

Course Syllabus
AEB 3550: Agricultural Data Analysis, Spring 2005

Class times:Section 0246:

Tuesday 12:50 – 1:40 FLG 235
Thursday 12:50 – 1:40 TUR 2319
Thursday 1:55 – 2:45 MCCB 2103

Section 4793:

Tuesday 12:50 – 1:40 FLG 235
Thursday 12:50 – 1:40 TUR 2319
Thursday 3:00 – 3:50 MCCB 2103

Instructor: Damian Adams
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T.A.: LaToya Mitchell
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Phone: TBA
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Office Hours:

Instructor: Tuesday 1:55-2:45; other hours TBA. Also available by appointment.
T.A.: Monday thru Friday 10:00 – 12:00.

Course Information:

Prerequisites: AEB 3114L, Introduction to Computer Applications in Agriculture (or equivalent)
STA 3023, Introduction to Statistics (or equivalent)
AEB 3103, Principles of Food and Resource Economics (co-requisite)

Course Objectives:

The objective of the course is for you to be able to perform basic statistical analysis for agricultural and related business decisions, including:

1. Identify the relevant variables associated with a problem;
2. Collect the information needed to analyze the problem;
3. Generate descriptive statistics, both graphically and numerically, and analyze your results; and
4. Use regression analysis to understand relationships between variables and to interpret, evaluate and present results.

Required Text:

David R. Anderson, Dennis J. Sweeney, and Thomas A. Williams, *Essentials of Modern Business Statistics with Microsoft Excel*, 2nd Edition, Thomson/South-Western, 2004 (ISBN 0-324-18452-2).

- This text should be used as a reference for questions regarding class material. The class notes will follow the text material closely. Doing the practice questions in this book is a very good way to prepare for exams.

David R. Anderson, Dennis J. Sweeney, and Thomas A. Williams, *Study Guide for Essentials of Modern Business Statistics with Microsoft Excel*, 2nd Edition, Thomson/South-Western, 2004.

- The study guide will be used heavily during the computer lab sessions. You must **bring this to all computer lab sessions.**

Additional Text Recommendation:

Neufeld, John L. *Learning Business Statistics with Microsoft® Excel 2000*, Prentice Hall, 2000. (ISBN 0-13-030878-1)

- You will need this text if you are not very familiar with Excel.

Evaluation:

Quizzes & participation	10 %
Homework	25 %
Midterm Exam	30 %
Final Exam	35 %

Letter Grades:

90+%	A
87-89.9	B+
80-86.9	B
77-79.9	C+
70-76.9	C
67-69.9	D+
60-66.9	D
0-59%	E

Homework:

Homework assignments are intended to provide you with experience in applying the concepts learned in class. Completed assignments are intended to be part of your study materials when preparing for exams. Homework is due at the beginning of class on the due date and must be turned in on time *without exception*. Late homework will not be graded. Please be aware that the homework assignments may take several hours to complete and you must allow yourself adequate time to complete them. There will be 12 homework assignments and the lowest two will be dropped.

Quizzes:

In-class pop quizzes will assess your understanding and use of the definitions, concepts and other course material. There will be 12 quizzes and the lowest two will be dropped.

Exams:

There are two exams for the course. The midterm exam mainly tests your knowledge of concepts and tools used for data analysis. The final exam focuses on statistical inference; it will mainly test your ability to analyze results, to report results in non-statistical terms and to utilize the concepts to answer economic questions.

The midterm exam is *tentatively* scheduled for February 17, but this may change by a few days depending on our progress. I will give you at least a week's notice prior to the midterm exam. The final exam is scheduled for April 19, which is the last day of class.

Webct/Vista:

Each student should have been automatically added to the Webct/Vista course account for AEB 3550. You will need to use your Gatorlink ID to login. Go to vista.courses.ufl.edu, select the link for the current semester, and login using your Gatorlink ID and password. If you do not have Gatorlink ID or cannot remember your Gatorlink login information, go to the Gatorlink website [gatorlink.ufl.edu] or to the CIRCA Help Desk at CSE520D or call them at 392-HELP.

You will be able to use WebCT to retrieve data for assignments, send e-mails to classmates or to the instructor, check grades, check class announcements and course calendar, and a variety of other tasks. You are expected to check the WebCT site for this course at least once a day.

Course Content

Data and Statistics (Chpt.1)

Characteristics of Data
Qualitative and Quantitative Data
Cross-sectional and Time-series Data
Sources of Data
Inferential and Descriptive Statistics

Descriptive Statistics: Tabular and Graphical Methods (Chpt. 2)

Summarizing Qualitative and Quantitative Data
Cross tabulations and Scatter Diagrams

Descriptive Statistics: Numerical Methods (Chpt. 3)

Measures of Location
Measures of Variability
z-Scores, Empirical Rule, Detecting Outliers
Measures of Association between two variables
Weighted Mean

Discrete Probability Distributions (Chpt. 5)

Random Variables (Discrete and Continuous)
Expected Value and Variance
Binomial, Poisson, and Hypergeometric Probability Distributions

Continuous Probability Distributions (Chpt. 6)

Uniform, Exponential, and Normal Probability Distributions

Sampling and Sampling Distributions (Chpt. 7)

Simple Random Sampling
Point Estimation
Sampling Distribution of the sample mean \bar{x}
Sampling Distribution of the population proportion \bar{p}
Other Sampling Methods

******Midterm Exam******

Interval Estimation (Chpt. 8)

Interval Estimation of a Population Mean: Large-Sample Case
Interval Estimation of a Population Mean: Small-Sample Case
Determining the sample size

Hypothesis Testing (Chpt. 9)

Developing the Null and Alternative Hypotheses
Type I and Type II Errors
Tests about a Population Mean:
 One-Tailed and Two-Tailed Tests, Large- and Small-Sample Cases.
 p -Values
 t Distributions

Simple Linear Regression (Chpt. 12)

Simple Linear Regression Model
Least Squares Method and Model Assumptions
Coefficient of Determination
Testing for Significance
Estimation and Prediction
Residual Analysis: Validating Model Assumptions

Multiple Regression (Chpt. 13)

Multiple Regression Model
Least Squares Method
Multiple Coefficient of Determination
Testing for Significance
 F -Test
 t -Test
Multicollinearity
Qualitative Independent Variables: “Dummy” variables

*******Final Exam*******

University Policies and Services

Academic Honesty:

As a result of completing the registration form at the University of Florida, every student has signed the following statement: “I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University.” This means that all work submitted by you is your own work and you will not tolerate academic dishonesty in your classmates.

I have found that students are most tempted to copy on homework assignments. I encourage interaction on assignments but not copying. Each student is to submit his/her *own* original work. Obvious collusion will result in credit for one being equally divided among all participants the first time I find it and a trip to Honor Court the second.

UF Counseling Services:

Resources are available on campus for students having personal problems or lacking clear career and academic goals that interfere with their academic performance. These resources include:

1. *University Counseling Center*, 301 Peabody Hall, 392-1575, personal and career counseling;
2. *Student Mental Health*, Student Health Care Center, 392-1171, personal counseling;
3. *Sexual Assault Recovery Services (SARS)*, Student Health Care Center, 392-1161, sexual counseling;
4. *Career Resource Center*, Reitz Union, 392-1601, career development assistance and counseling.

Accommodations for Students with Disabilities:

Students with disabilities, who need reasonable modifications to complete assignments successfully and otherwise satisfy course criteria, are encouraged to meet with the instructor as early in the course as possible to identify and plan specific accommodations. Students will be asked to supply a letter from the Office for Students with Disabilities to assist in planning accommodations. Please see me outside of class time to discuss any accommodations you might need.