

Master of Professional Studies in Applied Economics
University of Maryland
ECON 643-PCE1: Empirical Analysis I
Spring 2018

Syllabus – Revised [2018-02-27](#)

Instructor: John Straub, (301) 405-3531 (Straub@econ.umd.edu)

Office Hours: Morrill 1102B, Wednesdays 5:30-6:30 and by appointment.

Teaching Assistant: Hidehiko Matsumoto (Hide – “Hee-Day”) (Matsumoto@econ.umd.edu)

Office Hours: Wednesday or Thursday each week from 5:15-6:45.

Hide will be in on Wednesday some weeks, and Thursday other weeks.

His schedule for the full term is posted on the program’s general ELMS page.

He will also send weekly reminders via ELMS – every Sunday.

Prerequisites:

Admission to the Master of Professional Studies Program in Applied Economics (MPEC).

Note: Among other things, this requires at least 1 semester of calculus with a grade of at least B-.

Class meets: Wednesdays, 6:45-9:30 p.m. in suite 140 at 1400 16th Street, NW, Washington, DC
There will always be a 15-minute break at some point between 7:45 and 8:30.

General Description and Overview

Fundamental aspects of data management and statistics. Emphasis on practical application rather than theory. Emphasis on sampling, basic probability theory, basic statistics, and an introduction to STATA. The course will conclude with an introduction to linear regression analysis using STATA. ECON 643 is the first course in our program’s 3-course Empirical Analysis sequence. ECON 643 is the prerequisite for ECON 644, which is the prerequisite for ECON 645.

Course Objectives

Our program has 7 general learning outcomes for students:

1. Ability to understand, evaluate and analyze economic data
2. Ability to understand and interpret statistical evidence from economic data
3. Ability to apply empirical evidence to assessing economic arguments
4. Ability to apply macroeconomic theories to policy discussions
5. Ability to apply microeconomic theories to policy discussions
6. Ability to communicate economic ideas to a broader audience
7. Ability to evaluate the effectiveness of policy programs using sound economic techniques

The learning outcomes that pertain to this course are: 1, 2, and 6

Students will master basic statistics at a level of rigor befitting a professional master’s degree program in applied economics. Students will be able to perform basic statistical analysis using STATA software. Students will be able to interpret basic statistical results correctly and communicate them professionally in English. Upon completion of the course, students will be prepared to study econometrics in ECON 644.

Required Textbooks

SfBE: *Statistics for Business and Economics* by Anderson, Sweeney, Williams, Camm, and Cochran, Cengage, 13th edition.

AGIS: *A Gentle Introduction to Stata* by Acock (Stata Press), 5th ed.

Some additional readings will also be provided via the course’s ELMS/Canvas website.

Required Statistical Software: STATA, version 15.

(See detailed purchasing information on the next page.)

Course Website: Copies of the course syllabus, your grades, and other relevant links and documents will be posted on the course's ELMS/Canvas website. You can access the site via www.elms.umd.edu. You will need to use your University of Maryland "directory ID" and password.

Email: The University has adopted email as the primary means of communication outside the classroom, and I will use it to inform you of important announcements. Students are responsible for updating their current email address via <http://www.testudo.umd.edu/apps/saddr/> AND for paying attention to messages I send to the class. Failure to check email, errors in forwarding email, and returned email due to "mailbox full" or "user unknown" will not excuse a student from missing announcements or deadlines. I will do my best to respond to email within 36 hours. I prefer that you contact me via email to straub@econ.umd.edu, rather than through the ELMS/Canvas messaging system, though I will reply to either kind of message.

Laptop Computer Requirement: Completing some of this course's requirements will require a laptop computer (not a notebook or a tablet!) with at least 1 GB of RAM and at least 5 GB of free space available on the hard-drive. We recommend laptops with at least a 15-inch screen. Screens smaller than 13 inches are probably not practical.

Students must bring their computer to class on any day when there is a computer lab, quiz or exam.

Stata Purchasing Options

Students in our program are required to purchase Stata. Stata offers different "flavors" and different lengths of licensing. Price varies according to these two factors. We do not recommend Small Stata since it is too limited for the coursework in our program. Stata/IC is the least expensive and sufficient version for your coursework. With a single-user license, you can install Stata on up to three computers.

Description of all the "flavors" are given here:

<http://www.stata.com/products/which-stata-is-right-for-me/>

You can obtain Stata at discounted rates through the Campus GradPlan, in which University of Maryland, College Park is a participating institution. To benefit from the discounted prices, click on the link below and pick the Stata version you would like to buy.

(Note: Disregard the warning at the top which states that you must be a faculty or staff member. That is not correct.)

<http://www.stata.com/order/new/edu/gradplans/campus-gradplan/>

Through the Campus GradPlan you can buy either an annual (\$125 for Stata/IC) or a perpetual license (\$225 for Stata/IC). The perpetual license does not expire and is the most cost effective option assuming that you will stay in the program for more than 12 months. There are also upgrade discounts provided to perpetual license holders. During the checkout process you will be asked to verify your "@umd.edu" email address.

Terpware

Note: Stata is not available through Terpware, but many other software packages, including the Microsoft Office suite which includes Microsoft Excel, are available for free or at a discount to University of Maryland students via Terpware:

<https://terpware.umd.edu/Windows/List/235>

Schedule (revisions, if any, will be announced in class, by email, and posted in a revised syllabus online)

The class will meet on 12 consecutive Wednesday nights between February 28th and May 16th

2/28: Meet each other and introduce the course

SfBE, Ch. 1: Data and Statistics

Special Topic: Respect and Engagement in a Graduate Seminar

Discussion of Course Project Details

Example presentation by the instructor:

John Straub: The Effect of Fundraising on Charitable Contributions

SfBE, Ch. 2: Descriptive Statistics: Tabular and Graphical Display

Sunday 3/4: **Course Project Proposal due via email by 12:00 noon.**

Students will have written feedback on Course Project Proposal by 7:00 p.m. on Tuesday 3/6.

3/7: Computer lab: **Acock, Ch.1:** Getting Started with Stata

TA presentation: How to submit HW electronically via ELMS

Student Presentation(s):

SfBE, Ch. 3: Descriptive Statistics: Numerical Measures

3/14: **SfBE, Ch. 4:** Introduction to Probability

Student Presentation(s):

Computer lab: **Acock, Ch. 4:** Basic Stata commands and Do-files

3/21: Computer lab: Reading non-Stata datasets into Stata (**Mitchell, Ch. 2**)

Student Presentation(s):

Computer lab: **Acock, Ch. 5:** Descriptive Analysis Using Stata

3/28: **SfBE, Ch. 5:** Discrete Probability Distributions

Student Presentation(s):

SfBE, Ch. 6: Continuous Probability Distributions

4/4: **SfBE, Ch. 7:** Sampling and Sampling Distributions

Student Presentation(s):

Computer lab: TBA

4/11: **SfBE, Ch. 8:** Interval Estimation

Student Presentation(s):

SfBE, Ch. 9: Hypothesis Tests

4/18: **SfBE, Ch. 10:** Inference about Means and Proportions with Two Populations

Acock, Ch. 7: Tests for One or Two Means

Student Presentation(s):

Computer lab: 2-sample t-tests (Stock and Watson, E3.1 – CPS wage gaps)

4/25: **Midterm Exam** (6:30-8:15)

8:30-9:30: Selected topics from:

SfBE, Ch. 11: Inferences about Population Variances

SfBE, Ch. 12: Comparing Multiple Proportions, Tests of Independence and Goodness of Fit

SfBE, Ch. 13: Experimental Design and Analysis of Variance

5/2: **SfBE, Ch. 14:** Simple (aka Bivariate) Linear Regression

Supplemental reading: **Stock and Watson, Ch. 4**

Student Presentation(s):

Computer lab: Stock and Watson E4.2 and E5.2 (Teaching Ratings)

Sunday 5/6: **First draft of final course project due via email by 12:00 noon.**

Students will have written feedback on first draft of final course project by 7:00 p.m. on Tuesday, 5/8.

5/9: Introduction to Omitted Variable Bias and Multiple Regression (**Stock and Watson, Ch. 6**)

Student Presentation(s):

Computer Lab: Teaching Ratings Empirical Exercise from 2nd edition of Stock and Watson

Office Hour Visits to discuss first draft feedback: 5/9-5/13

Students are expected to share initial reactions to the written feedback on their first drafts, and when possible to show initial progress in following up on that feedback. Students' participation in these meetings will be graded. See discussion in the Graded Course Components section of this syllabus. Additional details will be posted on ELMS.

Saturday 5/13:

11:00-12:00: Optional Practice Exam (Paper and Pencil)

12:15-1:15: Optional Practice Exam (Stata)

1:30-3:00: Optional Review Session

Solutions for both parts of the practice exam will be posted on ELMS after the review session.

5/16: **Final Exam**

Saturday 5/19: **Final draft of course project due via email by 12:00 noon.**

Graded Course Components

There are 6 graded components to the course. The 6 components and their relative weights in the course grade are: homework (15%), presentations (15%), online discussions (5%) midterm exam (15%) the final exam (25%) and the course project (25%).

Homework (15 course points)

Each week before the midterm exam, I will assign a few HW problems that correspond to the material covered that week in class. HW assignments will always be posted to the Assignments section of the course ELMS/Canvas page. I will usually post the HW assignments as MS-Word documents, MS-Excel files, and/or Stata do-files. Students are to edit the files I post, adding their answers. The edited files are what students will submit electronically via ELMS.

HW will only be collected and graded during the first half of the course – prior to the midterm exam. After the midterm exam, students need to turn their attention to their course projects. Each HW assignment will be worth some number of raw points. The amount of HW assigned each week will vary, as will the raw points at stake each week. After the final HW assignment has been graded, each student will have earned some proportion of the total raw HW points. Their overall HW score will be based on the proportion of possible points earned. For example, a student who earns 86% of all the possible HW points will receive 12.9 of the 15 possible HW points ($0.86 \times 15 = 12.9$).

Presentations (15 points)

Each student will give a short (10-minute) presentation at some point during the term. We will have 1 or 2 student presentations at some point during 9 of our 12 meetings. There will be no student presentation on the following days: 2/28 (first meeting), 4/25 (midterm exam), 5/16 (final exam). The presentations will focus on a research question related to the student's idea for a course project, and will feature at least one graph depicting some empirical evidence related to the research question. If you are working with a partner on your course project, you must each give a separate presentation, and your presentations cannot be scheduled for the same day.

A detailed presentation grading rubric is posted on the course ELMS/Canvas website. The instructor will give an example presentation on the first day of class. The presentations will be graded on a scale of 0-to-10. Students will also receive a grade between 0 and 3 based on how well they handle a post-presentation Q&A session with me.

Students will also be graded on how well they engage with the presentations of other students. We do not have enough time for lengthy discussions in class after student presentations, but audience members will be asked to formulate written reactions to presentations. After each student presentation, members of the audience are required to write a clear and concise question or observation or suggestion for the presenter. These will be written on index cards, collected, and graded on a 2-point scale. Questions/observations/suggestions that are constructive and insightful will get grades of 1.8 or higher (A/A-). Questions/observations/suggestions that are less so will get lower grades. Students who are not present will get index card grades of zero on that day. At the end of the term, I will average the index card scores after throwing out the 2 lowest scores for each student, and that will be the student's index card score for the course (a number between 0 and 2).

So the 15 course points related to presentations are: 10 for the presentation itself, 3 for the post-presentation Q&A with me, and 2 for the quality of the index card reactions to other people's presentations.

Presenters are required to send complete first drafts of their PowerPoint slides to me via email at straub@econ.umd.edu by noon on the Monday before they present. I will reply with feedback by noon on Tuesday. The actual presentation must include revisions that address the feedback. Final drafts are due at the same email address by 5:45 on Wednesday before class. Presenters can meet with me before class to discuss their presentation. They cannot revise their slides based on the pre-class meeting, but of course they can adjust what they say during the presentation.

Online Discussions (5 course points)

We will not have enough time for lengthy discussions of the student presentations during class. We will have these discussions online. Each week after class, I will open several discussion threads related to that week's student presentation(s). Many of the threads will be inspired by the index cards that audience members turn in after student presentations. Students will have 24 hours to contribute to the online discussions (11:59 p.m. on Wednesday until 11:59 p.m. on Thursday). I will check in twice a day while the

discussions are open to read and respond to what's been posted, and to redirect the discussion as necessary. More details, including a grading rubric, are posted on the course's ELMS/Canvas website.

Midterm Exam (15 course points)

The midterm exam will test everything covered in the course through the previous week. Some or all of the midterm will consist of a series of empirical problems to be solved using Stata and submitted electronically.

Final Exam (25 course points)

I will prepare an exam that I think students should be able to solve in 2 hours, though students are welcome to use the entire class period from 6:45-9:30. The final exam will be cumulative. Some or all of the exam will consist of a series of empirical problems to be solved using Stata and submitted electronically.

The midterm and final exam are both open note, open book, open internet. Students can use whatever notes they like, including online resources. But students may not communicate with anyone except the proctor during the exam. Any student caught using a cell phone, email, online chat app, online translation app, or 2-way communicating with anyone in any way will receive a zero on the quiz or exam. Students are advised to make a compact sheet or two of the most important formulas for quick reference. Past experience suggest that students who spend a lot of time leafing through books and web pages will run out of time.

Course Project (25 course points)

Students are required to apply the skills they learn in the course to a small independent project. Students are encouraged to work in pairs on the project, though they may work individually if they prefer. Groups of 3 or larger will not be permitted. Students must collect some data, import and/or enter the data into Stata, organize and summarize the data appropriately, and perform some initial analysis of the data. The final draft of the course project will include a thorough descriptive analysis and a small regression analysis.

Students will submit the course project work in 4 installments (see the Schedule for due dates):

- Topic Proposal (2 points)
- Complete first draft of course project, including descriptive analysis (10 points)
- Follow-up and discussion of first draft feedback with me in my office (3 points)
- Final draft of completed course project (10 points)

Additional details about all 4 components of the course project will be provided in class and on the course's ELMS/Canvas website.

Extra Credit, Course Evaluations and Final Course Letter Grades

Extra Credit and Course Evaluations

Near the end of the term, you will receive an email inviting you to submit a voluntary and anonymous course evaluation. Your feedback on courses will be very helpful in improving the quality of instruction in our program. As an extra incentive for you to evaluate the course, I will offer an extra credit opportunity to the whole class if the course evaluation response rate exceeds 80%. I will not be able to see which students have evaluated the course, but we will all be able to see the overall response rate.

If the response rate exceeds 80%, I will offer an extra credit opportunity worth up to 3 course points (~3% of your overall course grade). Partial credit is possible (e.g. 2.5 out of the 3 possible points).

I will post the extra credit question after the final exam. To receive the extra credit, students must submit their answer to me via email at the same time as their final course project. Students are expected to work out their own answers to the extra credit question individually. Students who have clearly copied from each other will receive no extra credit.

Final Course Letter Grades

At the end of the semester I will add up each student’s course points. This will be a number between 0 and 100 (or 103 if there’s an extra credit opportunity). I do not grade on a curve. Numerical course grades will be translated into letter grades as follows:

93-103	A
90-92	A-
80-89	B+
70-79	B
60-69	B-
50-59	C+
40-49	C
30-39	C-
20-29	D+
10-19	D
0-9	F

I might give an A+ to a student or two at the very top of the class’ grade distribution.

Other Standard Policies for the Program and the University of Maryland

Contact Hours: Three credit courses at the University of Maryland require a minimum amount of contact between instructors and students. Our courses’ 12 weekly 3-hour meetings only satisfy 80% of the university’s contact requirement. The other 20% is satisfied by weekly mandatory and graded online contact. In principle, the contact hours requirement could be satisfied by scheduling 3 additional 150-minute meetings per term, or 6 additional 75-minute meetings, or 10 additional 45-minute meetings. But in practice the contact hours requirement is satisfied by the weekly online discussions. The weekly online discussions are a more flexible way to ensure that our program’s courses in DC provide the same level of student-instructor contact as the traditional 15-week, face-to-face, version of the same course when it is taught on campus in College Park.

Work Load: Mastering the material covered in this course requires a significant amount of work outside of class. Students should expect to spend more time outside of class than in class – typically at least twice as much time. The courses in our DC program are 12-week courses that cover all the same material as a traditional semester-long 3-credit course (15 weeks). The compressed schedule makes it possible to complete our degree in just 15 months if you take 2 courses each term. But the compressed schedule also implies an accelerated pace with an average of 25% more work per week in a given course ($15/12 = 1.25$). The normal full-time load in a master’s program is 3 courses per semester, or 6 courses per year. The weekly work load when taking 2 of our courses per term is equivalent to the load from 2.5 "normal" 15-week courses - so $2.5/3.0=83\%$ of a full-time load. Students who take 2 courses per quarter in our program complete 8 courses per year. So over the course of a year, taking 2 courses per quarter in our program is equivalent to 133% of a full-time load ($8/6 = 1.33$).

Academic Integrity: The University of Maryland has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards applicable to all undergraduate and graduate students, and you are responsible for upholding these standards as you complete assignments and take exams in this course. Please make yourself aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information see www.studenthonorcouncil.umd.edu.

Student Conduct: Students are expected to treat each other with respect. Disruptive behavior of any kind will not be tolerated. Students who are unable to show civility to one another or myself will be referred to the Office of Student Conduct. You are expected to adhere to the Code of Student Conduct.

Excused Absences: The University of Maryland’s policy on excused absences is posted here: <http://www.president.umd.edu/administration/policies/section-v-student-affairs/v-100g>

Please note:

If you miss any class meetings for any reason, you are still responsible for all material covered during the meeting you missed. It is your responsibility – not the instructor’s – to get yourself caught up in the course. Instructors routinely facilitate things by posting lecture notes, etc.

If you need to miss an exam or other graded course requirement because of illness, injury, or some other emergency: Follow doctor's orders and get documentation. Get in touch with the instructor as soon as you're able – preferably prior to missing the exam or deadline. Communicate with the instructor to make up the course requirement as soon as possible. You are entitled to recover before you make up the course requirement, but you are not entitled to extra days to study beyond the time the doctor's note says you're incapacitated. If you are incapacitated for more than a week or so beyond the end of the term, your grade in the course will be an “Incomplete”. In such cases you must negotiate a plan with your instructor for completing the course requirements. Once you make up the course requirement the instructor will change your "I" to the appropriate letter grade.

School Closings and Delays: Information regarding official University closing and delays can be found on the campus website and the snow phone line: (301) 405-SNOW (405-7669). Since our program is an evening program in downtown Washington, DC, rather than a day program in College Park, we do not always cancel classes on the same days as the College Park campus. The program director will always announce cancellation information to the program as an announcement on the program’s ELMS/Canvas site. This will generally be done by 1:00 p.m. on days when weather or other factors are an issue.

UMD Counseling Center: Sometimes students experience academic, personal and/or emotional distress. The UMD Counseling Center in Shoemaker Hall provides comprehensive support services that promote personal, social, and academic success. The cost of these services is covered by the fees you already paid when you registered for classes, and there is no additional charge if you use the services. Proactively explore the range of services available, including the Counseling Service, Accessibility and Disability Service, Learning Assistance Service, and the Testing Office, all described at <http://www.counseling.umd.edu/>

Students with Disabilities: The University of Maryland does not discriminate based on differences in age, race, ethnicity, sex, religion, disability, sexual orientation, class, political affiliation, or national origin. Reasonable accommodations will be arranged for students with documented disabilities. Students who have an accommodations letter from the Accessibility and Disability Service (ADS) should meet with me during the first few weeks of the semester to discuss and plan for the implementation of your accommodations. If you require reasonable accommodations but have not yet registered with ADS, please contact the Accessibility and Disability Service at 301-314-7682 or adsfrontdesk@umd.edu.

Academic Progress: The graduate school requires that students maintain a GPA of at least 3.0. Students whose cumulative GPA falls below 3.0 will be placed on academic probation by the graduate school. Students on academic probation must ask the program’s director to petition the graduate school if they want to remain in the program. The petition must include a plan for getting the student’s GPA up to at least 3.0. Students who do not live up to their plan can have their enrollment in the program terminated without having earned the degree. Note: a grade of "B" corresponds to a GPA of 3.0. A grade of "B-" corresponds to a GPA of 2.7.

Building Access: The door to the building at 1400 16th Street is unlocked on weekdays until 7:00 p.m. Students who arrive after 7:00 p.m. or on weekends will find the door locked. The building’s security guard is stationed at a desk just inside the door until 11:00 p.m. and will let you in. You can also call the phone on the security guard’s desk by dialing (202) 328-5158. If the security guard is off duty or happens to be away from his or her desk when you arrive, you can go around to the other door at 1616 P Street and pick up the black phone to the right of that door. You will be connected to the company that handles security for our building. If you tell them you are with the University of Maryland, they should ask you for a password. When you tell them the password, they will be able to unlock the door for you. You can get the password from the program coordinator, the TA, or the program director. Please note: the building security staff are not able to buzz you in at the 1400 16th Street door. You have to go around to the 1616 P Street door to be buzzed in.