Economics 8828 - Spring 2008
Econometrics Seminar
MW 1:30-2:45 – Econ 5

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Class Content

The primary objective of this course is to survey a number of modern topics in macro-econometrics. These include, primarily, time series analysis and simultaneous equations models. Although these models are often applied to aggregate time series data, they may also be appropriate for some microeconometric applications. For example, empirical work in labor economics with microdata sets pays considerable attention to issues of simultaneous equations identification and estimation. Also the analysis of individual markets with time series data should employ appropriate time series methods. In addition, it is recognized that panel data analysis involves a temporal dimension, and as a result some time series topics are beginning to appear in these models.

The first section of the course will cover topics in time series, with particular emphasis on problems of inference when variables are nonstationary. Traditionally, regressions with time series have ignored the issue of nonstationarity, proceeding as though the well-established properties of standard estimators hold even in the nonstationary environment. This complacency was upset by simulation studies by Granger and Newbold (1974) and analytical work by Phillips establishing that regression estimators and test statistics do not have standard distributions in models with nonstationary or integrated variables. Subsequently, Engle and Granger (1987) provided the framework of cointegration for modeling relations among integrated time series, and established the connection between cointegration and the dynamic error correction models that David Hendry and his disciples had pioneered. Following the seminal work by Engle and Granger, published about twenty years ago, there has been a flowering of research extending their ideas and applying these methods to a variety of estimation problems. During this section of the course you will be introduced to the statistical foundations, tests, and estimation procedures appropriate for work with integrated time series.

The second section of the course will cover simultaneous equations identification and estimation. In particular, theorems of model identification will be proven, and procedures for checking identification in more general contexts will be developed. Then we will develop the standard estimation methods (instrumental variables, two- and three-stage least squares), and in this context consider the problem of weak instruments and testing for exogeneity.

Evaluation and Administration

There will be one midterm examination and a take-home final exam, each counting towards 25% of your course grade. There will also be some computer exercises and problem sets counting another 10% of the final grade. The remaining 40% of your grade will be based on your individual project (30%) and a class presentation of an article on econometric methodology (10%), both described below.

Please see the addendum to this syllabus for policies concerning observance of religious holidays, classroom conduct, accommodation of disabilities, honor code, and discrimination and harassment. Please contact me promptly if you have any problems that we need to discuss.

Individual Projects

You will each be responsible for an individual term project on an econometrics topic of interest to you. Your choice of topic should be related to the general areas mentioned above (simultaneous equations problems or time series methods). Ideally your project should have both a theoretical or analytical component and an application, and the project should encompass a topic in econometrics that goes beyond what we cover in class. To make this assignment more concrete, an example of an appropriate project could involve allowing for structural breaks in tests of nonstationarity (unit roots). Although we will cover unit root testing in some depth, we will probably not cover this particular extension. There is a theoretical literature in which these tests are developed, and the analytical component of the project would present the statistical foundations behind these tests. Then the tests could be applied to one or more time series of interest as the applied component. In some cases the applied component could be a Monte Carlo or bootstrap simulation that demonstrates the performance of a particular econometric test or procedure in a particular context. Ideas for these projects are suggested by the various readings below, and I will mention other possible topics in class.

To assure that your project is appropriate, you should prepare a proposal describing (1) the econometric procedure you will investigate, (2) some key references to the relevant econometric theory, (3) the data set (empirical or simulated) and model to which you plan to apply the procedure, and (4) the data sources. One or two pages should suffice for this proposal, and it should be submitted to me by **February 18.** You are encouraged to discuss your project idea with me before submitting a proposal, or at any time while you are working on the project. Your final project is due on **Monday, April 21**. Late submissions are penalized by 10% of the score if received by April 30, or by 20% is submitted after April 30.

Computer Projects and Problem Sets

To get practical experience with some of the econometric methods discussed in the course, you will complete several computer projects using EViews, which is available on our Economics Network. These projects are designed to give you some experience applying the procedures that are discussed in class. You will be asked to submit relevant

output and answers to exercises requiring some interpretation of the output. Instructions for the use of Eviews, the exercises, and the data sets will be posted on our WebCT site that you can access at http://webct.colorado.edu.

I will also design several problem sets that require you to extend the mathematical presentation from class into new areas. Collaboration on the computer exercises and problem sets is acceptable, as long as you inform me about this in advance.

Article Presentation

In keeping with the seminar format, each student will be responsible for a presentation to the class of an article on econometric methodology. I have listed below a number of articles that would be appropriate for student presentations. Each of these is related to the major topics of the course, and presentations will be scheduled to fit with the course sequence. I am open to suggestions for other articles for presentation, as long as these fit within the major themes of the course. During the first two weeks of the class, you are urged to look over the titles below, examine any articles that sound interesting to you, and begin to sign up with me to reserve a presentation topic. I have copies of these papers that I can loan out for your examination if you cannot access these from the internet. I will match presenters with articles during the first week of February, and give you a schedule of presentations. Two presentations will also be scheduled for our final exam period (Tuesday, May 6, 4:30-7:00 p.m.) The tentative order of the presentations is given in the topical outline below.

You are encouraged to read a few related papers and/or the related pages in Maddala and Kim, to help put the article in a broader context. It should be possible to combine the topic for presentation with your individual project for some obvious complementarities. Your presentation will be based on the clarity of presentation, the use of visual aids, your ability to respond to questions from the class, and how well you motivate the topic in terms of its relation to this course, its connection to a larger literature, or practical lessons for future research. If some articles are too long to present in one class period, we can discuss strategies for limiting the scope of the presentation.

Prior to the presentation all students are urged to read either the article or the corresponding pages from the text by Maddala and Kim. You can obtain the articles from me, or some can be printed from the internet. In the past students have found it particularly useful if handouts presenting the main points of the presentation (e.g., copies of the slides or overheads) were made available for the group.

Articles for Student Presentations

I have listed here the articles that I believe are most suitable for student presentations. However, I am open to presentations on other paper as well if there are other topics of interest to you that are also related to our course. The articles listed under supplemental readings provide some possibilities. Other topics in time series analysis that are not covered in this syllabus but that could be appropriate are spatial autocorrelation, fractional unit roots & cointegration, structural VARs, and stochastic volatility.

1.Baxter, Marianne, and Robert King, “Measuring Business Cycles: Approximate Band-Pass Filters for Economic Time Series,” Review of Economics and Statistics 81 (Nov. 1999) 575-593. *This paper presents procedure for extracting components of different frequencies (e.g., seasonal, cyclical, and trend) from a time series. Although the presentation is based on spectral analysis, the application procedure is very straightforward and is available in EViews.*

2.Campbell, John and Pierre Perron, "Pitfalls and Opportunities: What Macroeconomists Should Know About Unit Roots," NBER Macroeconomics Annual 1991. Cambridge: MIT Press (1991). *A survey of the implications of nonstationarity for traditional econometric practice, with critical comments by Cochrane and Miron.* [This paper is difficult to find in the library, but you are welcome to borrow it from me.]

3.Engle, Rob, D. Lilien, and R. Robins, "Estimating Time-Varying Risk Premia in the Term Structure: The ARCH-M Model. Econometrica 55 (1987) 391-407. *Extends the ARCH model to allow the conditional variance to enter the regression equation.* And

Engle, Rob, “GARCH 101: The Use of the ARCH?GARCH Models in Applied Econometrics,” *Journal of Economic Perspectives* 15 (Fall 2001) 101-116. *This paper presents a simple illustration of the use of the ARCH model.*

4.Freedman, David A., and Stephen C. Peters, "Bootstrapping a Regression Equation: Some Empirical Results," Journal of the American Statistical Association, vol. 79 (March 1984), 97-106. *A very accessible presentation and application of the bootstrap procedure in a multiple equation regression model. Chapter 10 of Maddala and Kim provides an updated survey of bootstrapping in time series models.*

5.Granger, C.W.J., “Some Recent Developments in a Concept of Causality,” Journal of Econometrics 39 (1988) 199-211. *Granger discusses several issues in interpretation of tests of Granger-causality. An appropriate companion piece is the short paper by Dufour and Tessier (1993) “On the Relationship between Inpulse Response Analysis, Innovation Analysis, and Granger Causality,”* Economics Letters 42 (1993) 327-333.

6.Granger, C.W.J. and P. Newbold, "Spurious Regressions in Econometrics," Journal of Econometrics 2 (1974), 111-120. *A cautionary tale about regressions with integrated series, this is the first of several papers that have shown how spurious regressions can arise in a variety of situations. Later papers by Newbold and Davies (International Economic Review, 19 (1978) 513-519) and Lovell (Review of Economics and Statistics, 65 (1983) 1-12) present interesting extensions.*

7.Stock, James H., J.H. Wright, and M. Yogo, “A Survey of Weak Instruments and Weak Identification in Generalized Method of Moments,” Journal of Business of Economic Statistics 20 (2002) 518-529. *This paper deals with the problem of weak instruments which results in poor small sample properties of two-stage least squares estimators. See also Hahn and Hausman (2003) in the Additional Readings for a brief survey of work on this problem.*

8.Hausman, J. A., "Specification Tests in Econometrics," Econometrica 46 (November 1978) 1251-1271. *A single principle is applied to a variety of tests for model misspecification, including applications to simultaneous equations models.*

9.Hylleberg, S., R.F. Engle, C.W.J. Granger, and B. S. Yoo, "Seasonal Integration and Cointegration," Journal of Econometrics 44 (1990) 215-28. *Presents tests for integration and cointegration at the seasonal frequency.*

10.Inder, Brett, "Estimating Long-Run Relationships in Economics," Journal of Econometrics57 (1993) 53-68. *This Monte Carlo study compares several least-squares approaches to the estimation of cointegrating relations*. This should be paired with:

Gonzalo, Jesus "Five alternative methods of estimating long-run equilibrium relationships," Journal of Econometrics 60 (1994) 203-233. *The theoretical sections provide a mathematical integration and description of alternative cointegration models, and the Monte Carlo study evaluates these alternative estimators.*

11.Maddala, G. S. and Shaowen Wu, "A Comparative Study of Unit Root Tests with Panel Data and a New Simple Test," Oxford Bulletin of Economics and Statistics Special Issue, 61 (1999) 631-652. *One strategy for increasing the power of unit root tests is to combine several related time series into a pooled regression. A number of strategies for testing unit roots in panel data sets have been developed in recent years, and this paper provides a lucid review of the issues involved.*

12.Mroz, Thomas A. "The Sensitivity of an Empirical Model of Married Women's Hours of Work to Economic and Statistical Assumptions," Econometrica 55 (July 1987) 765-800. *This is an prominent example of a meta-analysis, analyzing the properties of alternative tests and estimators in a simultaneous equations context. The Mroz data set is available and often used for investigation of new tests or estimation procedures.*

13.Ng, S. and P. Perron, "Lag length selection and the construction of unit root tests with good size and power," Econometrica 69 (2001) 1519-1554. *They have combined insights from several alternative approaches to unit root testing to develop test procedures that are currently recognized as the state of the art in unit root testing. These test procedures are also appropriate, with suitable modifications, as residual based tests for cointegration. Their procedures are programmed into recent versions of EViews. A good illustration of the application of their methods is:*

Rapach, David E. and Christian E. Weber, "Are real Interest Rates Really Nonstationary? New Evidence from Tests with Good Size and Power," Journal of Macroeconomics 26 (September 2004) 409-430.

14.Pantula, S.G., G. Gonzalez-Farias, and W.A. Fuller, "A Comparison of Unit-Root Test Criteria," Journal of Business and Economic Statistics 12 (October 1994) 449-459. *Presents several extensions of the Dickey-Fuller test and evaluates these in a Monte Carlo study.*

15.Perron, P. "The Great Crash, the Oil Shock, and the Unit Root Hypothesis," Econometrica 57 (1989) 1361-1402. *The seminal paper in a growing literature that considers tests for unit roots in the context of possible structural breaks.*

16.Schwert, G.W., "Tests for Unit Roots: A Monte Carlo Investigation," Journal of Business and Economic Statistics 7 (1989) 147-59. *One of the first Monte Carlo investigations of the comparative properties of several unit root tests. This paper is also a good introduction to the Monte Carlo method.*

17.Stock, J.H., and M.W. Watson,"A Simple Estimator of Cointegrating Vectors in Higher Order Integrated Systems," Econometrica 61 (1993) 783-820. *Consistent with the title, the authors present a least-squares based approach to estimating cointegrating relations that can be used with systems involving I(1), I(2), or higher orders of integration.*

18.Engel, Charles, and James D. Hamilton, "Long Swings in the Dollar: Are they in the Data and Do Markets Know It?" American Economic Review 80 (September 1990) 689-713. *This is an interesting application of Hamilton's Markov switching model that has seen extensive applications in macroeconomics and finance. Chapter 15 of Maddala and Kim also surveys these regime switching techniques.*

Texts

For the time series topics we will rely on:

Maddala, G. S. and In-Moo Kim, Unit Roots, Cointegration, and Structural Change Cambridge: Cambridge University Press (1998)

For the section on simultaneous equations systems, you may refer to any advanced text on econometrics, including your text from 7828. I list here the optional text by Greene, which is a very comprehensive text and reference surveying the entire field.

Greene, William H., Econometric Analysis fifth edition, Upper Saddle River, New Jersey: Prentice-Hall (2003).

Schedule: Topics, Reading Assignments, and Student Article Presentations

If an assignment is due on the day of your presentation, you may request an extension.

I. Statistical Inference with Integrated Variables.

A. Basic concepts and statistical foundations.

Maddala and Kim, chapters 1, 2 and 3.1-3.2.

B. Unit root tests.

Maddala and Kim, chapters 3, 4.

Student presentations: (Feb. 4 – Feb 18)

Schwert (1989); Maddala and Kim, 4.2

Pantula, et al. (1994); Maddala and Kim, 4.2 and 4.3

Ng and Perron (2001), Rapach and Weber (2004)

Maddala and Wu (1999); Maddala and Kim, 4.9

Baxter and King (1999)

Computer exercise 1. Introduction to Eviews (due Jan. 30)

Computer exercise 2: unit root testing (due Feb. 13)

Computer exercise 3: programming Eviews for a Monte Carlo experiment (due Feb 20)

Problem set 1: Weiner processes and unit root testing (due Feb 6)

C. Testing and Estimation of Cointegrating Relations.

Maddala and Kim, chapters 5, 6.

Student Presentations:

Inder (1993) and Gonzalo (1994); Maddala and Kim, 5.4 (March 3)

Computer exercise 4: cointegration testing and estimation (due March 3)

Problem set 2: cointegration (due March 5)

D. Properties of regression estimators and test statistics in models with integrated variables.

Maddala and Kim, chapter 7

Student Presentations: (March 5, March 10)

Campbell and Perron (1991);

Granger and Newbold (1974)

Midterm Examination - March 12

E. Extensions;

Student presentations (March 17 – 19; March 30 – April 14)

ARCH models: Engle, Lilien, Robins (1987) and Engle (2001); Greene, 17.4

Seasonal unit roots: Hylleberg, et al. (1990); Maddala and Kim, 12.1-12.3

Unit roots and structural breaks: Perron (1989); Maddala and Kim, 13.1-13.7

Higher order systems: Stock and Watson (1993); Maddala and Kim, chapter 11.

Granger causality: Granger (1988)

The Bootstrap: Freedman and Peters (1984); Maddala and Kim, chapter 10

Markov Switching Models: Engel and Hamilton (1990); Maddala and Kim, Chapter 15.

Computer exercise 5. Advanced Time Series Modeling (due April 7)

II. Simultaneous Equations Models

A. Identification

Greene, Sections 16.1-16.3

B. Estimation and specification tests.

Greene, Sections 16.4-16.7

Student Presentations: (May 6, 4:30 – 7:00 – final exam period)

Mroz (1987)

Hausman (1978); Greene, Section 16.8

Stock, Wright, and Yogo (2002)

Term Projects Due April 21.

Computer exercise 6. SUR estimation of translog cost function (due April 23)
Computer exercise 7. Simultaneous equations estimation. (due April 30)

Take-home final: distributed April 28, due May 6

Additional References

Our text contains numerous references to additional literature. In addition to these, the following references are included for further reading, with an emphasis on time series econometrics.

Banerjee, Anindya, Juan Dolado, John Galbraith, and David Hendry, Cointegration, Error Correction and the Econometric Analysis of Non-Stationary Data. Oxford: Oxford University Press (1993. A textbook covering both theoretical and practical issues in unit root testing and cointegration. This text is a level above Enders' text in theoretical rigor, but not as demanding and Hamilton's text.

Campbell, John and Pierre Perron, "Pitfalls and Opportunities: What Macroeconomists Should Know About Unit Roots," NBER Macroeconomics Annual 1991. Cambridge: MIT Press (1991). A survey of the implications of nonstationarity for traditional econometric practice, with critical comments by Cochrane and Miron.

DeJong, D.N. et al. "Integration vs. Trend Stationarity in Macroeconomic Time series," Econometrica 60 (1992) 423-434.

DeJong, D.N., and C. H. Whiteman, "Reconsidering Trends and Random Walks in Macroeconomic Time Series," Journal of Monetary Economics, 28 (1991) 221-254. A pair of articles that presents a forceful critique of unit root testing and the conclusion that most macroeconomic time series are I(1).

Dickey, David, William Bell and R. Miller, "Unit Roots in Time Series Models: Tests and Implications," American Statistician 40 (1986) 12-26. A readable presentation, with empirical examples, of the Dickey-Fuller tests for unit roots.

Doldado, Juan, Tim Jenkinson, and Simon Sosvilla-Rivero, "Cointegration and Unit Roots," Journal of Economic Surveys 4 (1990) 249-73. A survey of this literature up to 1990.

Enders, Walter, Applied Econometric Time Series second edition. New York: Wiley (2004). A practical text on various time series topics including ARIMA modeling, unit root tests, ARCH models, vector autoregressions, and cointegration.

Engle, Rob, and C.W.J. Granger, "Cointegration and Error-Correction: Representation, Estimation and Testing," Econometrica 55 (March 1987) 251-76. The original presentation of the concept of cointegration and its connection to error correction models.

Engle, Rob, and C.W.J. Granger, (eds.) Long-Run Economic Relationships: Readings in Cointegration Oxford: Oxford University Press (1991). A collection of readings on cointegration.

Engle, Rob, David Hendry, and J. Richard, "Exogeneity," Econometrica 51 (1983) 277-304. *This paper establishes the modern concept of exogeneity and related terms.*

Gabriel, Vasco J. “Tests for the Null Hypothesis of Cointegration: A Monte Carlo Comparison,” Econometric Reviews 22 (2003) 411-435. *Presents Monte Carlo evidence on the performance of several alternative tests for cointegration, all with the null hypothesis of stationary errors (cointegration) as opposed to the more common null of non-cointegration.*

Hahn, Jinyong, and Jerry Hausman, "Weak Instruments: Diagnosis and Cures in empirical Econometrics," American Economic Review 93 (May 2003) 118-125. This is a brief survey of the problem of weak instruments in two-stage least squares estimation.

Hamilton, James, Time Series Analysis Princeton: Princeton University Press (1994). A comprehensive and often advanced presentation of time series analysis. Includes statistical distribution theory relevant to nonstationary processes.

Handbook of Econometrics, volumes 1-4, Amsterdam: North Holland. Of particular relevance to our topics on time series are two chapters in volume 4: Chapter 46 by James Stock, "Unit Roots, Structural Breaks, and Trends" and Chapter 47 by Mark Watson, "Vector Autoregression and Cointegration." These chapters update earlier surveys of these topics with numerous references to theoretical and applied papers.

Harris, Richard, Using Cointegration Analysis in Econometric Modelling London: Prentice Hall (1995). This is a hands-on text with examples demonstrating how to do empirical analysis with nonstationary data.

Harvey, Andrew, Forecasting, Structural Time Series Models and the Kalman Filter. Cambridge: Cambridge University Press (1989). Harvey promotes the use of state space models, estimated by the Kalman filter, as an approach to capturing stochastic trends and short term fluctuations characteristic of economic time series. This is an alternative to the Box-Jenkins and Dickey-Fuller approaches emphasized in the class.

Johansen, Soren, Likelihood-Based Inference in Cointegrated Vector Autoregressive Models, Oxford: Oxford University Press (1995). This is a comprehensive presentation of Johansen's maximum likelihood approach to modeling, estimating, and testing systems of cointegrating relations.

Johansen, Soren, and K. Juselius, "Maximum Likelihood Estimation and Inference on Cointegration: with Applications to the Demand for Money," Oxford Bulletin of Economics and Statistics, vol. 52 (1990) 169-210. This is a fairly accessible presentation of Johansen's maximum likelihood approach to cointegration modeling with a useful empirical example.

Journal of Business and Economic Statistics 10 (June 1992). A special issue devoted to tests of unit roots and structural change. Tests with unknown break points are presented by Perron and Vogelsang, and by Zivot and Andrews.

Journal of Econometrics volume 80, No. 2 (1997) is a special issue on cointegration and dynamics in econometrics. Especially recommended are Li and Maddala's article on bootstrapping of cointegrating regressions, and Entorf's paper on spurious regressions in a panel data model.

Journal of Economic Dynamics and Control volume 12 (June-Sept. 1988) is a special issue containing some early and important papers on unit roots and cointegration.

Journal of Economic Surveys volume 12, no. 5 (December 1998) *A special issue of surveys on practical issues in unit root testing and cointegration.* The article by Haldrup is a fairly intelligible paper on I(2) modeling.

Journal of Policy Modeling volume 14 (August 1992) is a special issue on Cointegration, Exogeneity, and Policy Analysis.

King, R.G., C.I. Plosser, J.H. Stock, and M.W. Watson, "Stochastic Trends and Economic Fluctuations," American Economic Review 81 (September 1991) 819-840. *Application of cointegration and common trends analysis to real business cycle model.*

Kwiatkowski, Denis, et al. (KPSS) "Testing the Null Hypothesis of Stationarity Against the Alternative of a Unit Root," Journal of Econometrics 54 (1992) 159-178. *Presents a test that reverses the null and alternative hypotheses from those of the Dickey-Fuller approach.*

Nelson, Charles, and Charles Plosser, "Trends and Random Walks in Macroeconomic Time Series: Some Evidence and Implications," J. of Monetary Economics 10 (1982) 130-62. An early application of unit root tests to economic time series. They find most of the series studied to be integrated, a result contested by later researchers using different methods. Their data set is available for further investigations.

Nelson, Charles R., and Heejoon Kang, "Pitfalls in the Use of Time as an Explanatory Variable in Regression," Journal of Business and Economic Statistics 2 (1984) 73-82. *The traditional practice in regression analysis with trended variables is to control for deterministic trends. This article shows what happens under such treatment if the variables actually have stochastic trends.*

Ng, S. and P. Perron, "Lag length selection and the construction of unit root tests with good size and power," Econometrica 69 (2001) 1519-1554. They have combined insights from several alternative approaches to unit root testing to develop test procedures that are currently recognized as the state of the art in unit root testing. These test procedures are also appropriate, with suitable modifications, as residual based tests for cointegration. Their procedures are programmed into recent versions of EViews.

Oxford Bulletin of Economics and Statistics volume 48 no. 3 (1986) is a special issue containing early papers on cointegration and error correction models.

Oxford Bulletin of Economics and Statistics Volume 54, No. 3 (August 1992) is another special issue on Testing Integration and Cointegration.

Oxford Bulletin of Economics and Statistics Volume 61, No. 4 (Supplement 1999) is a special issue on panel unit root and cointegration. The article my Maddala and Wu is a particularly useful review of the various unit root tests that have been proposed.

Perron, Pierre, "Testing for a Unit Root in a Time Series with a Changing Mean," Journal of Business and Economic Statistics 8 (1990) 153-62.

Perron, Pierre, "The Great Crash, the Oil Price Shock, and the Unit Root Hypothesis," Econometrica 60 (January 1992) 119-43. The first of this pair or articles presents the test of a unit root against the stationary alternative with change in mean or change in trend slope. The second applies the test to the Nelson-Plosser data.

Phillips, Peter, and Mico Loretan, " Estimating Long Run Economic Equilibria," Review of Economic Studies 58 (1991) 407-36. They review several procedures for estimating cointegrating equations, including a quite straightforward, single-equation procedure that is efficient and yields asymptotically valid test statistics.

Sims, Christopher, "Macroeconomics and Reality," Econometrica 48 (January 1980) 1-49. *The classic presentation of Sims' VAR methodology and critique of traditional structural econometric methods.*

Stock, James, and Mark Watson, "Vector Autoregressions," Journal of Economic Perspectives 15 (Fall 2001) 101-116. *This is a very readable introduction to VARs and some of the issues of controversy over their use in policy analysis.*

Syllabus Addendum

Accommodation of Disabilities.
If you qualify for accommodations because of a disability, please submit to me a letter from Disability Services in a timely manner so that your needs may be addressed. Disability Services determines accommodations based on documented disabilities. Contact: 303-492-8671, Willard 322, and http://www.Colorado.EDU/disabilityservices

Religious Observances
Campus policy regarding religious observances requires that faculty make every effort to reasonably and fairly deal with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. Please contact me early in the semester if you are aware of any conflicts between our course schedule and your needs for religious observances. See full details at http://www.colorado.edu/policies/fac_relig.html

Classroom Behaviour
Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, gender, gender variance, and nationalities. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. See polices at
http://www.colorado.edu/policies/classbehavior.html and at
http://www.colorado.edu/studentaffairs/judicialaffairs/code.html#student_code

Discrimination and Harassment
The University of Colorado at Boulder policy on Discrimination and Harassment, the University of Colorado policy on Sexual Harassment and the University of Colorado policy on Amorous Relationships apply to all students, staff and faculty. Any student, staff or faculty member who believes s/he has been the subject of discrimination or harassment based upon race, color, national origin, sex, age, disability, religion, sexual orientation, or veteran status should contact the Office of Discrimination and Harassment (ODH) at 303-492-2127 or the Office of Judicial Affairs at 303-492-5550. Information about the ODH, the above referenced policies and the campus resources available to assist individuals regarding discrimination or harassment can be obtained at http://www.colorado.edu/odh

Honor Code
All students of the University of Colorado at Boulder are responsible for

knowing and adhering to the academic integrity policy of this institution. Violations of this policy may include: cheating, plagiarism, aid of academic dishonesty, fabrication, lying, bribery, and threatening behavior. All incidents of academic misconduct shall be reported to the Honor Code Council (honor@colorado.edu; 303-725-2273). Students who are found to be in violation of the academic integrity policy will be subject to both academic sanctions from the faculty member and non-academic sanctions (including but not limited to university probation, suspension, or expulsion). Other information on the Honor Code can be found at http://www.colorado.edu/policies/honor.html and at http://www.colorado.edu/academics/honorcode/