

EC496/8/9: Senior Thesis in Economics & Business (Econ, Math Econ and IPE)

Blocks 1-6: Fall 2013 thru Spring 2014
Colorado College

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Class location: Independent study - no class meeting.
Office Hours: By appointment only - all meeting scheduled by student.

DEPARTMENT OF ECONOMICS AND BUSINESS MISSION STATEMENT

MISSION

We engage exceptional students
who think critically, analytically and creatively
with intellectual competence and confidence,
leveraging the advantages of the Block Plan,
drawing on the art and science of the discipline,
at home and abroad,
for now and for life.

Our students can:

 COMMUNICATE EFFECTIVELY

-  Write effectively
-  Speak and present effectively
-  Use the language of economics and business accurately and persuasively

 ANALYZE DATA

-  Interpret evidence in a reason-based approach
-  Generate insightful analysis in a theoretical context

 WORK INDEPENDENTLY

-  Demonstrate initiative and perseverance
-  Manage projects effectively

 FRAME AND RESOLVE ILL-DEFINED PROBLEMS

-  Apply relevant knowledge creatively
-  Appreciate the complexity of multiple perspectives

NOTE: This course addresses each of the above the goals in some fashion.

DESCRIPTION OF VARIOUS THESIS COURSES:

496 Senior Thesis in Mathematical Economics

Thesis in Mathematical Economics on approved topic. Required for majors in Mathematical Economics. No classes, but periodic scheduled conferences between student and supervisor. or MA 313, EC 207, EC 209, MA 203, one 300- or 400-level approved elective for the major, Mathematical Economics major, senior standing, and consent of department.

Prerequisites: Consent of Instructor & EC200 or MA313, EC207, EC209 MA203, Math Econ Major, Senior Standing, 2 units.

498 Senior Thesis in International Political Economy

Thesis in international political economy on approved topic., 207 or 209, 375, International Political Economy major.

Prerequisites: Consent of Instructor & IPE Major, Senior Standing. 1-2 units.

499 Senior Thesis in Economics & Business

Thesis on approved topic of student's choice, based on elective taken at 300 or 400 level. No classes, but periodic conferences between student and supervisor.

Prerequisites: Consent of Instructor & EC209, EC207, EC303 or EC408, + 1 elective at 300 or 400 level, Econ & Business Major, Senior Standing. 2 units.

LEARNING OBJECTIVES

The objective of the senior thesis is to provide every student within the Economics and Business Department with a meaningful independent research experience that will serve as a capstone to the major highlighting of your educational experience here at Colorado College. As stated in the department's *Senior Thesis Guidelines*, the primary purpose of the senior thesis:

To demonstrate that senior majors in economics can draw from their undergraduate education comprehensively in analyzing a significant problem or issue. Thus, the thesis is intended to develop, through individual initiative and independent research, a final product that demonstrates conclusively that the student can formulate a testable hypothesis, present necessary background material, apply appropriate theories, organize relevant data, and draw unbiased conclusions. The product must display good formal writing, appropriate citation, logical progression, and a balance among description, theory, and analysis.

At a minimum, the senior thesis must:

- 1) examine a compelling issue, context, opportunity or problem in the realm of the major;
- 2) review, critique and use the relevant research literature to motivate an empirical study; and,
- 3) formally state a theory, a research question, thesis statement, hypotheses or propositions.

In addition, you must:

- 4) acquire existing data or collect/create/compile your own data set;
- 5) analyze your data; and
- 6) summarize your findings.

GENERAL EXPECTATIONS, SUGGESTIONS AND REQUIREMENTS

Policies. The current year's "Economics & Business Department's Senior Thesis Guidelines and Illustrative Materials" policy provides all deadlines, procedures and formatting expectations for this course, and is a part of this syllabus by attachment. There are NO exceptions to the designated deadlines. You will receive an updated copy of this booklet on the first day of your first thesis block, and you will be asked to provide a written acknowledgment of receipt of it.

Meetings. The only two required thesis advisor meetings with me as your advisor is on the first day of each of your two assigned thesis blocks. After that, all meetings will be at your own discretion and incumbent upon you to schedule them.

Deadlines and deliverables. You are required to submit (by email) a complete compilation of all that you have written for your thesis by noon on the fourth Wednesday of each of your thesis blocks. Additionally, with each submission, you are also required to include a 1-2 page written summary documenting all of your efforts toward your thesis during the block. Then, after completion of your second thesis block, you are required to submit a pre-final draft (with citations, complete references and correctly formatted) within two weeks of your second thesis block. Failure to meet any of these deadlines could result in a "NC" grade for the block(s). Your final draft must be submitted to the online thesis repository by the deadline before it can be graded.

Independence. As noted in one our guiding departmental goals (page 1), working independently is a primary outcome of the thesis experience. Writing a thesis is inherently an independent research project and thus, all responsibility for its facilitation, execution and final delivery is yours and yours alone. As your advisor, I am here to meet with you as often as you feel necessary and help you in any way that I can. Think of me as your coach: I will answer questions, help you locate resources, guide you and advise you, but when you are "playing on the field," your performance is up to you. The more "thinking" I have to do for you, the higher my expectations will be for your final product. This is not to infer that you should not come see me often. Quite the contrary. I strongly advise you to confer with me regularly. However, the discussions should be about your thinking, your analysis and your efforts. Every student needs help along the journey, so when you need help, please ask. I only expect that you think before you ask. Healthy struggle is a necessary part of the process. Expect it.

Level of Effort (inputs). Routinely students have asked "how much time should I expect to spend working on my thesis on a daily basis?" My reply, "it completely depends on how good of a product you expect to produce." In my experience, very good theses requires an average of 7-8 hours a day. of dedicated work on your project for two months. I would recommend you keep a log. Clearly, not every student works eight hours a day, every day during his/her two thesis blocks. Some students get started early, others work during their "off blocks" and a few wait until the very end. As an independent research project, the scheduling of your time is up to you. That said, I strongly advise for you to come up with a plan and track your progress as you get started. Doing a thesis is much more than just putting in the required amount of time -- the output matters, but just realize that there is a strong correlation between inputs and outputs.

Your Plan. During our very first meeting, I will ask you to show up in my office with a plan to accomplish your thesis from start to finish. I know that in many cases, this may seem like a futile exercise if you haven't developed a clear idea of what you want to do. Nevertheless, you have to

have some sort of baseline to build upon, so please do your best to come up with some project management scheme based on whatever ideas you have for your thesis. Specifically, be sure to consider how you will obtain your data all the way to putting your final product in the final format and include it in your plan. Editing takes a lot of time, and the more editing you do, the better your thesis will be. Moreover, if you need to collect your data from others (human subjects data), your IRB proposal must be included in the earliest phases of your plan.

IRB submission. To the extent you decide to collect data from other people (e.g. interviews, surveys, experiment, etc.), you will be required to submit a fully-prepared proposal to me as one of the very first steps in the process. Once I concur with it (required by the process), I will forward it to the CC Institutional Research Board Chair for review and approval. PLEASE NOTE: YOU CANNOT START DATA COLLECTION FROM HUMAN SUBJECTS WITHOUT IRB APPROVAL. If you plan to collect data from others, please visit the CC website (search: IRB) for the proposal template, examples and other guidance, and get your proposal to me as soon as possible. Note also, if you are doing a survey, it must be completely developed prior. The same applies to interviews (need to have your interview schedule fully developed).

Editing. You should expect to have at least 2-3 “final drafts.” When you finally believe you are finally finished, it’s likely this is the first real final draft you will turn in for review. Anticipate at least 1-2 more rounds of comments. Your willingness to make suggested corrections, intellectual flexibility and tenacity to persevere will be critical for ultimate success in the final phase of your thesis development. I will likely you of this point at the very end of the process to again, emphasize its importance. You are expected to comply with all rules of spelling, grammar and punctuation as outlined in the official department guidelines. This not only means using the spell-check function in your word processing program, but having the Writing Center critique your work, having friends or roommates read your work, and proofreading your own work often. Consider anything submitted to me as being “ready for evaluation,” so try to impress me with your own preparation, much as you would consider trying to impress a superior at work, or a member of the executive board in a firm that might hire you. I’m happy to discuss informally with you at length, but written submissions should reflect more preparation and deliberation than our informal discussions represent.

Drafts. I will read and critique drafts of your work throughout your assigned thesis blocks once you have a complete draft of (an) individual section(s). Once you are outside your assigned thesis blocks, I will only read and critique drafts as my other primarily assigned teaching duties permit. However, I will not provide any feedback once inside fourteen days of the final due date of your thesis. During the final two weeks prior to your designated turn in time, you should be doing final edits, formatting and proofreading. If you don’t have a complete draft of your thesis prepared within two weeks of your final turn in date, you may be at risk of failing your thesis altogether.

Oral Presentation. As part of the thesis experience, you will be required to orally present your thesis findings in an open forum of faculty, staff and students. If you receive a Skilling Grant, your presentation for the grant will count towards this requirement. Likewise, if you present your thesis publicly for any other reason, that too, will satisfy the requirement. You are responsible for setting up the thesis presentation anytime after the completion of your second thesis block, but no later than the day prior to submitting the final version for grading. In doing so, you might also have an opportunity to get feedback not only from me, but also from your peers and other colleagues to improve your thesis in the final stages. Failure to successfully present your thesis orally by the

deadline could result in lowering your final grade by a complete letter grade. Every year, the Student Advisory Board (SAB) puts on a symposium (usually in April). This is an outstanding venue to accomplish this requirement, and I strongly recommend it.

First Step: Data-Method-Idea. The primary mistake most thesis students make is to focus first and foremost on the idea for the project. An idea is important, but it almost never emerges in isolation. The best (and arguably only) way to come up with an idea is to start reading the extant literature in a particular area. When you start getting tired of reading journal articles, read some more of them. Read, read, read. You will need to read at least 20-30 journal articles before you can reasonably come up with a viable research idea. That's the first step. While you are reading and thinking about a viable idea, you should also think about what data you will need and where you will get it. Our librarian, McKinley Sielaff, is an excellent resource to help you find data (if you are looking to do a regression). However, you may need to collect your own, and if so, this will likely extend the time needed for your thesis project. Finally, you must consider what method you will use to collect and analyze data. As you read, think "where would I get the data to answer the questions I'm thinking about asking, and how would I do it?" Also, think "what tools would I need to collect and analyze the necessary data, and do I have the time, resources and skill to do so?" Finally, think about "what is my research question?" If you go about coming up with a thesis idea in this fashion, you will likely run into much less frustration than many other students. The secret? Start reading early and often. If you have time over the summer, I'd strongly suggest you do so.

TIPS WHEN WRITING THE VARIOUS SECTIONS OF YOUR THESIS

Finally, beyond the content of your paper, remember that presentation is crucial. Pick a title that reflects the material but entices your reader to read and remember your work. Use your writing to draw the reader into the analysis, to invest them in finding out the answer to your question by convincing them of its importance. Make it easy for readers to find their way through your paper with obvious signposts and sections, so that no one can misconstrue your direction or conclusion.

A well-written thesis should always focus on quality instead of quantity, but it is realistic to expect a work of this magnitude to comprise about 35 pages. Longer or shorter is fine as this figure is only meant to provide an overall scope.

Working Title. This is one of the most important aspects of your thesis because it is this what will be long-remembered and most read of anything you will write. Good titles are descriptive, but not overly so. They should also evoke an emotion, question or challenge the reader. Getting a good title that does all this is as few words as possible (there is always a premium on parsimony) is challenging. Once you have a working title, remain flexible. It is quite possible it will change throughout the process.

Abstract. After the title, this is likely the second most-read section of your thesis. In about 150 words, you should provide the reader a clear snapshot of what your thesis is about. This is NOT an intro nor is it a summary. An abstract can be difficult to write. Summarize the key findings, but don't over do it. The best advice on writing a good abstract is to read other published works and mimic what you see.

Introduction. A good introduction must do two things to a reader. First, it has to capture their interest quickly and hold it. Starting with a story or example are commonly used techniques. Second, it has to

compel the reader to keep reading. In an interesting and compelling manner, your intro should frame your thesis for the reader so that when they get to the end of the section, they know where you are going and why it is important to go there. It is also necessary in an intro to provide a roadmap through the rest of your thesis at the very end of the section. There should be no ambiguity in the reader's mind at the end of your introduction, just questions -- the same questions that your thesis will seek to answer.

The Lit Review. The goal in this section of your thesis should not be to write a summary or synopsis of each previous paper, but rather to relate to the reader the state of knowledge in this field. What do we already know? What questions remain unanswered? Is there an obvious gap in our knowledge about this problem, which you aim to fill? Is the previously accepted methodology appropriate, and if so, what are you contributing to the study of this question? Has your precise question been asked before, or are you the first to ask in this precise direction? The lit review critiques and analyzes previous research that is related to your topic. Your objective should be to make the case for your thesis by highlighting the "holes" in existing research in order to emphasize why your research is so important and compelling. You are constructing an argument. Keep this in the forefront of your mind.

Theory. The discussion of theory should be the creation of a model for your thesis (quantitative approaches) or the crux of your analysis (if using grounded theory with qualitative analysis). Remember, whether you develop a model around which you can do hypothesis testing, or one that emerges as a grounded theory, it is simply a set of assumptions, which focus the reader (and writer) on the elements of reality essential for this problem. It is always best to build on the work of others, to "stand on the shoulders of giants" (as Isaac Newton originally said), rather than constructing everything anew from basic principles. That is, adopt a conception of reality, a model, from another related work which you admire, and alter it to more perfectly reflect your vision of your problem or situation. Be very clear here about the assumptions made, and in particular about which assumptions are yours and which hail from previous literature. Justification is always a good idea (e.g. if you assume that unemployment rates are zero, explain why that is a realistic or reasonable assumption). Also, always consider explicitly identifying your model's limitations. A figure or diagram is often very helpful in summarizing your research model or framework.

Methodology. Your methodology section should include all of the following: a description of the sample for which you have collected data; the time frame of the study; the source(s) of the data; and the techniques you will employ to analyze the data. It must defend and justify the choices you have made with respect to all of these factors. In other words, the methods section must demonstrate why you chose one particular sample and not another. Why a particular time frame and not another? Why one particular data analysis tool rather than another? Think of your methods section as a "recipe" or "cookbook" of your thesis. You should outline -- precisely -- step-by-step what your plan of gathering and/or analyzing the data.

Analysis and Results. For quantitative applications, be sure to calculate summary statistics of each key variable (i.e. at least minimum, maximum, average, standard deviation) so that you have a picture of what your empirical evidence reflects. Pair-wise correlations between variables might also be a good idea here, to avoid questions later about multicollinearity in regression results. Please remember to describe the data contextually as well, outlining the origins of the data and limitations or questions regarding the data. For qualitative applications, provide a thick description of your context and clearly define your protocol, method, description of your subjects and clear articulation of the procedure you employed. Analysis is the most important portion of your thesis, because it is here that your argument

or central hypothesis and/or research question is either made or broken. Taking some extra time here to get the right method or tool will save lots of time in revisions later. Every analysis should include robustness checks, meaning your own personal reflection about how your analysis would change if your model were different (e.g. different algebraic formulation, different time period, different assumptions, different sample frame, different context, etc). This section of your paper has to synthesize and present your evidence to make a case, much as a legal authority would collect the relevant facts to sway a jury or judge. Part of making a convincing case is to anticipate the objections of the skeptics, and a good paper responds to those counterarguments before skeptics have a chance to argue their point.

Conclusion. Take your time on this section and do it well. Keep in mind, the purpose of your conclusion is to comment on the significance of your findings. One way to organize your conclusion would be to have three sections: The first section would summarize the aims and findings of the thesis research; usually written so that if a reader were to read only this section, he or she would have a very good idea of what the thesis studied and what it found. The next section would focus on what your thesis research contributes to theory. For example, if you were invited to present your thesis at an academic conference, what would you say to any academic researchers in the audience? The final section might speak to the practical implications of your study's findings. In other words, what do your findings suggest for other firms, organizations, the larger society? What public policies or managerial implications do your findings suggest to business managers or to policymakers? Like the introduction, this final chapter should place your thesis in some larger context. Strong conclusions also have a hook, a claim to significance that extends beyond academia and beyond the particular narrow hypothesis under consideration. This is a fine line to walk, because you do not want to claim to have a definitive answer to questions outside of your thesis statement. However, the most effective theses have conclusions which raise further questions, which propose linkages to other interesting problems, which have applications to other situations. It is also critical to provide a summary of your thesis at the very beginning of your conclusion section. Aside from your title and abstract, this will likely be the most-read part of your thesis.

GRADING PROCEDURES

If all deadlines are met, a final grade is assigned only *after* the thesis is submitted to the department. Keep in mind that grades are awarded based on the *quality* of your work rather than the *quantity* of your work or the amount of effort. The most important considerations in my evaluation of your thesis are (1) the interest and importance of your thesis topic, (2) the quality of your assessment of the existing literature, (3) the creativity reflected in your theoretical framework and hypotheses or research propositions, (4) the care with which you execute your data collection effort and analyze your data, (5) the importance of the conclusions and implications that you draw from your findings, and (6) the level of independence you assert throughout the entire process; (7) the overall quality of your writing; (8) your oral presentation; and (9) your level of independent work throughout the process.

MISCELLANEOUS COURSE POLICIES

Honor Code: It should go without saying that the Honor Code firmly applies to your thesis. The only way in which we can all grow as scholars is to rely on each other's integrity and responsible behavior. Please help each other to preserve the strength of the Honor Code. If you are uncertain

about whether your behavior conforms, ask. The general rule is simple: always cite your sources. On the written exam, no outside sources are permitted. For homework and other projects that involve research beforehand, all sources are permitted with appropriate attribution.

The Honor System encompasses the student body, the Honor Council, and the Honor Code to form an essential part of the academic program at Colorado College. Its purpose is to help recognize each student's maturity and individual ability. Accordingly, the Honor System provides an atmosphere of mutual trust that contributes to students' personal growth and academic development. The spirit of this constitution and the principles it embodies are intended to provide a foundation for a personal ethical code that will continue long after graduation from Colorado College.

Every Colorado College student is responsible for obtaining a working knowledge of all rules and regulations of the Honor System and for understanding this constitution and other materials describing the Honor System. Also, the student is obliged to know how the principles apply in each class. Ignorance of the principles embodied in this constitution and of the way in which they apply in a particular class will be no excuse for a violation of the Honor System.

General Guidelines

THESE GENERAL GUIDELINES ARE ONLY A BRIEF SUMMARY OF THE HONOR SYSTEM. EVERY STUDENT IS EXPECTED TO BECOME FAMILIAR WITH THE DETAILS OF THE CONSTITUTION, WHICH FOLLOWS THESE GENERAL GUIDELINES.

1. The Honor System applies to all work done for credit — exams, papers, laboratory reports, daily assignments, and any other assigned work. Unless the professor specifically states otherwise, work done on all tests and assignments shall be entirely the student's own.
2. In papers, direct quotations must be acknowledged by quotes and footnotes. Ideas or paraphrasing taken from outside sources (including course textbooks) must be properly acknowledged, unless the professor specifically states otherwise. In oral reports, verbal acknowledgment of sources is usually sufficient.
3. Exams must be taken at the place and within the time limits designated by the professor. Except as otherwise stated in this constitution, each professor has the right to set such exam and term paper guidelines as the professor deems appropriate.
4. A student's work may not be submitted for simultaneous credit in two different classes without the explicit permission of both professors. Replications of one's own earlier work may be submitted for subsequent credit only with the explicit permission of the professor to whom the work is now being submitted.
5. An attempt to violate the Honor System, which is not completed because the student is observed in the attempt, will be considered a full violation.

6. A student or professor reporting a suspected violation will remain anonymous to everyone except the Honor Council. If the case is appealed, the identity of the accuser will also be revealed to an appeal board consisting of five (5) randomly selected students pledged to confidentiality.

As a requirement for your thesis, you must provide a written acknowledgment that, on your honor, you have neither given nor received any unauthorized aid on your thesis and it must be included in your final submission. Your thesis will not be graded without this acknowledgment included, and any delay in receiving it can render your thesis as being turned in late and penalized appropriately.

Disabilities: If you have a disability and require accommodations for this course, please speak with the professor privately as soon as possible so that your needs may be appropriately met. If you have not already done so, you will need to register with Disability Services in the Learning Commons at Tutt Library (Rm 152, 227-8285). This is the CC office responsible for coordinating accommodations and services for students with disabilities.