ECONOMETRICS

Syllabus – Spring 2020   Econ400 **Online** Class   Item: 5129 OAS

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Course Descriptions

This course introduces Econometrics methods that are used in economics, business, finance, marketing, management and other disciplines, with emphasis on practical use and application. Students will construct models using real-world empirical data, conduct hypothesis testing, forecast outcomes, and learn to estimate and interpret the parameters of models.

Course Outcomes

- Apply appropriate econometric tools to model, estimate, and forecast economic problems
- Apply appropriate models using indicator variables onto various real-world situations
- Identify and interpret error problems in the model and apply appropriate treatments
- Use and apply regression analysis with time-series data and panel data
- Use econometrics software to process data and incorporate modeling techniques
- Perform model assessment and suggest improvements
- Critically evaluate the conclusions of others' econometrics research studies.

Course Prerequisites

A 60 prior credits of college is recommended, with a good understanding of Math, good knowledge of Statistics, and Microsoft Excel. Additionally, you should have good English reading and writing skills.

How Outcomes will be met

- Please make sure you have your *MyBC Account* activated, and your *Canvas* account.
- Always check regularly on Canvas: for "**Announcements"& "Modules"**; or make sure that your preferred email is connected to Canvas.
- Read through the Syllabus.
- Submit weekly assignments on time.
- Research, Write, and submit Paper by the end of the term
- Computer Lab will be conducted a couple times to introduce a software and to start with some commands and functions relevant to the course.

Grading

Each of your work will graded with 100 point-base and then will be taken in percentage as follows:

Weekly R-Exercises (15%), Weekly Discussions (15%), Weekly Quizzes (10%), Two Projects (20%), Final Paper (20%), Final Exam (20%).

Your grade reflects your understanding of the chapter readings, assignments, and the time and efforts that you put into it.
If the average class score is below 68.0, points will be added to all to bring the mean score to 68.0 percent.

Books & Materials

For References:

1) Introductory Econometrics, by Jeffrey Wooldridge, 6th edition, Cengage.   We'll use this textbook for the proceeding of the class; it's currently at 6th edition; you could use previous 5th edition, order via Amazon for a low price.   Powerpoint slides correspond to this book will be provided.

2) Using R for Introductory Econometrics, by Florian Heiss*; http://urfie.net* - you don't have to buy this, it's available online and it will be incorporated into the powerpoint slides.

3) Software: We will be using a free software, R go to this link to get the manuals on how to download and use R: *http://www.r-project.org*

4) e-Resources: Journals related to Econometrics via JEL (Journal of Economic Literature) for a list of related journals.

5) External Databases for Economic Data: FRED, federalreserve.org, BLS, BEA, Penn World Tables, Census Data, EconEdLink, Economagic, WorldBank, etc.

Weekly R-Exercises

The assignments constitute 15 percent of your final grade.   Considering the emphasis of the course is application, exercises on using R-software according to the weekly topic is assigned, based on the example in the powerpoint.

Weekly Discussion

The assignments constitute 15 percent of your final grade. Some questions to respond to, relevant to each week's topic. I will also include some economic papers to read and discuss. More information will be available on the Modules.

Weekly Quizzes

The assignments constitute 10 percent of your final grade.   In place of a midterm exam, there will be a weekly quiz, consists of some multiple-choice questions, for you to reflect on each week's materials (chapters covered in each week), and you can do it on Canvas.
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Project Assignments

The assignments constitute 20 percent of your final grade. There will be two project assignments throughout the quarter. The projects reflect the materials discussed in class and it will be a combination of theoretical concept and the use of the software with data provided. You will run a research, create an econometric model, and then write a report.

Participation

A successful student have the following positive traits: **Dependable. Patience. Kindness. Hardwork.**
Do your own work: confident building, and avoid plagiarism by quoting the sources.

Term Paper

The Term Paper constitutes 20 percent of your final grade.
You will work individually on a paper with a topic that you may choose from the following, but not limited to, topics:
1. Economic Growth, Manufacturing and Trade
2. Sustainable Economics: solar cells, hybrid cars, plastic use, toxic substances, etc.
3. Social Media: Facebook, Tweeter; correlation with economics.
4. Finance: stock market, DJIA, SP500, Nasdaq
5. Housing market (local cities, states or nation-wide)
6. Healthcare, Medicare, Medicaid
7. Insurance Premiums
8. Social Security and Welfare Programs
9. Driving Safety: cellphone, texting
10. Tehnology and Economy
11. Consumerism, Consumption
12. Fast Food, Soda, Obesity
13. Luxury Goods and Income Groups
14. Minimum Wage
15. Price Control and Quantity Control
16. International Trade (NAFTA, Trans-Pacific Trade Agreement)
17. Businesses: small, medium, large businesses
18. Emerging Economies: China, India, Russia, Chile, Israel
19. Climate Change and Economies
20. Taxes (Sales, Income, Property)
21. GDP and National Debt
22. GDP and Happiness

Specification: (Guidelines will be discussed on Week 5)

By week 5, you will have to decide which topic, claim the topic and each student should have different topic;
By week 7 submit an outline (1-paragraph): statement of problem or question, sources of data that you can work on, components of the paper, to describe how you are planning to start it;
On week 10 or 11 (tentative, depends on time): be prepared to present your paper to your class, and prepare minimum 5 slides, maximum 10 slides of powerpoint.
On the last day in class (Final exam day): Finalized paper should be submitted on the day of the Final Exam.   Minimum 5 pages and maximum 10 pages, not including the appendix (your data output), typed double-spaced, 12-sized font, one-inch margin all around; free of spelling or grammatical error.
Grade for this Term Paper will be based on both the content of the paper and the clarity of presentation.

Final Exam

The Final Exam constitutes 20 percent of your final grade. Final Exam will follow the College's schedule.
You will be given more information and review one week prior to the final exam.
Please do not miss the exam. If it is an emergency, **you must notify me beforehand, and hand in a written document.**
You may do this makeup exam before the end of the quarter to get your final grade. This exam will not be corresponding with the exam that your other classmates had completed.

Late Submission Policy

Any late submission of quizzes, discussions, projects or term paper, will be deducted 10 percent point for each day late.
Unless there's a valid excuse with prior discussion.

COURSE OUTLINE (Tentative); Please check the weekly MODULES on Canvas

Week 1   Chapters 1 and 19
Introduction to Econometrics & Economic Data
Carrying out an Empirical Project

Week 2   Chapters 2 and 3
Review of Simple Linear Model & Multiple Regression Model
Computer Lab Sessions: Introduction to using software

Week 3   Chapter 4
Assumptions, Variances, Collinearity
Multicollinearity: Identifying, Measuring, Dealing with MC
Project Assignment #1 – Due the following week

Week 4   Chapters 5 and 6
Inferences: t-test, F-test, unrestricted v. restricted

Week 5   Chapter 7
LM test, Functional Forms: Semi-Log, Double-Log, Polynomials
Discuss the requirements of the term paper

Week 6   Chapter 8
Qualitative Data: Binary, Dummy, Interactive
Project Assignment #2 – Due the following week

Week 7   Chapter 9
Heteroscedasticity: Causes of HSK, Testing (BP, White), Remedies (WLS)
Submit topic of your term paper

Week 8   Chapter10
Time Series data: Distributed Lag Models, Philips Curve, De-trending, Seasonality
Submit an outline of your topic of the term paper

Week 9   Chapter 11
Stationarity, ARMA model, Random Walks, Efficient Market Hypothesis

Week 10   Chapters 12
Serial Correlation: DW test, BG test, HAC, ARCH

Week 11
Review for the Final Exam
Paper Presentation (tentative)

Week 12
FINAL EXAM; Grade will be posted on College's website within three days.

Other Advanced Topics: (for a more advanced class)

More on Time-Series Analysis
Unit Roots and Dickey-Fuller Test, Cointegration, VAR model
Pooled, DiD (Difference)
Fixed Effects, Random Effects
IV (Instrumental Variable) and TSLS (Two-Staged Least Squares)
Simultaneous Equation Model
Limited Dependent Variable: Probit-Logit-Tobit, Truncated, Heckman
Forecasting, in-sample, out-of-sample

Division Statements

PROCEDURES AND GUIDELINES OF THE DIVISION

Cheating, Stealing and Plagiarizing*
Cheating, stealing and plagiarizing (using the ideas or words of another as one's own without crediting the source) and inappropriate/disruptive classroom behavior are violations of the Student Code of Conduct at Bellevue College. Examples of unacceptable behavior include, but are not limited to: talking out of turn, arriving late or leaving early without a valid reason, allowing cell phones/pagers to ring, and inappropriate behavior toward the instructor or classmates. The instructor can refer any violation of the Student Code of Conduct to the Dean of Student Services for possible probation or suspension from Bellevue College. Specific student rights, responsibilities and appeal procedures are listed in the Student Code of Conduct, available in the office of the Dean of Student Services.

Incomplete
If a student fails to complete all the required work for a course, an instructor may assign the grade of Incomplete ("I"). The student must complete the coursework by the end of the next quarter, or receive the assigned letter grade (usually an "F").

F Grade
Students who fail a course will receive a letter grade of "F."

Final Examination Schedule
The Social Science Division will adhere to the final examination schedule as stated in the BC Schedule. Final examinations will be held at the end of each quarter at fixed times. Instructors will not give examinations in advance of the regular schedule. A student who is absent from any examination held at any time during the quarter may forfeit the right to make up the examination. If, for illness or some other circumstance beyond the student's control, the student is unable to be present at any scheduled examination and has contacted the instructor on a timely basis, the student may be permitted to take such examination at a time designated by the instructor.

Withdrawal From Class
College policy states that students must formally withdraw from a class by the end of the seventh week of the quarter (Registration Office, B125). If a student has not withdrawn by that date, an appropriate letter grade will be assigned for the course.

Hardship Withdrawal
Instructors may assign the grade of "HW" (hardship withdrawal) at their discretion in the event that a student cannot complete the coursework due to extreme and exceptional circumstances. Students may also contact the Enrollment Services office BEFORE grades are assigned in cases of hardship.

Distribution of Grades
Grades will not be posted in the Social Science Division or in faculty offices, and secretaries will not give out grades. Students should access their grades through the BC Web site.

Return of Papers and Tests
Paper and/or Scantron score sheet returns will be arranged in the following ways ONLY: by mail, if student supplies the instructor with stamped, self-addressed envelope (with appropriate postage); or by the instructor designating a time and place whereby the student may retrieve his/her papers. Unclaimed papers and/or Scantron score sheets must be kept by the instructor for a minimum of sixty (60) instructional days following the end of the quarter.

*If you are accused of cheating, stealing exams and/or plagiarism, there is a Bellevue College Student Discipline and Appeals Procedure (the right to due process) which you may pursue. Contact the office of Division Chair (D110), the Dean of Student Services (B231A) or the Associated Student Body (C212) for information regarding the appeals process.

Students' Code of Conduct and Academic Integrity

Any act of academic dishonesty, including cheating, plagiarism (using the ideas or words of another as one's own without crediting the source), and fabricationand inappropriate/disruptive classroom behavior are violations of the Student Code of Conduct at Bellevue College. Examples of unacceptable behavior include, but are not limited to, talking out of turn, arriving late or leaving early without a valid reason, allowing cell phones/pagers to ring, and inappropriate behavior toward the instructor or classmates. The instructor can refer any violation of the Student Code of Conduct to the Dean of Student Success for investigation. Specific student rights, responsibilities, and appeal procedures are listed in the Student Code of Conduct. The instructor can refer any violation of the Student Code of Conduct to the Vice President of Student Services for possible probation or suspension from Bellevue College. Specific student rights, responsibilities and appeal procedures are listed in the Student Code of Conduct, available in the office of the Vice President of Student Services." The Student Code, Policy 2050, in its entirety is located at: http://bellevuecollege.edu/policies/2/2050_Student_Code.asp

Bellevue College E-mail and access to MyBC and Canvas

All students registered for classes at Bellevue College are entitled to a network and e-mail account. Your student network account can be used to access your student e-mail, log in to computers in labs and classrooms, connect to the BC wireless network and log in to *My*BC. To create your account, go to: https://bellevuecollege.edu/sam .
BC offers a wide variety of computer and learning labs to enhance learning and student success. Find current campus locations for all student labs by visiting the Computing Services website.

Disability Resource Center (DRC)

The Disability Resource Center serves students with a wide array of learning challenges and disabilities. If you are a student who has a disability or learning challenge for which you have documentation or have seen someone for treatment and if you feel you may need accommodations in order to be successful in college, please contact us as soon as possible. If you are a person who requires assistance in case of an emergency situation, such as a fire, earthquake, etc, please meet with your individual instructors to develop a safety plan within the first week of the quarter.

The DRC office is located in B 132 or you can call our reception desk at 425.564.2498. Deaf students can reach us by video phone at 425-440-2025 or by TTY at 425-564-4110. Please visit our website for application information into our program and other helpful links at www.bellevuecollege.edu/drc

Accessibility, Affirmation of Inclusion, Religious Holidays, Anti-Discrimination, Confidentiality, Sexual Misconduct

Accessibility

The online elements of this course are designed to be welcoming to, accessible to, and usable by everyone, including students who are English-language learners, have a variety of learning styles, have disabilities, or are new to online learning. Be sure to let me know immediately if you encounter a required element or resource in the course that is not accessible to you. Also, let me know of changes I can make to the course so that it is more welcoming to, accessible to, or usable by students who take this course in the future.

Affirmation of Inclusion

Bellevue College is committed to maintaining an environment in which every member of the campus community feels welcome to participate in the life of the college, free from harassment and discrimination. We value our different backgrounds at Bellevue College, and students, faculty, staff members, and administrators are to treat one another with dignity and respect. (https://www.bellevuecollege.edu/inclusion/)

Religious Holidays

Students who expect to miss classes, examinations, or any other assignments because of their religious observance should be provided with a reasonable alternative opportunity to complete such academic responsibilities. It is the obligation of students to provide faculty with reasonable notice of the dates of religious holidays on which they will be absent, preferably at the beginning of the term. Students who are absent on days of examinations or class assignments should be offered an opportunity to make up the work without penalty (if they have previously arranged to be absent), unless it can be demonstrated that a makeup opportunity would constitute an unreasonable burden on a member of the faculty. Should disagreement arise over what constitutes an unreasonable burden or any element of this policy, parties involved should consult the department chair, or Dean. (http://www.bellevuecollege.edu/policies/id-2950p-2/).

College Anti-Discrimination Statement

Bellevue College does not discriminate on the basis of race or ethnicity; creed; color; national origin; sex; marital status; sexual orientation; age; religion; genetic information; the presence of any sensory, mental, or physical disability; or veteran status in educational programs and activities which it operates. Bellevue College is prohibited from discriminating in such a manner by college policy and by state and federal law. All college personnel and persons, vendors, and organizations with whom the college does business are required to comply with applicable federal and state statutes and regulations designed to promote affirmative action and equal opportunity. (http://www.bellevuecollege.edu/equal/)

Confidentiality and Mandatory Reporting

As an instructor, one of my responsibilities is to help create a safe learning environment on our campus. It is my goal that you feel able to share information related to your life experiences in classroom discussions, in your written work, and in our one-on-one meetings. I will seek to keep information you share private to the greatest extent possible. However, I am required to share with the Title IX Coordinator any and all information regarding sexual assault and other forms of sexual misconduct (e.g. dating violence, domestic violence, stalking) that may have occurred on campus or that impacts someone on campus. Students may speak to someone confidentially by contacting the BC Counseling Center at (425) 564-2212. The Title IX Office can be contacted at 425-564-2641 and more information can be found at (http://www.bellevuecollege.edu/titleix/).

Sexual Misconduct.

The term "sexual misconduct" includes sexual harassment, sexual intimidation, and sexual violence.

 Sexual Harassment. The term "sexual harassment" means unwelcome conduct of a sexual nature, including unwelcome sexual advances, requests for sexual favors, and other verbal, nonverbal, or physical conduct of a sexual nature that is sufficiently serious as to deny or limit, and that does deny or limit, based on sex, the ability of a student to participate in or benefit from the college's educational program or that creates an intimidating, hostile, or offensive environment for other campus community member

Sexual Intimidation. The term "sexual intimidation" incorporates the definition of "sexual harassment" and means threatening or emotionally distressing conduct based on sex, including, but not limited to, nonconsensual recording of sexual activity or the distribution of such recording.

 Sexual violence. "Sexual violence" is a type of sexual harassment and includes non- consensual intercourse, non-consensual sexual contact, sexual coercion, sexual exploitation, and stalking. The term further includes acts of dating or domestic violence.

Full student code of conduct is available online at:

http://www.bellevuecollege.edu/policies/id-2050/

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Welcome to the class! Listed here are the elements that will help you go through the quarter smoothly. The basic structure of the class will be based on "weekly" units, with each week requiring assigned reading, and homework problem sets.

First of all: Please read through the Syllabus.

Basically there are five things you'll need to do each week over the course of the quarter:

1. Always check Canvas for: "**Modules" and "Announcements"**
2. Read the assigned chapter for that week
3. Submit the weekly assignments on time
4. Prepare your term paper early
5. Final Exam by the end of the quarter.

Textbook: You can find the textbook *Introductory Econometrics,* by J. Wooldridge, now at 6th edition, but you can use the 5th edition at lower price; additionally I will also use and incorporate into the powerpoint slides: *Using R for Introductory Econometrics* (http://urfie.net) by Florian Heiss (no need to buy this, available online, and I will include it in my powerpoint).

A Typical Week

From Monday to Friday you'll want to read the chapter(s) for that week. On Friday/Saturday/Sunday you should work through as much of the homework assigned (Quizzes and Discussions), and make sure to submit it on the set deadline.   Also, there will be two small projects on Week 3 and Week 6, a warm-up towards writing Term Paper.

Final Exam: The final exam will be covering all chapters for the quarter.   I will post further information as we're approaching the last week.

Term Paper: It should cover application of econometrics methods that we discussed in class or used in the homework and computer lab, and tentatively, if time permits, be prepared to present your findings in class. The finalized term paper should be submitted on the day of the Final Exam.

Grading

Your final grade will come from the following: 15% from R-exercises, 15% from the weekly discussions, 10% from the weekly quizzes, 20% from two projects, 20% from term paper, and 20% from the Final Exam. If the average gets 85.0 overall, according to the table below is a B+.

92 - 100 =	A	(4.0 gpa)
88-91.9 =	A-	(3.7 gpa)
84-87.9 =	B+	(3.3 gpa)
80-83.9 =	B	(3.0 gpa)
76-79.9 =	B –	(2.7 gpa)
72-75.9 =	C+	(2.3 gpa)
68-71.5 =	C	(2.0 gpa)
65-67.9 =	C-	(1.7 gpa)
60-64.5 =	D	(1.3 gpa)
Below 60 =	F	(0.0 gpa)

For other information, please read through the SYLLABUS.