

## Agricultural Data Analysis

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Period 5, Monday, Wednesday & Friday 11:45 am -12:35 pm

Classroom: Computer Science and Engineering (CSE) E121

### Instructor and Contact Information

<b>Dr. Misti Sharp Schedule: Fall 2018</b>						
<b>Period</b>	<b>Time</b>	<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>
<b>1</b>	7:25 - 8:15					
<b>2</b>	8:30 - 9:20			Office Hours: 8:30 - 10:30		Office Hours: 8:30 - 10:30
<b>3</b>	9:35 - 10:25					
<b>4</b>	10:40 - 11:30		AEB 3103		AEB 3103	
<b>5</b>	11:45 - 12:35	AEB 3550	AEB 3103	AEB 3550	AEB 3103	AEB 3550
<b>6</b>	12:50 - 1:40	Lunch	Lunch	Lunch	Lunch	Lunch
<b>7</b>	1:55 - 2:45	AEB 3510	AEB 2451	AEB 3510	AEB 2451	AEB 3510
<b>8</b>	3:00 - 3:50	Computer lab office hours: 3:00 - 4:30			AEB2451	
<b>9</b>	4:05 - 4:55					
For appointments outside of office hours, email: <a href="mailto:mistisharp@ufl.edu">mistisharp@ufl.edu</a> ; phone: 352-294-7632						
Regular office hours in McCarty Hall A, room 1193						
Computer lab office hours in McCarty Hall B, room 3086						

### Communication:

E-mail is the best way to reach me. As you may notice, my fall teaching load is such that it might be difficult to catch me in my office and waiting until the last minute is also risky. You need to be very timely in your emails should issues arise. Any issues that require action MUST be handled by email so that there is a written record of need. Phone calls and after class conversations are not likely to result in action.

Class cancellations, 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.

**Undergraduate Advisor:** Mr. Jermaine Dunn; 1170 McCarty Hall A; (352) 294-7638;  
E-mail: [j.dunn@ufl.edu](mailto:j.dunn@ufl.edu)

**Graduate TA:** Yang Hu; 1172 McCarty Hall A; [huyang@ufl.edu](mailto:huyang@ufl.edu)  
Office Hours: Friday: 9:40 – 11:30

**Undergraduate TA:** Ms. Alyssa Davison; 1172 McCarty Hall A; [abdavison97@ufl.edu](mailto:abdavison97@ufl.edu)  
Office Hours: Wednesday & Friday: 12:50 – 1:50

### **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.

### **Which means:**

Unlike previous statistics courses you may have taken, this course is very much an APPLIED statistics course. You will be using real-world data relevant to agriculture, natural resources and the economy. For some, applied statistics is easier than theoretical statistics; for others, it is incredibly difficult and may take a great deal of time to develop the skills necessary for applied data analysis.

Most real-world problems that are solved using data are not written in a textbook format. Research questions do not always follow intuitive patterns. Nevertheless, as an economist, it is essential that you develop the skills to do applied data analysis while at the same time understanding the theoretical underpinnings of statistical techniques.

This class is a CORE class in the FRE undergraduate program. Mastery of the skills taught in this course is a pre-requisite for upper-level course work in FRE classes. Previous students have found this course to be challenging and time-intensive; however, many of them agree that the rigor introduced in this class is critical in building a strong analytical skillset needed for success in upper level course work such as price analysis, agricultural finance, econometrics, etc.

**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 appropriate statistical methods;
- Apply statistical techniques to a variety of economic data;
- Analyze a data set using tools provided in excel;
- Interpret statistical output to aid in economic decision making;
- 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). *If you do not have the required pre-requisite course work, the instructor reserves the right to remove you from the course.*

### Required Course Materials:

- **Text:** *Essentials of Statistics for Business and Economics*, 7<sup>th</sup> 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](mailto:helpdes@ufl.edu).
- **Top Hat:** We will be using the Top Hat ([www.tophat.com](http://www.tophat.com)) classroom response system in class daily. 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.
  - You can register by visiting the course website: <https://app.tophat.com/e/621030>  
Note: our Course Join Code is 621030
  - Top Hat will require a paid subscription, and a full breakdown of all subscription options available can be found here: [www.tophat.com/pricing](http://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](mailto: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.

### Resources for disabled students:

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, [www.dso.ufl.edu/drc/](http://www.dso.ufl.edu/drc/)) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Requests to the DRC for accommodated exams must be made at least 5 days prior to the exam. Failure to meet this deadline may result in a lack of testing accommodations.

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

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (<http://regulations.ufl.edu/wp-content/uploads/2018/06/4.040-1.pdf>) (updated June 7, 2018) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

**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
GatorWell Health Promotions Services (works on time management, etc.) ( <a href="http://gatorwell.ufsa.ufl.edu">gatorwell.ufsa.ufl.edu</a> )	1 <sup>st</sup> Floor, Reitz Union	273-4450
Dean of students ( <a href="http://www.dso.ufl.edu">http://www.dso.ufl.edu</a> )	P202 Peabody Hall	392-1261
Counseling and wellness center ( <a href="http://www.counseling.ufl.edu/cwc/">http://www.counseling.ufl.edu/cwc/</a> )	2190 Radio Road	392-1575
Sexual Assault Recovery Services (SARS)	Infirmery Building	392-1161
Student health care center ( <a href="http://shcc.ufl.edu">http://shcc.ufl.edu</a> )	Infirmery Building	392-1161
University Police Department ( <a href="http://police.ufl.edu">police.ufl.edu</a> )		392-1111
Career Resource Center ( <a href="http://www.crc.ufl.edu">http://www.crc.ufl.edu</a> )	1 <sup>st</sup> Floor, Reitz Union	392-1601
FRE Undergraduate Staff ( <a href="http://fred.ifas.ufl.edu/undergrad/">http://fred.ifas.ufl.edu/undergrad/</a> )	1170 McCarty A	294-7640
UF Help Desk—Technical Support ( <a href="mailto:helpdesk@ufl.edu">helpdesk@ufl.edu</a> )	1 <sup>st</sup> Floor, the HUB	392-4357
Library Support ( <a href="http://cms.uflib.ufl.edu/ask">http://cms.uflib.ufl.edu/ask</a> )	online	
Teaching Center ( <a href="http://teachingcenter.ufl.edu/">http://teachingcenter.ufl.edu/</a> )	Broward Hall	392-6420
Writing Studio ( <a href="http://writing.ufl.edu/writing-studio/">http://writing.ufl.edu/writing-studio/</a> )	online	846-1138

**Evaluations:**

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

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**Class Structure:** This is a blended lecture class meaning that there is a mixture of lecture, application (through TopHat polling), and in-class activities. 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.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

**Professional Etiquette:** Use of technology (cell phones, tablets, and computers) is permitted for this course—indeed, it is required! In order to provide a productive environment conducive to everyone’s learning, adherence to the following guidelines is expected:

- Technology should be used productively! If you feel like you might not be able to say no to baseball games, social media, texting or other content contained on your device, then put it away when polling is not taking place! You are an adult who must be present daily both physically and mentally.
- Students are expected to be on-time for class. It is disruptive when students arrive late – not to mention disrespectful to myself and your fellow students. It may be the case that attendance is taken in the first few minutes of class, throughout the class or at the end of class. If you miss the attendance check in due to tardiness or inattentiveness, it counts as an absence.
- Leaving class early without prior permission is not tolerated; all material taught is important and missing even a small bit of it, is not fair to you or me who has spent hours preparing to teach you.
- You should avoid talking amongst each other once the lectures begin (this includes conversations about the material and the class itself). This includes during TopHat polling unless stated otherwise. I want an accurate assessment of the entire class, not just the ones who tell their friends the right answer. Please raise your hand if you have any questions or need me to repeat the material.
- You are welcome to record lectures and/or take pictures as long as this is not distracting to you, me or your classmates.

If you cannot comply with these simple expectations, you may be asked to leave the classroom and you will be counted as absent. The instructor reserves the right to penalize any student violating these rules by deducting points from the student’s grade as appropriate.

**Course Assignments:**

*Applications of Data Analysis (best 5 of 6):* Assignments require the use of excel to apply statistical methods to economic and natural resource/environmental 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 24 hours late (beginning after class). If the assignment permits and you work with another student, one assignment should be submitted per group and both students are responsible for the material learned in the assignment.

*Exams (best 3 of 4):* There will be three midterms and one final in this class. Each exam will include multiple choice questions related to assignments, readings and lectures. Each midterm exam will be weighted equally and material will build on itself although the exams will not be *explicitly* cumulative. The final will be cumulative but will follow the same format as the midterm exams. If you miss a midterm for any reason, you are expected to take the final.

*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). Your attendance grade will be based on participation (checking in and answering all questions) as well as performance (correctness).

**Composition of Final Score:**

Course Assignments	Total Points	% of Total Grade
Attendance/Participation	50 points	8%
Projects (best 5 of 6)	250 points (50 points each)	42%
Exams (best 3 of 4)	300 points (100 points each)	50%
<b>Total</b>	<b>600 points</b>	<b>100%</b>

**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

This class adheres to UF grading policies:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

\*\*Please note that grades are not ‘rounded’ or ‘adjusted’ at the end of the term. Haggling over grades at the end of the semester is NOT entertained. Of course, if there is an error in recording a grade, I will gladly give you the correct points. If you believe that your exam is incorrectly graded or that your grade is incorrectly posted, please contact me via e-mail (i.e., in writing) as soon as possible. You have 7 days

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after the grade has been posted to voice your concern. After 7 days have passed, your posted grade will be assumed to be correct and accurate.

### **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 research 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 pre-requisite to inferential analysis.

### **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. The lecture material is pulled from the book so the book is a fantastic resource for study.
- 2) Do the assignments including non-graded assignments. Practice exams are already available on e-learning and are often used to prepare exams. It is my intention that you will receive feedback in a timely manner for application projects. You are responsible for understanding areas that need improvement based on the grades and items missed on these assignments.
- 3) Attend class, participate and ask questions where appropriate. You should not be surprised at the end of the semester by your attendance grade. Statistics builds on itself so if you do not attend class daily, you might find that catching up is incredibly difficult. That being said, I will NOT repeat missed lectures during office hours or in the next class. All TopHat lectures will be assigned for review and any questions about that material will be answered during office hours.
- 4) Study for exams. While exams are a flawed form of assessment, they remain one of the best ways to assess INDIVIDUAL learning. If you do well on assignments, but fail exams, it is likely that your partner did all of the work as the exams are VERY similar to assignments. That being said, the best way to study for exams is to do assignments, read your book, and quiz yourself using previous exams which are available on e-learning
- 5) Know how to gauge your own course performance. Grades are earned, not given, and each point you earn from assignments, exams and attendance counts equally towards your final grade. Do not ask for bonus points throughout the semester or additional assignments at the end of the semester once you learn that you have not made the grade you preferred. If you begin to struggle,

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it is your responsibility to come see me during office hours or in a scheduled appointment to determine what steps should be taken on your part to ensure your success in the class. Earlier intervention is the best way to ensure that any problems get resolved.

### Tentative Course Schedule:

Topic	Week	Lecture Material
<b>Part 1: Review of Statistics</b>		
Data and Statistics	1	Ch. 1
Descriptive Statistics: Tabular and Graphical	2	Ch. 2
Descriptive Statistics: Numerical Measures	3	Ch. 3
Introduction to Probability	4	Ch. 4
Discrete and Continuous Probability Distributions	5	Ch. 5-6
Exam week/Review	6	Midterm 1 expected <b>September 28<sup>th</sup></b>
<b>Part 2: Hypothesis Testing</b>		
Sampling and Sampling Distributions	7	Ch. 7
Interval Estimation	8	Ch. 8
Hypothesis Testing	9	Ch. 9
Comparisons Involving Means and ANOVA	10	Ch. 10
Exam Week/Review	11	Midterm 2 expected <b>November 2<sup>nd</sup></b>
<b>Part 3: Regression</b>		
Simple Linear Regression, part 1	12	Ch. 12, sections 1-4
Simple Linear Regression, part 2	13	Ch. 12, sections 5-8
Multiple Regression, part 1	14	Ch. 13, sections 1-4
Multiple Regression, part 2	15	Ch. 13, sections 5-7
Exam Week/Review	16	Midterm 3 expected <b>December 5<sup>th</sup></b>
<b>Final Exam: Wednesday, December 12, 2018 at 10:00 am – 12:00 pm</b>		

### Expected exam dates:

Midterm 1: Friday, September 28, 2018

Midterm 2: Friday, November 2, 2018

Midterm 3: Wednesday, December 5, 2018

Final: Wednesday, December 12, 2018 from 10:00 am -12:00 pm

*Note: The instructor 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 Gatorlink e-mail listserve, and posted on e-learning as an announcement. It is solely the student's responsibility to stay informed of any changes.*

**\*\*\*By enrolling in this course, you are agreeing to the terms outlined in this syllabus!\*\*\***

**I look forward to a fun and productive summer semester with you all!**