

**AAEC 8020**  
Computer Applications in Econometrics

**Course Syllabus\***  
Fall 2011

Instructor: Vahé Heboyan  
Classroom: Undergraduate Computer Lab (202 Conner Hall)  
Class time: Thursdays @ 11:30A-01:30P (see section below)

Office: 313-A Conner Hall  
eMail†: vheboyan@uga.edu  
Phone: 706.461.0258 (*cell*)

### **Course Description**

This course serves as a supplement to AAEC 6610. It is designed to introduce students to computer programming relevant to econometric analysis. It will meet 2 (two) hours per week. The course will use both Base SAS and SAS IML, and will cover data importation, management and manipulation, matrix functions, regression analysis, graphical functions, interpretation of output, and exporting results to other programs.

### **Assignments**

There will be a series of homework assignments for the class. They will include problem solving, but the bulk of the assignments will entail programming in SAS IML and PROC (canned) environments. Upon completion, students should understand the logical syntax of computer programming, and be confident in their ability to write programs and conduct empirical analyses using SAS IML and Base SAS.

### **Office Hours**

Open-door policy; I am in Conner Hall every Thursday. You can see me before/after the class or when I am in my office. I encourage scheduling an appointment via email. I check my email weekends and nights, so I may be available to respond to your email questions on weekends and late at nights. Email is another effective way of communicating concerns and posing questions about the course.

### **Class Schedule**

We will meet every Thursday starting from August 25. The course will be concluded on December 1. There is no class on November 24<sup>th</sup> due to the Thanksgiving Holiday. Each class will last for 2 hours and have a 5 min break.

### **Course Outline**

1. Matrix Algebra: Addition, Multiplication, Transpose, Inversion, Differentiation
2. Review of Probability Theory
3. Introduction to the SAS environment
4. Introduction to SAS IML
5. Base SAS data management
6. OLS in Base SAS and IML
  - a. Generating Collinearity Diagnostics
  - b. Testing for Heteroskedasticity
  - c. Testing for Autocorrelation
7. GLS in Base SAS and IML
  - a. Correcting for Heteroskedasticity
  - b. Correcting for Autocorrelation
8. Logit and Probit in Base SAS and IML

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\* Syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.

† Preferred method of communication.

## Text and Online Resources

There is no required textbook for this class; however the following resources will be useful in successfully completing this class as well as in your future academic and professional endeavors.

- ▶ Gujarati, D.N. *Basic Econometrics*, McGraw-Hill, 4<sup>th</sup> edition.
- ▶ Heboyan, Vahé. *Beginners Guide to SAS and STATA Software*. Dept. of Agricultural and Applied Economics, The University of Georgia, 2006. Accessible from: [www.aeegrad.uga.edu/stata\\_sas\\_guide.pdf](http://www.aeegrad.uga.edu/stata_sas_guide.pdf)
- ▶ Ajmani, Vivek. *Applied Econometrics Using the SAS® System*, Wiley, 2009.
- ▶ SAS IML 9.3 User's Guide. Accessible from:  
<http://support.sas.com/documentation/cdl/en/imlug/64248/PDF/default/imlug.pdf>
- ▶ SAS/STAT® 9.1 User's Guide. Accessible from:  
[http://support.sas.com/documentation/onlinedoc/91pdf/sasdoc\\_91/stat\\_ug\\_7313.pdf](http://support.sas.com/documentation/onlinedoc/91pdf/sasdoc_91/stat_ug_7313.pdf)
- ▶ Step-by-Step Programming with Base SAS® Software. Accessible from:  
[http://support.sas.com/documentation/onlinedoc/91pdf/sasdoc\\_913/base\\_step\\_10071.pdf](http://support.sas.com/documentation/onlinedoc/91pdf/sasdoc_913/base_step_10071.pdf)
- ▶ UCLA online resources
  - ▶ Online seminars and classes: <http://www.ats.ucla.edu/stat/seminars/>
  - ▶ Online SAS Learning Modules: <http://www.ats.ucla.edu/stat/sas/modules/>
  - ▶ Resources to help you learn and use SAS: <http://www.ats.ucla.edu/stat/sas/>
- ▶ Additional learning materials will be handed in the class.

## Listserv

A course listserv [ [aaec8020F11@listserv.uga.edu](mailto:aaec8020F11@listserv.uga.edu) ] is created to facilitate course related communication. I will use it to share course-related information and/or documents. Students are encouraged to use it for course related discussion. You can send an email to everyone in the course including myself by using the listserv. Simply send an email to the address above.

Remember: *sending a message or replying to this address will share your message with everyone in the course including myself. For confidential communication please use personal emails.*

## Grading

There will not be any exams in this course; all homework assignments will be weighted equally for the final grade. The final letter grade will be assigned based on the following scale on numerical scores:

A = 94 - 100	C+ = 77 - 79
A- = 90 - 93	C = 74 - 76
B+ = 87 - 89	C- = 70 - 73
B = 84 - 86	D = 60 - 69
B- = 80 - 83	F = Less than 60

## Academic Honesty

Absolute academic honesty is required in this class. You are expected to be familiar with UGA's Culture of Honesty available at: [http://www.uga.edu/honesty/ahpd/culture\\_honesty.htm](http://www.uga.edu/honesty/ahpd/culture_honesty.htm). All academic work must meet the standards contained in "A Culture of Honesty". Each student is responsible to inform themselves about those standards before performing any academic work.