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ECO 2401S: Ph.D. Econometrics

EVALUATION:

Midterm	35% Wednesday February 13, 2019, 9 AM – 11 AM.
Final Exam	35% Exam period.
Paper	30% Due date by midnight Friday March 29, 2018

The only generally acceptable reason for missing a term test is illness. A medical certificate is required under such circumstances. We are asked to remind you that plagiarism is a **serious** academic offence with potentially serious penalties.

Due dates

Outline: Friday, February 1, 2019, by midnight. This is a hard deadline. Late submissions will be penalized 10% of grade on final paper. Please submit the outline electronically through Quercus and name the file using your name. For example, my outline would be "YatchewOutline.doc" or "YatchewOutline.pdf". Your outline must contain the following:

1. preliminary model
2. key references (be sure to do a citation search)
3. anticipated results
4. actual numerical data on first observation.

Problem Sets: Wednesday February 13, 2019, by midnight. Please submit electronically through Quercus and name the file using your name. For example, my problems would be "YatchewProblems.doc" or "YatchewProblems.pdf". The problems will be considered in marginal cases.

Paper: Friday, March 29, 2019, by midnight. This is a hard deadline. Late submissions will be penalized 10% per day. Please submit the paper electronically as an attachment, and name the file using your name. For example, my paper would be "YatchewPaper.pdf". You must also attach a copy of the computer code (in *.txt format) used to produce the results in the paper.

References:

A. Greene, William, Econometric Analysis, Prentice Hall, Eighth Edition.
B. Davidson, Russell and James MacKinnnon, Estimation and Inference in Econometrics, Oxford University Press, 1993.
C. Hamilton, James Time Series Analysis, Princeton University Press, 1994.
D. Yatchew, A. Semiparametric Regression for the Applied Econometrician, Cambridge University Press, 2003.

1. Introduction to Discrete Choice, Censoring, Truncation and Sample Selection (2 lectures)

a. Greene Chapter 17 Binary Outcomes and Discrete Choices; Chapter 19 Limited Dependent Variable Models – Truncation, Censoring and Sample Selection

2. Nonparametric and Semiparametric Regression – Index Models and Testing (2 lectures)

a. Yatchew (2003) Chapter 7.
b. Yatchew (2003) Chapter 6 pp. 111-118.

3. Introduction to Time Series Analysis (6 lectures)

Overview - categorization of models; basic concepts -- stochastic processes, stationarity and invertibility, ergodicity, autocorrelation and partial autocorrelation functions.

Stationary models -- ARMA models - identification, estimation, inference, forecasting. Yule-Walker equations, Wold Decomposition Theorem; distributed lag models -- Almon lags, Koyck lags; ARMAX models; partial adjustment, dynamic regressions, error correction models, vector autoregressions, seasonal adjustment, spectral density estimation; ARCH and GARCH models.

Nonstationary models -- trend stationarity, difference stationarity, random walk with/without drift, spurious regressions, ARIMA models, unit roots, tests for unit roots, Dickey Fuller and Augmented D-F tests, Weiner processes. Cointegration, testing for cointegration, error correction models.

a. Davidson and MacKinnon Chapters 19, 20, pp. 556-560.
b. Greene Chapter 20 Serial Correlation; Chapter 21 Nonstationary Data.
c. Hamilton Chapters 15-19, 21.
d. Hendry, D. and K. Juselius (2000) “Explaining Co-integration Analysis: Part I”, The Energy Journal, vol. 21, 1-42.
e. Hendry, D. and K. Juselius (2002) “Explaining Co-integration Analysis: Part II”, The Energy Journal, vol. 22, 75-119.
f. Bollerslev, T., R. Engle and D. Nelson (1994) “ARCH Models”, in Handbook of Econometrics, vol. 4, ed. R. Engle and D. McFadden, North Holland, 2959-3040.

4. Generalized Method of Moments (2 lectures)

a. Greene Chapter 13 Minimum Distance Estimation and the Generalized Method of Moments

5. Quantile Regression (1 lecture)

a. Greene Chapter 7, section 7.3 Median and Quantile Regression.