

Agricultural Data Analysis

Spring 2018

Period 3, Monday, Wednesday, & Friday 9:35 am -10:25 pm

Classroom: McCarty Hall B G086

Instructor and Contact Information

Misti Sharp
Office: 1193 McCarty Hall A
Office Hours: Tuesday and Thursday from 8:30-10:25 am and by appointment
Computer lab office hours: Wednesdays from 10:40-12:35 in McCarty Hall B, room 3086
Graduate TA: Yang Hu, huyang1207@ufl.edu , Monday and Friday 8:30-9:30
Undergraduate TA: Amber Beers, bamberlynn@ufl.edu , Monday and Friday 11:30-12:30
Email: mistisharp@ufl.edu (preferred)
Phone: 352-294-7632

Communication:

Changes in office hours, meeting locations and the syllabus will be announced on e-learning. Be sure that you receive those notifications in a timely manner (controlled in your e-learning settings). Appointments are not necessary during office hours. Groups of students are welcome.

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.

Expected Student Learning Outcomes: After the successful completion of AEB 3550, a typical student should be able to:

- Demonstrate an understanding of descriptive versus inferential statistics;
- Identify different types of data and relevant analysis for decision making;
- Apply statistical techniques to a variety of economic data;
- Analyze a data set using tools provided in excel;
- Interpret statistical output to aid in decision making in the food and resource economics realm;
- Effectively communicate the results of statistical analysis including writing professional reports;
- Succeed in the senior-level coursework in the Food and Resource Economics Curriculum as they will have acquired the necessary statistical background and foundations.

Prerequisites:

It is the expectation that students have completed introductory Food and Resource Economics coursework including AEB 3103 (Principles of FRE) and AEB 3510 (Quantitative Methods in FRE). It is further expected that students have taken STA 2023 (Introduction to Statistics).

Required Course Materials:

- **Text:** *Essentials of Statistics for Business and Economics*, 7th edition by Anderson, Sweeney, Williams, Camm and Cochran. Cengage Learning, copyright 2010. ISBN: 9781133629658.
- **E-learning:** There is an E-Learning Canvas webpage for this course. E-learning can be accessed via <http://elearning.ufl.edu> using your Gatorlink username and password. If you are having difficulties accessing E-learning, please contact the UF Computing Help Desk by calling (352)-392-HELP or via email helpdes@ufl.edu.
- **Top Hat:** We will be using the Top Hat (www.tophat.com) classroom response system in class. You will be able to submit answers to in-class questions using Apple or Android smartphones and tablets, laptops, or through text message.
 - You can visit the Top Hat Overview (<https://success.tophat.com/s/article/Student-Top-Hat-Overview-and-Getting-Started-Guide>) within the Top Hat Success Center which outlines how you will register for a Top Hat account, as well as providing a brief overview to get you up and running on the system.
 - An email invitation will be sent to you by email, but if don't receive this email, you can register by simply visiting our course website: <https://app.tophat.com/e/443141>
Note: our Course Join Code is 443141
 - Top Hat will require a paid subscription, and a full breakdown of all subscription options available can be found here: www.tophat.com/pricing.
 - Should you require assistance with Top Hat at any time, due to the fact that they require specific user information to troubleshoot these issues, please contact their Support Team directly by way of email (support@tophat.com), the in app support button, or by calling 1-888-663-5491.
- **Other:** This course combines statistical concepts with practical application and as such, students are required to have a basic knowledge of rudimentary applications of both. If you feel like you do not have an adequate background in statistics or the use of excel, please use resources such as Kahn Academy (<https://www.khanacademy.org/math/statistics-probability>) or Lynda.com (available from <http://elearning.ufl.edu>) to supplement the classroom materials.

Expectations and feedback:

I expect students to attend every class prepared to contribute and learn. This means that there should be no texting or otherwise distracting behavior during my lectures. I will do my best to conduct organized and insightful class sessions and to treat your intellectual work with fairness and impartiality. It is your choice to succeed or not succeed in my class and “success” means different things to different students. From my perspective, successful students are those who 1) do the readings, 2) do the assignments including non-graded assignments, 3) attend class, be attentive and participate in discussions/polls, and 4) study for exams. If you begin to struggle, it is your responsibility to come see me to determine what steps should be taken on your part to ensure your success in the class.

Academic Integrity: <https://www.dso.ufl.edu/sccr/honorcodes/conductcode.php>

This course will adhere to the Academic Integrity Honor Code of the University of Florida: *We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest*

standards of honesty and integrity. I expect all work that you do in the course to be your own. Violations of the Academic Honesty Guidelines will result in judicial action.

Resources for disabled students:

If you have a documented disability and wish to discuss academic accommodations, please contact the dean of students as soon as possible to set up the appropriate arrangements. A minimum of 5 business days are required to request an exam. Further information can be found at <http://www.dso.ufl.edu/drc/>.

Student counseling and support:

If something happens in your personal life that has an impact on your academic life, you must go through the Dean of Students Office (contact below) for additional accommodations. If you are experiencing other forms of distress that do not impact your performance in my class, there are several resources available on campus for students (<http://www.umatter.ufl.edu/>)

Service	Location	Phone
Dean of students (http://www.dso.ufl.edu)	P202 Peabody Hall	392-1261
Counseling and wellness center (http://www.counseling.ufl.edu/cwc/)	2190 Radio Road	392-1575
Student health care center (http://shcc.ufl.edu)	Infirmery Building	392-1161
Career Resource Center (http://www.crc.ufl.edu)	1 st Floor, Reitz Union	392-1601
FRE Undergraduate Staff (http://fred.ifas.ufl.edu/undergrad/)	1170 McCarty A	294-7640

Class Structure: This is a traditional lecture class. All material will be posted on e-learning so as to provide equal access to all students but the only way to be sure you have all material and information is to attend class daily. I intend to use TopHat daily (with the exception of exam days) in order to test learning as well as verify attendance.

Course Assignments:

Applications of Data Analysis (best 5 of 6): Assignments require the use of excel to apply statistical methods to economic and natural data. While it is important to learn how to use excel to apply statistical techniques, interpretation of the data and statistical output will be the focus of these assignments. These should be typed and thorough. Late submissions will be penalized 5 points per day late. You may work with one other student on these assignments unless stated otherwise. If you work with another student, one assignment should be submitted per group and both students are responsible for the material learned in the assignment.

Midterm Exams (3): There will be three required exams in this class. Each exam will include multiple choice questions related to assignments, readings and lectures. Each exam will be weighted equally and material will build on itself although the exams will not be *explicitly* cumulative. Make-up exams will only be given to students with *university excused* absences.

Final Exam: There will be an optional cumulative final exam. The score on the final exam can replace your lowest midterm test score. This exam is scheduled for Thursday, May 3rd from 12:30 – 2:30 in the regular classroom.

Attendance: This grade will be based on GPS confirmed daily attendance and participation in questions/discussions throughout lecture. 4 classes will be dropped in case of problems with technology or absence (excused or otherwise).

Composition of Final Score:

Course Assignments	Total Points	% of Total
Applications (best 5 of 6)	250 points (50 points each)	42%
Exams (3 midterms or 2 midterms and 1 final)	300 points (100 points each)	50%
Attendance (TopHat Performance)	50 points	8%
Total	600 points	100%

Student Evaluation: Grades will be assigned as follows (note no minuses will be awarded)

Grade	Percentage	Total Points	Grade Points
A	90.0% or more	≥ 540	4.00
B+	86.0 – 89.9%	516 – 539	3.33
B	80.0 – 85.9%	480 – 515	3.00
C+	76.0 – 79.9%	456 – 479	2.33
C	70.0 – 75.9%	420 – 455	2.00
D+	66.0 – 69.9%	396 – 419	1.33
D	60.0 – 65.9%	360 – 395	1.00
E	≤ 59.9%	≤ 359	0.00

Your final letter grade will be posted on e-learning after the final exam. The professor has the right to change this point structure at any point so long as it improves the student’s final score.

Academic Performance:

Your grade on e-learning throughout the semester may not reflect your true performance in the course. You will earn points for correct assignments and exams throughout the semester and it is up to you to determine your progress in the course. It is my goal to teach students and not to “give grades” as I believe grades are earned. As such, consider the following guidelines when you have questions about your grade or class performance:

- If you have any questions about your score at any point, you may come to the professor during office hours to clarify the number of points you have and what points will be required to achieve your desired grade.
- Do NOT ask for clarification of your grade in class or after class. This type of discussion is reserved for office hours or email correspondence.
- Do NOT email me or come to office hours expecting to change your score on a given assignment unless an egregious error has been made in entering your grade into canvas (i.e. you failed to get credit for a completed assignment or an exam grade was entered incorrectly).
- Do NOT ask for additional points throughout the semester. It may be the case that bonus opportunities to gain additional points will be available; however, this is determined solely by the professor based on an assessment of the relevance of additional activities to course materials and learning objectives.

Course Topics:

This course is broken into three main sections: basic statistics review, hypothesis testing and regression analysis. The first part of the course will largely be a review of descriptive statistics which are used to summarize data either graphically, numerically or in tabular form. This is an essential first step in data analysis as it allows the researcher to become familiar with characteristics of the data that will be relevant for higher order inferential analysis. The second and third sections of the course apply inferential statistics to probability distributions. Inferential statistics involves generating, from a limited data set, information about statistical relationships and estimates about a population. The course is cumulative in that a firm understanding of distributions and descriptive statistical techniques is a prerequisite to inferential analysis.

Tentative Course Schedule

Topic	Week	Lecture Material
Part 1: Review of Statistics		
Data and Statistics/Descriptive statistics	1	Chapter 1, 2
Descriptive Statistics: Numerical Measures	2	Chapter 3
Introduction to Probability	3	Chapter 4
Discrete and Continuous Probability Distributions	4	Chapters 5-6
Exam week (exam expected Friday, February 9 th)	5	review
Part 2: Hypothesis Testing		
Sampling and Sampling Distributions	6	Chapter 7
Interval Estimation	7	Chapter 8
Hypothesis Testing	8	Chapter 9
Spring Break: March 5 th – March 9 th		
Comparisons Involving Means and ANOVA	9	Chapter 10
Exam Week (exam expected Friday, March 23 rd)	10	review
Part 3: Regression		
Simple Linear Regression, part 1	11	Chapter 12, sections 1-4
Simple Linear Regression, part 2	12	Chapter 12, sections 5-8
Multiple Regression, part 1	13	Chapter 13, sections 1-4
Multiple Regression, part 2	14	Chapter 13, sections 5-7
Exam Week (exam expected Monday, April 23 rd)	15	review
Final Exam: Thursday, May 3 rd at 12:30-2:30		

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