Most important rule for this class: read the syllabus! All the information you need is contained in the syllabus.

Time and Location: MWF 4:00pm-4:50pm, Callaway C101

Office Hours: My regular office hours for the Fall Semester are Monday 5:30-6:30pm and Wednesday 1:30-3:30pm or by appointment. Please try not to come to see me outside my office hours. Often I finish my lecture 5 minutes earlier and I stay around for a while so, if you have a conflict with my office hours, you can always talk to me after class or make an appointment.

Tutoring: For tutoring check the information at the web page http://www.emory.edu/COLLEGE/ECON/tutor.htm

Prerequisites: You need to have completed Econ 220 prior to taking this class. I will check the roster of each student enrolled in this class. If you have not taken Econ 220 (statistics) please let me know as soon as possible. This class does not satisfy the college writing requirements.

TA: I will let you know if we have a TA and will post additionally OH on LearnLink.

Textbook: F. Diebold, "Elements of Forecasting", Stock and Watson “Introduction to Econometrics”.

Please be aware that given the bookstore transition to new ownership textbooks will have to be purchased before Sept 13th.

Material: This course provides and introduction to Forecasting in Economics. Before learning the theory and application of forecasting, we need to review the econometrics tools that we will use in the rest of the class. We will then review linear regression, estimation and testing. This part is not emphasized in the textbook so the recommended book for the first part of the class is Stock and Watson: “Introduction to Econometrics”. Additionally, Wooldridge :Introductory Econometrics” or Ramanathan, "Introductory Econometrics" are very good references. You may also use any other undergraduate econometrics book.

Most of the textbooks I mentioned are on reserve at the library and can be checked out for 2 hours. “Using Econometrics. A Practical Guide: by Studenmund is also a good first reading for someone who has never been exposed to Econometrics before and it is also available on reserve.

Since applications to real examples will be emphasized throughout this class, I strongly recommend that you read the Wall Street Journal or the New York Times on a daily basis.
Grading: There will be two midterm exams, a final, a paper and, if we have time, an oral presentation of the results of your paper. Additional mandatory homework will be given during the semester. Homework and paper are due in class not later than 10 minutes after the start of the class. Any material turned in after that time or given to me by email will be considered late. The assignments will count toward the grade as follows.

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Midterm 1</td>
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<td>Midterm 2</td>
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<tr>
<td>Final</td>
<td>35%</td>
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<tr>
<td>Assignments (5-7)</td>
<td>15%</td>
</tr>
<tr>
<td>Paper</td>
<td>20%</td>
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</tbody>
</table>

Attendance to the class is not required but it is strongly recommended as the exams are mostly based on the materials given during class. Bonus points will be awarded for pop quizzes that will be randomly given during classes.

The distribution of the grades will be as follows:

- >94  A
- 90-94 A-
- 87-90 B+
- 84-87 B
- 80-84 B-
- 77-80 C+
- 74-77 C
- 70-74 C-
- 67-70 D+
- 60-67 D
- <60  F

**Paper:** A required paper will determine the remaining 20% of the grade. The paper should be between 10 and 15 pages long (including tables and graphs) and can be written in groups of up to three students. Additional instructions for the paper are attached to the syllabus. Although this class is not approved to satisfy the college writing requirements so the paper will be graded on multiple aspects: writing style, content, econometrics and statistical analysis. The specifics of your paper will depend on data availability, but I strongly encourage you to think about an environmental theme.

**Paper Presentation:** If we have time we will have a few days for students to present their results. I know that students usually don’t like the idea of an oral presentation in front of the rest of the class. At the same time, most of you will be looking for a job at the end of the year and, as you will discover, confidence in public speaking is a very important element of today’s work environment. Think at the presentation as an excellent occasion to practice your public speaking skills and to show the rest of the class how hard you worked on your paper. All the students are required to participate in the presentation.

**Important dates:**

- **Wed October 7th:** Midterm 1
- **Mon October 20th:** Deadline to submit proposal (3-5 pages).
- **Wed November 11th:** Midterm 2
- **Mon December 2nd:** Deadline to submit paper.
- **Mon December 11th:** Final (12:30pm-3:00pm)
**Statistical package:** For most of the assignments and for the paper you will need to analyze data using some statistical package. I recommend that you familiarize yourself as soon as possible with STATA. STATA is available on all computers in the econ lab and in Cox-Hall. It is possible to buy a student version of STATA for a good price. The student version is somehow limited in the number of observations you can use and what you can do but it will be enough for what we need to do in this class. I will organize review sections with the TA to introduce you to the use of STATA. Some of our regular classes will be scheduled in the computer lab. Note that the econ computer room has limited hours (9:00am – 5:00pm) and it is closed during weekends.

**Learnlink and Blackboard:** For the most part I will use BB but you can reach me via email on Learnlink. You should check Blackboard at least once a day. Announcements, Handouts, and Homework will be post on Blackboard so you are responsible for checking our Blackboard site regularly and often.

**Description of the Course:** The course will cover several topics in Econometrics and Time Series that will give you the tools to understand and predict economic variables. The course is divided in two main parts. In the first parts you will be introduced to some basic econometrics concepts like linear regression, goodness of fit, parameter estimation, and hypothesis testing. The students that have already taken 420 will find the first part a review of some of the concepts presented in the Econometrics class. This part of the course is not emphasized in the textbook by Diebold so we will follow the book by Stock and Watson for the first half of the semester.

In the second part of the class we will focus on forecasting. I will introduce the concept of Time Series and the use of statistical graphics for forecasting. You will learn how to model some of the key component of Time Series like cycles, seasonality and trend. After the completion of this part, you should be able to take any common economic Time Series and find the model that best fit each component of the series. The goal of this class is to provide you with the knowledge and experience to recognize the most important features of any economic series. You will learn the tools necessary to estimate and evaluate econometric models that fit your data reasonably well and that allow the construction economic forecasts. The term paper is going to be your chance to combine all the knowledge acquired during the semester.

A list of the main topics that we will cover during the semester is given below:

1. Introduction
2. Review of linear regression, testing and the use of dummy variables.
3. The use of statistical graphics for forecasting.
4. Outliers, correlation, partial correlation and the problem of scales.
7. Cycles, Covariance stationary time series and white noise processes.
8. The use of the lag operator and the Box-Jenkins methodology.
9. MA, AR and ARMA models.
10. Forecasting AR, MA and ARMA models.
11. Forecasting with regression models.
12. Forecasting using smoothing techniques.
Instructions for the paper

You should start thinking of an idea for your paper right away. You will have to collect the data on your own, so you will need to check that the data you have in mind is easily available. A great idea will not get you too far if you find out shortly prior to the paper due date that the desired data does not exist. On submission of your proposal, you will need to demonstrate that you have the data in hand. Although I would prefer you to come up with an idea on your own, I am available to assist in formalizing an idea or finding data. One possible source for data is the Internet, where a huge amount of data is available for free. In this class, we will mostly look at Time Series, so you will be able to apply what we learned in class only if you collect this kind of data. For example, baseball statistics for different teams will not work, while US GDP over time would be suitable. The paper will be graded on the content, style, and clarity of exposition with fairly equal weights. Make sure you spell-check your paper before you turn it in. The paper should include separate sections for each of the following: Abstract, Introduction, Data Description, Empirical Methods, Results, Conclusion, and References. You can place tables and graphs directly in the text or you can combine them at the end of your paper in between the Conclusion and References sections.

The Abstract includes a brief synopsis of your paper. This section should be on the same page of the title (10-point font, 1.5 lines spaced). The rest of the paper should be typed at 12-point font double-spaced. The Introduction is used to explain the background of your paper, why it is important, and to explain in further detail what your paper is going to show. Data Description includes a detailed description of the data, including source and frequency. The Empirical Methods section is used to explain the empirical methods used in your analysis. This section needs to be precise so anyone reading your paper should be able to obtain the same data, follow your methods, and replicate your results exactly. The Conclusion needs to clearly state your results and concluding remarks, and your References need to be formatted in the standard method. All the sections should be numbered (I-V) with the exception of the Abstract and your References sections. All the pages have to number starting from 0, which is the number for the title/abstract page. The number on the title page should not be visible.

Any data used, methodology employed, or argument advanced that is not your own must be cited. You reference a source in the body of your paper by stating the name of the author and the publication year (e.g., Hansen (1995)). You must include all references that you have cited in the paper listed in alphabetical order in the References section of your paper. The following page is an example of a title/abstract page. I am also giving you examples of how to reference articles and books.
ELEMENTS OF FORECASTING APPLIED TO GDP.

Elena Pesavento
Department of Economics
Emory University

Fall 2007

Abstract

Here you can write the abstract. It should not be too long and should include a brief introduction explanation of the results you find. It should be self explanatory, simple and captivating such that it invites the reader to continue with the rest of the paper.
You could have up to 10-12 lines here.
How to reference a book:


How to reference articles:


