AEB 4931: Econometrics
Section 10207

Instructor: Emmanuel Akande

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Spring 2019

Course Time (Period 6): MWF 12:50-1:40

Course Location: Room 3124

Office Hours: Mon. & Fri. after class

Course Description & Objectives:

This course aims to introduce students to the study of modern econometric techniques. It will cover the probability and statistical theory as a foundation to econometrics concepts and various economics modelling and approach. Moreover, the course will address the fundamental issues with hypothesis formulation and testing; the derivation and estimation of type I & II error and power of a test. The regression analysis will introduce students to estimation of parameters using the data and as well expose the students to relevant assumptions we need to observe to make our research reasonable. We shall go over the consequences of violating the Ordinary Least Square(OLS) assumptions. The class will also enable students to have a hands-on experience with R and Stata and how to integrate the computing environment with a practical experience with data. Most importantly, the application of these models in Food and Resource Economics. Clearly, the leaning outcome includes;

1. Learn fundamental theoretical concepts in probability and Statistics including standard errors, hypothesis testing, and confidence intervals.

2. Learn the basics of working with data, being aware of practical issues such as violations of missing-at-random.

3. Learn how to work with statistical programming language to analyze econometric problems

4. Learn the dangers of relying on assumptions that do not typically hold in economics (e.g., correlation with the error term)

Prerequisites:

I expect all students to have taken AEB 3550 or have basic linear algebra, statistics and calculus knowledge. Students with inadequate background in calculus or mathematics and statistics may struggle in the class. Although, I intend to provide details as to derivations, but it is in the students' interest to be familiar with some of the courses listed above. You may have to review some of the topics in these courses to be sure. However, the first four weeks of the class will cover a basic review of some probability and statistical theory and it is advisable you don't miss the class. I will go through all the concepts and foundations of the course with you in details as we go into the mainstream of econometrics.

Required Textbook:

Introductory Econometrics: Modern Approach 5th edition, by Jeffrey M. Wooldridge, Cengage ISBN: 978-1-1115-31041.

Recommended Textbooks:

Mathematical Statistics with Applications, **Seventh Edition** *Dennis D. Wackerly, William Mendenhall III, Richard L. Scheaffer*. I believe the soft copy of this book is available online and it is free.

Week	Brief Course Outline	Chapter
1-2	Random Variable & their Probability Distribution	DWR: 3.1-3.4, 4.1-4.5
3	Multivariate Probability Distribution	DWR: Chap. 5, 6.3
4-5	Sampling Distribution & Central Limit Theorem	DWR: 7.1-7.4
5	**Exam 1**	
6	Interval Estimation	DWR: 8.3-8.6
7	Hypothesis Testing: Type 1 & II error	DWR: 10.4-10.8
8	Simple Linear Regression Model	Wooldridge Chapter 2
	Spring Break	
9-11	Multiple Regression Model	Wooldridge: Chapter 3&4
	Exam 2	
12	Violations of Regression Assumptions	Wooldridge: Chapter 5&6
13	Regression with Qualitative Information	Wooldridge: Chapter 7
14	Heteroskedasticity	Wooldridge: Chapter 8
15	Regression with Time Series Data: Stationary & Non- Stationary Variables	Wooldridge: Chapter 10
	Presentation of Research Results	
	Exam 3	

Grading

Components	Due Dates	Weight
Proposal	Feb. 1st	10%
Exam 1	Feb.8th	15%
Exam 2	March 15th	20%
Assignments	Every other week	15%
Final Exam	April 24th	25%
Research Paper & Presentations	April 29th	15%

Grading Scale

A	93 - 100	4.00
A-	87 - 92	3.67
B+	84 - 86	3.33
B	81 - 83	3.00
B-	78 - 80	2.67
C+	75 - 77	2.33
C	72 - 74	2.00
C-	69 - 71	1.67
D+	65 - 68	1.33
D	60 - 64	1.00
D-	56 - 59	0.67
E	<56	0.00

Problem Set and Class Collaboration:

Late submissions of problem sets will not be accepted. There will be a total of **9 problem sets** throughout the semester. Students can discuss homework, but each student must turn in an individual problem set. Similar solution or/and steps will receive **zero point**; Copying other student's solutions will be penalized for cheating. Students will have the opportunity to drop homework with **1** lowest score. That said, only 8 of the 9 assignments will count towards grade.

Research Project

Each student will develop a research project on a topic of their choice, but the topic may not be limited to the course materials. You may want to discuss with me the relevance and the information you are trying to communicate before writing your proposal. No reproduction of any published or unpublished paper is allowed but you may improve on a previous research paper you presented in another class-as long as it communicate econometrics ideas or tool of analysis.

- Proposal should not be more than 2 pages and it must be handed-in at the end of the class on February 1st.

- Grading rubrics is entirely a function of the extent of the information your research intends to communicate and the rigorous tool of analysis you intend to employ. For instance, using only ordinary regression as a tool of analysis on time series data is worthless and thus, will receive a very low score. So, I expect research ideas to be creative and insightful.

- Final research is due on the final week and presentations starts on Monday April 22nd and final submissions with corrections are due on April 29th.

- Limit your final research paper to 12 pages (references inclusive)

- University Writing Studio (UWS) is committed to helping UF students become better writers and readers. The UWS is a FREE service for current UF students seeking to improve their writing and study skills, while they have the opportunity to work one-on-one with a consultant. For more information, please visit the UWS website in https://writing.ufl.edu/writing-studio/.

Course Website:

The course website will be available through UF's E-Learning Canvas page, which is accessible via http://elearning.ufl.edu. Lecture slides and homework assignments will be posted on Canvas. This website will be used to post announcements and send emails to the class. Canvas is associated with your *ufl.edu* email address; check your inbox often. The E-Learning page should be operational by the end of the first week of class. Blackboard will also be used a lot throughout the semester and it is the student's responsibility to keep notes and find notes from their peers if they missed a class.

Attendance

Attendance is highly recommended in this class but if absenteeism is unavoidable you may bring it to my attention ahead of class. Attendance is crucial for extra credit therefore; the extra credit must be earned and not a given nor a right.

Office Hours

Students are highly encourage to use the office hours. Following up with questions during office hours is a great way to gain a better understanding of course material.

Make-up policy

No make-up exams will be entertained under any circumstances. If you miss one of the exams for a reasonable, well-documented excuse (court, illness, etc.), then your remaining exam scores will be weighted accordingly.

FRE Program Assistant: ;

Academic Assistant: Ms. Danielle Shu 1170B McCarty Hall A; (352) 294-7640
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Undergraduate Advisor: Mr. Jermaine Dunn, 1170A McCarty Hall A; (352) 294-7638;

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E-Learning: There is an E-Learning Canvas web-page for this course. To access E-Learning, you will need your Gatorlink username and password. E-Learning will be accessible via http://elearning.ufl.edu. 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.

Software:

You are free to use **Stata or R** for data applications. These programs are very capable econometrics software that will meet your analytical needs even after you finish the course.

1   Stata

   a) Free through UF Apps (https://info.apps.ufl.edu)

b) To purchase at a heavily discounted rate, go to
http://www.stata.com/order/new/edu/gradplans/

2. R is a free with an open source which can be use together with R studio.
https://www.rstudio.com/products/rstudio/download/#download

UF POLICIES

Grades and Grade Points

Information on current policies for assigning grade points, see

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

Academic Honesty

In 1995 the UF student body enacted an honor code and voluntarily committed itself to the highest standards of honesty and integrity. When students enroll at the university, they commit themselves to the standard drafted and enacted by students. **The Honor 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.**

On all work submitted for credit by students at the university, the following pledge is either required or implied: **"On my honor, I have neither given nor received unauthorized aid in doing this assignment."**

Students should report any condition that facilitates dishonesty to the instructor, department chair, college dean, Student Honor Council, or Student Conduct and Conflict Resolution in the Dean of Students Office. *(Source: 2012-2013 Undergraduate Catalog)* It is assumed all work will be completed independently unless the assignment is defined as a group project, in writing by the instructor.

Software Use:

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Campus Helping Resources

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- *University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575,* **www.counseling.ufl.edu/cwc/**

Counseling Services

Groups and Workshops

Outreach and Consultation

Self-Help Library

Training Programs

Community Provider Database

- *Career Resource Center,* First Floor JWRU, 392-1601, **www.crc.ufl.edu/**

Services for Students with Disabilities

The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues.

-0001 Reid Hall, 352-392-8565, **www.dso.ufl.edu/drc/**