ECON 490 J3: Economic Forecasting

University of Illinois at Urbana-Champaign
College of Liberal Arts & Sciences
Department of Economics

Minchul Shin   **Spring 2018**
David Kinley Hall 310   **12:30pm-01:50pm Tuesday & Thursday**

Communication:

Course website: Lecture notes, sample codes, and problem sets will be distributed through Illinois Compass 2G (https://compass2g.illinois.edu/). The website will automatically upload student rosters.

Minchul Shin (Instructor)
    Office: David Kinley Hall 101D
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    Office Hours: TBA. There will be extra office hours before exams.

Course Description:

Decision-making often requires forecasting relevant variables in the future time period over which the outcome of a decision is realized. This course provides an overview of modern, quantitative, statistical and econometric methods for forecasting and evaluating forecasts. Topics include linear regressions; modeling and forecasting trend and seasonality; characterizing and forecasting cycles; MA, AR, and ARMA models; forecasting with regressions; evaluating and combining forecasts; unit roots; stochastic trends; ARIMA models; and smoothing. Advanced topics such as volatility measurement, modeling, and forecasting will be covered if time permits.

Credits: 3 hours (Undergraduate)/4 hours (Master)
Prerequisites: Students are assumed to have taken ECON202, ECON203 (Economic Statistics 1 and 2) or equivalent statistics and econometrics courses. Knowledge about basic calculus is also required.

Course Format:

The instructor will give lectures on major concepts and issues and have classroom discussions when necessary. Students will be asked to do problem sets and produce forecasts using forecasting tools taught in class.

Course Objectives:

- To provide understanding of basic forecasting methods.
- To provide hands-on experiences of economic forecasting using real data.

Learning Resources:

Textbook: Diebold, *Forecasting in Economics, Business, Finance and Beyond*.
Students can obtain a copy of both books from the author's website at
http://www.ssc.upenn.edu/~fdiebold/Textbooks.html for free.

Statistical software
You need to use computer software to do forecasting based on simulated and actual data. The software we will use in class is **Eviews**, which has packaged statistical and econometric tools we need for forecasting. It is easy to use. Students can purchase a student version **($39.95)** at
http://www.eviews.com/EViews9/EViews9SV/evstud9.html

Note that the version 6 or 7 or 8 is good enough for this course. If you have one of these, you do not have to buy the most recent version.

Supplementary Reading
Eviews User's Guide, which comes with the Eviews software. You will find this document very useful.

Student Assessment:

Scoring

	[3 credits]	[4 credits]
• Assignments	400 Total Points	400 Total Points
• Midterm Exams	200 Total Points	200 Total Points
• Final Exam	300 Total Points	300 Total Points
• Final Project		300 Total Points

There will be four or five assignments, two midterm exams, and a final exam. Four-credit students will have to complete an extra final project. The final grade for the class will be scored out of 900 points for 3-credit students and 1,200 points for 4-credit students.

Assessment Policies

Assignment Policy:
There will be *four* or *five* assignments, roughly one every two weeks except on exam dates and breaks, and they are due in a week. All assignments are to be turned in at the beginning of the class in which they are due. Only the *best four out of the five* (or *three out of the four*) assignments will be counted toward the final grade (the assignment portion of your grade will be the average of all your assignment scores with the lowest assignment grade dropped). **Late assignments will be heavily discounted (50 points out of 100 will be taken out).**

Exam Policy:
In the event that a student misses exams, the instructor reserves the right to give the student a zero on that exam. **There will be no make-up exams.**

The following materials are allowed for use during the exam: graphing calculator, accounting calculator or four-function calculator. There are to be no books, papers other than the exam itself (there is an exception for the final exam. See below), cell-phones or other items that connect to the Internet. Students found to be using unapproved items are in violation of the Academic Integrity policy of the University and will be subject to disciplinary action.

For the final exam (and only for the final exam!), you will be allowed to bring a formula sheet. It should be a piece of letter-sized paper. You can use both sides. Only hand-written sheet is allowed.

Important Dates:

Midterm Exam 1: TBA, in class
Midterm Exam 2: TBA, in class
Final Exam: TBA (During final exam period)

All the exams are comprehensive.

Exam dates and times are *not* flexible. The only exception to this rule is a death in the family or illness requiring immediate attention from a physician. See Article 1 - Student Rights And Responsibilities (for more details on these issues at: http://www.admin.illinois.edu/policy/Code/article1_part5_1-501.html). The final exam conflict policy of the University will be applied in order to resolve any exam schedule conflicts. The University's final exam policy is available at:
http://studentcode.illinois.edu/article3_part2_3-201.html

Topics:

- Review of basic statistics and econometrics concepts; Introduction to Eviews
- Modeling and forecasting trend; Modeling and forecasting seasonality
- Characterizing cycles
- Modeling cycles: MA, AR, and ARMA models
- Forecasting cycles
- Forecasting with regression models
- Evaluating and combining forecasts
- Unit roots, stochastic trends, ARIMA forecasting models, and smoothing
- Volatility measurement, modeling and forecasting

If time permits, additional topics may be covered according to the interest of students.

Emergency Response Recommendations:

The university maintains guidelines for emergency responses. A list of recommendations when to evacuate and when to find shelter are available at:
http://illinois.edu/cms/2251/general_emergency_response_recommendations_8_16_13_final.docx
Floor plans for specific buildings are available at:
http://police.illinois.edu/emergencyplanning/floorplans/

Statement on Accommodations:

To obtain disability-related academic adjustments and/or auxiliary aids, students with disabilities must contact the course instructor and the Disability Resources Educational Services (DRES) as soon as possible. To contact DRES you may visit 1207 S. Oak Street, Champaign, call 333-4603 (V/TTY), or email a message to disability@uiuc.edu.

Academic Integrity:

"The University has the responsibility for maintaining academic integrity so as to protect the quality of education and research on our campus and to protect those who depend upon our integrity.

Expectations of Students. It is the responsibility of each student to refrain from infractions of academic integrity, from conduct that may lead to suspicion of such infractions, and from conduct that aids others in such infractions. Students have been given notice of this Part by virtue of its publication. Regardless of whether a student has actually read this Part, a student is charged with knowledge of it. Ignorance is not a defense."

The University's full academic integrity policy is available at:
http://studentcode.illinois.edu/article1_part4_1-401.html