ECON 8740: Applied Statistics and Econometrics
Fall 2015

Instructor: Pierre Nguimkeu, PhD
Office: Room 539, Andrew Young School of Policy Studies
Office Hours: Friday 13:00–15:00, and by appointment
Phone: 404-413-0162
Email: nnguimkeu@gsu.edu
WebSite: Desire2Learn
Time and location: Thursdays 19:15-21:45, Sparks Hall 328

Course description:
This course develops basic knowledge of applied statistics and econometrics with a focus on the relationship between economic variables. The emphasis of the course is on hypothesis testing and economic interpretation of statistical results. The course will introduce estimation approaches such as simple and multiple regression analysis, and cover topics such as hypothesis testing, heteroskedasticity, and serial correlation. These techniques will be applied to real data for the purpose of policy analysis in the areas of labor markets, industrial organization, finance, development, health, and taxation. The class is taught through a combination of lectures, discussion, homework, and exams. Student involvement and participation in class is highly encouraged and rewarded.

Prerequisites:
Econ 2105, 2106, and a course in introductory statistics.

Required Text:
- Introductory Econometrics: A Modern Approach (5th edition, South-Western) by Jeffrey M. Wooldridge
- Student Solutions Manual (optional)
Website: academic.cengage.com/economics/wooldridge

Recommended Text:
- A Guide to Econometrics, by Peter Kennedy
- Microeconometrics Using STATA, by Cameron and Trivedi

Course website
We will be using Desire2Learn system. It is your responsibility to log on the system regularly. This is where assignments, readings and other information will be posted.

Course Requirements:
Homeworks:
Some components of homework assignments will require using data and the statistical software STATA. Data sets necessary for homework can be found on the textbooks website, but will also be posted on the class Desire2Learn site for download. You must work in groups of two for the homework assignments. Turn in only one homework assignment (with both students names) per
group. Please append your “log” file to any assignments that involve STATA use.

Project:
You will be required to conduct an original research project. This will consist of formulating a research question, using a data set to empirically test this question, and writing up your results in a concise and articulate way. You must work in groups of two on this project. More details about the project will be given during the semester.

Attendance:
Class attendance is highly recommended. Material for exams and homeworks will come from both class lectures as well as the book. The only acceptable excuses for missing a test are medical reasons or family emergencies, and an official doctors note or excuse must be provided. If you have a legitimate excuse, a make-up exam will be issued soon after the date of the original exam. Any issues should be discussed with me before the actual exam takes place.

Grading:
Homework is due at the beginning of the class period on the appropriate due date. Late homework will not be accepted. Homework, project, and exams will count for the following percentages of your final grade.

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>25% (5 or 6)</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>30% (Thursday October 15, 2015)</td>
</tr>
<tr>
<td>Project</td>
<td>15% (due Monday, November 30, 2015)</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30% (Monday, December 10, 19:00-21:30)</td>
</tr>
<tr>
<td>Participation</td>
<td>5% (Bonus)</td>
</tr>
</tbody>
</table>

Consult the exam schedule at http://registrar.gsu.edu/registration/semester-calendars-exam-schedules/fall-2015-final-exam-schedule/. Please make sure that you have no conflicts with the exam schedules. There will be no make-up exams.

Tentative course outline
This course syllabus provides a general plan for the course; deviations may be necessary.

1. Economic Data and Simple Linear Regression .... Ch. 1, 2.
2. Multiple Linear Regression: Estimation and Testing .... Ch. 3, 4.
3. Multiple Linear Regression: Further Issues .... Ch. 6.
4. Multiple Regression Analysis with Qualitative Information .... Ch. 7.
5. Multiple Linear Regression: Heteroskedasticity .... Ch. 8.
6. Introduction to Time Series Regressions .... Ch. 10.
7. Serial correlation and Heteroskedasticity in Time Series Regressions.... Ch. 12.
Course Software
There are several statistical packages for analyzing data. In this course, we will be using STATA. This software is available for use in the AYSPS building Room 720, 7th floor. Please note that access to the AYSPS building and computer lab are restricted to the following days and hours: Monday-Friday, 7:00 AM to 7:00 PM. The front doors of AYSPS lock at 7:00 PM and you will not have access after that. However, if you are already in the building you can continue to work. If you leave anytime after 7:00 PM you will not be able to re-enter. In order to enter the computer lab, you MUST have your GSU Panther card for the door swipe.

In order to get you acquainted with STATA, I will hold 3 lab periods throughout the semester. Each lab will be scheduled during a class period, from 19:15-21:45 pm and held in Room 720 of the AYSPS Building. There are a number of learning resources online for STATA which may be helpful:

UCLA Academic Technology Services:
This resource includes FAQs, learning modules, a reference guide, examples, etc
http://www.ats.ucla.edu/stat/stata/default.htm
>STATA Starter Kit > Learning Modules

Carolina Population Center:
http://www.cpc.unc.edu/services/computer/presentations/statatutorial
This resource includes tutorial, examples, reference commands, etc

Data and Statistical Services, Princeton University:
http://dss.princeton.edu/online_help/stats_packages/stata/stata.htm
This resource includes general information on using STATA

Many More:
http://www.stata.com/links/resources1.html

Policies
If you are taking this course, you are expected to follow all the rules and regulations of Georgia State University. In particular, inappropriate behavior in the classroom such as talking to a classmate, talking on cell phones, or any other action likely to disturb the overall class will not be allowed. Please turn off your cell phones during lectures. You can read Georgia State University student code of conduct at http://www2.gsu.edu/wwdos/codeofconduct.html. We will follow the policy of GSU on Academic Honesty. Students are responsible to go through relevant information on the university’s website (http://www2.gsu.edu/wwfhsb/sec409.html).