

Course Syllabus: AEB 3550
Agricultural Data Analysis

Summer 2019

Period 3, Monday-Friday 11:00 am -12:15 pm

Regular Classroom: McCarty Hall A-3194 Computer lab: McCarty Hall B-3086

Instructor and Contact Information

Dr. Misti Sharp	Email: mistisharp@ufl.edu
Office: 1193 McCarty Hall A	Phone: 352-294-7632
In-office hours: Wednesday and Friday from 8:30 – 10:30 am and by appointment	

Course Description (from Catalog): This course provides an introduction into analysis of agricultural data and incorporates statistical and agricultural economic theory into the analysis of agricultural problems.

Communication:

E-mail is the best way to reach Dr. Sharp. The summer teaching of this course goes very quickly and as such, 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 a timely response.

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: Mrs. Danielle Shu; 1170 MCCA; Daily Office hours: 8:30 – 11:00 and 1 – 4:30
E-mail: dshu@ufl.edu Phone: (352) 294-7640

Teaching Assistants: Eyrika ‘Rika’ Orlando; 1094(A) MCCB; OH: Tuesdays from 12:30 – 1:30,
Email: e.orlando@ufl.edu; expertise: Course Content
Devan Herous-Creus; 1094(B) MCCB; OH: M/Th from 12:30 – 1:30
Email: dahcreus@ufl.edu; expertise: Projects

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 listserv, and posted on e-learning as an announcement. It is solely the student’s responsibility to stay informed of any changes.

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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).

Course summary: 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 students will have acquired the necessary statistical foundations and demonstrated competency in performing statistical analysis.

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.
- **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.

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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/>.

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/) 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. All lecture notes will be provided on e-learning after class and lectures may be recorded with prior permission from the professor.

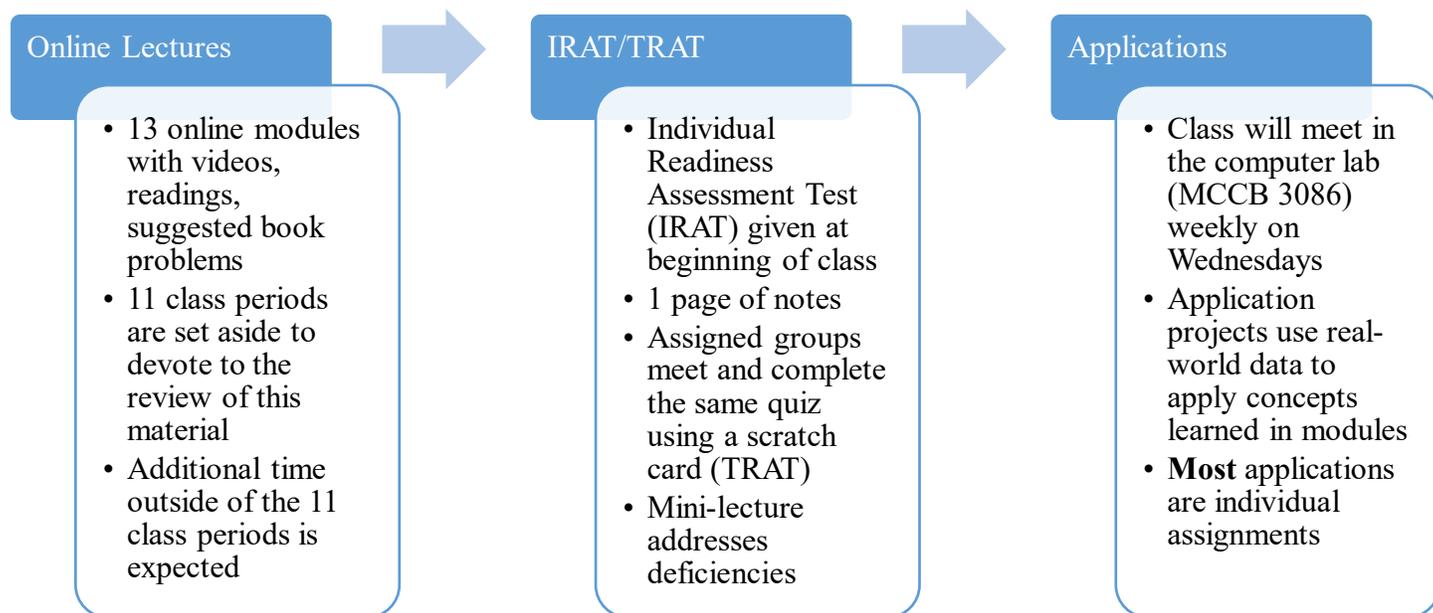
Student counseling and support: If something happens in your personal life that has an impact on your academic life, you must go through the Dean of Students Office (contact below) for additional accommodations. If you are experiencing other forms of distress that do not impact your performance in my 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.) (gatorwell.ufsa.ufl.edu)	1 st Floor, Reitz Union	273-4450
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
Sexual Assault Recovery Services (SARS)	Infirmery Building	392-1161
Student health care center (http://shcc.ufl.edu)	Infirmery Building	392-1161
University Police Department (police.ufl.edu)		392-1111
Career Resource Center (http://www.crc.ufl.edu)	1 st Floor, Reitz Union	392-1601
UF Help Desk—Technical Support (helpdesk@ufl.edu)	1 st Floor, the HUB	392-4357
Library Support (http://cms.uflib.ufl.edu/ask)	online	
Teaching Center (http://teachingcenter.ufl.edu/)	Broward Hall	392-6420
Writing Studio (http://writing.ufl.edu/writing-studio/)	online	846-1138

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.

Class Structure: This is considered a “flipped classroom;” more specifically, this class will be taught using “Team Based Learning-TBL,” a highly effective teaching paradigm that uses carefully designed small groups to facilitate learning and exploration of important course concepts (see the following video: <https://www.youtube.com/watch?v=QudVoyiacuw>). This means that students are expected to learn the course materials using multiple modes including a significant amount of outside of the classroom effort. In this classroom, the flow of each module will be as follows:



Course Assignments and Expectations:

Individual Readiness Assessment Test (IRAT) (Best 10 of 12): On the days when the class meets (see schedule at the end of this syllabus), there will be an individual assessment. This means that you **MUST** do the assigned readings, watch the assigned lectures and attempt practice problems in the book **PRIOR** to coming to class. This IRAT will include 10 multiple choice questions and should take students between 20 - 40 minutes to complete. You must be on time as extra time will not be given to students who are tardy. Each IRAT will be weighted equally, although some weeks will contain more content and difficulty varies significantly from week to week. The tested material will build on itself although the IRATs will not be *explicitly* cumulative. There are no excuses for missed IRATs as you get to drop 2. You are allowed to bring 1 page of self-prepared notes for each IRAT. It is in your best interest to do all IRATs as it affects your performance **AND** group dynamics.

Team Readiness Assessment Test (TRAT) (Best 10 of 12): These will be the same assessment as the IRAT but they will be completed/discussed as a group. You will be scored based on the group performance on the TRAT as well as your contributions to those assessments. If you do not show up for class, you will receive a zero on your TRAT for that day. There are no excuses for missed TRATs as you get to drop 2 and group work is not possible to redo. If you are present but do not contribute to the TRAT, as determined by your peers, then you will receive a relatively lower grade as well.

Applications of Data Analysis (best 5 of 6): These application projects require the use of excel to apply statistical methods to a real-world data set. While it is important to learn how to use excel to apply statistical techniques, interpretation of the data and statistical output will be emphasized in these assignments. The final

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output of these application projects will be a written report which should be typed and thorough. Late submissions will be penalized 5 points per day late (beginning immediately after the deadline). While collaboration is generally allowed on these assignments, you MAY NOT submit someone else's work as your own. Any unauthorized collaboration will be addressed through the Dean of Students Conflict Resolution process which may result in a grade penalty, course penalty, and remediation related to plagiarism and unethical behavior.

Final Project: Your final project will require you to collect your own data set and analyze an economic phenomena of interest to you. This final project should tell a story about food, agriculture and/or natural resources. It will involve use of statistical tools learned throughout the semester including descriptive and inferential statistical analysis.

Composition of Final Score:

Course Assignments	Total Points	% of Total
IRATs (best 10 of 12)	100 points (10 points each)	33.3%
TRATs (best 10 of 12)	50 points (5 points each)	16.6%
Projects (5 total)	100 points (20 points each)	33.3%
Final Project	50 points	16.6%
Total	300 points	100%

Student Evaluation: Grades will be assigned as follows

Grade	Percentage	Total Points	Grade Points
A	93.3% or more	>280	4.00
A-	90.0 - 93.2%	270 - 279	3.67
B+	86.6 - 89.9%	260 - 269	3.33
B	83.3 - 86.5%	250 - 259	3.00
B-	80.0 - 83.2%	240 - 249	2.67
C+	76.6 - 79.9%	230 - 239	2.33
C	73.3 - 76.5%	220 - 229	2.00
C-	70.0 - 73.2%	210 - 219	1.67
D+	66.6 - 69.9%	200 - 209	1.33
D	63.3 - 66.5%	190 - 199	1.00
D-	60.0 - 63.2%	180 - 189	0.67
E	59.9% or less	<180	0.00

The professor has the right to change this point structure at any point so long as it improves the student's final score.

**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 any assessment is incorrectly graded or that your grade is incorrectly posted, please contact me via e-mail as soon as possible. You have 7 days after a grade has been posted to voice your concern. After 7 days have passed, your posted grade will be assumed to be correct and accurate.

Academic Performance:

Your grade on e-learning throughout the semester may not reflect your true performance in the course. You will earn points every single week in this semester and it is crucial that you do not “check-out” at any point in the semester. If you fall behind, you **MUST** come to my office right when you realize this is happening. Do **NOT** wait until the end of the semester as there is nothing I can do to help at that point. 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 four main sections: basic statistics review, probability distributions, 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 last part of the course takes inferential analysis a step further to look at associations between multiple variables which is a first step in discussing causal or correlative relationships. The course is cumulative in that a firm understanding of distributions and descriptive statistical techniques is a pre-requisite to inferential analysis.

Summary: Lectures and readings are provided online. Your grade is based on individual performance on Projects (Wednesdays; location—MCCB 3086), IRATs, TRATs and the final project (due on last day-June 21).

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 listserv, 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 semester with you all!

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Schedule:

	Date	Class #	Lecture	Location	Module	Online	TBL	Lab	Due	Week
Mon	5/13/2019	1	Syllabus--Data and Statistics	MCCA 3194	1					1
Tues	5/14/2019	2	Descriptive Statistics: Tabular and Graphical	MCCA 3194	2		X			1
Wed	5/15/2019	3	Project 1	MCCB-G086				X		1
Thurs	5/16/2019	4	Numerical Descriptive Statistics	Online	3	X				1
Fri	5/17/2019	5	Numerical Descriptive Statistics	MCCA 3194	3		X		Proj 1	1
Mon	5/20/2019	6	Introduction to Probability	Online	4	X				2
Tues	5/21/2019	7	Introduction to Probability	MCCA 3194	4		X			2
Wed	5/22/2019	8	Project 2	MCCB-G086				X		2
Thurs	5/23/2019	9	Discrete and Continuous Probability	Online	5	X				2
Fri	5/24/2019	10	Discrete and Continuous Probability	MCCA 3194	5		X		Proj 2	2
Mon	5/27/2019	11	The Normal and Sampling Distributions	Online	6	X				3
Tues	5/28/2019	12	The Normal and Sampling Distributions	MCCA 3194	6		X			3
Wed	5/29/2019	13	Project 3	MCCB-3086				X		3
Thurs	5/30/2019	14	Interval Estimation	Online	7	X				3
Fri	5/31/2019	15	Interval Estimation	MCCA 3194	7		X		Proj 3	3
Mon	6/3/2019	16	The z-test	Online	8	X				4
Tues	6/4/2019	17	The z-test	MCCA 3194	8		X			4
Wed	6/5/2019	18	Project 4	MCCB-G086				X		4
Thurs	6/6/2019	19	The t-test and remainders from chapter 9	Online	9	X				4
Fri	6/7/2019	20	The t-test and remainders from chapter 9	MCCA 3194	9		X		Proj 4	4
Mon	6/10/2019	21	Comparison of Means and ANOVA	Online	10	X				5
Tues	6/11/2019	22	Comparison of Means and ANOVA	MCCA 3194	10		X			5
Wed	6/12/2019	23	Project 5	MCCB-3086				X		5
Thurs	6/13/2019	24	Simple Linear Regression, Part 1	Online	11	X				5
Fri	6/14/2019	25	Simple Linear Regression, Part 1	MCCA 3194	11		X		Proj 5	5
Mon	6/17/2019	26	Simple Linear Regression, Part 2	Online	12	X				6
Tues	6/18/2019	27	Simple Linear Regression, Part 2	MCCA 3194	12		X			6
Wed	6/19/2019	28	Final Project	MCCB-3086				X		6
Thurs	6/20/2019	29	Multiple Regression	Online	13	X				6
Fri	6/21/2019	30	Multiple Regression	MCCA 3194	13		X		Final	6

**Any changes to this schedule will be announced on e-learning!