

## **Economics 456, Senior Capstone**

Winter 2020

Bates College

Paul Shea

**Class Times:** Tuesday and Thursday, 1:10-2:30 PM.

**E-mail:** pshea@bates.edu

**Drop in Office Hours:** Drop in office hours are from 1-2:30 on Tuesday, and 9:30-11 on Friday. You are also welcome to make an appointment.

**Course Website:** [www.paulshea.com](http://www.paulshea.com). This site will include class announcements, assignments. Note that the class website is unrelated to Lyceum.

**Office:** 270 Petengill.

Building on experience from previous economics courses, students in this course produce new independent research. Like senior thesis, the goal is to provide you experience at conducting original economics research. Students will find a researchable idea, execute their idea, and present their results in both oral and written formats. The structure of the class is intended to provide you support in key areas of doing research such as finding an appropriate topic, finding and manipulating data, and placing your results in the related literature. All students will be expected to edit and provide feedback on the projects of other students in the class. In this class, all students are expected to actively participate and arrive prepared to do so. Students who are blatantly unprepared may be asked to leave. As a capstone experience, expectations are very high.

### **Goals and Objectives**

- To undertake a significant piece of independent research work;
- To gain experience in reading, processing and summarizing a significant amount of literature in a specialized area of economics;

- To gain practical experience in formulating research questions and refining these on the basis of relevant literature and data availability;
- To gain experience in finding and analyzing data and/or using, developing and validating and estimating models;
- To gain experience presenting both work in work-in-progress and completed work so that your ability to communicate effectively about economic topics will improve, regardless of your starting point
- To gain experience offering useful critiques of others work;
- To write an analytical research paper, approximately 25 pages in length, that demonstrates your ability to address an interesting and important topic using the tools of economics and to express yourself clearly and precisely in writing.

**Class Format:** Many class meetings consider of students presenting their project at various stages of completion to the class in order to receive feedback. Occasionally, I will present new material that is useful to a number of students' projects. In the past, this has usually consisted of methodologies (*e.g.* time-series methods) that several students are using but that not all students have seen (or remember). A few times, we may meet with the other capstone sections on a topic of common interest. In other cases, office hours may be substituted for class meetings.

The following constitute the four presentations that you will make:

1. Topic Proposal (weeks 2-3)
2. Data
3. Methodology
4. Initial Results

**Assignments:** The main component of this class is the independent research paper discussed later in this document. In addition, each student must:

1. Create and present a poster describing their work. The poster session for all three sections of ECO 456 is during the scheduled final exam week, date and time to be announced.
2. Present their work 4 times in class.

## Grading

The grade on your final paper will be your course grade if all other aspects of the class are completed satisfactorily. However,

- Good or bad posters may move your course grade up or down by as much as  $\frac{2}{3}$  of a letter grade.
- Exceptionally good or bad class participation may also move your course grade up or down by as much as  $\frac{2}{3}$  of a letter grade.
- Exceptionally good or bad performance on an oral presentation up or down by  $\frac{1}{3}$  of a letter grade.

**Academic Dishonesty:** Academic dishonesty is always unacceptable at Bates. It is, however, especially intolerable in this senior capstone setting. Expect intentional plagiarism or cheating to result in 1) a course grade of *F* without regard to the consequences for your ability to graduate, 2) referral to the Student Conduct process which may result in suspension or expulsion from the College. The last time I caught a student plagiarizing his paper in a senior capstone class, the College awarded him a grade of *XE*, with “failure due to academic misconduct” permanently and unalterably affixed to his transcript.

The College has adopted the following language on academic dishonesty. I support this policy and re-print it here:<sup>1</sup>

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<sup>1</sup>Auer, Matthew R. “Tips for incorporating academic integrity info into your syllabi.” E-mail to Bates Faculty. 6 Aug. 2014.

Academic integrity is fundamental to learning, scholarship, and indeed all dimensions of academic life. At its simplest, this means that the work you submit must be your own unless collaboration is specifically allowed, that you use only those resources allowed; that you express yourself in your own words unless you are quoting, and that you properly acknowledge and cite the ideas, information, and other work that you used or that contributed to your understanding.

Your academic work is governed by The Bates College Statement on Academic Integrity, found here at:

<http://www.bates.edu/entering/policy/judicial-affairs/code-of-student-conduct/academic-misconduct/>,

and by any additional standards I set in this syllabus or in individual assignments. The Statement on Academic Integrity provides a fuller discussion of academic integrity and definitions of plagiarism, misuse of sources, and cheating. You are responsible for reading the Statement carefully and abiding by its terms.

Violations of academic integrity are serious and can result in severe consequences at both the course and college levels. Depending on the circumstances of the violation, I will assign a failing grade for the assignment and/or the course, require work to be redone, and/or impose other consequences; in addition, I will refer the matter to the Dean of Students for possible institutional action. Procedures for suspected violations are explained here:

<http://www.bates.edu/entering/policy/judicial-affairs/>.

If you have any questions or concerns about what is expected or permissible in this course or about academic integrity in general, please contact me.

If you are unsure about issues of academic integrity, just ask.

## **Paper**

The major component of this class is the final paper. Your final paper is to consist of an original piece of research. My presumption is that most or all students' final papers will include original empirical analysis. You may, however, write an extensive literature review instead. My expectations, however, for such a project are very high. It must bring together disparate strands of economic research in a way that is novel and clear. Very strong students may also write a theoretical project. If you are thinking of doing so, you must consult me early in the semester. Only well formed theoretical projects will be judged viable.

There is neither a minimum nor maximum page length. A good target, however, is about 25 double spaced pages. If your paper is significantly shorter, you should carefully consider whether or not you are thoroughly addressing your central question. If it is much longer, then you should carefully consider whether or not you could cut its length while still making your main points. Papers over 40 pages will be viewed with great skepticism.

*Idea:* Forming an original idea is a major part of this project. The source for your idea should generally be your previous electives, not this seminar. I am happy to discuss your topic with you and help you mold it into a researchable question. I will not, however, hand you a topic.

There is no easy way to settle on a researchable question. Here are some common type of ideas to consider:

1. Testing a theory. Does theory predict that  $X$  causes  $Y$ ? If so, perhaps an empirical paper examining this relationship would make for a nice contribution.
2. Extending a previous paper. This might entail addressing a similar question as a previous paper, but using new data (*e.g.* more countries). It might also entail adding new variables into a previously done analysis.
3. Analyzing a proposed or actual policy change. The goal here is to provide quantitative estimates of how the policy will affect key variables.
4. Quantifying an effect. Sometimes the direction of an effect is obvious. Estimating an effect may still be useful if doing so provides new insight on the magnitude of the effect.

The quality of your idea is an important factor in determining your grade. In judging your idea, I consider its originality and importance. You are not responsible for boring or insignificant results if they result from a well executed, and interesting research question.

You have been placed into this section because you expressed interest in macroeconomics or because you have taken some of the department's macroeconomic electives. While you are free to choose a topic outside of macroeconomics, be aware that my expertise and most of the other students' projects will be related to macroeconomics. You may thus find the class structure less helpful if you do not write in macro.

*Process:* You will present your project, in different stages, 4 times during the semester, plus the joint ECO 456 poster session. Students are expected to provide feedback on their peers' projects, both during these presentations and as part of separate assignments where you will be asked to make suggestion that improve two other students' work. All students are expected to contribute to the process.

*Structure:* There is no single appropriate structure for an economics research paper. Below, I have outlined one common structure. You are free to deviate. But if you do, take care to cover each of these element in your paper:

1. Abstract: A 100-200 word summary of the paper's purpose and main points. Often, I read a paper's abstract to determine if I want to examine the paper itself. I typically write an abstract last.
2. Introduction. The first purpose of this section is to motivate the paper. Why should I care? What is new about your paper? If the answers are "I shouldn't" and "not much" a reader is unlikely to go further. Your job is to make a case for why the topic matters. Another purpose of the introduction is to preview the paper's results. Suspense is not desirable in a research paper. Tell the reader what you will show in greater detail later in the paper.
3. Related Literature. How does your paper build off of related work? Take care to explain what is different about your paper as compared to the papers that are most closely related. Sometimes this section is appended to the introduction. Other times, it is interwoven with the introduction.

4. Data. This applies to empirical papers. Where did you get the data? Are there any problems or issues with the data that you had to address. Suppose that you use one of many different price levels that are out there. You should explain why you chose the one that you did. Often, it makes sense to provide summary statistics (mean, variance, etc.) here, or to plot your data if they are time-series.

5. Empirical Specification. What econometric methods are you using and why? If you are using unusual methodologies, this is where you provide your justification. Assume the reader is familiar with econometrics. You thus do not need to explain what common estimators (OLS, VARs, etc.) are, but you do need to defend their use. If the econometrics and data are straightforward, #4 and #5 are frequently combined. In a theoretical paper, a section presenting and solving the model often appears in this area.

6. Results. What do you find and how does it shed light on your researchable question? Often, a challenge is to select, among many results, the handful that are more relevant. Take time to interpret your results. Do not just present a Table and expect the reader to figure it out. Explain why your results are important. Take care to think about both statistical and economic significance.

Suppose that you find yourself with insignificant results. This does not mean that you have written a bad capstone paper. DON'T FREAK OUT. Write your results up honestly. Examine the following: i) can you rule out large effects or are your confidence intervals very large? The former may still make for an important result, 2) is your lack of significance likely because of data limitations or because there is no economic relationship?, and 3) what else could you do, beyond your paper, to see if there is a statistical relationship.

7. Robustness Checks. How does making reasonable changes to your data or specification affect your findings. If you had to make a tough decision in Choosing Approach A over Approach B, here is a place to discuss what happens when you instead use Approach B. Often, this section is combined with #6.

8. Conclusion. Recap the paper's main contributions and results. What are the handful of things

you would like the reader to remember. This is often a good place to talk about the new questions raised by your paper and the additional work that could address these new questions.

### *Grading*

In grading your papers, I will use the following standard:

**A=** A well executed, well presented paper that addresses an interesting question. With a significant amount of additional work, the paper may be publishable in a respectable professional journal. The paper has no moderate/major deficiencies.

**B=** Quality undergraduate work that includes moderate deficiencies. This includes well executed papers that address less interesting questions. It may also include papers that are not well presented, or which include mediocre technical work. With major work, such paper might be publishable in a respectable professional journal.

**C=** Acceptable undergraduate work that includes major deficiencies in the concept, presentation, or technical execution. Papers that display good effort but which fail to meet their objectives may fall into this category. Such papers are generally not publishable.

**D and F=** Unacceptable papers. These fundamentally fail to achieve the purpose of this assignment.