

BAN 8000-70: Capstone

Myles D. Garvey, Ph.D

Spring, 2020



E-mail: garveym2@wpunj.edu
Office Hours: By Appointment
Office: Valley Road Room 3070
Phone: 973-720-3928
YouTube Playlist: [TBA](#)

Virtual Hours: Wednesday: 6pm - 8:30pm
In-Class Hours: Monday: 7-9:30/Online
Class Room: Valley Road 2014

Contents

1	Required and Recommended Materials	2
2	Course Description	2
3	Prerequisites	2
4	Course Format	2
5	General Course Policies	2
6	Evaluation	4
7	Blackboard	4
8	Structure of the Capstone	4
8.1	Problem Formulation	4
8.2	Literature Review	5
8.3	Research Design, Data Collection and Analysis	5
8.4	Drawing Conclusions and Recommending Action	5
8.5	Conference Submission or Journal Submission	6
8.5.1	Conferences	6
8.5.2	Journal Submission	6

9 Course Schedule and General Syllabus Changes	7
9.1 Policy Regarding Changes to the Syllabus	7
9.2 Tentative Course Schedule	7

1 Required and Recommended Materials

Required Textbooks:

- No Books. Take notes as needed. Most of your material will be based on your results from your literature review.

2 Course Description

This course is designed to prepare all MS in Business Analytics candidates for their professional careers through the integration and application of their course learnings in the development of a solution to a selected real world business problem. Specifically, students will develop an experiential learning project where they apply business analytics skills in their area of professional interest. Students may choose to investigate an issue at their place of work or undertake research that will lead them to new fields. The capstone experience will provide students with direct experience in business analytics by solving a real problem.

3 Prerequisites

All Lower Core and Upper Core

4 Course Format

This class is a hybrid course that meets in person every other Monday night from 7pm - 9:40pm. On weeks that we meet in person, be expected to present your results for each deliverable.

5 General Course Policies

1. Please adhere to professional behavior in class. Refrain from chatting, reading the newspaper, answering phones, wearing headsets etc. Such behavior is disruptive and discourteous and WILL result in you being asked to leave for the remaining time of the class. I cannot be more clear on this. If this is a continued pattern, this will result in you receiving an F for the course. Please note that if you are carrying private conversations with other students, this also classifies as a disruption. Do not be surprised if I call you out on it. It is nothing personal, however, private conversations will result in a warning and a second violation will result in you being asked to kindly leave the classroom.

2. Important announcements will be made in class and on Blackboard. So please make sure you are attending class and checking Blackboard! I ask everyone to check their email/Blackboard a MINIMUM of 30 minutes before class in the event of a last minute cancellation.
3. Final course grades are final. Let me repeat this. **Final course grades are final!** Changes will only be made if there is a mistake in the calculation of the final grade, but legitimate evidence suggesting the contrary must be presented to the professor. "Legitimate" constitutes the use of the professor's calculation in grade mismatching with the grade received. See below for more detail. It does NOT include a mistake made on a particular assignment or exam or project. Please keep in mind that grades are NOT rounded. So if you receive a 89.99, this constitutes a B+, not an A. Do NOT request me to change a grade due to the closeness of a letter grade. I'm informing you right now, this will not happen! Same for other grading boundaries.
4. Accommodating students with special learning needs: In accordance with the university policy, students with documented sensory and/or other learning disabilities should inform the professor, so that their special needs may be accommodated. Please let me know IMMEDIATELY following the first lecture.
5. As you may know, it is against university policy to cheat. It is a very serious violation of academic integrity. Please note that if cheating of any kind is observed in/out of the class, you will be reported to a higher authority in accordance with university policy on academic dishonesty.
6. I do not give extra credit just because you are falling behind. Please do not request me to do so.
7. All course material is posted on Blackboard. Our videos are posted on YouTube.
8. It is YOUR responsibility, not mine, to keep track of your grades. With that said, ensure that you use the formula indicated below to get an idea of your standing in my course. The "Total Score" grades on Blackboard **do not** properly reflect your grades. In order to determine your grade in the course, you must use the equation indicated below in this syllabus. Failure to keep track of your own grade is not an excuse for additional points, extra credit or additional revision on assignments outside the grace period for review for said assignments. It also is not a valid reason to contest a final course grade. If you receive a grade of F at the end of the semester, please keep in mind that this is not reason for me to change a final grade due to your lack of supervision of your own grade. If you need me to clarify or project what your final grade will be, or give you a comment on your progress in the course, I will be happy to do so, but YOU MUST first initiate that type of discussion with me, and do so **well before the semester ends**.
9. If you are having difficulty due to a death in the family, financial problems, or other personal issues, I MUST receive an email from you **in advance**. I do not accept such requests after due dates.
10. ALL submissions of anything in this course are digital. Furthermore, ALL documents MUST be of PDF file format upon submission. **DOC, TXT, DOCX, etc will NOT be ac-**

cepted as valid submissions. I have a hard absolute policy with this. So please, remember, don't let your hard work result in a 0 all due to you not submitting a PDF. We live in the 21st century, and ALL modern operating systems have the easy ability to convert any of the aforementioned types into a PDF format. HENCE, please make sure that submissions are indeed in PDF format. Last, and most importantly, hard-submission (paper-format) **WILL NOT** be accepted as a valid form of submission.

6 Evaluation

Deliverables (4 Total)	12.5% each
Journal or Conference Submission	50%

Numerical Grade	Letter Grade
[94, 100]	A
[90, 94)	A-
[87, 90)	B+
[83, 87)	B
[80, 83)	B-
[77, 80)	C+
[70, 77)	C
[68, 70)	C-
[65, 68)	D
[0, 65)	F

7 Blackboard

All submissions for everything are conducted through blackboard. Make SURE you have access to this! Everything will equally be posted on blackboard. Another side-note, please **DO NOT** EMAIL ME via blackboard. If you need to email me, please do so **DIRECTLY** from your WPUNJ email account.

8 Structure of the Capstone

8.1 Problem Formulation

When we meet for our first session, we will discuss the overall outline of the capstone. You will be tasked with finding a practical, real-world business problem to solve with your newly discovered analytical toolbox. You **will** be absolutely required to use R, Python, nodeJS, Java, or C. **Excel is not permitted in this capstone.** We will discuss the fundamentals of conducting applied research through the lens of the business analytics lifecycle. You are expected to go through each step in the lifecycle. On our first night, we will discuss how to go about identifying, formalizing, and specifying the research problem.

After the first night, you will be required to go out and find a problem to solve. There are two ways in this capstone that will be acceptable:

- Speak with your boss at your current job position. See if there are any problems that currently exist which can reasonably be resolved by ways of an analysis within a three-month time frame. Determine the research question, the potential recommended actions that can be taken once the information is gathered and analyzed, the type of data that will be needed to analyze the problem, and the analysis methodologies that could possibly be employed. You will be required to conduct a literature review.
- If you do not have a boss at the moment, or your current job does not have any practical problems for you to solve at the moment, you can dive into a research question instead and conduct more basic research. You will need to first conduct a review of the literature, organize it, summarize it, and formulate your research questions and objectives.

You will be given only 4 weeks to formulate your problem. The first deliverable will essentially be a presentation and a mini-report that specifies the research problem, the planned resources needed to continue to carry out the research, the research questions, the first portion of the literature review, and an emphasis on the gaps in the literature (if you are conducting more basic research for your project). Essentially, deliverable 1 is a summary of what each phase in the business analytics lifecycle will comprise of for your specific problem at hand.

8.2 Literature Review

Once you have your research questions complete, the next part of our capstone will comprise of showing you how to complete a thorough literature review. You will be lectured on how to find literature using various databases, university inter-library loans, as well as Google Scholar. In addition, we will cover how to judge the quality of literature from subjective and objective methodologies, determine the characteristics and topics within a "literature stream", as well as common methods for organizing and synthesizing the literature and using it in your own research. Your second deliverable will comprise of zip-file of all of your literature, a mini-report that explains the various areas, variables, methods, measures, and topics in the literature, as well as emphasizes the "gaps" in the literature. You will also be required to give a presentation on your mini-report.

8.3 Research Design, Data Collection and Analysis

In this portion of the capstone, we will review through research design methodologies (conceptual, empirical, analytical, simulation, etc), data sources, and how to gather data. We will also review through an overview of data analysis methodologies (statistics, machine learning, econometrics, mathematical analysis, etc). Your deliverable for this part of the project will be a mini-report that specifies the design of your research project, the data gathering methodology, and the data analysis methodology. You also will be required to present on your report.

8.4 Drawing Conclusions and Recommending Action

In the last portion of the capstone, we will review through how to draw conclusions from our analysis. What do exploratory and casual analysis show us? How can we turn our results into actionable decisions? Which decisions did our analysis find to be "sensitive", while others not so much? Once we review through a few cases, you will be expected, as your fourth deliverable, to

take your results together with your initial research questions/objectives and draw conclusions as well as make recommendations for solutions to the original problem. If your problem was basic research, you will be required to identify the "managerial implications". Put differently, how can a manager use your results to solve a problem in their firm? You need to show the practical relevance of your research. Again, your deliverable will be a mini-report and presentation on the matter.

8.5 Conference Submission or Journal Submission

You are **required** as part of this capstone to submit your research to a conference or a journal.

8.5.1 Conferences

You are free to submit your research to a conference. The research does not need to be complete in order for you to submit it. All that is needed is a title and an abstract. I will be attending POMs 2020 Conference, as well as INFORMS 2020 Business Analytics Conference this year. If you submit your research as a presentation to either of these conferences, I will be more than happy to help and support you at the conferences. Unfortunately, you will need to pay out of pocket if you submit it to a conference, and so I would encourage you to submit to more local conferences. **You will be required to attend and present.** We will discuss upcoming conference that are appropriate for you to present. You are free to pick any conference that relates or has a track for analytics in some manner. Failure to attend will result in failure of the capstone.

8.5.2 Journal Submission

A less expensive route to finish this requirement is to submit your research to a journal. Journal publications will greatly help your career, as employers are always more than willing to employ individuals whom have demonstrated publishable research results. If you opt for the journal submission process, you will need to synthesize your mini-reports into a final manuscript. Furthermore, you will need to select a journal to submit to, with the following criteria:

- It is ranked in the ABDC Journal Ranking system (more on this when we discuss the capstone, but any grade is just fine, so long as it appears in the system). Any journal which does not appear on ABDC is disqualified.
- It is related to your main topic area.
- If you are in a group, the individual whom has contributed the most work deserves first authorship.

I will show you how to prepare for a journal submission during our mid-semester meeting. Since journal submissions are difficult to publish, I will not base your grade on whether your research is accepted or rejected from the journal. Rather, I will grade you on the submission itself as if I were reviewing it for a journal. Hopefully, however, you can see your paper be accepted, although this takes quite a few months. I will be more than happy to help aid you in the process throughout the year of the journal submission process. You are free to add me as a coauthor only if (1) I am the last co-author, (2) your research somehow can intersect with my own research. Otherwise, I will kindly ask you to leave me off as a co-author.

9 Course Schedule and General Syllabus Changes

9.1 Policy Regarding Changes to the Syllabus

I try my best to stick to this schedule and grade distribution. With that said, if I see that you need more time to absorb the material, some homework assignments or topics may be extended. If I begin to see that our grading distribution in regards to assignments becomes too much, I will need to redistribute points. Again, **this is a very rare situation that happens**. However, I understand that some of you may have more difficulty in absorbing the material than others. With that said, I want to ensure we spend the proper amount of time on each topic. If we need to change anything about this course, I will update the syllabus and post it.

If I need to make changes to the syllabus, you will be notified, on Blackboard, and via email. Changes to the syllabus may come as a consequence of in class discussions. I always consult with my students first before making any necessary changes. **Please note that if you miss class, especially on a regular basis, then your voice on such matters may not be heard.** I only take into consideration comments made within a class session. Moral of the story: attend class and you will have your voice heard if such a need for change arises.

9.2 Tentative Course Schedule

- Research Questions, Objectives, and Problem Identification and Formulation
- Using Library Databases and Google Scholar
- Conducting Literature Reviews (the Right Way!)
- Organizing, Synthesizing, and Leveraging Your Literature Review
- Research Design and Types
- Analyzing Data and Reporting Your Findings
- Turning Your Results into Actionable Recommendation
- A Word on Final Report Writing and Presentations
- Research Publication and Conference Presentations: Why It Matters to Your Career
- Preparing and Submitting Your Research for Publication or Conference Presentation