

5/23/05

Below is a list of the UNL Courses approved for Validation by Educational Experience at UNL.

Anyone who already has a degree and is interested in taking any of these courses may register online as a "Student-At-Large" at <https://www.applyweb.com/apply/unl/sala.html>

Of particular interest may be the actuarial science course for Applied Statistics VEE, ActS 430/830, which may be taken even if you already have credit for that class. ActS 430/830 credit satisfies VEE beginning this fall. The course meets from 3:30-4:45 pm on Tuesdays and Thursdays from Tuesday, August 23 through Thursday, December 8, with a final scheduled for Tuesday, December 13 from 3:30-5:30 pm. Dr. Mostafa Mashayekhi is the instructor for the course. (A draft syllabus for the course follows the SOA memo.)



SOCIETY OF ACTUARIES

TO Warren Luckner – University of Nebraska-Lincoln
FROM VEE Administration Committee
DATE March 31, 2005
REGARDING REVISION 4 - Course Approval for Validation by Education Experience

On behalf of the CAS, CIA and SOA, thank you for your course submission(s) for Validation by Educational Experience (VEE). This is to confirm that the following courses have been approved. The approved courses will be added to the Directory of Approved Courses for VEE coming soon to the SOA web site. The approval time period for each course is shown in the table below.

VEE Subject	Approved Courses	Time Period
Corporate Finance	Advanced Finance (FINA 461)	1994-2007
Corporate Finance	Advanced Finance (FINA 861)	1994-2007
Corporate Finance	Managerial Finance (GRBA 811)	1995-2007
Corporate Finance	Foundations of Business I (JDEP 181H) Along with: Advanced Topics in Business I (JDEP 381H)	2003-2007 2003-2007
Economics	Introduction to Economics (ECON 210)	1993-2007
Economics	One of: Principles of Macroeconomics (ECON 211) Intermediate Macroeconomics (ECON 311) Macroeconomic Models and Applications (ECON 874) Combined with one of: Principles of Microeconomics (ECON 212) Intermediate Microeconomics (ECON 312) Microeconomic Models and Applications (ECON 873)	1993-2007 1993-2007 1993-2007 1993-2007 1993-2007 1993-2007 1993-2007
Economics	Foundations in Business II (JDEP 182H) Along with: Advanced Topics in Business II (JDEP 382H)	2003-2007 2003-2007
Applied Statistics	Actuarial Applications of Applied Statistics ACTS 430 / ACTS 830	2005-2007

To receive credit for a subject, candidates will need a grade of B- or better in each of the associated courses.

Please note that course JDEP 381H is not required as part of the VEE-Economics combination approved above.

Please direct any VEE questions to vee@soa.org

VEE Administration Committee

ACTUARIAL APPLICATIONS OF APPLIED STATISTICS
(ACTS 430/830. 3 semester credits; to be first offered as revised in Fall 2005)
Fall 2005

Instructor: Dr. Mostafa Mashayekhi
Office: CBA 235
Phone: 472-0715
Office Hours: To be announced

Time and Place: Tuesday, Thursday, 3:30-4:45 pm, CBA 132

Course description

This course provides an introduction to model building and forecasting methods. Course material will include simple and multiple regression, time series methods, and SAS procedures REG and ARIMA. The following is a detailed list of the topics that will be covered.

Least Squares and the Standard Linear Model:

The assumptions of the standard linear model
The ordinary least squares estimation method and its geometry
The normal equations and least squares estimators of the parameters
Statistical properties of the ordinary least square estimators, and the Gauss-Markov theorem
Confidence intervals and prediction intervals under the normality assumption
Multiple correlation and analysis of variance
Hypothesis testing under the normality assumption
The two-variable case as an example
Dummy variables
The multicollinearity problem
Serial correlation and heteroscedasticity
Tests against serial correlation and heteroscedasticity
The generalized least squares
Heteroscedasticity and weighted least squares
Limitations of the standard linear model
Introduction to the SAS procedure REG

Time Series Analysis:

Components of a time series; the trend, the seasonal part, and the stochastic part
Removing the trend and the seasonal part from a time series
Strictly stationary and weakly stationary time series
The auto-covariance function and the auto-correlation function of a stationary time series
Causal and invertible ARMA (p, q) processes
Forecasting with ARMA (p, q) models
The minimum mean square error forecast and the linear minimum mean square error forecast, and their geometric interpretation.
The Yule-Walker equations and the best linear forecast
Estimation of the parameters of an ARMA (p, q) process
The ARIMA (p,d,q) processes and random walk processes
Forecasting with ARIMA (p, d, q) processes
Diagnostic checking and tests of goodness of fit.
Introduction to the SAS procedure ARIMA.

Text and Coverage

There is no specific textbook for this course. I will draw material from many different sources. The main sources that I use are:

Principles of Econometrics by Henry Theil (1971)

Time Series: Theory and Methods by Peter J. Brockwell and Richard A. Davis (1987, 1991)

SAS/STAT User's Guide

SAS/ETS User's Guide

However note that I will not go over everything that is contained in the above references. A large part of the material that is covered in the above references is for advanced courses and you may especially find it too difficult to read Brockwell and Davis's book on your own. It is therefore very important that you attend classes regularly.

Attendance

You are responsible for all material presented in class. Some of the material that is presented in class is not in the above references. As I mentioned I will draw material from many different sources. Homework assignments and other important announcements are made in class. Unexcused absences may cause you to be dropped from the course or affect your grade. If you miss a class for a legitimate reason you will need to borrow the class notes from one of your classmates. I will not repeat lectures for those who miss a class during my office hours.

Homework, quizzes, and projects

Homework problems will be assigned in class. There will be 5 closed book quizzes based on the assigned problems. The quizzes are tentatively scheduled for Thursdays September 1, September 15, October 13, October 27, and November 10. There will also be two take home projects to be done with SAS. Each student must give me a floppy diskette on which I will copy two sets of data, one for a time series project and the other for a multiple regression project. The data may be real or hypothetical and will be different for different students. When the projects are assigned, the students will have one week to complete the project and write a report and submit to me.

Each quiz will be worth 20 points and each project will be worth 50 points.

Exams

There will be two mid-term exams and a final. All of the exams will be closed book. The first mid-term exam will be based on the regression part of the course and the second mid-term exam will be based on the time series part of the course. The mid-term exams are tentatively scheduled for Tuesdays October 3, and November 23. The final will be a comprehensive two hour exam given on the date scheduled by the university. **No make-up exams or quizzes** will be given without a credible reason similar to a medical emergency verified by a physician. To be fair to the students taking a regularly scheduled exam, any make-up exam will be more difficult than the regular exam.

Grading

Your course grade will be based on the total of points accumulated on the quizzes (20 points each), the projects (50 points each), the mid-term exams (100 points each), and the final exam (200 points). There is no set formula used to determine the letter grade for the course. However the following scale gives a lower bound for your course grade.

570-600 A+	500-519 B+	440-459 C+	380-399 D+
540-569 A	480-499 B	420-439 C	360-379 D
520-539 A-	460-479 B-	400-419 C-	340-359 D-