Food and Resource Economics Department
University of Florida

AEB 6553 - ELEMENTS OF ECONOMETRICS
Spring 2024

Instructor:
Zhifeng Gao
1161 McCarty Hall A
Tel: 352-294-7672
Email: zfgao@ufl.edu

Class Location and Hours:
AEB 6553
Tuesday: 11:45 am - 1:40 pm   MCCB 3124

Thursday: 12:50 pm - 1:40 pm   MCCB 3124

Office Hours:
Zhifeng Gao: Tuesday, Thursday: 11:00 am -11:30 am
……………... or by appointment

Course Description:
AEB 6553 is the first-year MS-level graduate Econometrics course. This course starts
with a simple two-variable classical linear regression model to discuss the assumptions,
estimation, and inferences in Econometrics. Multiple regression analysis is discussed, and
tools are introduced to test and remedy the violations of the assumptions in the classical
linear regression models. Major emphasis is placed on applications of econometric
methods to problems in economics and related fields.

Objectives:
By taking this class, students should be able to
   (1) Understand the basic concepts in Econometrics.
   (2) Apply econometric tools to modeling, estimation, inference, and forecasting in the
       context of real-world problems.
   (3) Use related econometric software (SAS / R) to estimate econometric models.
   (4) Evaluate and interpret the results of econometric models.
   (5) Build up the foundation for advanced econometric courses.

Prerequisites:
There are no prerequisites for this class, but students should have basic knowledge of
statistics and derivatives.

Homework, Quiz, Exam, and Grading:
Homework:
Homework will be assigned across the semester. All assignments are due at the beginning
of class on the due date (midnight if through online submission)**.** Students are encouraged

to work together but each student should turn in their own homework, and no plagiarism is allowed.

The late homework will receive a discounted grade. The discounts are in the following table.

Item	Your Grade	Discounted Grade
One day late	X	90X
Two days late	X	80X
Three days late	X	60X
Four days late	X	50X
Five days late	X	0

In Class Quizzes:
Quizzes will be given out randomly at the begging of the class. No makeup quizzes are available.

Exams and Report:
Exams:
There are two exams: Makeup exam is available for the midterm exams. Students should inform the instructor in advance if they are not available at the scheduled time of the exams.
Report:
Students will be divided into groups to work on the group projects. Each group will make a presentation and submit a final report. The final report is no longer than 10 pages (single space, excluding tables and figures) and should include the following components.

1. Title Page

Report title

Project group members and department

2. Abstract

A brief statement of the motivations, the methods, the main results and key conclusions of the research project.

3. Report body
   a. Introduction: motivation of the research project, background as well as the identification and the significance of the research problem
   b. Technical objectives
   c. Theoretical analysis (if applicable)
   d. Economic and econometric models
   e. Data collection method, data source, data type, descriptive statistics of the data
   f. Results: key tests, key tables, and figures, interpretation of the results
   g. Conclusions: take-home message of the project, limitation of the project, future direction of the research

Grade:
The final grade is the weighted average of homework, quizzes, exams, etc. The weight of each part is in the following table.

Item	Weight	Point
Homework	20%	200
Quizzes/Lab Practices	5%	50
1st Exam	20%	200
2nd Exam	25%	250
Presentation	10%	100
Report	10%	100
Self and Group Peer Evaluation	5%	50
Class Participation	5%	50
Total	100%	1000

Notes:

1) The grade for **class participation**. Each student is encouraged to participate in the class activities. The grade is calculated as $min(\frac{n_i}{\bar{n}_j} * 50, 50)$, where n_i is the score that the student i received, $\bar{n}_j$ is the average score of all students. This formula means that if a student's score is higher than the average score of all students, then the he/she will receive a maximum of 50 points for class participation.

For instance, if there are 4 students, the score of groups 1, 2, 3, and 4 are 5, 6, 8, and 10, respectively, the mean 5, 6, 8, and 10 is 7.25, and the class participation grades for student 1, 2, 3 and 4 are $\frac{5}{7.25} * 50 = 34.5$, $\frac{6}{7.25} * 50 = 41.4$, 50, and 50, respectively. If all the students have the same score, then all the students get 50.

2) The grade for **the presentation** is for a group. Each student in the class will give a grade for the group that gives the presentation. The averages will be used as the presentation grade.

3) **Self and peer evaluation**: each group member will give a grade for himself and his peers in the group. The grade should be based on his and his peers' contribution to the group project (presentation and report) and class participation.

Each student should give a percentage of the contribution of each group member. For instance, if there are 4 members in a group, the contributions of each group member should be X1, X2, X3, X4, where X1+X2+X3+X4=1.

The student who has the highest contribution will receive the highest grade, 5, and the grades of other group members are based on the ratio of contributions between his and the student that have the highest contribution, such as $\frac{x_i}{\max x_j}$. For example, if the average contributions of students 1, 2, 3, and 4 are, 0.2, 0.3, 0.3, and 0.2, then the grades are $\frac{0.2}{0.3} * 50 = 33.3$, 50, 50, and 33.3, respectively, for persons 1, 2, 3, and 4.

The self and group peer evaluation will be conducted online at the end of the semester. All the information is anonymous. <u>The student who does not do the self and group peer evaluation will get zero grades for this part</u>.

Course Grade	Letter Grade	Grade Point
90-100	A	4
87-89	A-	3.67
84-86	B+	3.33
81-83	B	3
78-80	B-	2.67
75-77	C+	2.33
72-74	C	2
69-71	C-	1.67
66-68	D+	1.33
63-65	D	1
60-62	D-	0.67
Less than 60	E	0

Recommended Textbook

Gujarati, Damodar N. and Dawn C. Porter. 2008. Basic Econometrics, 5th edition. McGraw-Hill/Irwin.

http://www.amazon.com/Basic-Econometrics-Damodar-Gujarati/dp/0073375772/ref=sr_1_1?ie=UTF8&qid=1294262018&sr=8-1

http://www.amazon.com/Basic-Econometrics-Damodar-N-Gujarati/dp/0071276254/ref=tmm_pap_title_0?ie=UTF8&qid=1294262018&sr=8-1

Griffiths, William. E., R. Carter Hill, George G. Judge.1993. Learning and Practicing Econometrics. John Wiley & Sons.

http://www.amazon.com/Learning-Practicing-Econometrics-William-Griffiths/dp/0471513644

Tentative Course Outline

The contents listed below are tentative. The actual lecture does not strictly follow the contents list. Based on the time left at the end of the class, the actual topics covered in this class may be more or less than those listed in the outline.

Topics	Book Chapters
Statistics and Math Review	
I. Introduction	(Introduction, Chapter 1)
Part One- Single-Equation Regression Models	
1.1 Nature of Regression Analysis	(Chapter 1)
1.2 Two-Variable Regression Analysis-Basic Idea	(Chapter 2)

1.3 Two-Variable Regression Model- Problem of Estimation	(Chapter 3)
1.4 Classical Normal Linear Regression Model	(Chapter 4)
1.5 Two-Variable Regression: Interval Estimation and Hypothesis Testing	(Chapter 5)
1.6 Extension of the Two-Variable Linear Regression Model	(Chapter 6)
1.7 Multiple Regression Analysis: The Problem of Estimation	(Chapter 7)
1.8 Multiple Regression Analysis: The Problem of Inference	(Chapter 8)
1.9 Dummy Variable Regression Models	(Chapter 9)
Part Two- Relaxing the Assumptions of the Classical Model	(Chapter 9)
2.1 Problem of Multicollinearity	(Chapter 10)
2.2 Problem of Hetroscedasticity	(Chapter 11)
2.3 Problem of Autocorrelation	(Chapter 12)
2.4 Models Specification and Diagnostic Testing	(Chapter 13)

Selective (depending on the progress of the class)

Part Three- Topics in Econometrics	
3.1 Qualitative Response Regression Models	(Chapter 15)
3.2 Panel Data Regression Models	(Chapter 16)
3.3 Dynamic Econometric Models	(Chapter 17)
Part Four- Simultaneous-Equation Models	
4.1 Simultaneous-Equation Models	(Chapter 18)
4.2 The Identification Problem	(Chapter 19)
4.3 Simultaneous-Equation Methods	(Chapter 20)

Important Dates (Link)

Classes Begin	January 8
Classes End	April 24
Drop/Add (11:59 pm of last day)	January 8-12
Withdrawal with no Fee Liability (11:59 pm of last day)	January 12
Reading Day	April 25 - 26
Final Grades available	May 8
Holidays - no classes	January 15: Martin Luther King, Jr. Day
	March 9 - 16: Spring Break

Tentative dates	
Exam1	**March 5 (Tuesday)**
Exam2	**Tuesday, May 3/2024, 12:30 am - 2:30 pm**

Project Presentation 1 (in class)	TBD
Project Presentation (in class)	April 18, April 23 (TBD)
Final Project Due	Friday, May 3, 11:59 pm

Attendance Policy: Class attendance is expected. Students should inform the instructor of expected absences. Excessive unexcused absences will result in negative consequences.

Policy On In-Class Cell Phone Use And Text Messaging: Cell phones should be turned off or put on vibrate mode and should not be answered during the class period. Non-emergency, in-class text messaging is not acceptable.

Students Requiring Accommodations
Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center. It is important for students to share their accommodation letter with their instructor and discuss their access needs as early as possible in the semester.

Course Evaluation
Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/. Students are 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 https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.

In-Class Recording
Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled.

The only allowable purposes are: (1) for personal educational use, (2) in connection with a complaint to the University, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A "class lecture" is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To "publish" means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

University Honesty Policy
UF students are bound by The Honor Pledge: "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 Conduct Code specifies a number of behaviors that are in violation of this code and the possible sanctions. Click here to read the Conduct Code. If you have any questions or concerns, please consult with the instructor or TAs in this class.

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. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Student Privacy
There are federal laws protecting your privacy with regard to grades earned in courses and on individual assignments. For more information, please see the Notification to Students of FERPA Rights.

Campus Resources:

Health and Wellness
U Matter, We Care: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit U Matter, We Care website to refer or report a concern and a team member will reach out to the student in distress.

Counseling and Wellness Center: Visit the Counseling and Wellness Center website or call 352-392-1575 for information on crisis services as well as non-crisis services.

Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need, or visit the Student Health Care Center website.

University Police Department: Visit UF Police Department website or call 352-392-1111 (or 9-1-1 for emergencies).

UF Health Shands Emergency Room / Trauma Center: For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; Visit the UF Health Emergency Room and Trauma Center website.

Academic Resources

E-learning technical support: Contact the UF Computing Help Desk at 352-392-4357 or via e-mail at helpdesk@ufl.edu.

Career Connections Center: Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.

Library Support: Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center: Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.

Writing Studio: 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.

Student Complaints On-Campus: Visit the Student Honor Code and Student Conduct Code webpage for more information.

Online Students Complaints: View the Distance Learning Student Complaint Process.