ECON 6070-5001, Spring 2014
GRADUATE ECONOMETRICS
TuTh 2:30PM - 3:45PM, BAA 1002

Administrative Details

Instructor: Zheng Zeng
Office: BA 316
Phone: (469) 372-8397
E-mail: zzeng@bgsu.edu
Office Hours: Wednesdays 11:30 – 2:00 pm and by appointments
Prerequisites: ECON 5020

Required Text: *Applied Econometric Time Series, 3e*, Walter Enders

Recommended Readings:
- *Time Series Analysis*, James D. Hamilton

Course Description:
The major purpose of this course is to extend the student's econometric tools to univariate and multivariate time series analysis. A medium level of mathematical reasoning and statistical background is required. The course also emphasizes computer skills and economic application. The goal is to integrate economic theories with the practical use of analyzing and interpreting real-world data. Students will study the econometric computer software *Eviews* for empirical work.

Although a lab class meeting is scheduled in (Lab) BAA 2003 every other Thursday starting the second week, I will adjust the numbers of regular class meetings and lab class meetings as the semester goes.

Course Information:
All courses documents can be accessed using *Canvas*.

Evaluation and Grading

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<th>A</th>
<th>B</th>
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<tbody>
<tr>
<td>Homework</td>
<td>90% - 100%</td>
<td>80% - 89%</td>
<td>70% - 79%</td>
<td>60% - 69%</td>
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<tr>
<td>Midterm Exam</td>
<td>20%</td>
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<tr>
<td>Project</td>
<td>30%</td>
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<tr>
<td>Final Exam</td>
<td>20% (Friday, May 9, 3:30 – 5:30 pm)</td>
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About the project

(1) It has to be a Time Series analysis.

(2) It will be a group project. Given the number of students enrolled in this class, I would like to receive 5 projects by the end of the semester. Therefore there will be either 2 or 3 members in each group. The students are responsible to form a group.

(3) Each group needs to come up with a topic of the project. It can either be your own topic, a replication of a paper that you are interested in, or an extended study of any existing case study in the literature. Once you come up with a topic, you need to get the approval of the instructor before you start working on it.

(4) The whole project for each group must include:
   i. A paper (including data and Eviews programs.) (20%) Feel free to use other software(s) that you feel comfortable with.
   ii. A 20 to 30-minute presentation (including presentation slides) (8%) It can either be a group or solo presentation.
   iii. A one-page summary of your comments on projects of the other groups. (2%) You will be judged according to the questions that you ask during their presentations and your comments submitted afterwards.

(5) The projects will be evaluated by the instructor only.

(6) The presentations will be scheduled on April 29 and May 1. The available time slots will be “first come, first serve.” The due date of submitting your papers is Monday, May 5 regardless the date of your presentation.

About the homework assignments

Homework will be assigned as determined by the instructor. To receive credits, homework must be handed in on the specified date due, during class or prior to class time, unless the student has a physician-documented illness or a documented personal tragedy on the due date.

About the exams

(1) I will curve the grades for each exam by adding (or taking) points to (from) everybody. Homework grades will NOT be curved.

(2) Make-up exams are permissible only with evidence (like a doctor’s note) of a legitimate excuse. You are responsible to notify me within 2 days of your absence and to talk with me to set up a time for the makeup exam. Otherwise, no makeup exam will be scheduled. The final exam will not be given early.

Excused Absences for University Extracurricular Activities

Students participating in an officially sanctioned, scheduled University extracurricular activity should be given the opportunity to make up class assignments or other graded assignments missed as a result of their participation. It is the responsibility of the student to make arrangements with the instructor prior to any missed scheduled examination or other missed assignment for making up the work.
**Honor Code**
All work undertaken and submitted in this course is governed by the University’s honor code. If any student is unclear about the University’s honor policy – either in general or its particular application in this course – please contact your instructor immediately. **Students who submit assignments that are word-for-word identical in any portions will be considered as cheating.**

**Course Outline (subject to change)**

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<th>Topics</th>
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<tr>
<td>Introduction and overview</td>
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<tr>
<td>Difference Equations</td>
<td>Chp 1</td>
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### Stationary

**Univariate**
- ARMA(p,q) model
- The Autocorrelation Function
- The partial Autocorrelation Function
- Box-Jenkins Model and Forecasting
- Structural Change*

**VAR**
- Simple VARs and Impulse Response Functions
- VARs and Structural Decompositions
- State Space Model*

### Nonstationary

**Univariate**
- Trend
  - Detrending
  - Unit Roots and Regression Residuals
  - Dickey-Fuller Tests
  - Univariate Decomposition*
- Volatility
  - ARCH Process
  - GARCH model
  - MLE of GARCH model

**Multivariate**
- Cointegration*
- ECM, VECM*
- Multivariate GARCH model*