University of Florida
Food and Resource Economics Department

AEB3550 Agricultural Data Analysis

Fall 2016

Section: 1G07 - 3 Credits

M,W,F - Period 3 (09:35 AM - 10:25 AM)
Turlington Hall L011

Instructor and Contact Information

Instructor: Daniela Puggioni
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Phone: (352) 294-7687
Office Hours: M,W 11:00 AM - 12:30 PM
Email: dpuggioni@ufl.edu

E-mail is a preferable way to communicate with me outside office hours. When e-mailing me, please start the subject line with AEB 3550 so that it easier for me to identify course-related messages. Courteous and professional e-mails can expect a prompt reply.

FRE Program Assistant: Kathy Green - 1170 McCarty Hall A | kagreen@ufl.edu

Undergraduate Advisor: Michael Fitzgerald - 1170 McCarty Hall A | mgfitzgerald@ufl.edu

Teaching Assistant: Elisa Fortis - Office Hours: M,W 02:30 - 3:30 PM | elisafortis@ufl.edu

The instructor reserves the right to change the terms and dates stated in this course syllabus at any time. Changes will be communicated in class, via the Gatorlink e-mail listserv and posted on E-Learning Canvas. It is solely students' responsibility to stay informed of any change.

General Course Information

Textbook
Essential of Statistics for Business and Economics, 7th edition, by Anderson, Sweeney, Williams, Camm, and Cochran. Cenage Learning - Copyright 2015. ISBN: 9781133629658.
Please note that this textbook is **required**. Older copies of this book are also acceptable as long as students are able to identify ans keep up with the appropriate topics and material covered in class.

E-Learning Canvas
There is an E-Learning Canvas web-page for this course. To access E-Learning Canvas, you will need your Gatorlink username and password. E-Learning Sakai can be accessed via https://lss.at.ufl.edu/. If you are having difficulties accessing E-Learning Canvas, please contact the UF Computing Help Desk by calling (352) 392-HELP or via e-mail helpdesk@ufl.edu.

Course Description
This course provides an introduction into analysis of agricultural data and incorporates statistical and agricultural economic theory into the analysis of agricultural problems.
That is, AEB3550 is an applied statistics course designed as a foundation course that provides students with the statistical methods successful agribusiness managers should be familiar with. Emphasis will be placed on the use of the statistical analysis tool within Microsoft Office Excel. The focus of the course will be on the application of statistical techniques, not statistical theory or mathematical proofs.

Prerequisites
AEB3103 *Principles of Food and Resource Economics*, AEB3510 *Quantitative Methods in Food and Resource Economics*, and STA 2023 *Introduction to Statistics*, or their equivalents. This course will be taught on the assumption that students are familiar with the material covered in these courses. Knowledge in use of spreadsheets is also required.

Attendance, Participation and Recommended Study Effort
Given the nature and quantity of material covered, missing class will more than likely have a negative impact on students' performance in this course. Formal attendance will be taken every day and attendance together with class participation will count for more than 10 percent of the final grade (see Table 1). Class will start promptly at 09:35 AM and students are expected to arrive in class on-time. Arriving more than 10 minutes late or leaving early without prior consent will result in the student being considered as absent. Students are allowed to **miss up to 5 classes** throughout the semester (with or without justification). Missing more than 5 classes will result in the class attendance and participation portion of the final grade being zero.
Class participation is also an important component of student's performance and will count toward the final grade. Coming to class on time and maintaining a professional behavior during lectures is the minimum standard to receive credit. Further engagement and participation above the minimum standard is highly encouraged and expected.
This is an upper-level course and it will be structured and taught accordingly. The rigorous nature of the course requires students to plan on spending about two hours of studying outside of class for every hour of lecture time. When preparing for each exam this time commitment may be significantly higher. A lower study effort will more than likely negatively affect the final grade in this

course.

Course Structure and Content

Learning Objectives
After successfully completing this course students should be able to

- Demonstrate an understanding of basic statistical concepts, including statistical sampling, probablility, simple and multiple linear regression;

- Apply statistical tools in a variety of business decision-making contexts;

- Analyze managerial problems using quantitative and statistical frameworks;

- Develop correct inferential techniques for statistical analysis, including confidence intervals and hypothesis testing to evaluate different business and agricultural scenarios;

- Effectively communicate the result of the application of mathematical and statistical tools in general (non-mathematical), professional terms.

Course Outline
Chapter 1 - Data and Statistics
- Introduction to the field of statistics
- Data and data sources
- Descriptive and inferential statistics

Chapter 2 - Descriptive Statistics: Tabular and Graphical Displays
- Summarizing data for a single variable: categorical and quantitative variables
- Frequency distributions
- Graphical analysis - Summarizing data for two variables

Chapter 3 - Descriptive Statistics: Numerical Measures
- Measures of location: mean, median, mode
- Measures of variability: range, variance, standard deviation, coefficient of variation
- Distribution shape
- Z-scores
- Empirical rule and detection of outliers

Chapter 4 - Introduction to Probability
- Counting rules: combinations
- Experiments, outcomes and assignment of probabilities
- Events and their probabilities

Chapter 5 - Discrete Probability Distributions
- Random variables: discrete variables and continuous variables
- Discrete probability distributions and probability functions
- Expected value and variance

- Binomial probability distribution

Chapter 6 - Continuous Probability Distributions
- Probability density function
- Uniform probability distribution
- Normal probability distribution

Chapter 7 - Sampling and Sampling Distributions
- Selecting a sample
- Point estimation
- Sampling distributions

Chapter 8 - Interval Estimation
- Margin of error and interval estimate
- Determining the sample size
- Z-distribution and. t-distribution

Chapter 9 - Hypothesis Tests
- Null and alternative hypothesis
- Type I and type II errors
- One-tailed and two-tailed tests

Chapter 10 - Comparisons Involving Means, Experimental Design, and Analysis of Variance
- Interval estimation
- Inference about the difference between two population means
- Analysis of variance
- F-distribution and F-test

Chapter 12 - Simple Linear Regression
- Regression models and regression equations
- Least squares method
- Coefficient of determination
- Testing for significance (t-test)
- Estimation and prediction

Chapter 13 - Multiple Regression
- Multiple regression model
- Least squares method
- Testing for significance (t-test and F-test)
- Estimation and prediction

This outline is tentative. The instructor reserves the right to change the outline at any time, changes will be announced in class. Some chapters will be covered rapidly and superficially, while other chapters will be covered more rigorously and in great detail.

Evaluation of Performance and Grading

Grades

Throughout the semester students will have the opportunity to earn up to 450 points. The maximum points available for each course task (i.e. exams, homework assignments and class attendance and participation) are indicated in Table 1. The final grade of the course will be determined by converting the total points earned into an alphabetical grade accordingly to the criteria reported in Table 2.

Please note that grades will not be *rounded* or *adjusted* in any way at the end of the semester. If a student believes that his/her exam is incorrectly graded or that his/her grade is incorrectly posted, he/she should contact me via email (i.e. in writing) as soon as possible. Students have 7 days after the grade has been posted to voice their concern. After 7 days have passed, the posted grade will be assumed to be correct and accurate.

For general information about grading and grading policy at the University of Florida, please refer to http://www.registrar.ufl.edu/catalog/policies/regulationgrades.html.

Table 1: Maximum points available for each course task

Course task	Possible points
Exam 1	100
Exam 2	100
Exam 3	100
Final (optional)	100
HW assignments	100
Class attendance and participation	50
TOTAL	**450**

Table 2: Conversion of points into the final grade

A	($\geq$418)	C	(345 - 328)
A-	(417 - 405)	C-	(327 - 315)
B+	(404 - 391)	D+	(314 - 301)
B	(390 - 373)	D	(300 - 283)
B-	(372 - 360)	D-	(282 - 270)
C+	(359 - 346)	E	($\leq$270)

Exams

There will be three regular exams during the semester. The exams will be administered during the regular class meeting time. The final exam is **optional** and will be administered accordingly to the UF official finals calendar. (see Table 3 for exam dates).

Each exam is worth up to 100 points. The regular exams will consist of multiple-choice questions, problem solving and applications, and essay/short answer/questions. The final exam will be **comprehensive** and consist of multiple-choice questions only.

All the exams are closed book and closed notes. A simple calculator may be used however, graphing calculators, cell phones, touch-screen devices, calculators with more than one display row, or other

devices with the capability to store formulas are not allowed. This policy will be ***strictly*** enforced during exams. Sharing calculators during an exam is not allowed. Thus, students who do not own a simple calculator will need to purchase one or rely on the power of their mind during exams (!). ***Early or late exams are not given***. However, university athletes are allowed make-up exams if they need to miss a regular exam for official university sporting events. Prior and written notification (at least 7 days before the scheduled exam) is required to be granted a make-up exam. The final exam will serve as make-up exam if a student happens to miss one of the regular exams or wishes to drop the lowest grade received in the regular exams. Missing more than one regular exam will result in a score of zero for any additional exam missed.

Exam day policy

It is expected that all students be on time to exams. Please arrive early, if possible, to get seated and get your books/bags stowed away so that the exam can be started on the stated time. Students are not allowed to leave the classroom during exams and re-enter the classroom. No one will be allowed to enter the classroom to begin the exam after the first student has turned in his/her finished exam.

Table 3: Exam dates

Exam 1	Wednesday, September 28	09:35 - 10:25 AM
Exam 2	Wednesday, October 26	09:35 - 10:25 AM
Exam 3	Monday, December 5	09:35 - 10:25 AM
Final Exam	Thursday, December 15	03:00 - 05:00 PM

Homework Assignments

There will be five homework assignments throughout the semester, each homework is worth up to 25 points. The lowest homework score will be dropped; thus only the four highest homework scores will count towards the final course grade. The homework assignments will be posted on E-learning Canvas.

The assignments are an individual effort. Students are permitted to work in groups but will have to submit their own homework. Depending too heavily on group efforts typically leads to a false sense of security and can result in poor exam performance. Therefore, it is suggested that students work on the assignments as independently as possible and rely on the study group to verify rather than elaborate their answers.

Submitting an identical assignment to someone else in class, or an assignment that is *too similar for comfort* to some other student's will be considered cheating and will be treated as such (please see the Academic Honesty section of the syllabus for further details).

All assignments must be typed. Since it is possible to drop the lowest homework score, late homework submissions are not accepted and no make-up opportunities will be given.

Professional Etiquette

To guarantee a productive and pleasant classroom environment students are expected to respect to the following guidelines. Note that failing to adhere to these simple rules will impact the final grade as a professional behavior during class is the minimum standard required to receive credit for class participation.

- Cellular phones should be turned off during class. No texting or any other use of cellular devices is permitted or tolerated in class, so please take a moment to turn off your devices before the class begins;

- The use of any tablets, laptops, touch-screen and any other potentially distractive devices should be also discontinued once the class begins;

- Students are expected to arrive on-time for class and leave once the lecture is over;

- Students should avoid talking amongst each other once the lecture begins unless required by specific circumstances (i.e. part of a classroom activity). Questions and concerns pertinent to the lecture are encouraged and can be raised at any moment in a civil and polite fashion.

Additional Information

Students are responsible for all deadlines/critical dates and policies set forth by the University of Florida. Deadlines/critical dates are published on the UF Office of the University Registrars website (http://www.registrar.ufl.edu/). Current academic policies are outlined in the UF Undergraduate Catalog (https://catalog.ufl.edu/ugrad/current/Pages/home.aspx).

Students Requesting Classroom Accommodation
The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Please contact this office at 0020 Reid Hall, 392-8565, https://www.dso.ufl.edu/drc/. Any student requesting accommodation will have to provide documentation from the Disability Resource Center.

UF Counseling services
The life of a college student can sometimes be overwhelming. Resources are available on-campus to help students manage personal issues or gain insight into career and academic goals. Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's various counseling resources. The following resources are available for all UF students:

- For general student affairs: Dean of Students Office, 392-1261 (after hours, please call 392-1111);

- For mental health consultations: Counseling & Wellness Center, 392-1575 (24/7 phone access);

- For students experiencing distress: UMatter, We Care, 294-2273, http://www.umatter.ufl.edu/;

- For physical health consultations: Student Health Care Center, 392-1161;

- For victims of sexual assault: Office of Victim Services, 392-5648 (after hours, please call 392-1111);

- For career guidance: Career Resource Center, 392-1602, https://www.crc.ufl.edu/.

Software Use

All faculty, staff, and students of the University of Florida are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate.

Academic Honesty

In 1995 the UF student body enacted an honor code and voluntarily committed itself to the highest standards of honesty and integrity. When students enroll at the university, they commit themselves to the standard drafted and enacted by students. According to the the Honor Code Preamble: In adopting this honor code, the students of the University of Florida recognize that academic honesty and integrity are fundamental values of the university community. Students who enroll at the university commit to holding themselves and their peers to the high standard of honor required by the honor code. Any individual who becomes aware of a violation of the honor code is bound by honor to take corrective action. The quality of a University of Florida education is dependent upon community acceptance and enforcement of the honor code.

The Honor Pledge: We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.

On all work submitted for credit by students at the university, the following pledge is either required or implied: ***On my honor, I have neither given nor received unauthorized aid in doing this assignment.*** The university requires all members of its community to be honest in all endeavors. A fundamental principle is that the whole process of learning and pursuit of knowledge is diminished by cheating, plagiarism and other acts of academic dishonesty.

In this course it is expected that students will complete all course work independently unless the instructor provides explicit permission for collaboration. Furthermore, as part of their obligation to uphold the Honor Code, students should report any condition that facilitates academic misconduct to appropriate personnel. It is a student's individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated and will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/.

By enrolling in this course students are agreeing to the terms outlined in this syllabus.