



**New Course**

**Catalog Course Title:** SPA 614 - Conduct of Inquiry III

**Name and contact information for future correspondence:** David Baratta, baratta@american.edu, x2377

**Academic Unit - School/College:**

- CAS
- KSB
- SOC
- SIS
- SPA
- SPEXS
- Other:

**Teaching Unit - Department or Program:** Public Administration and Policy

**Date effective:** Fall 2016

---

Required Signatures	Name	Signature	Date
Teaching Unit Chair or Director	Alison Jacknowitz	<i>[Handwritten Signature]</i>	5/31/16
EPC Chair	<i>Susan Glover</i>	<i>S. Glover</i> <sup>BMA</sup>	5/9/16
Primary Academic Unit Assoc. Dean	<i>V. Wilkins</i>	<i>V. Wilkins</i>	6/16/2016
Second Academic Unit Assoc. Dean			
Faculty Senate Chair			
Provost's Designee (VPUG or VPGR)			

**Date sent to the Office of the University Registrar:**



## New Course

**Note:** *Proposals are not necessary for a selected topics or nonrecurring topics course or project which is not a regular part of the curriculum of a department or school and is offered to a group of students on a nonrecurring or experimental basis. A course may be offered as a nonrecurring selected topics course a maximum of two times. If the academic unit wishes to make the topics course a permanent course, it must submit a New Course Proposal for full review.*

### Order of Review

After review by the academic unit, prepare the document for circulation and comments.

1. During the circulation and comment period (customarily 10 working days):
  - Send document to other academic units for comment.
  - Post the document for public comment. (Today@AU)
  - Respond to comments or make changes to the proposal as appropriate
2. At the end of the comment period:
  - If no adjustments are needed, the academic unit submits the proposal and compilation of comments and responses to [faculty senate@american.edu](mailto:faculty senate@american.edu).
  - If adjustments are needed, the academic unit rewrites and submits the proposal and compilation of comments and responses to [faculty senate@american.edu](mailto:faculty senate@american.edu).
  - *All comments to the proposal and responses to comments must be compiled into one PDF document and included with the proposal.*
3. The Faculty Senate conducts a formal review of the final proposal:
  - If the Faculty Senate returns the proposal to the unit for revision, every effort must be made to address its recommendations.
  - The Faculty Senate may reject a proposal if it is not satisfied with responses to its recommendations for changes to a proposal.
4. The Faculty Senate Chair submits the Faculty Senate's recommendation to the Office of the Provost.
5. The Provost or Provost Designee makes the final decision.
6. If approved by the Provost or Provost designee, the proposal is forwarded to the Office of the University Registrar via [curriculum\\_services@american.edu](mailto:curriculum_services@american.edu).

## Proposal Template

Copy and paste the questions below into a new MS Word document and address all questions asked. Please preserve the formatting (including numbering) to facilitate the review process.

- I. Identifying Information
  - a) Proposed effective date
  - b) Academic Unit
  - c) Teaching Unit
  - d) Course Title (Generally a limit of 30 characters including spaces)
  - e) Course Number
  - f) Credits
  - g) Prerequisites
  - h) Course description for University Catalog (Generally a limit of 50 words)
  - i) Grade type
    - i. A/F only
    - ii. Pass/Fail only
    - iii. A /F and Pass/Fail
  - j) Expected frequency of offering
    - i. Every Fall
    - ii. Every Spring
    - iii. Every Summer
    - iv. Alternate Falls
    - v. Alternate Springs
    - vi. Alternate Summers
    - vii. Every term
    - viii. Irregularly
    - ix. Other
  - k) Note all that apply:
    - i. General Education course
    - ii. Online course
    - iii. Hybrid course
    - iv. Rotating topics course
    - v. Individually supervised course, such as Internship, Independent Study, Research Course, Thesis, Dissertation
    - vi. Research Methods course
    - vii. AU Abroad Programs course
    - viii. Other study abroad course (offered directly by Academic Unit, not through AU Abroad)
- II. Rationale
  - a) Please explain the main purpose of the new course, including whether it will be a requirement for an existing or proposed program or an elective, and how the new course relates to the existing courses in the program and department. *Note: if the course will be required for an existing program, submit a corresponding Minor Change to Program proposal.*
  - b) Will the course require students to pay a special fee associated with the course? If so,

- please provide a justification for this additional cost to students.
- c) Has the course previously been offered under a rotating topics course or an experimental course number? If so:
    - i. Semesters/year offered
    - ii. Course number
    - iii. Instructor
    - iv. Enrollment
    - v. What observations and conclusions were derived from the previous offering(s) that now lead to proposing this course as a permanent part of the curriculum?
  - d) Please indicate other units that offer courses or programs related to the proposed course and provide documentation of consultations with those units.
  - e) Estimate the enrollment per semester.
  - f) Does your teaching unit's classroom space allotment support the addition of this course?
  - g) Are present university facilities (library, technology) adequate for the proposed course?
  - h) Will the proposed course be taught by full-time or part-time faculty?
  - i) Will offering the new course involve any substantial changes to the scheduling of existing courses?
  - j) What are the learning outcomes for the course?
  - k) How will those outcomes be assessed?
  - l) What are the competencies that students are expected to demonstrate for the course? Please attach a draft syllabus.

### III. Catalog Copy

- a) Please attach a course description as it is to appear in the University Catalog, following the format of the current catalog.

## I. Identifying Information

- a) Proposed effective date – **Fall 2016**
- b) Academic Unit – **School of Public Affairs**
- c) Teaching Unit – **School of Public Affairs (formerly a Public Administration & Policy course)**
- d) Course Title (Generally a limit of 30 characters including spaces) - **Conduct of Inquiry III**
- e) Course Number – **SPA 614**
- f) Credits - **3**
- g) Prerequisites – **SPA 613 Conduct of Inquiry II**
- h) Course description for University Catalog (Generally a limit of 50 words) - **This doctoral level course covers extensions of the basic linear regression model including quasi-experimental methods for estimating causal effects using cross sectional and longitudinal data and nonlinear regression models for limited dependent variables. The course assumes that students have a firm grasp of classical hypothesis testing and the properties of the OLS estimator. Prerequisite: SPA 613 Conduct of Inquiry II.**
- i) Grade type
  - i. **A/F only**
- j) Expected frequency of offering
  - i. **Every Fall**
- k) Note all that apply:
  - vi. **Research Methods course**

## II. Rationale

- a) Please explain the main purpose of the new course, including whether it will be a requirement for an existing or proposed program or an elective, and how the new course relates to the existing courses in the program and department. Note: if the course will be required for an existing program, submit a corresponding Minor Change to Program proposal. **This course will be an elective advanced research methods course for PhD students in the departments of Government, JLC, and Public Administration & Policy. Conduct III is an elective continuation of the required research methods courses – Conduct I & II.**
- b) Will the course require students to pay a special fee associated with the course? If so, please provide a justification for this additional cost to students. **No special fee.**
- c) Has the course previously been offered under a rotating topics course or an experimental course number? **YES.** If so:
  - i. Semesters/year offered – **Fall 2015, Fall 2014**

ii. Course number – **PUAD 796 - Selected Topics: Non-Recurring, “Conduct of Inquiry III”**

iii. Instructor – **Seth Gershenson**

iv. Enrollment – **Fall 2015 (20), Fall 2014 (8)**

v. What observations and conclusions were derived from the previous offering(s) that now lead to proposing this course as a permanent part of the curriculum? **Based on enrollments, there is significant interest in advanced methods courses for our PhDs. The opportunity for an advanced research methods sequence puts our PhD program on the cutting edge compared to other programs.**

d) Please indicate other units that offer courses or programs related to the proposed course and provide documentation of consultations with those units. **The Department of Public Administration and Policy and the Department of Government had traditionally split the Conduct of Inquiry courses between the two departments. This new course request is part of an SPA-wide movement to bring this sequence of courses to the SPA course marker.**

e) Estimate the enrollment per semester. **20**

f) Does your teaching unit’s classroom space allotment support the addition of this course? **Yes.**

g) Are present university facilities (library, technology) adequate for the proposed course? **Yes.**

h) Will the proposed course be taught by full-time or part-time faculty? **Full-time.**

i) Will offering the new course involve any substantial changes to the scheduling of existing courses? **No.**

j) What are the learning outcomes for the course? **This course builds on the tools of statistical analysis and multiple linear regression introduced in Conduct 1 & 2 (the first-year SPA PhD sequence in quantitative methods). After introducing some terminology and philosophical debates central to modern micro-econometrics, this course aims to extend students’ knowledge of the linear regression model and recent developments in micro-econometrics, multiple regression, and quantitative analysis. Specifically, this course introduces methods for identifying and estimating causal effects from non-experimental (observational) data, methods for analyzing panel (longitudinal) and time series data, and estimating and interpreting quantile regression and nonlinear models for limited dependent variables.**

k) How will those outcomes be assessed?

**40% Homework Assignments (4, weighted equally, 10% each)**

**20% Midterm Exam**

**20% Research paper**

**20% In-class presentation of research paper**

l) What are the competencies that students are expected to demonstrate for the course? Please attach a draft syllabus. **See attached.**

III. Catalog Copy

- a) Please attach a course description as it is to appear in the University Catalog, following the format of the current catalog.

**SPA 614 – Conduct of Inquiry III (3)**

**This doctoral level course covers extensions of the basic linear regression model including quasi-experimental methods for estimating causal effects using cross sectional and longitudinal data and nonlinear regression models for limited dependent variables. The course assumes that students have a firm grasp of classical hypothesis testing and the properties of the OLS estimator. Prerequisite: SPA 613 Conduct of Inquiry II.**

**Time and place: Thursdays, 5:30-8, in room 305**

**Instructor: Seth Gershenson**

- Email: [gershens@american.edu](mailto:gershens@american.edu)
- Office: 345 Ward
- Office Hours (walk in): Thursdays from 4-5; Wednesdays from 3-5; by appointment.

**Teaching Assistant: Stephen B. Holt**

- Email: [stephen.holt@student.american.edu](mailto:stephen.holt@student.american.edu)
- Office Hours: Friday 3-5 in Ward 345 (or Ward 307)

**Course Goals:** This course builds on the tools of statistical analysis and multiple linear regression introduced in Conduct 1 & 2 (the first-year SPA PhD sequence in quantitative methods). After introducing some terminology and philosophical debates central to modern micro-econometrics, this course aims to extend students' knowledge of the linear regression model and recent developments in micro-econometrics, multiple regression, and quantitative analysis. Specifically, this course introduces methods for identifying and estimating causal effects from non-experimental (observational) data, methods for analyzing panel (longitudinal) and time series data, and estimating and interpreting quantile regression and nonlinear models for limited dependent variables. Conduct of Inquiry 4 is a separate class that introduces treatment effect estimators such as regression discontinuity designs and propensity score matching.

**Course Learning Objectives:** Are listed below on a lecture-by-lecture basis.

## **2 Required Textbooks:**

*Mastering Metrics* -- Princeton University Press (2014)

- Angrist and Pischke
- ISBN-10: 0691152845 | ISBN-13: 978-0691152844

*Introductory Econometrics: A Modern Approach*, 5th Edition

- Jeffrey M. Wooldridge
- ISBN-10: 1111531048 | ISBN-13: 978-1111531041
  1. This text is sometimes referred to as “Baby Wooldridge” in reference to the fact that the same author has written a well-known PhD-level textbook (Big Wooldridge). At times I will reference “Big W” as a source for further (optional) readings/details. Big W is a useful desk reference that will likely prove useful in the course of your career, though is written at a technical level beyond the scope of this course (intended for Economics PhD students).
  2. The 4<sup>th</sup> Edition is similar, though some important new material has been added to the 5<sup>th</sup> (e.g., quantile regression, clustered standard errors, correlated random effects [CRE] models). All assigned readings and suggested practice problems refer to the page and problem numbers in the 5<sup>th</sup> edition. This text will remain a valuable reference on your bookshelf for many years, so it's worth investing in a relatively new edition.



## Advanced References (also optional; useful references for applied researchers)

### GENERAL

#### *Econometric Analysis of Cross Section and Panel Data*, 2nd Edition

- Jeffrey M. Wooldridge
- ISBN-13: 978-0262232586 | ISBN-10: 0262232588
  - This is known as “Big Wooldridge.” It is more rigorous and covers several topics that the introductory book does not (e.g., ordered probit, hurdle models, dynamic panel data models, treatment effects, duration/hazard models, etc.)

#### *Microeconometrics Using Stata*, Revised Edition

- Cameron & Trivedi
- ISBN-13: 978-1597180733 | ISBN-10: 1597180734
  - Covers similar material at a similar level as Big W, but has lots of example Stata code. Covers some topics that Big W does not.

#### *Methods Matter: Improving causal inference in educational and social science research*

- Murnane and Willett
- ISBN-10: 0199753865 | ISBN-13: 978-0199753864
  - This is a very practical book that introduces RD and matching in an intuitive way. It also discusses experiments and multi-level models (hierarchical linear models). This is a useful, well regarded book, but is a better fit for the conduct 4 material. It also overlaps somewhat with Mastering ‘Metrics. Useful reference on your bookshelf.

#### *Mostly Harmless Econometrics*

- Angrist and Pischke
- ISBN-10: 0691120358 | 978-0691120355
  - This is the more rigorous precursor to Mastering Metrics. Covers some topics that MM does not (e.g., quantile regression).

### Required Software:

All students **must have access** to statistical software that can implement the methods taught in this course. Stata, SAS, and R are the three most common software packages that fit the bill. Statistical software packages/programs all have their own strengths and limitations, and which you use is a matter of personal preference. I do not care which software package you use to obtain your estimates, **provided that you obtain the correct estimates and interpret them correctly**. Nor should it matter which package you use. Point estimates might differ by a decimal point due to minor differences in how the estimation routines (algorithms) round and approximate various quantities, but such differences should be trivial. The primary objective of this course is to train and teach students in the implementation and interpretation of “sophisticated” econometric techniques for the quantitative analysis of secondary data—not the mastery of a specific statistical software package. Indeed, as new estimators and techniques are

developed new commands and codes will become available, so as PhD researchers you must be comfortable learning new methods, commands, codes, and routines.

I typically use Stata in my own research and will provide examples in Stata. I will not troubleshoot non-Stata code, but this is not a reason to switch to Stata if you prefer another program. Indeed, there are large online communities dedicated to troubleshooting code in Stata, SAS, and R – and there are students and faculty on campus who are valuable resources in each program/language. Again, it is important that you learn to use help files, documentation, and online discussion boards to solve coding problems on your own, as your professors won't be around to help you forever (and sooner than you think, you'll be the one giving the help!) It is impossible to “learn all the commands” since there are an infinite number of options, permutations, and special cases. The idea here is to develop a base set of skills, including the skills of trouble shooting and “learning on the fly”, from which you can launch your independent research career. Bottom line: use the package that is best suited for you and the project you are working on. Bottom line 2: learn / master these skills now, when you have the time and mental bandwidth to do so—this is what grad school is for—you won't have time to learn new software in 10 years, when you have a full slate of professional obligations.

Should you use Stata, I recommend Stata 11 or newer (14 was recently released). Stata IC is available in the SPA computer lab (Ward Sub-terrace): <http://www.american.edu/technology/services/Campus-Computing-Facilities.cfm>. You may, but are not required to, purchase Stata through the AU grad-plan (major discount): <http://www.stata.com/order/new/edu/gradplans/gp-direct.html>. Here you will see several options, ranging in price from \$32 to over \$1,000. The cheapest option is a **temporary** “Small Stata” license, which is limited in the number of observations that it can handle (at N = 1,200). This will be fine for the take-home exams, as I will be sure to provide datasets with N < 1,200. However, if you envision using Stata in “real life” in the future, I encourage you to consider purchasing a perpetual Stata-IC license, which will last forever and can accommodate larger datasets (most micro-level data sets, where individuals, firms, households, schools, etc. are the unit of observation, have N substantially larger than 1,200). MP versions of Stata utilize multiple processors and run much faster (and cost much more). Please feel free to ask me if you're unsure of which version is best for you. You will need Stata (or another software) for the take-home exams, problem sets, and (presumably) your research paper.

**Course grades will be based on:**

40% Homework Assignments (4, weighted equally, 10% each)

20% Midterm Exam on October 15<sup>th</sup>

20% Research paper

- This can be a paper you started in another class, or a dissertation chapter, or whatever – as long as you add some new econometric analyses relevant to this course. Given that you are Ph.d. students, I sincerely hope that many of these class papers will turn in to dissertation chapters and/or journal publications. Write and pursue projects accordingly.
  - Or, replicate a paper in your field using either different data or different methods
- 20% In-class presentation of research paper (December 3 and 10; dates decided by lottery)
- We'll talk more about these as the date approaches, but consider this an opportunity to practice giving a short (~ 15 minute) academic conference presentation.

### Key Dates

- First Day: September 3<sup>rd</sup>
- Group Midterm Exam on October 15<sup>th</sup> (Groups to be selected randomly)
- Homework Assignments due at start of class on: 10/1, 10/29, 11/5, 11/19
- November 12th: class to be rescheduled.
- Papers Due Dec. 3
- Presentations Dec. 3 and 10 (your date determined by lottery)

### Homework Rules

- You may not ask for help on the homework assignments from anyone **NOT** currently enrolled in, or teaching/TA'ing, this course. This includes other professors and graduate students in DPAP, at AU, and at other universities; extended family members, internet forums; and friends, spouses, coworkers, etc. However, you may discuss problems amongst yourselves and ask me and Steve questions in office hours.
- Homeworks will require the analysis of data that will be posted on blackboard in Stata (.dta) format. If you choose not to use Stata, it is your responsibility to import the data to your program of choice. You must show all code used to generate your results, regardless of the statistical package that you use (e.g., R, SAS, etc.)
- You may consult with classmates. However, each student must write up and turn in their own work/assignment. Assignments deemed too similar to another student's will receive a score of 0. Working (and struggling) on the homework is the only sure way to master the material.

**Weekly Course Outline** (\* indicates optional reading; BB indicates available on Black Board)  
W = Wooldridge; MM = Mastering Metrics

### (9/3) INTRO; **FIRST CLASS**

- Lecture Topics:
  - Course overview: syllabus, expectations, & key dates
  - Introduction to modern micro-econometrics
  - Summarize competing econometric philosophies (key debates in the field)
    - Identification & Partial Identification
    - Parametric & Non-parametric Econometrics
    - Frequentist & Bayesian Econometrics
    - Tradeoffs in econometrics
- Assigned Readings:
  - MM Preface & Chapter 1
  - *LISTEN* to Leamer's 5/10/10 appearance on EconTalk podcast:  
[http://www.econtalk.org/archives/2010/05/leamer\\_on\\_the\\_s.html](http://www.econtalk.org/archives/2010/05/leamer_on_the_s.html)
- Optional Readings
  - \*Manski on (im)precision of estimates (BB)
  - \*Hamermesh on Replication (BB)
  - \*Gill & Witko on Bayesian Methods (BB)
  - \*DiNardo & Tobias on non-parametric (NP) methods (BB)

- Learning objectives (at a very general/basic level, you should be able to):
  - Familiarize yourself with notion of a data generating process (DGP) and the idea that econometric models are an approximation of true DGP
  - Differentiate between linear and nonlinear DGPs and models
  - Differentiate between Bayesian and frequentist (classical) econometrics
  - Differentiate between parametric and non-parametric econometrics
  - Importance of both statistical and practical (economic) significance
  - Importance of both internal and external validity
  - Importance of robustness checks and sensitivity analyses
  - Importance of producing replicable empirical analyses

(9/10) Finish Intro; Start to Review OLS

(9/17) REVIEW LINEAR MODEL

- Lecture Topics:
  - Definition of linear model
  - Properties of OLS estimator
  - Statistical Hypothesis Testing (t and F tests)
  - Interpreting OLS coefficient estimates
    - Categorical (dummy), count, and continuous
    - Interpreting partial effects of quadratic & log functional forms
  - Testing for functional form
  - Correcting for heteroskedasticity (robust s.e.)
  - Bootstrapped standard errors
- Assigned Readings: W Chapters 2, 3, 4; Sections 5.1 & 5.2, 6.1-6.3, Appendix 6A, 7.1-7.4, 7.6, 7.7, 8.1, 8.2, 9.1, 9.3 (\*Note – much of this was assigned in Conduct 2)
- Learning Objectives (After this lecture, students should be able to):
  - Articulate properties under which OLS is unbiased and/or consistent
  - Conduct individual and joint significance tests of coefficients
  - Interpret partial effects of categorical, count, and continuous independent variables
  - Interpret partial effect of a quadratic in x
  - Interpret coefficients in log-log, level-log, and log-level specifications
  - Conduct RESET specification test
  - Compute heteroskedasticity-robust s.e. in Stata
  - Bootstrap OLS s.e. in Stata and explain the intuition behind bootstrapping

(9/24) FINISH REVIEW; PRACTICAL DATA ISSUES

- Lecture Topics:
  - Finish review
  - Sampling & sampling weights
  - Missing data
  - Multiple comparisons problem
- Assigned Readings:
  - MM Chapter 2
  - Allison on missing data (BB)

- Schochet on multiple comparisons (BB)
- Solon et al. on sampling weights (BB)
- Learning Objectives (After this lecture, students should be able to):
  - Use sampling weights in Stata
  - Recognize the need for sampling weights
  - Articulate the problems created by various types of missing data
  - Articulate and solving problem caused by “multiple comparisons”

#### (10/1) REPEATED CROSS SECTIONS

- Lecture Topics:
  - Pooled OLS Estimation
  - Difference in Difference (DD) Estimator
- Assigned Readings:
  - W Chapter 13 & Appendix 13A
  - MM Chapter 5
- Learning Objective: Perform and interpret DD estimation, pooled OLS, test and relax DD assumptions

#### (10/8) PANEL (LONGITUDINAL) DATA

- Lecture Topics:
  - Serial correlation and clustered standard errors
  - Fixed Effects
  - Random Effects
  - Correlated Random Effects & Hausman Test
  - Hierarchical Linear Models (HLM)
  - Attrition from longitudinal surveys
- Assigned Readings:
  - W Chapter 14 & Appendix 14A
  - MM Chapter 6
- Optional Readings
  - \* Sections 5.1, 5.3 in MHE
- Learning Objectives:
  - Perform and interpret RE & FE estimation
  - Test between RE and FE estimators
  - Compute cluster-robust s.e. in Stata
  - Test for endogenous attrition

(10/15) Group Midterm Exam (in class), 2 hours, covers OLS and linear panel data methods

#### (10/22) INSTRUMENTAL VARIABLES

- Lecture Topics:
  - Proxy Variables
  - Instrumental Variables
  - Two-stage Least Squares (2SLS) estimation

- Dynamic Panel-Data Models
- Assigned Readings:
  - W Section 9.2 & Chapter 15 (skip 5.7)
  - MM Chapter 3
- Optional Readings
  - \*W Chapter 16 (skip 16.5)
- Learning Objectives:
  - Distinguish between proxies and instruments
  - Articulate the properties of a valid instrument
  - Test for endogeneity and instrument validity
  - Estimate dynamic panel-data models

#### (10/29) QUANTILE REGRESSION

- Lecture Topic: Quantile Regression
- Assigned Readings:
  - W Section 9.6
  - Hayes & Gershenson application to education production function (BB)
  - Koenker & Hallock application to birthweights (BB)
- Learning Objective: Perform and interpret quantile regression

#### (11/5) BINARY DISCRETE CHOICE MODELS

- Lecture Topics:
  - Linear Probability Model (LPM) estimation and interpretation
  - Probit and Logit Models
  - Probit and Logit Average Partial Effects (APEs)
  - Maximum Likelihood Estimation (MLE)
- Assigned Readings:
  - W sections 7.5 & 17.1
  - W Appendix 17A.1, MLE section on pp. 769-70
- Learning Objectives:
  - Estimate and interpret LPM, probit, and logit models
  - Compute probit and logit APEs in Stata
  - Articulate potential limitations of LPM

(11/12) NO-CLASS, APPAM Fall Meeting, To be rescheduled. Bonus content – class vote on either [Time Series Analysis]

- W Chapters 10-12; 18 skim

or

#### PANEL (LONGITUDINAL) DATA EXTRAS (Time Permitting)

- Lecture Topics
  - Unbalanced panels and endogenous attrition from longitudinal surveys
  - Dynamic Panel Data Models

- Incidental parameters problem
- Conditional FE for logit and poisson regression
- Hazard Models for time-to-event dependent variables (duration/survival analysis)
- Assigned Readings:
  - Singer & Willet on hazard models (BB)
  - Kiefer on hazard (duration) models (BB) (\*Only parts I & II; rest is optional\*)
  - MM Chapter 6
  - TBA
- Learning Objectives:
  - Implement and interpret tests for nonrandom panel attrition
  - Implement and interpret parametric hazard models
  - Implement and interpret Cox Proportional Hazards Model

(11/19) MODELS FOR OTHER TYPES OF LIMITED DEPENDENT VARIABLES (LDVs)

- Lecture Topics:
  - Multiple Discrete Choice: Multinomial Logit (MNL)
  - Ordered Outcomes: Ordered probit/logit (oprobit/ologit)
  - Count outcomes: Poisson & Negative Binomial regression
  - Corner Solutions: Tobit, Hurdle/2-part models
- Assigned Readings:
  - W sections 17.2, 17.3
  - Excerpts from “Big W” on MNL & Ordered Response (BB)
- Learning Objectives:
  - Estimate and interpret MNL, ordered-outcome, & Tobit models
  - Estimate and interpret Poisson & Negative Binomial regressions
  - Articulate limitation of Tobit model that hurdle model solves
  - Articulate potential limitations of OLS when applied to count, ordered, or censored dependent variables

(11/26) NO CLASS, THANKSGIVING HOLIDAY

(12/3) Presentations (9 students, 15 minutes each)

(12/10) Presentations (9 students, 15 minutes each)

**Course Mechanics**

**Grading Scale**

- What follows is a “worst case” scenario; i.e., I reserve the right to decrease, but not increase, the thresholds given below:
  - A ( $\geq 93$ ), A- (90 to 92)
  - B+ (87 to 89), B (83 to 86), B- (80 to 82)
  - C+ (77 to 79), C (73 to 76), C- (70 to 72)
  - D (60 to 69), F ( $< 60$ )
- I will always round to whole numbers (e.g., 92.5 becomes a 93 and 92.4 is a 92).
- There is no extra credit; please do not ask.

- Attendance does not count directly towards grades. I understand that work obligations & conferences may occasionally prevent you from attending class; thus I do not require (or expect) notes/explanations unless you plan on missing an exam or presentation day. However, attendance is strongly encouraged, of course, and past experience strongly suggests that students who attend class, and stay focused and engaged, both perform better in the class and better retain/master the material.

**Miscellaneous:**

- Information for students with disabilities: <http://american.edu/ocl/dss/>.
- For details on the Academic Integrity Code and the corresponding administrative procedures:
  - <http://www.american.edu/provost/registrar/regulations/reg80.cfm>
  - <http://www.american.edu/academics/integrity/>

**Students with Disabilities**

If you experience difficulty in this course for any reason, please don't hesitate to consult with me. In addition to the resources of the department, a wide range of services is available to support you in your efforts to meet the course requirements.

Academic Support Center (x3360, MGC 243) offers study skills workshops, individual instruction, tutor referrals, and services for students with learning disabilities. Writing support is available in the ASC Writing Lab or in the Writing Center, Battelle 228.

Counseling Center (x3500, MGC 214) offers counseling and consultations regarding personal concerns, self-help information, and connections to off-campus mental health resources.

Disability Support Services (x3315, MGC 206) offers technical and practical support and assistance with accommodations for students with physical, medical, or psychological disabilities.

If you qualify for accommodations because of a disability, please notify me in a timely manner with a letter from the Academic Support Center or Disability Support Services so that we can make arrangements to address your needs.

**A.U.'s Academic Integrity Code:** <http://www.american.edu/academics/integrity/index.htm>

Standards of academic conduct are set forth in the University's Academic Integrity Code. By registering for this course, students have acknowledged their awareness of the Academic Integrity Code, and are obligated to become familiar with their rights and responsibilities as defined by the Code. Violations of the Code's standards will not be treated lightly, and disciplinary actions will be taken should violations occur.