

UNIVERSITY OF MONTANA
ECNS 403: Introduction to Econometrics

Course Information:

Semester: Fall 2019
Section: Section 01
Meeting time: TR 12:30-1:50, W 12:00-12:50
Classroom: LA 243 for TR 12:30-1:50, FA 210 for W 12:00-12:50
Credits: 4 credits
CRN: 70044

Instructor Information:

Instructor: Douglas Dalenberg
Office: LA 413
Email: doug.dalenberg@mso.umt.edu
Phone: 406-243-4406 (message only – email will get a faster response).
Office hours: TR 11:00 – 12:20, W 1-1:50, or by appointment or discovery.

Teaching Assistant Information:

Teaching Assistant: Mikayla Eager
Office: LA 409
Email: mikayla.eager@mso.umt.edu
Office hours: TR 2:00-4:00.

Course Description:

This course is designed to develop undergraduate-level competency in econometric analysis with emphasis on interpretation and testing. Statistical software will be used to assist the student in handling of complex empirical problems and to demonstrate the use of statistical software in business and research environments. The ultimate objective of the course is to familiarize the student with the regression technique used in economics but also found in business, forestry, and other social sciences. I aim to help students develop a strong foundation for more advanced applications of econometrics in the future. This is an applied rather than theoretical econometrics course.

Prerequisites:

The prerequisite is an introductory statistics course.

Optional Text:

Gujarati, Damodar, *Econometrics by Example*, New York, NY: Palgrave Macmillan, 1st edition, 2011.

Optional Software:

Stata. We will use Stata in the lab and I will pass out instructions on how to purchase Stata for home use, however, you do not need to purchase Stata since it is available in FA 210 and in LA 401.

Optional Hardware:

You may want a USB stick to save your lab work. However, many students use e-mail or Box to save their work.

Course Moodle Page:

The course Moodle page will contain the data sets we use in the lab.

Learning Outcomes:

Students who successfully complete this course will be able to:

1. interpret regression results; this includes interpreting coefficient estimates and the related measures of fit.
2. explain the standard ordinary least squares assumptions and the consequences, detection, and potential corrections for violations of the standard assumptions.
3. perform and interpret the relevant hypothesis tests associated with the regression coefficients, model, fit, and violations of the ordinary least squares assumptions.
4. explain how to distinguish between practical and statistical significance.
5. demonstrate proficiency with a statistical software program.
6. identify situations in which methods such as logit or two-stage least squares are called for.

Assessment:

You will be assessed with regular short homework assignments, two exams, and a comprehensive final exam. Your homework score will account for 25% of your grade, each exam for 20% and your final exam will account for 35% of your grade.

Assignment	Percent	Date
Homework	25%	Throughout the term, almost every meeting
Exam 1	20%	Thursday, October 10
Exam 2	20%	Thursday, November 7
Comprehensive Final Exam	35%	Monday, December 9, 10:10-12:10

I will use plus/minus grading with 100-92=A, 91-90=A-, 89-88=B+, 87-82=B, 81-80=B-, 79-78=C+, 77-72=C, 71-70=C- 69-68=D+, 67-62=D, 61-60=D-, 59 and below=F.

Graduate Increment:

Students taking this course for graduate credit are required to complete a graduate increment. I will pass out a separate graduate increment assignment. The graduate increment does not change your grade but must be completed in order to earn a grade in this class.

Policies:

1. If you miss an exam and you contact me prior to or immediately after the exam, then we will schedule a make-up exam. If I am not contacted promptly, then no makeup is possible and you will get a zero score. I will not drop any exam scores, so you must do a make-up exam.
2. Late homework is penalized with a deduction of points reflecting the cost it imposes on me or the TA to grade it. Homework is considered late if the TA or I receive it after we have finished grading those assignments handed in on time.
3. If my office hours conflict with your schedule, see me for an appointment.
4. Although I do not take attendance, attending class regularly is important.
5. The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and Disability Services for Students. If you think you may have a disability adversely affecting your academic performance, and you have not already registered with Disability Services, please contact Disability Services in Lommasson Center 154. I

will work with you and Disability Services to provide an appropriate modification. For more information, visit the [Disability Services for Students](http://www.umt.edu/dss) website (<http://www.umt.edu/dss>).

6. All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the [Student Conduct Code](http://www.umt.edu/student-affairs/community-standards/Student%20Conduct%20Code%20-%20FINAL%20-%208-24-18.pdf) (<http://www.umt.edu/student-affairs/community-standards/Student%20Conduct%20Code%20-%20FINAL%20-%208-24-18.pdf>). Academic dishonesty will result in a score of zero for the work in question and possible university sanctions.
7. The University sets deadlines for adding classes, dropping classes, changing grade options, and changing to or from audit status. These policies can be found at the [Registrar's web page](http://www.umt.edu/registrar/students/dropadd.php) (<http://www.umt.edu/registrar/students/dropadd.php>) while the actual dates for this term can be found on the [Registrar's calendar](http://www.umt.edu/registrar/PDF/201970-Official-Dates-and-Deadlines.pdf) (<http://www.umt.edu/registrar/PDF/201970-Official-Dates-and-Deadlines.pdf>).
8. UM has a Cultural and Ceremonial Leave Policy which states: "Cultural or ceremonial leave allows excused absences for cultural, religious, and ceremonial purposes to meet the student's customs and traditions or to participate in related activities. To receive an authorized absence for a cultural, religious or ceremonial event the student or their advisor (proxy) must submit a formal written request to the instructor. This must include a brief description (with inclusive dates) of the cultural event or ceremony and the importance of the student's attendance or participation. Authorization for the absence is subject to approval by the instructor. Appeals may be made to the Chair, Dean or Provost. The excused absence or leave may not exceed five academic calendar days (not including weekends or holidays). Students remain responsible for completion or make-up of assignments as defined in the syllabus, at the discretion of the instructor."
9. University policy states "For undergraduates, a CR grade (credit) will be equivalent to a D- or better and an NCR grade (no credit) will be equivalent to an F." University rules require you to earn a grade of C- or better in order for the course to satisfy the requirements of a major.
10. As a courtesy to your classmates, please set your cell phones on vibrate rather than ring and please leave the classroom to talk on a phone. You may text during class if it does not disturb those sitting near you and it does not disturb me. Absolutely no texting or cell phone use during exams. If you believe that you will need to leave during class, please sit where you will not disturb others as you leave.
11. I do not recommend taking notes for this class on your computer. The number of graphs and equations makes it difficult. The research I have read indicates that hand written notes are better for recall. If you are going to take notes on your computer, please sit where you will not distract the people around you.
- 12.** A classroom is a community, so I trust you will act as a mature and responsible citizen and treat each other with respect and courtesy. Please do not interfere with the learning of your classmates. I will ask you to leave if you are interfering with others' learning and it would be very embarrassing for you. I encourage you to help each other in the labs; one of the best ways to learn something is to teach it.

Calendar:

This schedule of topics is subject to modification. All changes will be announced in class.

Wk	Date	Topic	Labs	Assignments
1	8/27 8/28 8/29	Introduction and Terminology	Lab 1	Hmk 1 due
2	9/3 9/4 9/5	Ordinary Least Squares	Lab 2	Hmk 2 due Hmk 3 due
3	9/10 9/11 9/12	Testing	Lab 3	Hmk 4 due Hmk 5 due
4	9/17 9/18 9/19	More Testing	Lab 4	Hmk 6 due Hmk 7 due
5	9/24 9/25 9/26	Functional Form	Lab 5	Hmk 8 due Hmk 9 due
6	10/1 10/2 10/3	Dummy Variables	Lab 6	Hmk 10 due Hmk 11 due
7	10/8 10/9 10/10	More Dummy Variables Exam 1	Lab 7 - Review	Hmk 12 due Exam 1
8	10/15 10/16 10/17	Multicollinearity	Lab 8	Hmk 13 due
9	10/22 10/23 10/24	Heteroskedasticity	Lab 9	Hmk 14 due Hmk 15 due
10	10/29 10/30 10/31	Serial Correlation Specification Error	Lab 10	Hmk 16 due Hmk 17 due
11	11/5 11/6 11/7	Specification Error Exam 2	Lab 11	Hmk 18 due Exam 2
12	11/12 11/13 11/14	Introduction to Logit and Probit	Lab 12	Hmk 19 due
13	11/19 11/20 11/21	Causality and Panel Data	Lab 13	Hmk 20 due Hmk 21 due
14	11/26 11/27 11/28	Panel Data <i>Wednesday is a Travel Day.</i> <i>Thursday is a Holiday.</i>		Hmk 22 due
15	12/3 12/4 12/5	Endogeneity	Lab 14	Hmk 23 due
16	12/9	FINAL EXAM - Monday, December 9, 10:10-12:10 pm		Final Exam