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**Syllabus/Class Overview Template**

**General Class Information**

Instructor Name and Contact Information: Mary Dunaway, Ph.D.

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E-mail is the best way to contact me!

Office Phone: (703) 536-1129 or

cell 972-839-4438 (emergency only)

Subject Area and Catalog Number: STAT 3559

Year and Term: 2017& J-Term (January 3 – 13)

Class Title: Data Analytics and Decision Making

Level (Graduate or Undergraduate): Undergraduate

Credit Type: 3 credit hours

Class Description:

This course introduces students to the analytics process from question formulation, through data gathering, data processing, and decision making. Through labs and in-class exercises, students will utilize SAS Studio and Tableau software to apply analytical methods. Analytics best practices and real-world case studies will be integrated into the course. Students are expected to relate results of their analyses to become information-based decision makers. To facilitate career exploration and industry interaction, guest speakers will further demonstrate applicability of analytic methods and tools within their respective organizations to provide students with a sense for the careers available in analytics (possible disciplines include healthcare, social media, health policy, government, sports, and non-profit). Students will work in teams on a project to explore, summarize, and analyze a data set. Each team will present their analysis, findings, and recommendations to industry partners, faculty, and others on the final day of class.

Course Prerequisite:

STAT 2120 or equivalent. Students must have completed the equivalent of an undergraduate course in statistics covering p-values, hypothesis testing, analysis of variance, and regression; Complete pre-readings, tutorial/video(s), and statistics knowledge assessment survey prior to the first class session.

Required Text (Include ISBN, specific edition):

Keeping Up with the Quants

Author: Thomas H. Davenport and Jinho Kim

ISBN-13: ISBN13: 978-1-4221-8725-8

Publisher: MIT Press

Edition: 1st (2012)

SAS Digital Workbook (adapted from Data Manipulation and Analytics using SAS® University Edition Course Notes)

Author: Peter Christie and Catherine Truxillo

Publisher: SAS Institute Inc. Cary, NC, USA

[Copies will be distributed to each student in class]

**Optional Textbook:**

Title: Tableau 9: the official guide

Author: George Peck

ISBN: 978-0-07-184329-4

Publisher: McGraw Hill Education

Edition: 2016

Course Learning Outcomes – Upon successful completion of this course, the student will be able to:

1. Describe the analytics process and how it is applied in a variety of contexts

2. Evaluate the differences (i.e. strengths/weaknesses) between analytical methods (specifically, regression, t-test, and ANOVA)

3. Determine the appropriate method of analysis based on the analytic problem or question to be addressed

4.Apply a statistical tool to analyze data

5. Synthesize and evaluate analytical output to support decision-making

6. Interact as a team to analyze a dataset and create a presentation summarizing results and recommendations

7. Develop a presentation of analytical findings and recommendations tailored to the appropriate audience

8. Gain an appreciation for the variety of career options available in the field of Data analytics for Liberal Arts and Sciences majors

Assessment Components: Course participation (30%), Assignments and concept checks (30%), Data analytics team project and presentation (40%)

Delivery Mode Expectations (Classroom/Internet and Web-based classes, specify any live (synchronous) meetings, dates, times, and location of delivery): Face to Face, lab hours