

Economic Statistics

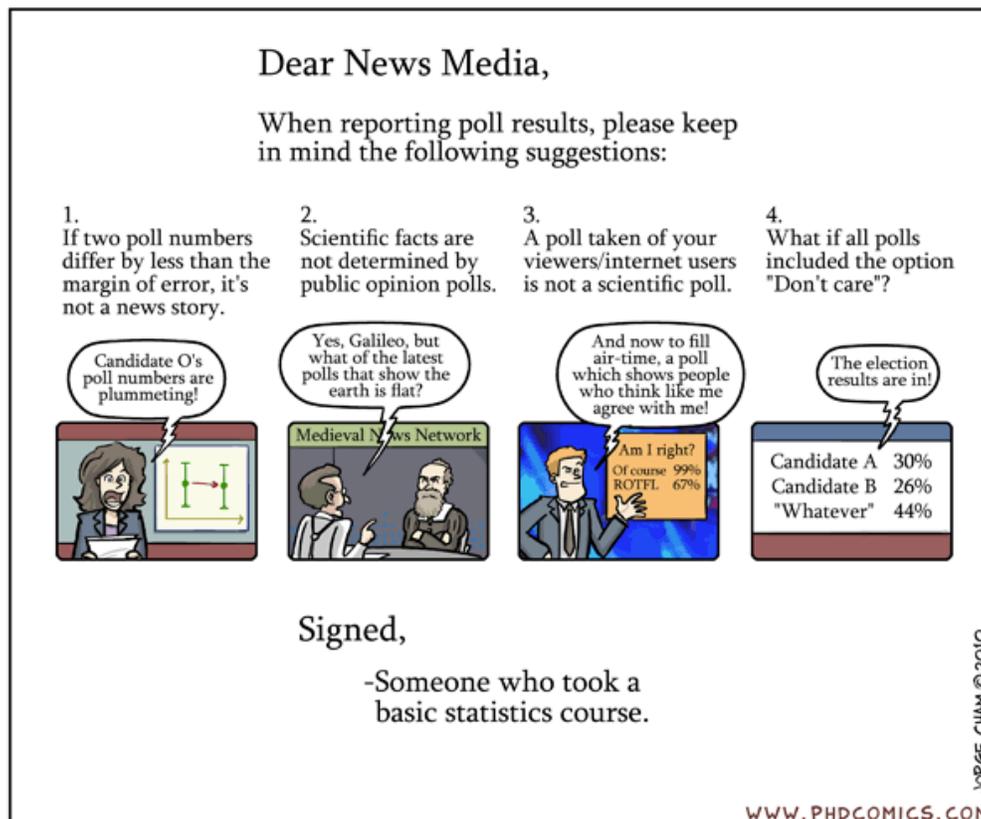
ECO 210 – Fall 2014
T/TH 12:45 – 2:05 pm
Stager 114

Instructor: Mitch Green
Office: 324 Stager
Email: mgreen1@fandm.edu
Office Hours: Mon. – Thur: 10 – 11 am
Or by appointment

*Please note: Email is not my preferred method of communication. Most questions can be dealt with much more efficiently before, during, or after class. I would really like to see you in my office hours, for both superficial and substantive questions. Of course, I want you to know that I'm available so do email if you feel you must. I will respond within 24 hours.

“Figures often beguile me, particularly when I have the arranging of them myself; in which case the remark attributed to Disraeli would often apply with justice and force: ‘There are three kinds of lies: **lies, damned lies and statistics.**’”

- Mark Twain's *Own Autobiography: The Chapters from the North American Review*



We are confronted daily with facts and figures. Often, the news presents us with statistical claims concerning issues ranging from public policy to personal health. The ability to properly evaluate these claims is fundamental to meeting the challenges of an increasingly complex world. Statistical reasoning plays an important role in many academic disciplines, as well as in popular discourse and policy debates. Medical studies, sociological surveys, and public opinion polls are all based on statistical approaches. Within economics, statistics forms the basis for the tools of econometrics. But, it's easy to be hoodwinked by crafty use of statistics, both in academic studies and the popular press reporting them. This course will provide you with the tools to reason through this mess

Statistics is more than just a body of numerical information; it is the science of reasoning with data. Statisticians interrogate data mercilessly, seeking meaningful patterns that yield new insights to old problems. Unlike the theoretical worlds we often study in other courses, the real world is characterized by *variability*. Many events cannot be predicted precisely. Nevertheless, because of patterns that occur within this soup of variability, we can derive useful information from data about variable events, when it has been properly collected and interpreted.

Course Goals

In this course, you will develop knowledge of statistical principles and learn to apply these to practical problems. Specifically, you will learn how to collect meaningful data, summarize data using graphical and numerical techniques, perform standard statistical analyses for one and two variables, and perform and interpret simple linear regressions. You will learn to interpret and judge the statistical information in the world around you and to use computing tools for statistical analysis. The course also seeks to provide a sound basis for further study in econometrics, a method most economists rely upon to carry out empirical research.

Course Approach

Statistics is a body of techniques – both numerical and interpretive – to be practiced, not simply a theory to be learned. Accordingly, this course will take an active, hands-on approach to learning. You will spend the majority of class time working through a series of activities and problems carefully designed to guide you in the development of a thorough understanding of statistical reasoning and techniques. You will be encouraged to work collaboratively with a partner on some of these activities, while we will work through others as a class. We will also regroup for lecture and discussion whenever necessary to clarify and emphasize key points.

This approach will serve your learning far better than passively listening to lecture, *but you must actively participate*. Please come to class expecting to participate, think, and learn, and spend the necessary time outside of class to prepare and to consolidate what you have learned.

Specifically:

- Come to class prepared by having read the **Overview** and completed the assigned **Preliminaries** questions for each topic. (Some days will also have data collection assignments to be completed online.)
- Actively use your text to take notes, highlight key points, and create your own glossary of key terms.
- Spend some time after each class to review the definitions, Watch Out, and Wrap Up sections, and to complete the Self Check and Homework problems. Although homework will be collected weekly, I encourage you to do it after each class.
- **ASK QUESTIONS WHENEVER YOU NEED TO.**

Course Materials

Required text: Allan J. Rossman and Beth L. Chance. Workshop Statistics: Discovery with Data, 4th Edition. John Wiley & Sons, 2012. **(WS)**

R & R Studio: In this course, we will use the statistical software package R. R is a powerful programming language designed specifically for statistical analysis. R is widely used across the physical and social sciences. It is also free. To assist us, we will use the program R Studio, an integrated development environment (IDE), to interface with R. R Studio is also free. These programs will be installed on the laptops for use in class as well as in the Innovation Zone. You are highly encouraged to install these programs on your personal computers as well.

Blackboard: Daily handouts with key points for each class meeting, preparation assignments, and other important announcements will be posted in Blackboard. The applets and data sets for the book will also be available there.

Grading:

Grading will be computed as follows:

Midterm		15%
Final		15%
Two Quizzes	5% each	10%
Eleven Mini – Quizzes	2% each of best 9	18%
Homework	Lowest 3 dropped	17%
Participation		15%
Regression Project		10%

A mini-quiz or quiz will be given every week. Your lowest two *mini-quiz* grades will be dropped. **Therefore, there will be no makeups for missed mini-quizzes.**

Homework will be assigned during each class meeting and will be due *at the start of class each Tuesday*. Your three lowest homework grades will be dropped. **NO CREDIT WILL BE GIVEN FOR LATE HOMEWORK UNDER ANY CIRCUMSTANCES.**

Course Policies and Norms

We all have responsibility for creating an environment in which everyone can focus on learning. Therefore, I ask everyone to please adhere to the following course norms and common courtesies:

- Come to class on time, prepared to work, with cell phones turned off, and all external needs attended to before class. You will be working with a partner much of the time, so please be ready to work without interruption for 80 minutes.
- Do not talk to others when I am talking – but please DO talk to your neighbors when working on collaborative activities.
- We will use computers in class regularly. (You may bring your own computer or check out one of the cart computers.) When we are using computers, use them only for the in class activities. **DO NOT CHECK EMAIL, SURF THE WEB, UPDATE FACEBOOK, OR ENGAGE IN ANY OTHER NON-CLASS ACTIVITIES.** This is distracting to you and everyone around you. If you do so, I will ask you to leave, and this will be counted as an unexcused absence. Please DO NOT bring your computers on non-computer days.
- You may bring beverages (covered please), but please do not bring food.

Attendance is mandatory. Even more so than in most classes, you must be here and fully engaged in order to learn. You will not be able to “catch up” on classes missed by reading the text or copying someone’s notes. Therefore, **more than two unexcused absences will result in significant deductions from your participation grade.** Note that participation in class is 15% of your grade. **It will not be possible to get an A in this course if you do not attend regularly.** Absences will be excused only in the case of contagious illness, serious emergency, or unavoidable conflict, and should be cleared with me in advance unless impossible. **Missed quizzes and exams that are not excused in advance will not be made up. Missed mini-quizzes will not be made up under any circumstances (but your two lowest scores will be dropped).**

Academic Honesty

I encourage you to study together, discuss the material, work on homework problems together, and proofread each other's regression project papers. However, all work you hand in must be your own. If you have any questions about where the line between appropriate collaboration and cheating lies, I encourage you to come and talk to me about it. It is your responsibility as an F&M student to be familiar with the definition of Academic Dishonesty and relevant procedures discussed in the F&M Catalog.

You will succeed in this class if you stay caught up, work all the homework problems and Self Check activities, and review each Topic after every class. You will probably find it nearly impossible to catch up if you do fall behind.

Course Schedule*

Date		Topic	Quiz	Topic
Th	9/4/14	Data and Variables		1
T	9/9/14	Graphing and R	MQ	2
Th	9/11/14	Study Design		3
T	9/16/14		MQ	4,5
Th	9/18/14	Summarizing Categorical Data		5,6
T	9/23/14	Summarizing Quantitative Data	MQ	7
Th	9/25/14	Measures of Center		8
T	9/30/14	Measures of Spread	Quiz	9
Th	10/2/14	Probability		11
T	10/7/14	Normal Distributions	MQ	12
Th	10/9/14	Sampling Distributions: Categorical Variable		13
T	10/14/14	No Class		
Th	10/16/14	Sampling Distributions: Quantitative Variable	MQ	14
T	10/21/14	Central Limit Theorem		15
Th	10/23/14	Estimation and Hypothesis Testing: Categorical	MQ	16
T	10/28/14	Midterm	Midterm	
Th	10/30/14	Estimation and Hypothesis Testing: Categorical		16,17
T	11/4/14		MQ	
Th	11/6/14			
T	11/11/14	Estimation and Hypothesis Testing: Quantitative	MQ	19
Th	11/13/14			
T	11/18/14	Comparing Two Populations: Categorical	Quiz	21
Th	11/20/14	Comparing Two Populations: Quantitative		22
T	11/25/14	Relationships Between Quantitative Variables	MQ	26
Th	11/27/14	No Class		
T	12/2/14			27
Th	12/4/14	Linear Regression	MQ	28
T	12/9/14			29
Th	12/11/14	Review and Regression Project	MQ	29
T	12/16/14	Optional: Regression Project Session		
FINAL EXAM TO BE SCHEDULED BY THE REGISTRAR Regression project due at Final Exam.				

*Subject to change given course progress.

Environmental and Natural Resource Economics

ECO / ENV 240 – Spring 2014

Professor: Mitch Green
Office: 324 Stager
Email: mgreen1@fandm.edu
Office Hours: TBD

This course examines the methods economists use to analyze environmental issues, including pollution, renewable and nonrenewable resources, and global environmental change. There are at least two reasons to study environmental problems from an economic perspective. First, in so far as they arise from human activity, most environmental problems result from the economic activities of production, distribution, and consumption. Second, the tools of economic analysis form the basis of one of the core policy analysis languages to address major public policy issues - including environmental - in the current U.S. and international context.

The economic analysis of environmental problems is a dynamic field, adapting older methodologies and developing new ones to address contemporary global scale environmental concerns such as climate change and species extinction. Accordingly, we will study some of the classic tools and their application to policy issues, and we'll use global problems, particularly climate change, to explore the limitations of and debates around these tools, as well as newer approaches including ecological economics and interdisciplinary analysis.

Course goals

- To understand and apply the major theoretical tools of environmental and natural resource economics to environmental policies.
- To examine the challenges for these approaches raised by the scale problems and systemic effects associated with global environmental issues.
- To critically engage with some of the key theoretical arguments and empirical findings in the economic analysis of environmental problems.
- To research one environmental policy in some detail.

Course readings

Required Texts:

Harris and Roach. *Environmental and Natural Resource Economics: A Contemporary Approach*, Third Edition. M. E. Sharpe, 2013

The Economics of the Environment, Dollars & Sense, 2012

Additional readings:

Because this is a dynamic field, we will not strictly be reading from the textbook. We will also read a series of papers in the field - some of them "classics" that set an agenda or

redefined a problem; some that raise and address challenges about methodology; and some that analyze major unsolved problems. They are listed in the syllabus.

Assignments and Grading

Problem sets	20%	Four at 5% each
Midterm	25%	
Final	25%	
Paper	15%	
Class preparation and participation	15%	

Paper

you will write a 6 to 8 page paper analyzing one of the issues or methodological controversies we discuss in class in more depth. Details of the assignment and suggested topics will be handed out early in the semester. The paper will be due at the final exam. You may, of course, elect to turn it in earlier if that suits your schedule better. In the interests of fairness, there will be no extensions to paper due dates.

Preparation and participation

Your job every day is to come to class prepared and ready to discuss the day's material. This means having done all the reading - textbook and additional readings - before class.

For every class, I will hand out a set of discussion questions that we will use to start class discussions of the readings. You should write down your answers, including references to specific, relevant sections of the text. (For example, you may want to highlight, circle, or otherwise mark the sections of the text you think are most relevant to question.) These can be short: 1 to 2 sentences each, or even just bullet points, but they should be written. You will use these notes to help you contribute more effectively to class discussion. You may also wish to note down other things that stood out to you, extended your understanding or knowledge, or confused you. Always bring the readings and your notes with you to class. Failure to be the prepared for class will be readily apparent to the instructor and other students, and will result in a lower course grade.

Course norms and policies

Attendance in this course is mandatory. You must be here and fully engaged in order to learn. You will not be able to "catch up" on classes missed by reading the text or copying someone's notes. Therefore, more than one unexcused absence will result in deductions from participation grade. Absences will be excused only in the case of contagious illness, serious emergency, or unavoidable conflict, and should be cleared with me in advance unless impossible. Missed exams that are not excused in advance will not be made up. Late assignments will lose a letter grade (that is, from A to B) for each day that they are late.

Discussion questions for each day and any changes to the course schedule and assignments will be posted on blackboard. I will send occasional announcements about the course via email. Thus you are responsible for checking email regularly.

We all have the responsibility for creating an environment in which everyone can focus on learning. Therefore, I ask everyone to adhere to the following course norms in common courtesies:

- Please do not arrive late to class, or leave class early. If you must leave the classroom for any reason, please do so as quietly as possible. Please do not pack up your books and notes before the class period is over.
- Please listen attentively to whomever is speaking - your instructor or one of your classmates.
- No cell phones, laptops, tablets, or other electronic devices should be out in the classroom at any time.

Academic honesty

I encourage you to study together, discuss the material, work on problem sets together, and proofread each other's papers. However, all work you hand in must be your own. If you have any questions about where the line between appropriate collaboration and cheating lies, I encourage you to talk to me about it. It is your responsibility as an F & M student to be familiar with the definition of academic dishonesty and relevant procedures in catalog.

Course Outline

Week	Topics	Reading
1	Introduction: The Economy and Environment	H & R: 1
2	Resources, Environment, and Economic Development	H & R: 2 Sen
3	Externalities and the Environment	H & R: 3 Eriksson and Andersson
4	Problems with Property Rights	H & R: 4 Hardin, Coase, Tierney, Ostrom
5	Valuing the Environment	H & R: 6 Costanza et al; D & S 2.1
6	Ecological Economics & Environmental Accounting	H & R: 7-8 Daly, Boulding, Georgescu-Roegen,
7	Agriculture, Food, and Environment	H & R: 10 Sen
8	Resources and Question of Scarcity	H & R: 9 De Gregori
9	Energy: The Great Transition	H & R: 12 D & S: 136 White, Aleklett
10	Renewable resources: Fisheries	H & R: 13 D & S: 1.5 Lichotawich
11	Renewable resources: Forests	H & R: 14 Gowdy
12	The Political Economy of Water	H & R: 15 D & S: 4.5 Films: Flow, Even the Rain
13	Confronting Pollution	H & R: 16 Stavins
14	Greening the Economy	H & R: 17 D & S: 3.5
15	Global Climate Change & Policy Responses	H & R: 18 – 19 Klein Van Den Bergh and Kallis

Additional Readings

Ralf Eriksson and Jan Otto Andersson, *Elements of Ecological Economics* (Routledge, 2010), Chapter 1.

Garret Hardin, "The Tragedy of the Commons," *Science* 162, no. 3859, (December 13, 1968): 1243 – 1248.

Elinor Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action* (Cambridge University Press, 1990), Chapter 1.

John Tierney, "A Tale of Two Fisheries," *New York Times*, August 27, 2000.

Robert Costanza et al., "The value of the world's ecosystem services and natural capital," *Nature* 387, no. 6630 (May 15, 1997): 253-260

John Gowdy, "The Value of Biodiversity: Markets, Society, and Ecosystems," *Land Economics* 73, no. 1 (1997): 25-41.

Herman Daly, "Economics in a Full World," *Scientific American* (September 2005): 100-107

Kjell Aleklett et al., "Peak Oil Forum," *World Watch* 19, (January / February 2006): 9-24.

Robert N. Stavins, "What Can We Learn from the Grand Policy Experiment? Lessons from SO₂ Allowance Trading," *The Journal of Economics Perspectives* 12, no. 3 (1998): 69-88.

Naomi Klein, *This Changes Everything: Capitalism vs. the Climate*. (Simon & Schuster 2014), Selections.

Richard White, *The Organic Machine: The Remaking of the Columbia River* (Hill and Wang 1995), Selections.

Amartya Sen, *Development as Freedom*. (Knopf Doubleday Publishing Group 2011), Selections.

Jim Lichatowich, *Salmon without Rivers: A History of the Pacific Salmon Crisis*, (Island Press 1999), Selections.

COURSE SYLLABUS
ECON-201
Fall 2012

Instructor: Mitchell Green
E-mail: mrgen3@mail.umkc.edu
Phone: TBA (I respond better to email)
Office: 202I Manheim Hall
Office Hrs: T/R 11-12 and by appt.
Blog: <http://ec201umkc.blogspot.com/>

Required Readings :

Economics: A Tool for Critically Understanding Society, 9th Ed., Riddell, Shackelford, Stamos, and Schneider. ISBN: 0131368494

While available in the bookstore, I advise each of you to search sites like amazon.com, half.com, albris.com, etc., for the best deal.

Optional: Economics Explained, by Robert Hielbroner. ISBN: 0684846411. *I will post selected excerpts from this book to blackboard to supplement the main text. I will not print these off for you, so if you do not wish to print them yourselves or read PDFs electronically, I suggest ordering a copy of the book. It is fairly inexpensive – something like \$10.*

Daily Newspaper: We will discuss current economic events throughout the semester. You will be asked to report on important economic news topics on a regular basis, and you will be asked to apply the theories we discuss in class to the contemporary economic world around us. Make sure that you read a good daily newspaper with substantial economic content (New York Times, Wall Street Journal, Financial Times, Philadelphia Inquirer, or Washington Post, to name a few). **As a student at UMKC, you have free access to the New York Times at the kiosk on the ground floor of Royall Hall.**

Blog: To communicate with you I will rely mostly upon a simple blog I have set up, where I will post lecture notes, Mathematica demonstrations, YouTube videos, and other multimedia materials. To stay up to speed in the course I suggest subscribing to the blog via RSS.

Course Description: This course examines the economic system as a whole, paying particular attention to the ways in which its functioning is affected by the behavior of the interdependent sectors of which it is composed. There are no prerequisites to this course.

Learning Objectives: The overall purpose of this course is to acquaint you with basic principles of economic analysis and to engage in a substantive critical analysis of our current global economic system. We will achieve this through the following two

objectives: First, to introduce the student to the concepts, tools and issues in the economics discipline. We emphasize in this principles course the *macroeconomy*, which is concerned with issues that affect the social provisioning process as a whole. Second, throughout this course the student will learn to think like an economist – that is, you will develop the ability to examine a given policy issue – e.g. unemployment, inflation, taxes and spending, interest rates, etc. – and analyze the social and economic outcomes that might result from particular policy choice.

Expectations: This is a fast-paced course that covers relatively difficult macro economic concepts/models. In order to do well, you must **keep up** with the readings and assignments. You are expected to **attend all classes** and to **raise questions** in class or during office hours when you are having problems with the material. Do not wait until the week of an exam to seek help.

You are also expected to participate in class activities, debates and discussions. Active engagement in class requires that you **do all required readings prior to class**, and that you are up to speed on the economic news.

Grading:

Participation	10%	
Homework	15%	
Midterm No. 1	25%	September 17
Midterm No. 2	25%	October 29
Final Exam	25%	Tuesday, Dec. 11, 1:00 p.m. – 3:00 p.m.

Grading on Improvement: When a student shows significant improvement over the course of the semester, it seems appropriate to adjust the student’s grade to reflect that effort. In order to be eligible for this “improvement bonus”, your score on the final exam (which is cumulative) must exceed your score on at least one midterm. To determine your *improvement bonus* subtract the lower of your first two exam scores from your final exam percentage and divide that total by 10. That is your bonus, and it will be added to your course total. (Note that theoretically the bonus can vary from 10 percentage points (with a 100% on the final and a 0% on either exam one or exam two) to 0 (with a final exam score that does not exceed your lowest score.)

EXAMPLE

Midterm #1	Midterm #2	Final Exam
74%	65%	90%

Improvement Bonus = $(90\% - 65\%) \div 10 = 2.5\%$ will be added to your course total

Make-Up Exams: Exams will be in-class and closed book. The format for both exams will be a combination of multiple choice and short answer/essay questions. *Make-up exams will not be given unless arrangements are made prior to the date of the exam.*

Policy on Electronic Devices: I ask that you silence your phones prior to the start of class, and any other device that makes noise. With exception of taking notes on your laptop or tablet, there is not reason for you to use your personal electronic devices during class. If you are distracted by e-mail, texting, Facebook, etc., then you will miss something important that is being covered. Beyond that, it is disrespectful. At the end of the day, it is the **attentive student** who gets the benefit of the doubt when a borderline grading decision must be made. Think about it.

Academic Honesty

Plagiarism and cheating will not be tolerated. Plagiarism and/or cheating will result in your failing the assignment and potential dismissal from the university. The University of Missouri Rules and Regulations include a Student Standard of Conduct, which can be found at: http://www.umkc.edu/helpline/code_conduct.asp

Disabilities

The Office of Services for Students with Disabilities is available to assist any University of Missouri Kansas City student with a diagnosed disability. They can be reached at (816) 235-5696 or by e-mail at disability@umkc.edu. I welcome and expect students with documented learning needs or physical disability to contact me immediately to make appropriate accommodation for their needs.

This link will direct you to essential information regarding university policies, rules, and resources <http://cas.umkc.edu/student-resources.asp>

Course Outline:

Section 1: Envisioning Provisioning	
8/20/2012	Syllabus, Course Overview, Expectations
8/22/2012	****No class: Read for next week****
8/24/2012	
8/27/2012	The Economy as a Social Provisioning Process: Readings: RSSS, Ch: 1-2 Adam Smith: A Natural System of Perfect Liberty: Readings – RSSS, Ch:
8/29/2012	3
8/31/2012	Karl Marx and the Socialist Critique of Capitalism: Readings – RSSS, Ch: 4 Rise and Fall of Laissez-Faire in the U.S. Economy: Readings – RSSS, Ch: 5
Section 2: The Market	
	Scarcity and Abundance: RSSS, Ch: 6; see blog for Khan Academy video
9/5/2012	on PPF
9/7/2012	
	The Theory of Markets: RSSS, Ch: 7; see blog for Supply & Demand
9/10/2012	model
9/12/2012	
9/14/2012	Review Session
Exam 1: 9/17/2012	
Section 3: Macroeconomic Theory and Policy	
9/19/2012	Macro: Issues and Problems, Ch: 13
9/21/2012	
9/24/2012	Macro Theory: Classical and Keynesian, Ch: 14
9/26/2012	
9/28/2012	
10/1/2012	Fiscal Policy: Government Spending & Taxation, Ch: 15
10/3/2012	
10/5/2012	
10/8/2012	Financial Markets, Money, and Monetary Policy, Ch: 16
10/10/2012	
10/12/2012	
10/15/2012	Aggregate Demand & Aggregate Supply, Ch: 17
10/17/2012	
10/19/2012	
10/22/2012	Unemployment, Inflation, and Stabilization Policy, Ch: 18
10/24/2012	
10/26/2012	Review Session
Exam 2	
Section 4: International Economics & Finance	

10/31/2012	Int'l Trade and Interdependence, Ch: 19
11/2/2012	
11/5/2012	
11/7/2012	Int'l Finance, Ch: 20
11/9/2012	
11/12/2012	
11/14/2012	Economics of Developing Nations, Ch: 21
11/16/2012	
Thanksgiving Break	
11/26/2012	Modern Economic Systems, Ch: 22
11/28/2012	
11/30/2012	
12/3/2012	
12/5/2012	Review Session