University of Maryland   **Prof. Razvan Vlaicu**
Department of Economics   **E-mail:** vlaicu@umd.edu
                                                                 Office hours: Tue 6.00-6.30pm via Zoom.
                                                                                                  TA: Xue Song
Class location: All class meetings via Zoom.   **E-mail:** xsong1@umd.edu
Class time: Wed 6.45-7.30pm & 8.15-9.00pm.   **Office hours:** Thu 5.30-6.15pm via Zoom.

SYLLABUS
ECON 644 Empirical Analysis II

Course Objective: The Professional Master's program has seven general learning outcomes for students. The learning outcomes that pertain to this course are 1, 2, 3, 6, and 7.
    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 course teaches statistical methods and statistical software used to manage and analyze data. The main goal is to *quantify* how one economic variable (such as someone's education) is related to another variable (for instance their wage), apart from other factors like ability, gender, race, marital status. These techniques are used in academic, policy, and business research.

Course Description: Three-credit required core course. This is the second in the three-course sequence "Empirical Analysis": ECON 643, ECON 644, ECON 645. The course provides an introduction to econometric methods with applications to public policy analysis. The primary focus is on the application and interpretation of multiple regression analysis.

Prerequisites: ECON 643 Empirical Analysis I.

Course Materials:
    Introductory Econometrics, by J. Wooldridge. (South-Western 2019, 7th Ed.).
    Data Management Using Stata, by M. Mitchell. (Stata Press 2020, 2nd Ed.).
    A Gentle Introduction to Stata, by A. Acock. (Stata Press 2018, 6th Ed).
    Stata 16. (StataCorp 2019). See page 5 below on how to obtain this software.

Grading:

Grade Breakdown		Letter Grades	
Online Discussions	10%	A: 93-100%	C: 40-49%
Home Assignments	15%	A-: 90-92%	C-: 30-39%
Replication Project	20%	B+: 80-89%	D+: 20-29%
Midterm Exam	25%	B: 70-79%	D: 10-19%
Final Exam	30%	B-: 60-69%	F: 0-9%
--		C+: 50-59%	
TOTAL:	100%		

Expectations: (1) prepare for class, (2) attend class, and (3) do assigned work by deadlines.

CLASS SCHEDULE

DATE	TOPICS		READINGS
Wed Jun 2	1) Intro to Econometrics Stata: Log Files and Do Files		Wooldridge Chapter 1 Acock Chapter 4
Wed Jun 9	2) Causality, Counterfactuals, and Experiments Stata: Data Management **Assignment 1** due		Wooldridge Chapter 2 Mitchell Chapters 1&2
Wed Jun 16	3) Simple Regression: Identification & Estimation Stata: Reading Data and Saving Data **Assignment 2** due		Wooldridge Chapter 2 Mitchell Chapter 2
Wed Jun 23	4) Multiple Regression: Identification & Estimation Stata: Exporting Data, Merging and Appending **Assignement 3** due		Wooldridge Chapter 3 Mitchell Chapter 3
Wed Jun 30	5) Multiple Regression: Inference I Stata: Simple Significance Tests **Assignment 4** due		Wooldridge Chapter 4 Lecture Notes 5
Wed Jul 7	6) Multiple Regression: Inference II Stata: Joint Significance Tests **Assignment 5** due		Wooldridge Chapter 4 Lecture Notes 6
Wed Jul 14	**Midterm Exam** Stata Practice Session	1h30min 0h45min	
Wed Jul 21	7) Multiple Regression: Modeling Choices Stata: Creating and Formatting Variables		Wooldridge Chapter 6 Mitchell Chapter 5
Wed Jul 28	8) Dummy Variables Stata: Converting and Recoding Variables **Assignment 6** due		Wooldridge Chapter 7 Mitchell Chapter 6
Wed Aug 4	9) Heteroskedasticity Stata: Heteroskedasticity Tests, WLS and FGLS Estimates **Assignment 7** due		Wooldridge Chapter 8 Lecture Notes 9
Wed Aug 11	10) Model Misspecification and Measurement Error Stata: Model Specifications, Data Frames **Replication Project** due		Wooldridge Chapter 9 Lecture Notes 10
Wed Aug 18	**Final Exam**, Cumulative	2h00min	

Weekly Online Discussions: After every class meeting, the instructor opens an interactive discussion on Elms. The content is a follow-up on class topics. Students are expected to contribute to the discussion and will be graded on their contribution. The instructor will monitor and guide the discussion. Student answers are due by the next day Thursday at 9pm.

Deadlines: All assignments are to be submitted electronically on Elms and are due at the beginning of class Wednesday 6.45pm. Since answers are posted at the beginning of class, late submissions are not acceptable. Graded work, including exams, cannot be rescheduled except in exceptional and documented circumstances; see "Excused Absences" policy below.

University of Maryland Policies

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.registrar.umd.edu/current/ . (Under the first major heading of "Online Transactions" there is a link to "Update Contact Information".)

Contact Hours: Three credit master's-level courses at the University of Maryland require a minimum amount of contact between instructors and students. Our courses' 12 weekly 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 DC 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 DC 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. You should inform yourself about the UMD policies related to academic misconduct: https://www.studentconduct.umd.edu/home/current-students. Cases of academic misconduct, including plagiarism and giving or receiving unauthorized assistance on exams, will be referred to the UMD Office of Student Conduct. If found responsible for academic misconduct, students can be

subject to sanctions. The standard sanction for graduate students found responsible for cheating on exams is expulsion from the university.

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 week of the term 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 UMD 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 gra-

duate school if they want to remain enrolled 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.

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 a 15-inch screen. Screens smaller than 13 inches are probably not practical.

Purchasing Stata: Students in our program must 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.
http://www.stata.com/order/new/edu/gradplans/campus-gradplan/
(Note: Disregard the warning at the top which states that you must be a faculty or staff member. That is not correct.) Through the Campus GradPlan you can buy either an annual ($89 for Stata/IC) or a perpetual license ($198 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 at least 15 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. If you wish to buy a 6-month license ($45 for Stata/IC), you need to order it as a regular student using the following link: https://www.stata.com/order/new/edu/gradplans/student-pricing/ .
During the checkout process you will be asked to upload a copy of your student ID or another document as a proof of your enrollment.