USCMarshall

School of Business

Spring 2017
BUAD 493

Marshall Honors Research Seminar
Revised Syllabus and Timeline

Faculty and Contact Information

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Office Hours:	MW 10:30-11:30 A.M. and by appointment
Class Hours:	M 04:00-05:50 P.M. **Room JFF LL102**

Email is the best way to reach me.

Course Scope and Objectives

BUAD 493 Provides the methodological tools to identify research problems, develop researchable hypotheses, apply appropriate methodologies, conduct research, derive meaningful conclusions from data, write a research proposal. Open only to Business and Accounting students.

Your invitation letter said something like this:

"We invite you to apply for the Marshall Honors program. All Marshall students meeting the following criteria are eligible to apply:

- U3 standing, or above

- Anticipated graduation date between Dec-17 and Aug-18

- Overall USC GPA of 3.3 or greater

- Marshall GPA of 3.5 or greater

The Marshall Honors program is a selective program offering students the opportunity to work closely with Marshall faculty to design and execute a research project of the studentsâĂŹ choosing. We currently offer sections in Accounting, Finance and Business Economics, and Marketing.

The program components and timeline are as follows:

1. Attend a mandatory information session to learn about the program and application process.

2. Apply for the Marshall Honors Program by completing the online application by next Tuesday, November 3, 2016

3. Take BUAD 493 Marshall Honors Research Seminar (2 units) in spring 2017.

4. Take BUAD 494 Marshall Honors Research and Thesis (2 units) in fall 2017.

Upon successful completion of the Marshall Honors program, and conditional on maintaining the Marshall and overall GPA standards, students are awarded Marshall Departmental Honors at graduation. At graduation, departmental honors students wear a departmental honors sash and are invited to sit on stage during the commencement ceremony. Departmental honors are noted on official university academic transcripts. In most cases the project submitted for the Marshall Honors program will also be eligible for the Discovery Scholar honor from the University."

You were exposed to the following issues to motivate your decision making:

- BUAD 493 See what research looks like:

  - What kinds of questions are asked?
  - What is an appropriate scale and scope?
  - What tools and techniques are used?
  - What resources are used?

- BUAD 493 Develop a research proposal:

  - What question do you want to answer?
  - How will you attempt to answer the question?
  - What tools and techniques will you deploy?
  - What resources do you need?
  - What answer do you expect?

- BUAD 494 Execute your research proposal

  - Adapt as necessary
  - Interpret the results - what do the results say? what do the results not say?
  - How do the results add to or change our understanding of the discipline?
  - What are the practical implications?
  - What new questions are raised?
  - What questions remain unresolved?

Course Learning Objectives

The primary goal of this course is to equip you with modeling, econometric, estimation, computational and programming tools used in graduate studies, consulting, analysis, banking, and quantitative portfolio management, in order to help you write a senior thesis. First, this course will help your thinking about a new research idea/question that will form the basis of your thesis. Second, it will introduce you to key research tools that will enable you to conduct your theoretical, statistical, and computational analyses. Finally, the course will guide you in writing a thesis proposal which will form the starting point of BAD 494 in Fall 2017. For all our estimation and computational tasks, and, generating graphs, we will use Matlab®: "*... a high-level language and interactive environment used by millions of engineers and scientists worldwide. It lets you explore and visualize ideas and collaborate across disciplines including signal and image processing, communications, control systems, and computational finance.*"

Once you learn the basics of Matlab, your transition to free and open source programming languages such as 'python' (`https://www.python.org/`)and 'julia' (`https://julialang.org/`)will be much easier.

Course Materials

- **Suggested Text:** Chris Brooks, *Introduction Econometrics for Finance*, third edition, Cambridge University Press, 2014.

- **Required Software:** Matlab®. This is free for USC students.
  Please go to `http://software.usc.edu/matlab/` and follow the instructions to download either the Windows or the Mac version of the latest (R2016b) software and all the toolboxes. If you do not wish to download and install Matlab® on your laptop/PC, you can still access it under Teaching Applications on all Marshall LAB stations; but this requires that you must be physically at a Marshall LAB station and cannot access it remotely.

- Take the following 2-hour online tutorial: `https://matlabacademy.mathworks.com/`.

- **Articles and notes** posted on Blackboard. I will post additional articles as make progress.

- 'Survey of Professional Forecasters: Third Quarter 2015', Research Department, Federal Reserve Bank of Philadelphia, 2015.

- 'Survey of Professional Forecasters: Fourth Quarter 2016', Research Department, Federal Reserve Bank of Philadelphia, 2016.

Recommended Materials

- **Popular Press:** I suggest that you get in the habit of regularly reading economic and business news through the lens of the material covered in this course. My favorite source of weekly news is *The Economist*, a British publication with extensive U.S. and world coverage. Several high-quality daily newspapers are available such as *The Wall Street Journal* with information on both U.S. and world events, *The New York Times* and *The Financial Times* of London. FT has a stronger international flavor and less detailed coverage of U.S. events. than either of the domestic newspapers.

- *The Essential Guide to Doing Your Research Project*, Sage (2nd ed.) by Zina O'Leary is a valuable book for explaining the process of research.

Course Requirements and Grading

The requirements for the course and the associated weights in the overall numerical grade are given below:

Requirement	Weight
Homework Assignments (5)	50%
Presentations	20%
Final Research Proposal	30%
Total	100%

Each individual course requirement receives a numerical score but not a letter grade. The overall numerical score in the course is converted into a letter grade at the end of the semester in accordance with the Marshall School's guidelines. There is no official quota for the number of A's, B's, C's, etc., although the average grade in elective undergraduate courses can be expected to be close to 3.3 (corresponding to a B+) out of 4.0.

The instructor determines what qualifies as an accurate grade on an assignment, exam, or other deliverable, and the instructor's evaluation of the performance of each individual student is the final basis for assigning grades for the course.

Homework Assignments (50%)

There will be five individual homework assignments with due dates given in the schedule below. Each homework assignment involves the use of Matlab® with economic and financial data. Each homework is worth 10% of the course grade, so 50% of the course grade is determined by these computer assignments/applications. Each student will be given an individual data set consisting of monthly observations on two risky asset returns. In addition, students will receive a common data set consisting of monthly observations on the 10-year Treasury bond yield, the 1-month Treasury bill yield, NASDAQ and Dow Jones Industrial indices, and quarterly real GDP. The computer assignments will involve the use of the common as well as the individual data sets. More detailed information, the data sets to be used, and further guidelines are posted on Blackboard. If an assignment is late for any reason, then for every 24-hour period that an assignment is late I will deduct 20% from the maximum allowable points before grading. I accept assignments submitted over the internet, provided that they are well-formatted (not too long) Word or, preferrably, PDF documents. In addition, for each assignment, I require the accompanying Matlab® code that generated the numerical results/graphs.

There is a document preparation system widely used in academia, both for technical writings, and, for organizing/publishing theses/books called LaTeX: A document preparation system. LaTeX is a high-quality typesetting system; it includes features designed for the production of technical and scientific documentation. LaTeX is the de facto standard for the communication and publication of scientific documents. LaTeX is available as free software. See `https://www.latex-project.org/`

Presentation (20%)

Each student will make two short presentations in class. The first presentation will be about a short (published) research paper assigned to him/her. Presenting and discussing someone else's reseach is a good first step in organizing one's own ideas and research. The list of papers will be uploaded on Blackboard after the first week of classes. The second presentation will be about the student's own final reseach idea, in one of the last two class meetings. With comments from your classmates and myself, a revised research proposal will form the basis of the Final Research Proposal due on Wednesday, May 3 by 6:00 pm.

Final Research Proposal (30%)

Your research proposal should start with the question you would like to work on, put into the context that makes it an interesting or important research question to work on. Then you should have a literature survey to summarize what we know about this question so far, and, why your idea will enhance our understanding of the issue or how you will produce new knowledge about the issue. Next will be a description of your methodology to address the research question; typically an empirical approach with detailed econometric specification and data needed to undertake the analysis, although, it is perfectly fine if you wish to use a theoretical (mathematical) approach or a descriptive approach instead. Note that the latter tend to be quite difficult to master and therefore talk to me early and often if you think you can use one of these methodologies. Finally, you should include the results that you expect to get (not necessarily hope to get) and what they would imply about your research question.

This document, if well developed and approved by me, would then form the basis of your summer work towards the completion of BUAD 494 in the Fall of 2017.

Incomplete Grade

A mark of IN (incomplete) may be assigned when work is not completed because of a documented illness or other 'emergency' that occurs after the 12th week of the semester (or the twelfth week equivalent for any course that is scheduled for less than 15 weeks).

An 'emergency' is defined as a serious documented illness, or an unforeseen situation that is beyond the studentâĂŹs control, that prevents a student from completing the semester. Prior to the 12th week, the

student still has the option of dropping the class. Arrangements for completing an IN must be initiated by the student and agreed to by the instructor prior to the final examination. If an Incomplete is assigned as the studentâĂŹs grade, the instructor is required to fill out an 'Assignment of an Incomplete (IN) and Requirements for Completion' form which specifies to the student and to the department the work remaining to be done, the procedures for its completion, the grade in the course to date, and the weight to be assigned to work remaining to be done when the final grade is computed. Both the instructor and student must sign the form with a copy of the form filed in the department. Class work to complete the course must be completed within one calendar year from the date the IN was assigned. The IN mark will be converted to an F grade should the course not be completed within the time allowed.

Expectations and Classroom Etiquette

An active and productive classroom is essential for the success of this course. Cultivating and maintaining such an environment is the responsibility of the instructor and the students. This responsibility imposes several obligations on all of us. It is very important that each of us comes prepared for each and every session. It is not necessary that you know the material "cold" before each class, but it is important that you expend sufficient effort to gain some grasp of the ideas we will be discussing. To be more specific, prior to every session, 1) read all of the assigned materials, 2) attempt to address and answer some of the questions found at the end of each chapter, and 3) give some thought to the broader managerial implications of the materials.

It is very important that you appreciate the interactive nature of the classroom environment. Although all class sessions will be conducted in lecture format, that does not mean I discourage classroom interaction. On the contrary, I encourage your active participation in the discussion through observations and questions. When I ask a question, it is almost never rhetorical: I expect an answer. And I encourage relevant questions from the class as well.

Laptop and Internet usage is not permitted during academic or professional sessions unless otherwise stated by the respective professor and/or staff. Use of other personal communication devices, such as cell phones, is considered unprofessional and is not permitted during academic or professional sessions. ANY e-devices (cell phones, iPads, other texting devices, laptops, I-pods) must be completely turned off during class time. Upon request, you must comply and put your device on the table in off mode and FACE DOWN. You might also be asked to deposit your devices in a designated area in the classroom. Videotaping faculty lectures is not permitted due to copyright infringement regulations. Audiotaping may be permitted if approved by the professor. Use of any recorded or distributed material is reserved exclusively for the USC students registered in this class.

Communication Protocols

Consultation with Instructor

If you have questions on course material or other course-related issues, please do not hesitate to contact me by email or in person. Contact information appears on page 1 above.

The course combines economics, finance and statistics in a computational environment using Matlab$^{\circledR}$. It will be more difficult to recover from 'failure to keep up with the material' in this course than in some others. If you believe you are failing to gain a basic grasp of fundamental course concepts, please contact me so that we can try to resolve these difficulties sooner rather than later.

Distribution of Class Information

- **Blackboard:** I will use Blackboard for several purposes:

- To distribute various documents, including class slides and readings that become available during the semester.
- To post announcements relevant to the course. Please check Blackboard regularly for new announcements.
- To send email messages. It is your responsibility to make sure either that your Blackboard email address is the one you regularly check or that email sent to your Blackboard email address is forwarded automatically to your favorite address. You should also make sure that your inbox does not become full.
- To post grade information.

Other Procedures

Sharing of Course Materials

It is a violation of USC's Academic Integrity Policies to share course materials with others without permission. **No student may record any lecture, class discussion, or meeting with me without my prior express written permission**. The word "record" or the act of recording includes, but is not limited to, any and all means by which sound or visual images can be stored, duplicated, or retransmitted whether by an electro-mechanical, analog, digital, wire, electronic or other device or any other means of signal encoding. I reserve all rights, including copyright, to my lectures, course syllabi and related materials, including summaries, class presentation slides, prior exams, answer keys, and all supplementary course materials available to the students enrolled in my class whether posted on Blackboard or otherwise. They may not be reproduced, distributed, copied, or disseminated in any media or in any form, including but not limited to all course note-sharing websites. **Exceptions are made for students who have made prior arrangements with DSP and me**.

Add/Drop Process

In compliance with USC and Marshall policies, this class is open enrollment (R-clearance) through the first three weeks of the semester and is closed (switched to D-clearance) at the end of the third week. There is no wait list for this course, and I am not permitted to add students. This procedure minimizes the complexity of the registration process for students by standardizing across classes.

I can drop you from the class, without notification to you, if you do not attend the first two sessions. Please note: If you decide to drop this class, or if you choose not to attend the first two sessions and are dropped, you risk not being able to add another section this semester, as they might reach capacity.

Academic Integrity

USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own (plagiarism). Plagiarism - presenting someone else's ideas as your own, either verbatim or recast in your own words - is a serious academic offense with serious consequences. All students are expected to understand and abide by the principles discussed in the SCampus, the Student Guidebook (www.usc.edu/scampus or http://scampus.usc.edu). A discussion of plagiarism appears in the University Student Conduct Code (section 11.00 and Appendix A). Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at:

http://www.usc.edu/student-affairs/SJACS/ . Failure to adhere to the academic conduct standards set forth by these guidelines and our programs will not be tolerated by the USC Marshall community and can lead to dismissal.

Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the Office of Equity and Diversity http://equity.usc.edu/ or to the Department of Public Safety http://dps.usc.edu/contact/report/. This is important for the safety of the whole USC community. Another member of the university community - such as a friend, classmate, advisor, or faculty member - can help initiate the report or can initiate the report on behalf of another person. Relationship and Sexual Violence Prevention and Services (RSVP) https://engemannshc.usc.edu/rsvp/ provides 24/7 confidential support, and the sexual assault resource center webpage https://sarc.usc.edu/reporting-options/ describes reporting options and other resources.

Support Systems

Students whose primary language is not English should check with the American Language Institute http://dornsife.usc.edu/ali, which sponsors courses and workshops specifically for international graduate students. The Office of Disability Services and Programs (www.usc.edu/disability) provides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, USC Emergency Information (http://emergency.usc.edu/) will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.

Students with Disabilities

The Office of Disability Services and Programs (www.usc.edu/disability) provides certification for students with disabilities and helps arrange the relevant accommodations. Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to your TA) as early in the semester as possible. DSP is located in GFS (Grace Ford Salvatori Hall) 120 and is open 8:30 a.m. - 5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776. Email: ability@usc.edu.

Retention of Graded Materials

In accordance with University requirements, final exams not returned to students will be retained for one semester after the course ends. The instructor is not responsible for maintaining copies of returned paperwork. Returned paperwork unclaimed by the student will be discarded after four weeks and thus may not be available should a grade appeal be pursued by a student following receipt of his/her course grade.

Emergency Preparedness/Course Continuity

In case of a declared emergency if travel to campus is not feasible, the USC Emergency Information web site (http://emergency.usc.edu/) will provide safety and other information, including electronic means by which instructors will conduct class using a combination of Blackboard, teleconferencing, and other technologies.

Course Schedule and Reading List

You are responsible for all reading assignments

Week	Date	Topic No.	Topic	Textbook Sections	HW Due
1	M - 01/09	1	Introduction & Matlab$^®$	Ch. 1	
2	M - 01/16		MLK Day		
3	M - 01/23	2	Descriptive Statistics	Ch. 2 and Matlab$^®$	
4	M - 01/30	3	Multiple Regression	Ch. 4 and Matlab$^®$	
5	M - 02/06	4	Estimating Factor Models	Ch. 4, 5 Matlab$^®$	
6	M - 02/13	5	Estimating Factor Models	Ch. 4, 5 Matlab$^®$	**HW1 Due**
7	M - 02/20	Presidents' Day			
8	M - 02/27	6	Logit/Probit Regressions	Ch. 12 and Matlab$^®$	
9	M - 03/06	6	Time Series Analysis, ARMA	Ch. 6 and Matlab$^®$	**HW2 & HW3 Due**
10	M - 03/13		**No Class − Spring Recess**		
11	M - 03/20	7	Stochastic Volatility	Ch. 9 and Matlab$^®$	**HW4 Due**
12	M - 03/27		Presentations		**HW5 Due**
13	M - 04/03		Presentations		**1 page proposal due**
14	M - 04/10		Individual advising		
15	M - 04/17		Individual advising		**Progress report due**
16	M - 04/24		Individual advising		
	W - 05/03		**Final Research Proposal Due 06:00 p.m.**		

Note: All details in this handout are subject to change with adequate notice. The University's official "Schedule of Classes" supersedes all items such as final exam schedules, etc., which are reproduced here only for your convenience.