

Economics 203 Syllabus

Economic Statistics II

Sections AL1, AL2

Fall 2017

Instructor: Professor Joseph A. Petry
Office: 116 David Kinley Hall
e-mail: jpetry@illinois.edu
Office hours: Monday 4:00 – 5:00
Lecture hours: M/W 2:00 – 2:50; 3:00 – 3:50
Lecture Section: AL1, AL2
Lecture Location: 141 Wohlers Hall

Lab Time: Varies by TA section
Lab Days: Thursday / Friday
Lab Location: 901 W. Oregon, Room 101
TA Office Hours: See Compass for schedule
TA Contacts:
 Head TA: Filia Arga arga2@illinois.edu
 TAs: See full list on compass

Course Website:

<https://compass2g.illinois.edu>

Q & A Forum:

piazza.com/illinois/fall2017/econ203/home

Required Texts / Materials:

Aplia Homework system. (You **must** use the link in compass2g to sign up for Aplia—please do **NOT** sign up directly on the aplia website.)

Petry, *Economics 203 Course Packet*. Fall 2017.

Anderson, Sweeney, Williams, *Modern Business Statistics with Microsoft Office Excel*, 4e. South-Western/Cengage. An e-text version of this text comes automatically with the Aplia homework system. When you purchase Aplia, you will have an e-version of the ASW text. You may also purchase a hard copy from the site if you would like—optional.

Required Materials: Basic financial or statistical calculator. You should ALWAYS bring your calculator to class! We have found that the Texas Instruments BAII Plus is useful, and is often used in other classes. We will provide basic instructions in the use of this calculator in class (and only this calculator). To insure fairness for all students, calculators with functionality beyond the BAII Plus, will NOT be permitted for use on exams. Graphing calculators therefore will NOT be permitted during exams.

Course Objective: This course is about making better decisions. We do this by throwing out what we think we know, and informing our judgement by proper analysis of data. Armed with the facts, properly analyzed, we make the best decision possible.

A famous statistician once said: "without data, we are just another person with an opinion". Obtaining data, *and* analyzing it properly, can vastly enhance the influence you have in your professional life and community, as well as allow you to make better decisions in both your personal and professional lives. Our own real-world experience has taught us that statistics may be the single most useful tool one can learn as a student, irrespective of your major. As you will find, statistical analysis can be applied to nearly every field of human endeavor.

We have put together a course that we hope will make learning this important material as successful and enjoyable as possible. In designing the specifics of the course, we have laid out four key objectives that we hope to accomplish before the semester ends. These four objectives have guided all our decisions in terms of course structure, content and administration. At the end of this course, you should:

1. Understand the relevance of statistics in your future course-work and professions
2. Be trained to identify the proper statistical technique to apply to a problem
3. Be adept at finding the answers to statistical queries using excel
4. Be able to properly interpret the results of your analysis.

Course Content: Students must have completed a course on probability and statistical analysis before becoming eligible to take Economics 203. The best course to meet this requirement is Economics 202 at the University of Illinois.

Inferential Statistical Analysis is the common thread tying the topics of Economics 203 together. In this course we briefly review single population cases of hypothesis testing and confidence interval formation before extending this analysis to two population cases. We emphasize mean, variance and proportion as the parameters of interest. We also cover single-factor Analysis of Variance. The most significant portion of the course is regression analysis. We cover simple and multiple regression, consider assumption violations, qualitative variables, transformations, curvilinear relationships and model building. The course ends with time series analysis.

Course Grade:

Project	10%	Pre-Lecture Quizzes	5.0%
Midterm Exam I	20%	Homework	15.0%
Midterm Exam II	20%	Lab Quizzes	10.0% (5.0% each)
Final Exam	20%	Quick Quizzes	2.5% (Extra Credit)

Grading Scale: The scale used to assign letter grades in the course will be the standard 90/80/70/60 scale with +/- given at +/- 3% around these cutoffs. Curves are at the discretion of the Professor. Once grades are assigned by the instructor at the end of the course, no exceptions will be made. We do not round grades up.

Project: There is a semester-long project which is an integral part of the course. This is your chance to pull together what you have learned in the course and apply it to a topic that you care about. You will be doing it independently. You will select your own topic, find the data and present your analysis and conclusions in a 5-10 page paper. You and your fellow students will be responsible for peer reviewing each other's work. The details, including 6 project checkpoints you should follow along the way are provided in the project link available in the course compass site.

Exams: There will be three exams (two midterms and a final) given during the semester. Each mid-term will only cover the material since the last exam. The final exam will be comprehensive. Basic calculators will be permitted, and you will be provided with a formula sheet identical to the one at the back of your course-packet for use during the exams.

Students are required to have their University of Illinois Student ID with them to take their exam. Students who do not have their ID with them for the exam may not be allowed to take the exam. Cell phones must be put away during exams. No hats of any kind may be worn during exams. These policies are necessary for us to insure the integrity of the exams.

We only offer conflict exams if a student qualifies for such an accommodation under university guidelines. The university policy is stated in the [Student Code](#). If a student is unable to attend the conflict exam, then the weight of the missed exam will be added to the weight of the final exam at the end of the semester. If you believe you are eligible for a conflict exam, you must notify your TA in writing during the first week of class. If you do not notify your TA in a timely fashion, you may not be eligible for the conflict.

Any student who is taking the exam through DRES must take the exam at the same time or prior to the regularly scheduled exam.

Pre-Lecture Quizzes: We use a "flipped classroom" pedagogical style for this course. This means that students are required to familiarize themselves with the material prior to coming to lecture. To reward you for this work, we provide Pre-Lecture Quizzes in Aplia which must be completed the night before the lecture and are there to allow you to demonstrate that you have in fact become familiar with the lecture content. You can become familiar by reading the relevant material in the course packet or watching the corresponding audio/video lectures or both. Class time will be used to work problems. Depending upon the content, some class periods will include a discussion or brief review of some of the content provided in the notes, but you should assume you are responsible for knowing this content before you enter lecture. There are no make-ups for missed work but we will drop your two lowest PLQ scores at the end of the semester.

Homework: Statistics can only be learned one way--doing a lot of problems. As a result, homework represents an important part of this course. You will be assigned homework after nearly every lecture. Each homework is to be turned in electronically using Aplia. Homework is due no later than 11:45pm, the Sunday evening of the week following the lecture. Late homework is not accepted. If you are having trouble with your homework, please check Piazza for assistance, it is monitored closely by our TAs for this purpose. You must use your university issued email address when registering for Aplia, and also provide your net-ID when requested to receive credit for your HW. There are no make-ups for missed work but we will drop your two lowest HW scores at the end of the semester.

Excel Lab Quizzes: Based on student requests, we have moved 10% of your final grade from exams to excel lab quizzes. There will be two quizzes given during the semester, each worth 5% of your grade. The dates are provided in the schedule at the end of the syllabus. The purpose of these quizzes is to make sure that you are learning how to apply the statistical tools using excel. The quizzes will be given during your regular lab sessions and will involve using excel as a means of solving problems. You must go to your lab session to take these quizzes and you must take the quizzes in the actual lab using a University computer to receive credit.

Lab Quick Quizzes: Lab Quick Quizzes (QQ) are given in your computer lab each week based on the lab content that week. You can receive up to 2.5% extra credit in the course by completing the Quick Quizzes. The quizzes may be opened by the TA at any time during the lab hour. You will be given a password and allowed 5 minutes to complete the quiz. You must take the quiz in the lab you are assigned on a University computer. Each QQ has 3 questions. 100% credit is received for 2 or more correct answers. 75% credit for 1 correct answer and 50% credit for zero correct provided an in-lab attempt was made. You will not have a Quick Quiz in lab on the day you have your Excel Lab Quizzes. There are no make-ups for missed work but we will drop your two lowest QQ scores at the end of the semester.

Class Participation: There is no such thing as a stupid question. Dialogue is not only strongly encouraged, it is critical to your understanding of the material. Vocalizing your questions often helps you solidify what you do and do not understand. It also provides your instructors important feedback on the areas in which we need to spend more time. This can be a challenge in a large lecture. As in all things, we do the best we can under the circumstances. During lecture, we will encourage questions and we will solicit input. If we call on you, please relax, we are NOT trying to intimidate you or embarrass you in any way--far from it. We are trying to encourage active listening, and to keep you engaged in the course. This will greatly assist you in learning the material. If you do not know the answer, we will move on to another student.

Compass Discussion Board: Illinois Compass will be used to post announcements. *You are responsible for checking for announcements on Compass before each class session.*

Piazza: Piazza will be used to give you an opportunity to ask questions about course content. Our Student TAs are diligent in answering student questions on Piazza, so please take advantage of this resource. Special consideration will be given to students at the end of the semester for providing consistent high quality responses to their fellow students—this is particularly true for those interested in applying as a Student TA for this course in future semesters. The Compass homepage has a link to our Piazza page.

Office Hours: We have one or more TAs available in office hours in 17 DKH (basement) from 10-6 M-Th every week.

Student TAs: We offer the opportunity for exceptional students to earn independent class credit for working as Student TAs. To be eligible to become a student TA in a future semester, you must get a minimum of an “A” in the course, and have demonstrated a willingness and aptitude to help others master challenging material. A very good way to be considered for an interview for this position is to be actively engaged in the Q & A Forum on piazza during the semester. Students offering consistent and high quality responses to their peers will factor in to hiring decisions. It is also a good idea to introduce yourself to your instructor either after class or in office hours to improve your chances of being selected as a future Student TA.

Other Resources: Online videos of class lectures are available through a link on the compass homepage.

Excused Absences: On occasion, an emergency may arise which prevents you from taking an examination or otherwise performing in the course. To be considered for an excused absence, you must provide the proper documentation explaining your absence to your TA as quickly as possible. The Instructor and TA will determine whether an accommodation is appropriate.

Academic Integrity: Violations of academic integrity as given in the Code on Campus Affairs will be taken extremely seriously. Students found cheating in the course (or helping others to cheat) will be penalized according to the Code's guidelines.

Lecture	Date	Topic / Event	Homework
1	Aug 28	Course Introduction.	Rev1, Rev2
2	Aug 30	Overview of Inference. Hypothesis testing Review.	HW#2
3	Sept 6	Confidence Interval Review.	HW#3
4	Sept 11	Single Population Variance.	HW#4
5	Sept 13	Two Population Difference in Means, Independent Samples, Population Variances Known.	HW#5
	Sept 17	<i>Project Checkpoint 1 due no later than 11:45pm</i>	
6	Sept 18	Two Populations Difference in Means, Population Variances Unknown (assumed equal, assumed unequal).	HW#6
7	Sept 20	Two Population Means, Matched Pairs.	HW#7
8	Sept 25	Two Population Difference in Proportions.	HW#8
9	Sept 27	Two Population Ratio of Variances.	HW#9
	Oct 1	<i>Project Checkpoint 2 due no later than 11:45pm</i>	
10	Oct 2	One-Way ANOVA.	HW#10
11	Oct 4	Flex day. Review as possible.	HW#11
12	Oct 9	Exam I. Monday, 7:00 - 9:00 pm. No Lecture Today.	
13	Oct 11	Simple Linear Regression. Estimating Model Coefficients.	HW#13
	Oct 12/13	Excel Lab Quiz #1	
14	Oct 16	Simple Linear Regression. SST, SSR, SSE, S_e , R^2	HW#14
15	Oct 18	Simple Linear Regression. Significance Tests	HW#15
	Oct 22	<i>Project Checkpoint 3 due no later than 11:45pm</i>	
16	Oct 23	Simple Linear Regression. Model Assumptions	HW#16
17	Oct 25	Simple Linear Regression. Confidence and Prediction Intervals	HW#17
18	Oct 30	Multiple Regression. Regression Diagnostics, Assumptions 1, 2, 3	HW#18
19	Nov 1	Multiple Regression. Assumption 5	HW#19
	Nov 5	<i>Project Checkpoint 4</i>	
20	Nov 6	Multiple Regression. Modeling Process. Adjusted R^2	HW#20
21	Nov 8	Multiple Regression. Partial and Overall F-Tests. Coefficient t-test	HW#21
22	Nov 13	Multiple Regression. Curvilinear Relationships, Dummy Variables	HW#22
23	Nov 15	Flex day. Review as possible.	HW#23
	Nov 18-Nov 26	Thanksgiving Break!!	
24	Nov 27	No Lecture Today in anticipation of Nov. 28 exam.	
	Nov 28	Exam II. Tuesday, 7:00 – 9:00 pm.	
25	Nov 29	Time Series. Components, Moving Averages and Exp. Smoothing	HW#25
	Nov 30/ Dec 1	Excel Lab Quiz #2	
	Dec 3	<i>Project Checkpoint 5</i>	
26	Dec 4	Time Series. Trend and Cyclical Effects	HW#26
27	Dec 6	Time Series. Seasonal Effects	HW#27
	Dec 10	<i>Project Checkpoint 6 due no later than 11:45pm</i>	
28	Dec 11	Time Series. Forecasting	HW#28
29	Dec 13	Flex day. Last day of classes.	
	Dec 13	<i>Project Peer Grading due no later than 11:45pm</i>	
	Dec 14	Reading Day.	
	Dec 15	Final Exam for Lecture AL1. Friday, 8:00 – 11:00 am.	
	Dec 18	Final Exam for Lecture AL2. Monday, 1:30 – 4:30 pm.	