graded Problem Sets quickly, **LATE PROBLEM SETS WILL NOT BE ACCEPTED IN GENERAL**. If you have some justifiable reasons such as medical reasons (doctor's proof required) **AND WITH MY PERMISSION**, I will allow late Problem Sets up to the time the graded Problem Sets are returned by the TA and the score on your late Problem Set will be discounted by 50%. Problem Sets **ARE NOT ACCEPTED** once answers are posted on Blackboard.
- Please note the TA can deduct your points if your handwriting is not legible.

In-Class Exercises: In most classes, short exercises will be provided. See Guideline for In-Class Exercise. Notice this is also my way to check your attendance. If you do not attend a class, your score for the in-class exercise is zero. If you have some justifiable reasons such as medical reasons (doctor's proof required) **AND WITH MY PERMISSION**, you will be given a make-up in-class exercise later in the semester.

EXAMs

- Exams will be in class and closed books. Students must take the exams at the designated time unless under extreme conditions such as medical reasons (doctor's proof required) **AND WITH MY PERMISSION**. Arrangements will be made for you to take the exam (usually before the exam date) after you have obtained my permission. **IF YOU SKIP ANY EXAM WITHOUT OBTAINING MY PERMISSION BEFOREHAND, YOUR DEFAULT GRADE FOR THE EXAM IS ZERO**.
- Please note again the TA can deduct your points if your handwriting is not legible.

Grading policy

Total points for the class

Problem Sets	30
In-class Exercises	15
2 EXAMs	20 × 2
FINAL EXAM	15
Total Points	100

The course is graded on the following scale where S is the student's class score:

A	$S \geq 90$
A-	$87 \leq S < 90$
B+	$83 \leq S < 87$
B	$80 \leq S < 83$
B-	$77 \leq S < 80$
C+	$73 \leq S < 77$
C	$70 \leq S < 73$
C-	$67 \leq S < 70$
D+	$64 \leq S < 67$
D	$62 \leq S < 64$
D-	$60 \leq S < 62$
F	$S < 60$

- Each Problem Set is 3 points. There are 11 problem sets in total. The lowest problem set score will be dropped. Total = 3 × 10 Problem Sets = 30.
- Guideline for In-Class Exercise explains the grading of in-class exercises.
- Each exam is 20 points. There are 3 EXAMs during the semester. Students will drop their lowest EXAM score, so two EXAM scores will be counted. Total = 20 × 2 EXAMs = 40.
- Students will be allowed to bring in a "cheat sheet" for each EXAM (one 8.5 x 11 inches sheet of paper, front and back) and two sheets for the Final Exam.
- The class grade calculated as of and including Final Exam are FINAL. No change will be made.

Tentative Schedule and Due Dates

Dates		Due Date		Textbook Readings	
					Sections you can **SKIP**
T	Aug 25			Chap 1	Levels of Measurement
Th	Aug 27			Chap 2	
T	Sep 1			Chap 2	
Th	Sep 3	**PS #1**		Chap 3	The Weighted Mean; The Geometric Mean; The Mean and Standard Deviation of Grouped Data
T	Sep 8			Chap 3	
Th	Sep 10	**PS #2**		Chap 4	Dot Plots; Stem-and-Leaf Display; Sknewness; Relationship between Two Variables; Contingency Tables
T	Sep 15		Review for EXAM 1		
Th	Sep 17	**PS #3**		Chap 5	Contingency Tables Principles of Counting
T	Sep 22			Chap 5	
Th	Sep 24	**EXAM 1** (Covers Chapters 1 – 4)			
T	Sep 29			Chap 6	Hypergeometric Probability Distribution Poisson Probability Distribution
Th	Oct 1	**PS #4**		Chap 6	
T	Oct 6			Chap 7	The Normal Approximation to the Binomial The Family of Exponential Distributions
Th	Oct 8	**PS #5**		Chap 7	
T	Oct 13			Chap 7	
Th	Oct 15	**PS #6**	Review for EXAM 2		
T	Oct 20	Fall Break			
Th	Oct 22			Chap 8	Sampling methods
T	Oct 27	**EXAM 2** (Covers Chapters 5 – 7)			
Th	Oct 29			Chap 9	Sections on pages 297-306
T	Nov 3	**PS #7**		Chap 10	Type II Error
Th	Nov 5			Chap 10	
T	Nov 10			Chap 10	
Th	Nov 12	**PS #8**		Chap 11	
T	Nov 17			Chap 11	
Th	Nov 19	**PS #9**	Review for EXAM 3		
T	Nov 24			Chap 13	Interval estimates of Prediction
Th	Nov 26	Thanksgiving Holiday			
T	Dec 1	**EXAM 3** (Covers Chapters 8 – 11)			
Th	Dec 3			Chap 13	
T	Dec 8	**PS #10**		Chap 14	Sections on pages 494-507
Th	Dec 10			Chap 14	
Fri	Dec 11	**PS #11**			
	Dec 17	**FINAL EXAM** Comprehensive, 8:00AM - 10:00AM			

Please hand in your Problem Sets to the instructor **before class** on due dates.
Coverage of each lecture and Due dates may vary depending on the progress of the class.

Classroom Rules

- If you are late, please come in quietly (but do not skip any class even if you are late). You should remain in the classroom until the instructor indicates the class is over. If you have a particular reason to leave early, you should ask for the instructor's permission first before class begins.
- During classes, please turn off any devices such as laptop, tablet, iPad or phones. No chatting is allowed, especially when I am speaking.
- Questions relevant to classes are more than welcome. We will have plenty of time for discussions and practices in class.
- Academic Integrity—Academic Honesty. "As a core part of its mission, the University of Arkansas provides students with the opportunity to further their educational goals through programs of study and research in an environment that promotes freedom of inquiry and academic responsibility. Accomplishing this mission is only possible when intellectual honesty and individual integrity prevail. Each University of Arkansas student is required to be familiar with and abide by the University's 'Academic Integrity Policy' at honesty.uark.edu. Students with questions about how these policies apply to a particular course or assignment should immediately contact their instructor." Any scholastic dishonesty of yours will result in points taken off your Problem Sets or exams or even an F for the class grade. If you are caught cheating, campus procedures will be followed to exact the appropriate punishment.

To do well in the class:

- Attend every class.
- Read the textbook chapter before classes.
- Read the class notes posted on the class Blackboard site before classes.
- Ask questions in class. Remember the "No question is stupid" rule.
- Work on problem sets and turn them in on time.
- Visit office hours whenever you have questions.
- Communicate with the instructor about any difficulties you encounter or any suggestions you have to improve the class.

Emergency Preparedness— The University of Arkansas is prepared for a wide range of emergencies. Detailed information and contact numbers: http://emergency.uark.edu/

Inclement Weather— We will follow the campus's inclement weather policy (link below). If campus is closed, no lecture will be given. No assignment would be graded down in such a case and an exam would be re-scheduled. During inclement weather the instructor will try to communicate with students via e-mail. http://emergency.uark.edu/

RazALERT— The University of Arkansas has a campus-wide alert system for any hazardous conditions that may arise on campus. To learn more and to sign up: https://emergency.uark.edu/emergency-notification-system/index.php

Academic Support— A complete list and brief description of academic support programs can be found on the University's Academic Support site, along with links to the specific services, hours, and locations. The instructor can assist you with finding and using the support services that will help you be successful. http://www.uark.edu/academics/academic-support.php

Learning Disabilities— Students with learning disabilities will be accommodated in accordance with campus policies. Students with such disabilities should contact the instructor early in the semester so that the means of accommodation can be arranged.