Old Dominion University
Mathematics-Statistics Department
Course Syllabus
Fall 2009 Semester

Course number: Stat 630
Course title: Time Series (Box Jenkins) Models
Credit hours: 3.00
Prerequisites: Stat 626 or equivalent
Instructor name: Norou Diawara
Contact information: e-mail: ndiawara@odu.edu webpage: www.odu.edu/~ ndiawara
Course: TTh 3:00-4:15 pm Constant 2065
Textbook: *Introduction to Time Series and Forecasting,* 2^{nd} edition, by P.J.Brockwell and R.A. Davis (2002) - , Springer
Course material: Graphing calculator and Software: You can use the software of your choice to solve homework problems or analyze data (for ex: SAS, Matlab, Splus, R, ITSM).
Office hours: M-W-F: 11:00 am -Noon 2317 E&CS Building or by appointment

Course description: This course examines the principles and concepts of time series and forecasting. Time series occurs when a process is studied and measured over time. Assuming independence is not realistic when analyzing such time series data. We will study the tools and theories using methods and models taking into account the correlation structure with applications in forecasting, stock markets, economics, pollution, seasonal trends, etc... We will study them by introducing notions of autocorrelation functions, autoregressive and moving averages, stationary and non-stationary autoregressive integrated moving average (ARIMA) models. We will also look at estimation of model parameters.

Course Outline: Chapters:
Chapter 1: Introduction
Chapter 2: Stationary Processes
Chapter 3: ARMA Models
Chapter 5: Modelling and Forecasting with ARMA Processes
Chapter 6: Non-stationary and Seasonal Time Series Models
Chapter 7: Multivariate Time Series
Chapter 8: State-Space Models

Attendance is mandatory. All absences must be justified.
So is academic honesty. Refer to the ODU honor code.
You are encouraged to work with other students on homework assignments. However, each student should produce his/her own work to be graded, and verbatim copying of homework is not allowed. You will have 5 to 6 homework assignments this semester, each will be due one week from when it is assigned, and they will be due in class on the announced due date. No late homework assignment will be graded. They will be the basis of the tests and final exam. You will also have 3 or 4 chapter tests, and a final exam. Please, be aware that you must present your work neatly and in detail on paper since that is all I will have to grade.

There will be no make up test.
Please contact me via e-mail if you have a question and/or the appointment time is not favorable.
Chapter tests (3 or 4): 45%
Homework assignments (5 or 6): 20%
Classes begin August 31^{st}
September 7^{th}: Labor Day Holiday
October $10^{th} - 13^{th}$: Fall Holidays
November $25^{th} - 29^{th}$: Thanksgiving Holidays
Last day of class: December 11^{th}
Departmental Final Exam: December 12^{th}; 3:45-6:45 PM : 35%
Grades: $A \Leftrightarrow 90 - 100$; $B \Leftrightarrow 80 - 89$; $C \Leftrightarrow 70 - 79$; $D \Leftrightarrow 60 - 69$; $F \Leftrightarrow Below\ 60$