

Course Syllabus: AEB 3550
Agricultural Data Analysis

Fall 2020—Tentative Syllabus

Monday, Wednesday and Friday, Period 5 (11:45 am – 12:35 pm)

Synchronous Class Meetings zoomlink:

<https://ufl.zoom.us/j/97924105778?pwd=N1MzYkJwYWdibWtCTEhoVVpCUGU5QT09>

Learning Team Contact Information

Instructor: *Dr. Misti Sharp*; mistisharp@ufl.edu; Zoom office hours MWF 3:00 – 4:30 and by appointment: <https://ufl.zoom.us/j/902541919>

Teaching Assistants: *Ms. Fei He*; he.fe@ufl.edu; Zoom office hours tbd

Mr. Ethan Vaughan; ethan.vaughan@ufl.edu; Zoom office hours tbd

Undergraduate Advisor: *Mrs. Danielle Shu*; dshu@ufl.edu Phone: (352) 294-7640; For appointments: <https://calendly.com/dshu-fre>

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.

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).

Communication:

E-mail (either to my email address or via canvas messaging) is the best way to reach Dr. Sharp. Any issues that require action **MUST** be handled by email so that there is a written record of need. I will not jump into my zoom meeting room if I see you there without advance notice of a proposed meeting; however, I am able to meet with very little notice during regular business hours (M-F 8-5).

Make sure to enable emails for course announcements and read this syllabus thoroughly! I post important announcements sparingly (no more than 1 per day and usually much less) and will not answer questions by email that are already answered via canvas announcements or the course syllabus.

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

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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:

- Identify different types of data and appropriate statistical methods;
- Differentiate between descriptive and inferential statistics;
- 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;
- 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 helpdesk@ufl.edu.
- **Zoom:** There are regular synchronous sessions to be conducted via zoom. To ensure privacy and security, please install the [latest Zoom Client](#), and follow the security recommendations provided on the [Keep Zoom Secure](#) site.
- **Intedashboard:** This class makes use of team based learning software. You will receive information about your login credentials via email no later than the first day of class.
- **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.

Services for Students with Disabilities 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.

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

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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 Honesty: As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following 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.*” You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit 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.*” It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your 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. Violations 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://sccr.dso.ufl.edu/process/student-conduct-code/>

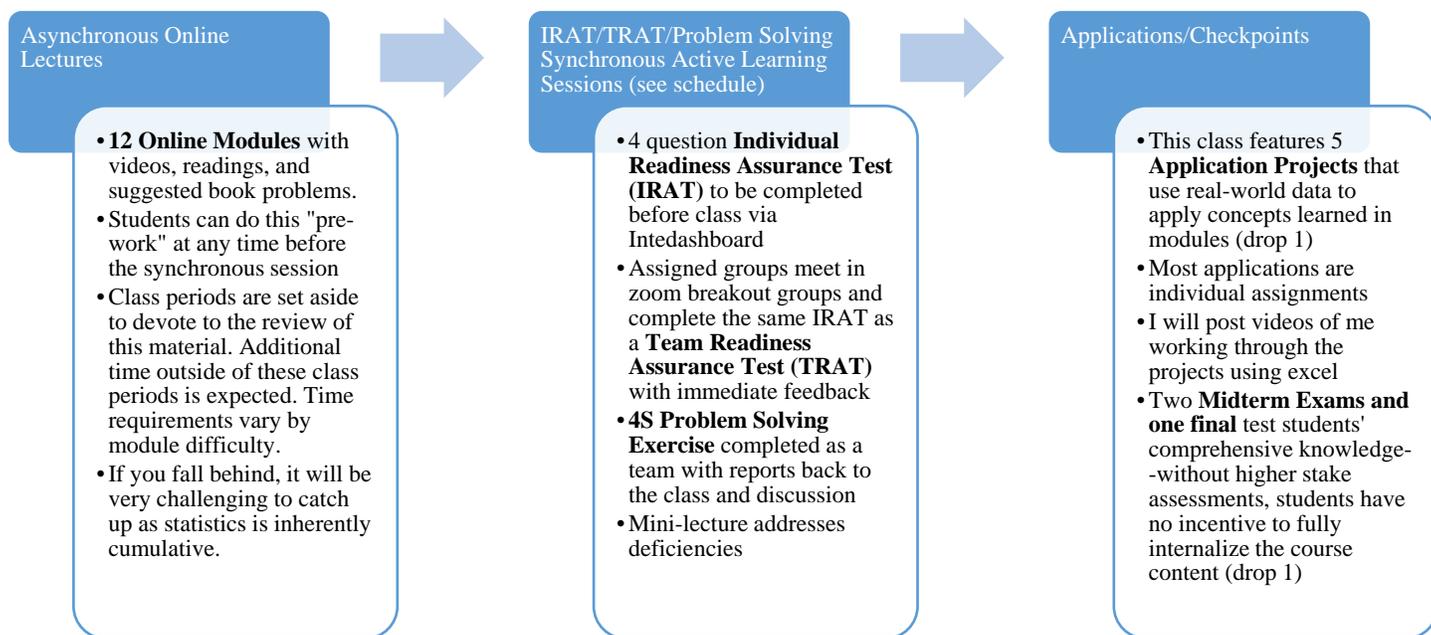
Attendance and Make-up Work

Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

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 (asynchronous) effort. In this class, the flow of each module will be as follows:

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Course Assignments and Expectations:

Individual Readiness Assurance Test (IRAT) (Best 10 of 12): On the days when the class meets synchronously (mostly Wednesdays with a few exceptions—see schedule at the end of this syllabus), there will be an individual quiz. This means that you **MUST** do the assigned readings, watch the assigned lectures and attempt practice problems in the book **PRIOR** to the synchronous class session in InteDashboard. This IRAT will include 4 multiple choice questions and should take students between 5 - 10 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. It is in your best interest to do all IRATs as it affects your performance **AND** group dynamics.

Team Readiness Assurance 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. 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.

4S Problem Solving Activity (based on peer feedback): In addition to the TRAT there will be a 4S Problem Solving prompt to be completed as a group. This is meant to be an opportunity to apply what you have learned in the module to a real-world significant problem with each team coming to and defending a specific choice under simultaneous report. The grade you earn for this portion will depend on the feedback you provide for your peers as well as the feedback peers provide for you.

Applications of Data Analysis (best 4 of 5): 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 output of these application projects will be a written report which should be typed and thorough. Late

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submissions will be penalized 5 points per day late (beginning 24 hours after the deadline). All work completed in excel and written in your final report **MUST** be your own.

Exams (Best 2 of 3): Each exam (2 midterms and 1 final) will consist of 20 multiple choice questions and will be administered through e-learning. These exams will be an open-book, open-note timed individual assessment (60 minutes) with only one allowable attempt.

For all individual assignments (IRATs, applications and exams), you **MAY NOT** submit someone else's work as your own, pay another person to complete your assignment or otherwise engage in unethical behavior unbecoming of the gator nation. 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. Please review the honor code and consult the professor if you are unsure of what constitutes academic dishonesty or if you suspect an honor code violation has occurred in this class:

<https://sccr.dso.ufl.edu/process/student-conduct-code/>

Composition of Final Score:

Course Assignments	Total Points	% of Total
IRATs (best 10 of 12)	80 points (8 points each)	20%
TRATs (best 10 of 12)	80 points (8 points each)	20%
4S Problem Solving (peer evaluation)	40 points	10%
Projects (best 4 of 5)	100 points (25 points each)	25%
Exams (best 2 of 3)	100 points (50 points each)	25%
Total	400 points	100%

Student Evaluation: Grades will be assigned as follows

Grade	Percentage	Total points	Grade Points
A	93% or more	≥ 372	4.00
A-	90.0 – 92.9%	360 - 371	3.67
B+	86.0 – 89.9%	344 - 359	3.33
B	83.0 – 85.9%	332 - 343	3.00
B-	80.0 – 82.9%	320 - 331	2.67
C+	76.0 – 79.9%	304 - 319	2.33
C	73.0 – 75.9%	292 - 303	2.00
C-	70.0 – 72.9%	280 - 291	1.67
D+	66.0 – 69.9%	264 - 279	1.33
D	63.0 – 65.9%	252 - 263	1.00
D-	60.0 – 62.9%	240 - 251	0.67
E	59.9% or less	≤ 239	0.00

*****Please note that grades are not 'rounded' or 'adjusted' at the end of the term. 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 every single week in this semester and it is crucial that you do not "check-out" at any point in the

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semester. If you fall behind, you **MUST** notify me and set up a meeting when you realize this is happening so that we can discuss your best course of action. 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 set up an appointment to clarify the number of points you have and what points will be required to achieve your desired grade. Grades may not be discussed over email or in front of other students.
- Do **NOT** ask me 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 a 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.
- 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 one week after a grade has been posted to voice your concern. After one week has passed, your posted grade will be assumed to be correct and accurate.

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 is 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.

Online Course Evaluation Process Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. [Click here for guidance on how to give feedback in a professional and respectful manner](#). Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via ufl.bluera.com/ufl/. [Summaries of course evaluation results are available to students here](#).

Summary: Lectures and readings are provided online. The class meets synchronously to complete IRATs, TRATs and problem solving exercises using team based learning. Projects and cumulative exams are due throughout the semester.

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 on e-learning as an announcement. It is solely the student's responsibility to stay informed of any changes.

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****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!

Tentative Schedule:

DOTW	Date	Class #	Topic	Text Ch.	Due*	Synchronous?
Mon	8/31/2020	1	Module 0: Orientation and Introduction to Team Based Learning	0		No
Wed	9/2/2020	2	Module 0: Orientation and Introduction to Team Based Learning	0		Yes
Fri	9/4/2020	3	Module 1: Data and Statistics	1		No
Mon	9/7/2020	4	Labor Day holiday			
Wed	9/9/2020	5	Module 1: Data and Statistics	1		Yes
Fri	9/11/2020	6	Module 2: Descriptive Statistics: Tabular and Graphical Approaches	2		No
Mon	9/14/2020	7	Module 2: Descriptive Statistics: Tabular and Graphical Approaches	2		No
Wed	9/16/2020	8	Module 2: Descriptive Statistics: Tabular and Graphical Approaches	3		Yes
Fri	9/18/2020	9	Module 3: Numerical Descriptive Statistics	3	Proj 1	No
Mon	9/21/2020	10	Module 3: Numerical Descriptive Statistics	3		No
Wed	9/23/2020	11	Module 3: Numerical Descriptive Statistics	3		Yes
Fri	9/25/2020	12	Module 4: Probability and Probability Distributions	4, 5 & 6		No
Mon	9/28/2020	13	Module 4: Probability and Probability Distributions	4, 5 & 6		No
Wed	9/30/2020	14	Module 4: Probability and Probability Distributions	4, 5 & 6	PR 1	Yes
Fri	10/2/2020	15	Homecoming Holiday			
Mon	10/5/2020	16	Module 5: The Normal and Sampling Distributions	6 & 7		No
Wed	10/7/2020	17	Module 5: The Normal and Sampling Distributions	6 & 7		Yes
Fri	10/9/2020	18	Module 6: Interval Estimation	8	Proj 2	No
Mon	10/12/2020	19	Module 6: Interval Estimation	8		No
Wed	10/14/2020	20	Module 6: Interval Estimation	8	PR 2	Yes
Fri	10/16/2020	21	Midterm 1--Synchronous Review and Exam Released			Yes
Mon	10/19/2020	22	Module 7: Hypothesis Testing, Part 1	9		No
Wed	10/20/2020	23	Module 7: Hypothesis Testing, Part 1	9		Yes
Fri	10/22/2020	24	Module 8: Hypothesis Testing, Part 2	9		No
Mon	10/26/2020	25	Module 8: Hypothesis Testing, Part 2	9		No
Wed	10/28/2020	26	Module 8: Hypothesis Testing, Part 2	9		Yes
Fri	10/30/2020	27	Module 9: Comparison of Means and ANOVA	10	Proj 3	No
Mon	11/2/2020	28	Module 9: Comparison of Means and ANOVA	10		No
Wed	11/4/2020	29	Module 9: Comparison of Means and ANOVA	10	PR 3	Yes
Fri	11/6/2020	30	Module 10: Simple Linear Regression, part 1	12		No
Mon	11/9/2020	31	Module 10: Simple Linear Regression, part 1	12		Yes
Wed	11/11/2020	32	Veterans day holiday			
Fri	11/13/2020	33	Module 11: Simple Linear Regression, part 2	12		No
Mon	11/16/2020	34	Module 11: Simple Linear Regression, part 2	12		No
Wed	11/18/2020	35	Module 11: Simple Linear Regression, part 2	12		Yes
Fri	11/20/2020	36	Module 12: Multiple Regression	13	Proj 4	No
Mon	11/23/2020	37	Module 12: Multiple Regression	13		No
Wed	11/25/2020	38	Thanksgiving holiday			
Fri	11/27/2020	39	Thanksgiving holiday			
Mon	11/30/2020	40	Module 12: Multiple Regression	13	PR 4	Yes
Wed	12/2/2020	41	Make up day		Proj 5	Yes
Fri	12/4/2020	42	Midterm 2 Review Session			Yes
Mon	12/7/2020	43	Midterm 2--Modules 7 through 12			No
Wed	12/9/2020	44	Optional Final Exam Review			Yes
Fri	12/1/2020	45	Optional Final Exam (12:30 - 2:30)			

Proj refers to application project available on e-learning and due by midnight; PR indicates peer review due in InteDashboard