GRAD 695: RESEARCH METHODOLOGY AND WRITING Course Syllabus

**Course Description**

This course is intended to assist you in preparing your thesis proposal, which is the experiential capstone of your graduate studies in analytics. We will review the components of a proposal, emphasizing the selection of an appropriate/innovative research topic, developing the literature review, defining hypotheses, and attending to the research design and expected data analyses. In addition, we will review key elements of APA formatting standards and discuss important considerations in scientific writing.

**Required Resources**

Publication Manual of the American Psychological Association, Sixth Edition (<http://www.apastyle.org/manual/)>

The Purdue Online Writing Resource:

https://owl.english.purdue.edu/owl/resource/560/01/

**Course Policy**

Any violation of the Harrisburg University standards of academic integrity will result in an F in the course.

**Learning Objectives**

1. Identify and assess the objectives, scope, and methodological limitations for domain-specific problems.
   1. Translate between a domain problem and an analytical framework
   2. Identify appropriate data (tools) needed to solve the problem.
   3. Assess the utility of available data
2. Design and execute insightful analyses
   1. Form a testable hypothesis
   2. Select the appropriate analytical technique
   3. Determine appropriate data requirements and processing to required format.
   4. Defend choice of algorithms used to answer a research question
3. Measure, evaluate, and explain the quality of a dataset and develop a plan to improve the quality
   1. Determine whether a dataset meets the assumptions of the analytical process.
   2. Develop a plan to improve the quality of a dataset.
   3. Assess the suitability of a dataset to the analytical process
4. Recognize and analyze ethical issues related to intellectual property, data security, integrity, and privacy
   1. Identify plagiarism / Document ideas from source to execution
   2. Demonstrates appropriate use of data
   3. Understands bias in analysis
   4. Identify inappropriate analysis techniques
5. Communicate effectively to a variety of audiences
   1. Display effective public speaking skills
   2. Convey by verbal presentation, quality, meaningful content
   3. Articulate through written report comprehensive, but concise, relevant information
   4. Able to develop and use persuasive arguments about technical topics to non-technical audiences

**After taking this course, you should be able to**

* Develop a solid proposal for a research thesis or applied project.
* Conduct research or applied projects successfully with minimal supervision.

**Course Philosophy**

* The primary objective of this course is to prepare the student for the Experiential Capstone (MS Thesis or Applied Project).
* The main deliverable of this course is a well-written and solid proposal for continuing with an MS Thesis or Applied Project.
* **Course Grading**

According to the Harrisburg University 2017-2018 graduate catalog, a grade of ‘A’ indicates *superior* achievement, a grade of ‘B’ indicates *average* achievement, and a grade of ‘C’ indicates *minimum* achievement. Any grade below a ‘C’ indicates a failure to achieve course objectives.

**Assignments**

Assignments consist of several assignments that will prepare you to write your proposal. Each assignment can and should be submitted as early as possible to give you an opportunity to redo it for full credit. Assignments lose 5% of their grade for each day late.

**Standards of Academic Integrity**

Please refer to the Harrisburg University 2017-2018 graduate catalog for specifics regarding plagiarism, cheating, fabrication/alteration of documents/lying/etc., and assisting others in academic misconduct (http://harrisburgu.edu/wp-content/uploads/2017/06/2017-2018-GR- Catalog.pdf#page=2).

You will not be allowed to finish or submit any Proposals after a plagiarism incident, and will be awarded an “F” for the course.

**Disability Support Services**

Please refer to the Harrisburg University 2017-2018 graduate catalog for specifics regarding requests for accommodations by qualified individuals with a disability (http://harrisburgu.edu/wp- content/uploads/2017/06/2017-2018-GR-Catalog.pdf#page=2).