Economics 4650
Principles of Econometrics
Summer 2015

WHEN Mondays and Wednesdays, 6:00 PM – 7:30 PM. This is a full-length course, running May 18 through August 4.

WHERE Marriott Library (MLI) 1130

WEB See the course page on Canvas

INSTRUCTOR Michael Hogue

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OFFICE Business Classroom Building (BUC) 470 C

OFFICE HOURS MW 5:00 PM – 6:00 PM

COURSE OVERVIEW Building on and extending the foundations covered in Econ 3640 *Probability and Statistical Inference for Economists*, this course is concerned with principles of learning from data, when the data is of the sort often encountered by economists and allied researchers. We will see how these principles can figure in addressing such diverse issues as whether smaller classroom sizes improve student performance, the relationship between smoking and birthweight, how earnings relate to age, gender, and education, and whether actual economic agents—people—behave "rationally" in the way prescribed by simple microeconomic theory.

COURSE OBJECTIVES Students who successfully complete this course should have a basic conceptual understanding of multivariate regression analysis (estimation, diagnostics, and inference), be able to carry out such an analysis using the statistics software `R`, and be able to give appropriate interpretations of the results.

PREREQUISITES This course has two prerequisites: Econ 3620 *Mathematics for Economists* and Econ 3640 *Probability and Statistical Inference for Economists*. If you have not taken these classes but have taken other classes you believe have similar or equivalent content, please let me know as soon as possible, indicating which courses you have taken and where (if not at the University of Utah). You will want to be fully prepared before taking Econ 4650.

TEXT There is one required text for the course: *Using Econometrics—A Practical Guide*, by A. H. Studenmund. Although I will be using the 6th edition (ISBN-13: 9780131367739), I imagine most students would do just as well with the 5th edition.

TOPICS We will cover the following topics. For each topic, appropriate background reading from the textbook is indicated. Please note that although the readings from the textbook are highly recommended, they are not a substitute for the lectures. We will cover some topics in considerably more detail than the text, others in less detail.

1. Probability and statistics (Ch. 17)
2. Simple linear regression and ordinary least squares (Ch. 1–3)
3. The classical linear regression model (CLRM) (Ch. 4)
4. Statistical inference in the CLRM (Ch. 5)
5. Specification: variables and functional forms (Ch. 6–7)
6. Mulicollinearity (Ch. 8)
7. Serial correlation (Ch. 9)
8. Heteroskedasticity (Ch. 10)
9. Experiments and quasi-experiments (Ch. 16)
10. Panel data (Ch. 16)
11. Instrumental variables (Ch. 14)

SOFTWARE The weekly assignments and project will require use of the statistics software R. Since R is free and runs on Windows, Mac, and Linux, I recommend you download and install R to your personal computer if possible. Otherwise, there are two alternatives: (1) use R from the CSBS Virtual Lab or (2) use R from a computer in one the campus computer labs. More detailed instructions and comments about R will be put on Canvas.

EVALUATION The final grade for this course will be determined by performance on weekly assignments (25%), a midterm exam (25%), a project (15%), and a comprehensive final exam (35%). The midterm will be held July 1 and the final will be held August 7, 6:00–8:00.

Letting G stand for the overall numerical grade for the course, computed according to the weights given above, letter grades will be assigned to G as shown below.

$93 \le G \le 100$: A	$81 \le G < 85$: B	$69 \le G < 73$: C	$57 \le G < 61$: D
$89 \le G < 93$: A−	$77 \le G < 81$: B−	$65 \le G < 69$: C−	$53 \le G < 57$: D−
$85 \le G < 89$: B+	$73 \le G < 77$: C+	$61 \le G < 65$: D+	$G < 53$: E

POLICIES

1. **Attendance** Students are strongly encouraged to attend lecture, but attendance is not recorded.
2. **Phones and other devices during class** Use of laptops, tablets, phones, or similar devices during class is limited to purposes directly related to the course.
3. **Electronic devices during exams** The only electronic devices allowed during exams are simple hand-held calculators. Laptops, tablets, phones, and any device capable of communicating with another device must be put away, out of sight, before the exam.
4. **Makeup exams** Makeup exams are only available for reasons of (1) medical emergency (2) participation in an officially sanctioned university event, or (3) religious obligations. In case (2) students must provide me notice of their absence at least one week in advance and a written letter from the appropriate University unit. In case (3) students must let me know the dates of their absence no later than May 27. For case (1) a doctor's note will be sufficient.
5. **Assignments** Assignments will usually be given on Monday and due at the beginning of class the following Monday. Late assignments are subject to the same policy as makeup exams, with the following exception: I reserve the right to allow one (but only one) submission up to one week late if the student can provide a compelling reason. Although students may discuss the assignments with other students, each student must turn in their own assignment, written in their own words. Copying verbatim, or nearly verbatim, the work of another student and presenting it as one's own constitutes a form of academic misconduct (see below).
6. **Extra credit** It will not be possible to receive extra credit in this course.
7. **Incompletes** A grade of "incomplete" will be given only in cases of documented medical emergency.
8. **Academic conduct** Cheating, plagiarism, or other forms of academic misconduct will be dealt with according to University policy (see `http://regulations.utah.edu/academics/6-400.php`).
9. **Accommodations for disability**. The following statement is provided by the University of Utah, Center for Disability Services (See `http://disability.utah.edu`).

   > The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, 801-581-5020. CDS will work with you and the instructor to make arrangements for accommodations.
   >
   > All written information in this course can be made available in alternative format with prior notification to the Center for Disability Services.

   If you require such accommodations please let me know at the beginning of the course.

ABOUT THIS SYLLABUS I reserve the right to make such alterations to this syllabus as circumstances may warrant. Any changes will be announced in class and on Canvas.