

ECON 6901: Research Methods I

UNC Charlotte, Department of Economics, Spring 2020

1 Contact Information

Professor: Artie Zillante
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Professor: Paul Gaggl
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2 Important Dates & Times

Class Meetings: Mon 6:30 - 9:15 pm

Friday 207

Tentative Schedule & Due Dates

Week 1: Jan 13	Frist Class: Intro and Leading Example Lecture: Research questions, minimum wage, difference in differences	
Week 2: Jan 20	Martin Luther King Day	
Week 3: Jan 27	Assignment 1: Assigned Replication + Paper Selection Lecture: Replication "Answer Key", basic data management	Canvas Upload
Week 4: Feb 3	Project Update/Discussion Lecture: summary statistics, instrumental variable regressions	
Week 5: Feb 10	Assignment 2: Data, Summary Stats, Methods Lecture: results tables/graphs, regression discontinuity	Canvas Upload
Week 6: Feb 17	Project Update/Discussion Lecture: results tables/graphs	
Week 7: Feb 24	Assignment 3: Replication of Core Result Lecture: how to present, make slides, and do a literature search	Canvas Upload
Week 8: Mar 2	Spring Break	
Week 9: Mar 9	Presentation 1: Preliminary Results + Motivation (upload slides)	Canvas Upload
Week 10: Mar 16	Project Update/Discussion Lecture: how to cite and report references	
Week 11: Mar 23	Assignment 4: Draft of Literature Review	Canvas Upload
Week 12: Mar 30	Project Update/Discussion	
Week 13: Apr 6	Project Update/Discussion	
Week 14: Apr 13	Assignment 5: Draft of Motivation & Introduction	Canvas Upload
Week 15: Apr 20	Project Update/Discussion	
Week 16: Apr 27	Presentation 2: Final Project Presentation (upload slides)	Canvas upload
Apr 29	Assignment 6: Final Paper Due	Canvas upload
Week 17: May 4	Feedback on Final Paper	

3 General Information

3.1 Course Description

ECON 6901. Research Methods for Economists I. (3G) Research programs in economics; problem identification; interpretation of statistical results, bibliographic search, data sources and collection, selection of statistical technique, preparation of reports and proposals.

3.2 Prerequisites

ECON 6112 or ECON 6113, and either ECON 6201, ECON 6202 or MBAD/FINN 6157.

3.3 Course Objectives

The objective of this course is to introduce students to the process of conducting scientific research in economics and the social sciences more generally. We will focus on how to identify a viable and feasible research question, how to frame it within the existing literature, and how to present the results, both in writing and orally.

Throughout the course, students will develop a small research project on their own, which will ideally be the basis for a more extensive project in Research Methods II (ECON 6902). In this research project, each student will start with replicating a recent working (or published) paper of their choice, followed by an analysis of a small extension to the original analysis, developed and carried out by the student.

3.4 Course Resources

There is **no required textbook** for this class. All class material, such as required and optional readings, assignments, handouts, etc., will be made available on the class website (Canvas) as we go along. While the class does not require any textbook, here are a few resources that we highly recommend for your reference:

1. Angrist J, Pischke J. 2008. *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton University Press. ISBN 9781400829828.
URL <https://books.google.com/books?id=ztXL21Xd8v8C>
2. Cameron A, Trivedi P. 2010. *Microeconometrics Using Stata, Revised Edition*. Stata Press. ISBN 9781597180733.
URL <https://books.google.com/books?id=UkKQRAAACAAJ>
3. Strunk W, White E, Kalman M. 2007. *The Elements of Style*. A Penguin book : Reference. Penguin Books. ISBN 9780143112723.
URL https://books.google.com/books?id=sj5_wr6zIEcC
4. McCloskey D. 1999. *Economical Writing: Second Edition*. Waveland Press. ISBN 9781478609568.
URL <https://books.google.com/books?id=HQwZAAAAQBAJ>

4 Course Grade & Assignments

The overall grade for this course will be based on three components (plus one opportunity for bonus credit), described in detail below. The different components are weighted in the following way:

1. Class Attendance/Participation	20%
2. Assignments	60%
- Assignment 1: Assigned Replication + Individual Paper Selection	10%
- Assignment 2: Data, Summary Stats, Methods	10%
- Assignment 3: Replication of Core Result	10%
- Assignment 4: Draft of Literature Review	10%
- Assignment 5: Draft of Introduction	10%
- Assignment 6: Final Class Paper	10%
3. Presentations	20%
- Presentation 1: Motivation & Preliminary Results	10%
- Presentation 2: Final Project Presentation	10%
4. Economics Seminar Attendance (Bonus Credit)	3 pp

4.1 Class Participation (20% of final course grade)

We plan to hold 16 class meetings and we expect you to actively participate in class. The following activities will be considered as participation:

1. Each student needs to be prepared to **answer questions about and/or give a brief synopsis of assigned class readings** for each class. Typically, if a paper is assigned as required reading for a class, each student needs to be prepared to answer the following questions if called upon: What is the main goal/point of the paper? How do the authors tackle the question? What are the main results?
2. Particularly later in the semester, each student needs to be prepared to give an **in-class update on the current status of his/her ongoing project**.
3. Students are encouraged to **give feedback and ask clarifying questions** when somebody else is presenting (including the instructors). This is a vital part of being a researcher. Typically, researchers frequently present ongoing work (“working papers”) at various conferences and seminars, before submitting a draft to a journal. The weekly updates and group discussions during class will serve the same purpose. We encourage students to make use of the luxury that they can bug the instructors and their peers about their project once a week.

4.2 Written Assignments (60% of final course grade)

The following rules apply to all assignments:

1. While we **encourage students to work in groups** and help each other out (including the first assignment), **each student must submit his/her own copy of the assignment** to receive any credit.
2. All assignments need to be submitted via `Canvas` upload before the posted due date.
3. Late assignments lose 5 percentage points each day. Be aware that `Canvas` records the exact timestamp of your file upload(s), so even 1 minute late is late!
4. Each assignment is to be submitted as either one or two files:
 - (a) **One PDF** file containing your formal written work. This PDF has to be compiled with professional text processing software (e.g. MS Word, Google Docs, \LaTeX , etc.) and cannot be images of handwritten work. The .zip file may contain auxiliary computer code (e.g., Stata, Matlab, R, SAS, Excel, etc.) producing your empirical/computational results (if any).

- (b) **One (optional) .zip** file containing auxiliary computer code (e.g., Stata, Matlab, R, SAS, Excel, etc.) producing your empirical/computational results (if any).
5. All written work in Research Methods I and II will require that you follow certain **style and formatting guidelines**. While we will provide further details throughout the class, we summarize these here. Generally, take the layout of the papers you will read throughout this class as a guideline of how to professionally typeset a research article.

At the very minimum, make sure you follow at least the following guidelines:

- (a) All written work must be prepared with **professional typesetting software** (e.g., MS Word, L^AT_EX, Google Docs, etc.)
- (b) All papers **MUST BE SUBMITTED IN PDF FORMAT!!!!** We cannot stress this point enough! Do not hand in papers as editable word processing files (e.g. .docx). Depending on the software, operating system, etc. your file may look nothing like what you thought it would on somebody else's computer. This may be due to a different version of MS Word, the person's operating system, etc. A PDF looks the same, always and everywhere. That is the point of making a PDF. It looks exactly the way you want it to look like.
- (c) All written submissions must include the student's **name, paper title, date, and page numbers**
- (d) References should be formatted using a consistent reference style and must be compiled with a **professional reference management software**. We will introduce you to a free, extremely practical, referencing software called [Zotero](#). If you prefer to use another citation manager (e.g. Endnote, Bibtex, etc.) you are welcome to.
- (e) Figures and tables must
 - i. have a figure number and title
 - ii. have a self explanatory figure note, explaining what is in the figure
 - iii. referenced with their table number in the text (do not say "the figure above shows", instead say "Figure 2 shows...")
- (f) Tables should not simply be copied and pasted from Stata (or other statistical software) output.

Important: If an assignment does not comply with the above guidelines (up to the instructor's discretion), the assignment will be returned and may be resubmitted as a late assignment. The student loses 5 percentage points for each day the assignment is late, starting with the day the assignment was returned to the student. If the resubmission still does not comply with the guidelines the assignment score will be zero.

Assignment 1: Assigned Replication + Individual Paper Selection (10% of final course grade)

Part 1: We will provide a journal article on Canvas and ask you to "replicate" the key results. Your replication must be submitted as a single PDF and a .zip file containing auxiliary materials (e.g., your code) and must include the following:

1. A brief discussion of at most one page (12 point, double spaced, one inch margins) which addresses the following points:
 - (a) What is the main question the paper tries to answer?
 - (b) How do the authors go about answering this question?
 - (c) What is the main conclusion of the paper?
2. Replication of the key empirical results in the paper using the same data as the authors (more details in the actual assignment).

3. A brief discussion of the results you obtain:

- Do your own results match the paper exactly (up to rounding errors)?
- Note that this will require reading the paper VERY CAREFULLY. In particular, make sure to pay close attention to the descriptions of various data manipulations that the authors conduct, before running their final regressions. It is your job to figure this out and replicate EXACTLY what the authors did (up to rounding errors).
- If you can't match the results exactly (you should get very close when using the same data), discuss why you think the results might differ?

4. A brief section that describes where to find the programs that produce your results and how to run them. In your .zip file, only include material that is necessary to replicate your work. Do not include unnecessary files.

5. The final product should not exceed 5 pages (12 point, double spaced, one inch margins), including graphs and tables.

Part 2: Below is a [link to past NBER conferences and workshops](#). These workshops cover all major fields within economics and should give you a good snapshot of **what successful scholars in economics are currently working on**.

Papers in the most recent workshops will typically either be “working papers” but some will be works in progress without draft: papers that have a completed draft and may or may not already be under submission at an academic journal. If you go further back in time, most (but not necessarily all) of the papers are probably published in a journal in the meantime. So for older papers, copy the title into google scholar and check whether a newer version has been published in the meantime. Published papers have the benefit that the data is typically made available by the journal. Newer papers are probably on more recent “hot topics”, but the downside is that these are still work in progress and the authors are likely not going to share their data with you.

- Past NBER meetings: <https://conference.nber.org/confer/old-conference.html>

Your task: Use the link above and **select three papers** that you find interesting and you think you can replicate (like you did in part 1 with the two assigned papers). For each paper, be prepared to explain the following in class:

1. What is the paper about?
2. Why do you find it interesting? It is possible that you only find part of the paper interesting. That's OK.
3. What would you do to replicate the paper?
 - **Where would you get the data?** (Hint: if you can't download all the data you need before telling us about the paper, this paper is perhaps not a wise choice.)
 - **How would you do the analysis?** What methods would you use? Are you familiar with these methods (or at least confident you can figure it out)?
 - **Be clear about exactly what part/result you are planning to replicate.** It is not always necessary to replicate every single result in the paper (especially working papers can have A LOT of analysis). It is OK to pick one result of the paper, and focus on that.

IMPORTANT: What is the goal of this assignment? Throughout the **two-class sequence “Research Methods I” and “Research Methods II”**, we will ask you to do the following with one of the three papers you identified:

1. (Research Methods I) Replicate the main results you are interested in (as you did with the replication project we assigned)
2. (Research Methods I) Identify a small extension to the paper (e.g., different data, different outcome, etc.)
3. (Research Methods II) Write a class paper about this small extension; your own small research project.

So, **choose your paper wisely, because you will have to work on it for the next two semesters.** We ask you to select three papers, so that you have some backups, in case we decide that your favorite paper is not a good idea (e.g. data is too hard to get, it's not doable in the time available, etc.). output as an appendix (these do not count as part of the 5 pages).

Assignment 2: Data, Summary Stats, Methods (10% of final course grade):

Prepare a 1-3 page (including tables and graphs) written document that summarizes the data and methods you will use. Your document should include at least the following items:

1. A brief description of the dataset (where did you get it from, who provides the data, what does the data contain). Note that this can be very similar to the analogous section in the original paper. However, you only need to talk about the parts of the data that are relevant for the particular result that you are replicating. Also, perhaps you got your data (either the same or similar) from a different source, etc.
2. An appropriately designed table with relevant summary statistics and a brief explanation of what these summary statistics are telling us and why they are important/relevant for the project. Again, this is likely very similar to the original paper.
3. A brief section that describes the methods you will use to analyze the data and produce the core result you are aiming to replicate.

Assignment 3: Replication of Core Result (10% of final course grade):

1. Prepare a 1-3 page (including tables and graphs) written document that summarizes your core replication result. Ideally this should have the "bare bones" of the main results section for your final paper. The most important part of this assignment is a well designed table and/or graph that presents the main result. It is important to get as close as possible to the results in the original paper, but don't lose any sleep over small differences in the exact numbers you get.

Assignment 4: Draft of Literature Review (10% of final course grade):

Prepare a written document that is at most 1 page long, summarizing the the relevant literature for your project. This can be very similar to the original literature review. Below are a few important hints/pointers:

- Keep the literature review brief.
- In the end, the literature review does not have to be it's own chapter. It can be the last part in the introduction.
- A simple list of "papers that are similar" is not a literature review!!!
- A literature review is a discussion of other relevant results, that makes clear why your result is important how it fits into the existing literature.
- Make use of a Google Scholar "reverse citation search". We'll show you in class how that works.
- Use a citation manager (e.g., Zotero or Endnote)

Assignment 5: Draft of Introduction (10% of final course grade):

Believe it or not, the introduction (first section of your paper) is the most important part of the paper! It tells the “lazy” reader everything they need to know about your paper. It typically (but not always) has four (or three) parts

1. One or two brief paragraphs that motivate why the question is interesting and important
2. A part that briefly summarizes how the current paper will contribute to our understanding of the issue you motivated above. This part usually includes a preview of the main result (usually no details, just a statement of what the main finding is and how enlightening that is)
3. The fourth part gives a tight summary of exactly what’s going on in the paper. What methods? What’s novel about the application of these methods? Maybe the data is new? Etc. This section explains (very briefly) what you did to produce the result you bragged about above.
4. The fourth part is “optional”. Most modern papers will put the literature review here. The more “old school” approach is to skip the fourth part and have a separate literature review section. This is a matter of taste.

Assignment 6: Final Draft of Class Paper (10% of final course grade):

1. Combine your work from the previous assignments (introduction, literature review, results) into a full blown paper. Ideally, your paper should have roughly (this is not exactly necessary!) the following structure:
 - (a) **Introduction:** summarizes your main motivation, what you are doing, and your results
 - (b) **Literature Review:** This can either be a separate section or the fourth part of your introduction. It explains how your work fits into the existing literature (what gap it fills)
 - (c) **Methods/Conceptual Framework/Theory:** a section that explains the thought experiment you have in mind and how your methods allow you to get at the question you’re interested in. It also explains how one needs to interpret any possible findings that come from this analysis
 - (d) **Results:** shows your main results
 - (e) **Conclusion:** sums up

4.3 Presentations (20% of final course grade)

While you need to be ready to talk about your project at any time during class throughout the semester, there will be two “formal” class presentations. For these presentations, plan on talking for about 15-20 minutes with professional presentation slides. A good guide to see how you give a professional presentation in economics is to go to as many [Economics Seminars](#) as possible.

4.4 Seminar (Bonus Credit):

The economics department regularly hosts guest speakers in the [Economics Seminar Series](#). The seminar series provides a great opportunity to see what active research economists are currently working on. You may earn **up to three bonus percentage points** for attending seminars. Each seminar you attend counts for one point, up to a total of three. It is your own responsibility to check the seminar schedule on the [Economics Seminar Series webpage](#).

In order to receive credit, you must sign in with one of the instructors (or another faculty member if we are not present) at the beginning of the seminar to earn the credit (we will ask you to follow up with an email). The extra percentage point will be added to your overall numerical class score (up to a maximum of 100).

5 General Rules

Academic Integrity: Please note that academic misconduct (cheating) will NOT be tolerated. In addition, students have the responsibility to know and observe the requirements of [University Policy 407 \(The Code of Student Academic Integrity\)](#). This code forbids cheating, fabrication or falsification of information, multiple submissions of academic work, plagiarism, abuse of academic materials, and complicity in academic dishonesty. Academic evaluations in this course include a judgment that the student's work is free from academic dishonesty of any type; and grades in this course therefore should be and will be adversely affected by academic dishonesty. Students who violate the code can be expelled from UNC Charlotte. The normal penalty for a first offense is zero credit on the work involving dishonesty and further substantial reduction of the course grade. In almost all cases, the course grade is reduced to U. Copies of the code can be obtained from the Dean of Students Office. Standards of academic integrity will be enforced in this course. Students are expected to report cases of academic dishonesty to the course instructor.

Statement on Diversity: The Belk College of Business strives to create an inclusive academic climate in which the dignity of all individuals is respected and maintained. Therefore, we celebrate diversity that includes, but is not limited to ability/disability, age, culture, ethnicity, gender, language, race, religion, sexual orientation, and socio-economic status.

Adverse Weather: If the University is closed or if the Charlotte-Mecklenburg School system is closed, there will be no class. If you commute in from outside the county and there is adverse weather there (but not in Mecklenburg County), make your own decision to attend or not, but remember we do not want you to endanger life or limb just to get to class.

Communication: To repeat: Dr. Zillante's email address is azillant@uncc.edu and Dr. Gaggi's email address is pgaggi@uncc.edu. **Always email both of us.** Please include "ECON 6901 student question" in the subject line to ensure a prompt reply. If the question is such that all students could benefit from a reply, we may reply to all students in the class.

General announcements will be made through Canvas. Make sure you configure your Canvas client in a way so that you receive an email notification whenever a new announcement is posted. Whenever we email an individual or the entire class, we will use your official university email address. You are responsible for monitoring this address: we will not use your private address.

Disability Services: UNC Charlotte is committed to access to education. Students in this course seeking accommodations to disabilities must first consult with the Office of Disability Services and follow the instructions of that office for obtaining accommodations. Contact the Office of Disability Services at 704-687-0040 or visit their office in Fretwell 230.

Last Day of Participation: If a student earns an F or U grade, the last date of attendance will be reported. This may require the student to pay back any financial aid money received for this course.