

**ECON 5337-01**  
**Business and Economic Forecasting**  
**FALL 2013**

**Instructor:** Dr. Aaron Smallwood

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**Course Website:** <http://www.uta.edu/faculty/smallwood/ECON5337fall13.html>

Please visit the course website before each class period to obtain data sets that may be used during class. You are encouraged to bring your laptop to class, to follow along with the examples we will go over.

**Time and Location:** W, 7:00-9:50 p.m., COBA 138.

**Office Hours:**      Tuesday      4:00-5:00 (p.m.)  
                         Thursday      12:30-1:30 (p.m.)  
                         By appointment (I will typically be available before class).

**Textbooks:**

*Forecasting for Economics and Business*, 1 Edition, by Gloria Gonzalez-Rivera.

**Software:**

1. EViews, student version 6.1 (or higher).

You can acquire the software directly from QMS using the following URL:  
<http://www.eviews.com/eviews6/eviews6s/evstud6.html>

**Course Description and Objectives:**

This is a challenging course that employs statistical techniques in developing forecasts for economic and financial data. The course begins with a description of what a forecast is and the tools necessary to evaluate competing forecasts. Various forecasting models are introduced, with emphasis placed on modeling the statistical properties of the economic data under consideration. As the course progresses, the models become more elaborate as we will introduce ARMA models, forecasts based on regression analysis, and ultimately multivariate techniques. Upon successful completion of the course,

1. The student will understand complicated statistical techniques related to modeling economic and financial data over time.
2. The student will independently be able to develop a model to forecast economic or financial data.
3. The student will be able to compare the relative forecasting ability of various models and choose the most appropriate model among a set of alternatives.
4. The student will gain familiarity with the computer package EViews and will be able to employ this software to develop and analyze forecasts.

**Grading:** Course grades will be based on the following:

Assignments	42%
Midterm	29%
Final	29%

**I. Assignments:** There will be a total of 4 assignments throughout the course. The assignments will be intensive in both mathematical and computational analysis associated with the techniques developed in the course. The first three assignments are worth 10 points each, while the last assignment is worth 12 points. Assignments will be administered and due on the following dates:

- a. Assignment #1: Administered: September 18, Due: September 25
- b. Assignment #2: Administered: October 2, Due: October 9
- c. Assignment #3: Administered: October 30, Due: November 6
- d. Assignment #4: Administered: November 13, Due: November 27.

## II. Exams

1. Midterm: Tentatively scheduled for October 16, 2013  
Coverage: Determined by the pace of the course.
2. Final Exam: December 11, 2013 (Wednesday) from 8:15. to 10:45 p.m.  
Coverage: Again determined by the pace of the course.

## III. Class Participation and Attendance

At some point in the semester you may be asked to present the results of your homework assignments. Regular attendance and participation will be required.

**Drop Policy:** It is the student's responsibility to complete the course or withdraw from the course in accordance with University regulations. Students are strongly encouraged to verify their grade status before dropping a course after their first withdrawal date. A student who drops a course after the first withdrawal date may receive an "F" in the course if the student is failing at the time the course is dropped.

**Grade Grievances:** You have one calendar year from the date the grade is assigned to initiate any grievance. The normal academic channels are department chair, academic dean, and the Provost.

**Non-payment of fees policy:** Students who have not paid their fees by the census date and are dropped for non-payment cannot receive a grade for the course under any circumstances. Emergency loans are available from the Financial aid Office.

**Academic Dishonesty:** The UTA Student Handbook contains the following statement on academic dishonesty:

"It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures."

"Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusions, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts." (Regents' Rules and Regulations, Part One, Chapter VI, Section 3, Subsection 3.2 Subdivision 3.22)

**Reasonable Accommodations:** Students with academic disabilities needing accommodations should make an appointment to meet with me in my office during the first week of class. I will do my best to make the necessary accommodations to insure that no student is at a disadvantage because of his/her disability.

**Bomb Threats:** Effective April 8, 1997, the College of Business Administration has adopted a policy to deal with the classroom disruption caused by bomb threats in the building. (A) Section 22.07 of the Texas Criminal Law Statutes governs terrorist threats and classifies bomb threats as Class A misdemeanors. Section 12.21 of the Texas Criminal Law Statutes states that a Class A misdemeanor is punishable by (1) a fine not to exceed \$4,000, (2) a jail term of not more than one year, or (3) both such a fine and confinement. (B) If anyone is tempted to call in a bomb threat, be aware that UTA will soon have technology to trace phone calls. (C) Every effort will be made to avoid cancellation of presentation/tests caused by bomb threats to the Business Building. Unannounced alternate sites will be available for these classes. If a student who has a class with a scheduled test or presentation arrives and the building has been closed due to a bomb threat, the student should immediately check for the alternate class site notice which will be posted on/near the main doors on the south side of the Business Building. If the bomb threat is received while class is in session, your instructor will ask you to leave the building and reconvene at another location. (D) Students who provide information leading to the successful prosecution of anyone making a bomb threat will receive one semester's free parking in the Maverick Garage across from the Business Building. UTA's Crimestoppers will provide a reward to anyone providing information leading to an arrest. To make an anonymous report, call 817-272-5245.

**Course Outline:** The course outline is very tentative. Please note that topics can and will likely change and that the following may also change due to the pace of the course.

**Week 1** (August 28): Distribute syllabus. Meet students. Introduction. Elements of forecasting analysis (chapter 1,4).

**Week 2** (September 4): Review of the linear regression model and introduction to EViews. Definition of useful statistics in EViews. Statistics and time series methods. (Chapters 2-3).

**Week 3** (September 11): Statistical concepts: Autocorrelations (sample/population), partial autocorrelations (sample/population). Moments. Conditional and unconditional moments. Ergodicity and stationarity. (Chapter 3-4).

**Week 4** (September 18). **Problem set #1** distributed. The Wold decomposition theorem. Moving average models. Theoretical characteristics of MA(q) processes. (Chapter 6).

**Week 5** (September 25). **Problem set #1** collected and reviewed. Forecasting moving average processes. Introduction to autoregressive models. Theoretical characteristics of AR(p) processes. (Chapters 6-7).

**Week 6** (October 2). Return problem set #1. **Problem set #2** distributed. Forecasting with AR(p) models. The chain rule of forecasting. ARMA models. Forecasting with ARMA models. (Chapter 7, continued).

**Week 7** (October 9). **Problem set #2** collected and reviewed. Forecasting in practice. Residual autocorrelations and white noise. Review for exam #1. (Chapter 8).

**Week 8** (October 16). Return problem set #2. EXAM #1.

**Week 9** (October 23). Return EXAM #1. Introduction to seasonality. Deterministic versus stochastic seasonality. Forecasting seasonal variables (Chapter 7.3).

**Week 10** (October 30). **Problem set #3** distributed. Modelling and forecasting trends. Deterministic versus stochastic trends. The Box-Jenkins methodology. (Chapter 10).

**Week 11** (November 6). **Problem set #3** collected and reviewed. Trends continued. Unit root testing. Introduction for forecasting from a system. (Chapter 10-11).

**Week 12** (November 13). Return problem set #3. **Problem set #4 distributed.** Forecasting vector autoregressions and vector error correction mechanisms. (Chapter 11-12).

**Week 13** (November 20). Combining forecasts. Ex post evaluation of forecasts. (Chapter 9). Forecasting volatility. (Chapter 13-14).

**Week 14** (November 27). **Problem set #4** collected and reviewed. Forecasting volatility continued. Discussion of nonlinear methods (time permitting). (Chapter 14-16).

**Week 15** (December 4). Review for final exam.