

**ECON 400: Introduction to Statistics and Econometrics  
Fall 2016**

Instructor: Dr. Stephen Lich  
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Office hours: Gardner 202, Monday & Wednesday 1:30 – 3:00  
Teaching assistants: Ms. Anessa Custovic, Mr. Chunxiao Li, Ms. Hanwei Liu, Mr. Zhechen Yu  
Lectures (400-002): Murphey Hall 116, Tuesdays & Thursdays 11:00 – 12:15  
Lectures (400-001): Murphey Hall 116, Tuesdays & Thursdays 12:30 – 1:45  
Tutorial sessions: Gardner Hall TBD, Sunday through Wednesday afternoons TBD  
Honors recitation: Genome Sciences 1370, Wednesday 3:35 – 4:25 (required for all 400H students)  
Materials: Mirer: Economic Statistics and Econometrics, 3rd ed.  
Intercooled Stata (Version 11 or later)  
Background: ECON 101, Calculus (STOR 113, MATH 152, or MATH 231), Statistics (STOR 155)

**Content:** This course provides students with an understanding of statistical vocabulary and techniques, the ability to apply a statistical and probabilistic mindset to economic situations, and the skills to analyze data and draw conclusions. At the end of the course, students will have the skills to do multivariate linear regression, econometric modeling, and statistical inference at an intermediate level. Students will also be able to apply their skills to data analysis in other courses. The course covers five general topics:

1. Descriptive statistics
2. Probability, sampling, and hypothesis testing
3. Regression and inference
4. Specification
5. Limited dependent variable models

**Attendance:** I expect regular attendance at lectures, but I do not require documentation of absences. When students are absent, they are still responsible for submitting assignments on the due date and knowing all announcements and material from class.

**Announcements:** When I make announcements (about due dates, changes to the schedule, and such), I will write them on the board at the start of lecture, or I will email through Sakai.

**Assignments:** Students must turn in book problems in the classroom at one of two times: either on the due date or (with permission) at the end of the next class. Students should not turn any assignment in at my office or the economics department office. Students should upload Stata assignments to Sakai as a PDF document. The last homework assignment might be due after the last day of class.

**Grading:** Grade are based on three exams, six quizzes, and approximately ten homework assignments:

Homework assignments (15%)  
Quizzes (5%): Sept. 5th & 19th, Oct. 10th & 26th, Nov. 14, Dec. 5th (tentatively)  
First midterm (25%): Thurs., Sept. 22nd  
Second midterm (25%): Thurs., Oct. 27th  
Final exam (40%): Fri., Dec. 9th, 12:00 – 2:00 (for 400-002 meeting Tu./Th. 12:30)  
Thurs., Dec. 15th, 12:00 – 2:00 (for 400-001 meeting Tu./Th. 11:00)

For students who take all three exams as scheduled, I reduce the weight on the lowest exam by 10 percentage points. If a student misses a midterm exam — for a legitimate reason — there is no make-up exam. Instead, the weight is distributed across the other exams. The remaining midterm counts for 31% of the grade and the final counts for 49% of the grade. If a student misses both midterms, then the final exam counts for 80% of the overall grade. The final exam is given in compliance with UNC final exam regulations and according to the UNC Final Exam calendar. A student may miss one quiz, for any reason, without penalty. If all quizzes are completed, then the lowest grade is dropped.

**Special grades:** I offer two special grades based on the final exam alone. If a student scores is in the top 75% of the class on the final, the student will receive at least a C in the course. If the final is in the top 5%, the student is guaranteed an A. In order to qualify for these special grades, students must have taken both midterms and completed all homework assignments. (These special grades are uncommon.)

**Bonus points:** During the semester, there may be opportunities for extra credit. I will always announce extra credit publicly and make it available to the entire class.

**Schedule:** All lectures will be held at the scheduled time, with holidays for University Day, Fall Break, and Thanksgiving. The dates of the exams are almost certain. Other dates (especially due dates for assignments) on the Sakai calendar are tentative. I will announce due dates for assignments at least one week in advance. The last homework assignment might be due at the final exam.

#### **Academic integrity and etiquette:**

**Homework:** Students may consult each other and collaborate on homework assignments. They may seek assistance from the instructor, the teaching assistants, or a tutor. However, each student must do the problems on his or her own, and each student must submit a unique assignment. Students may use calculators, except for their statistical functions.

**Late assignments:** Students turning in late assignments may not use any resources that were unavailable to their classmates at the regular due date.

**Quizzes:** Students may use their textbook, the study guide and lecture notes, and their own notes. They may not work together, and they may not receive assistance from other people.

**Exams:** Students may use appropriate statistical tables and basic calculators.

**Archives:** Students may not acquire my documents from, or place my documents into, any online or physical archive, other than my course website on Sakai.

**Technology:** Students may not use laptops, tablets, phones, or similar devices during the lecture, except when I specifically permit them, or when they are prescribed accessibility devices. Disruption behavior violates section II.C.1.k of the Honor Code. (And, for your own sake, it interferes with your learning.) I may deduct up to 1 point from a student's course grade for each violation of this policy, after a warning.

**Externalities:** Avoid the negative ones; create the positive ones.

#### **Help resources:**

**Tutorials:** Students can get answers to questions and homework help at the tutorial sessions. These tutorials are held every day in Gardner [TBD], from [TBD-TBD], Sunday through Wednesday. A teaching assistant will be available. These tutorials are unstructured and completely optional. Students are welcome to come to this room simply to work on their assignments, and a teaching assistant will be available to provide help.

**Office hours:** Students can also receive help and answers during my office hours. I can also address administrative issues or other special situations. I am always available in Gardner 202 between 1:30 and 3:00 on Mondays and Wednesdays. Students may simply drop in, or they may ask for priority at some particular time. I can also arrange to meet at other times.

**Email:** I can answer quick questions and administrative issues through email, but I cannot provide detailed homework help through email. (My teaching assistants do not provide help through email.)

**Before and after class:** I can answer only very quick questions.

**The Learning Center:** The Learning Center has academic counselors who can give general advice about improving study habits, note-taking skills, and other academic strategies. In some semesters, free peer tutoring is available in Dey Hall. They also maintain a list of private tutors available for hire.

**Syllabus changes:** The instructor reserves the right to make changes to the syllabus, including due dates and test dates. Changes will be announced as early as possible.

## Policy Details

**Adding students:** ECON 400 is usually filled to the enrollment capacity. During the first week of class, I add as many additional students as I can accommodate. I rarely add students after the first week of class.

**Grade Calculation.** The course grade is based on three exams, approximately ten homework assignments, and six quizzes. There are several elements to calculating the grade.

I reduce the weight on the lowest exam by 10 percentage points. As I see it, everyone occasionally has a bad day, and this reduction mitigates the effect of that bad day. This reduction does not apply to students who miss a midterm. That midterm counts as the bad day. Also, I allow students to miss one quiz. This allowance is for sickness, travel, technical problems, forgetfulness, and other circumstances. If a student does not miss any quizzes, I drop the lowest quiz grade. (If not, I would give incentive to skip the last quiz.)

I assign traditional ordinal letter grades (... , B+ , B , B- , ...) to the exams. This conversion is not directly based on percentage of correct answers. These letter grades represent performance that is excellent, good, satisfactory, and so forth. They are essentially the “curved” grade. When I calculate the course grade, I convert numerical values for the letters (... ,  $88\frac{1}{3}$  , 85 ,  $81\frac{2}{3}$  , ...). I average grades using the weights in the syllabus. This overall average is then translated back into a letter grade (B+ is  $86\frac{2}{3}$  to 90, B is  $83\frac{1}{3}$  to  $86\frac{2}{3}$  , B- is 80 to  $83\frac{1}{3}$  , and so forth).

A student has the option to request that all exams are counted as strict percentages, foregoing the letter grade system altogether.

Special course grades reward students who show considerable improvement over the semester. They are rare. Students should not count on them to salvage a bad semester. The top 75% of final exams are guaranteed at least a C in the course, as long as the students completed all assignments (except one quiz). The top 5% of final exams are guaranteed an A in the course, as long as the students completed all assignments (except one quiz).

The value of extra credit assignments is at my discretion. Often, they have counted for a third or half of a point added to the course score. In my opinion, they serve to round up grades that are close to a cutoff point. (For example, an average of 89.7 might become 90.2, changing the course grade from a B+ to an A-.)

**Grading Questions and Appeals.** I believe strongly that it is your right to receive an accurate and fair grade in the course. Students may request clarification on grading and may appeal the grading of exams. I request that you follow my procedure for any grade appeal. After each exam, I will post a set of solutions. A student should review these solutions and wait at least one day before asking me to regrade. The student should identify which specific questions were misgraded and how. I will consider grade appeals based on errors in grading or on an alternative legitimate interpretation of the question. I am unlikely to change a grade because of a difference

of opinion about partial credit. When I review a question, I might lower the grade, since I occasionally notice additional errors. However, my intent is not to penalize or discourage grade appeals. I request that students submit all grade appeals in a timely manner, usually within two to three weeks.

**Homework Submissions.** Some assignments are problem sets, on paper, and some are programming assignments in Stata. Students should submit paper problem sets in class on the day that they are due, unless they have been given an extension. I encourage students to retain a copy of their submissions for their own records. Late homework submissions (even with permission) may be graded and returned later than the rest of the class. Programming assignments are submitted online, through Sakai. These assignments should be PDF files, using a monospaced font and no line-wrapping. I may deduct points if the submission is difficult to read.

**Academic Integrity.** I take integrity seriously. In my experience, some students underestimate the importance of integrity. In ECON 400, I see the most problems with duplicated homework submissions, unauthorized collaboration on quizzes, and occasional abuse of calculators. I do report breaches of academic integrity to the Office of Student Conduct. Further, I will not award credit for any assignment on which I see clear and convincing evidence of unauthorized assistance.

**“New 400”.** Starting this semester, ECON 400 is a second-level statistics course. I expect students to already have a foundation in the basics of descriptive statistics, probability theory, sampling, and hypothesis testing. My materials from previous semesters (like practice exams) may not be applicable in all cases.

**Honors 400H.** The honors section attends lectures alongside the regular section, and then meets again for an extra hour on Wednesday afternoons. During this recitation, we will discuss statistics further, with an emphasis on critical thinking skills. The honors group will read two additional books (Huff’s How to Lie with Statistics and Tufte’s The Visual Display of Quantitative Information). This group will have several additional assignments and modified exams.