Course Syllabus Part I
DSC 500 Introduction to Data Science

3 Credit Hours

Course Description
This course introduces the possibilities, history, and ethics surrounding Data Science. Basics of data science are explored, including vocabulary, programming languages, big data frameworks, visualization, and statistics. Prior programming experience is not needed for this course.

Course Prerequisites:
None

Course Objectives

Students who successfully complete this course should be able to:
1. Describe the skills needed to be a data scientist.
2. Demonstrate an understanding of the data science process.
3. Apply the data science process to case studies using exploratory data analysis.
4. Compare data science approaches and their ethical considerations.
5. Explain the purpose of various programming languages used in data science.
6. Develop a portfolio of data science projects.

Grading Scale

93 – 100% = A	87 – 89% = B+	77 – 79% = C+	67 – 69% = D+
90 – 92% = A-	83 – 86% = B	73 – 76% = C	63 – 66% = D
	80 – 82% = B-	70 – 72% = C-	60 – 62% = D-
			0 – 59% = F

Topic Outline

I. History
   - A. When Computers Were Human
   - B. When Computer Science was Datalogy
   - C. From Business Only Use to Substance

II. The Data Science Process
   - A. How to ask interesting questions.
   - B. How to get data.
   - C. How to explore data.
   - D. How to model data.
   - E. Communicating and visualizing data science.

III. What do Data Science Projects Look Like?
    A. Algorithms.
    B. A Spam Filter – Bayesian v. Frequentist.
    C. Data science in the business world.
    D. Recommendation engines.
    E. Social networks.
    F. In the health industries.

IV. From Business Only Use to Substance
    A. Why do people use computers?
    B. What don't people know about the machines they use?
    C. How do companies take advantage of that?
    D. Does it matter?

V. Accessibility Issues

VI. What You'll Need to Learn to Use
    A. Software
    B. Social Stuff
    C. Online communities
    D. Online identity

VII. Tools and Things to Develop in This Program
    A. Github
    B. Kaggle
    C. Quora
    D. Jupyter
    E. Other things of interest