

The University of North Carolina at Greensboro
Bryan School of Business and Economics
Department of Information Systems and Supply Chain Management

**ISM 675 Methods And Models in Business Analytics
Spring 2018**

Instructor: Dr. Xia Zhao
Office: 422 Bryan Building
Voice Mail: 336-256-8588
Email: x_zhao3@uncg.edu
Course website: canvas.uncg.edu
Office hours: Tuesday noon-1:30pm or by appointments

Catalog Description

Business Analytics is an interactive process of analyzing and exploring enterprise data to find valuable insights that can be exploited for competitive advantage. Business Analytics models and methods are discussed.

Course Description

With the widespread and economical availability of computing power and data management techniques, organizations have huge amounts of data (BIG DATA). Over the years, companies have come to realize that these data are of little use without systematic analysis to find trends, patterns, associations that help them make sense of their data and make better decisions. Business Analytics sits at the intersection of Information Systems, Statistics, Data Mining, Machine Learning and Data Management and helps organizations make better informed, data-driven decisions. Without the ability to transform the data into actionable intelligence, the volumes of organizational data add little value. Organizations willing to change the way they do business based on insights from analytics will prevail. Business analytics are becoming an even more critical capability for enterprises of all types and all sizes, and skilled business analytics professionals are in high demand.

In this course, you will learn to identify, evaluate, and capture business analytic opportunities that create value. It should make you alert to the ways that analytics can be used and abused in organizations. You will learn basic analytic methods and analyze data to identify trends and develop analytics models that inform business decisions. We focus on how to use data to develop insights and predictive capabilities using machine learning, data mining and forecasting techniques using SAS Enterprise Miner. The concepts learned in this class help you identify opportunities where business analytics can be used to improve performance and inform important decisions in organizations.

Student Learning Outcomes:

Upon completion of this course, students will demonstrate a broad knowledge and clear understanding of critical concepts, practices and issues in developing and using Business Analytics (BA) models and methods. This course makes extensive use of SAS Enterprise Miner software.

Specific course outcomes include:

1. Demonstrate an understanding of Business Analytics;
2. Identify, design and assess different business analytics methodologies;
3. Prepare and formulate data collection, sampling, preprocessing;
4. Describe data quality controls;
5. Explore and develop descriptive and predictive analytic models;
6. Apply and assess different predictive modeling techniques;
7. Evaluate efficacy of different analytics model implementations;
8. Demonstrate proficiency in the use of SAS Enterprise Miner.

Course Materials

This course is Web based and delivered on-line. It blends assignments, online discussions, final project and final exam. All teaching material including text books, assignments, handouts and other learning recourses needed for this course are available electronically at the course Canvas site. It is your responsibility to read the assigned readings. Please sign into Canvas to gain access to the material and come back frequently, as I upload new content throughout the semester.

Course materials in the course include:

I. Required Text Books

Galit Shmueli, Peter C. Bruce, Inbal Yahav, Nitin R. Patel and Kenneth C. Lichtendahl Jr. *Data Mining for Business Analytics: Concepts, Techniques, and Applications in R*, Wiley, 2016. ISBN: 978-1118879368.

Applied Analytics Using SAS® Enterprise Miner™ Course Notes

Developed by Peter Christie, Jim Georges, Jeff Thompson, and Chip Wells. Additional contributions were made by Robert Blanchard, Tom Bohannon, Mike Hardin, Dan Kelly, Jay Laramore, Bob Lucas, André de Waal, and Sue Walsh. Editing and production support was provided by the Curriculum Development and Support Department. Copyright © 2016 SAS Institute Inc. Cary, NC, USA.

Additional articles that are required reading will be provided on canvas.

III. Necessary Software:

- **SAS® Enterprise Miner™** will be extensively used for data analysis.
- **Tableau** is used for data visualization.

Please see software installation guide for installation details.

Evaluation and Grading

The course is letter graded. The final grade depends on the quality of four components.

| | |
|-------------------|------|
| I. Assignments | 400 |
| II. Group project | 300 |
| IV. Final exam | 300 |
| Total | 1000 |

Letter Grades and Points:

930-1000 = A, 900-929 = A-, 870-899 = B+, 830-869 = B, 800-829 = B-,
770-799 = C+, 730-769 = C, 700-729 = C-, 600-699=D, 599 and below =F

I. Assignments

You will have specific assignments dealing with specific business analytics method or model using SAS® Enterprise Miner™. Assignments are due on the date/time specified in the assignment description.

Assignments submitted after the due date may not be accepted but, if they are based on valid excuse, there will be a minimum of a 20% reduction for each day late. Assignments turned in late will be assessed a grading penalty. Also, any assignment that requires rework will be assessed at least a 20% penalty.

II. Group Project

Each student is required to join a group of up to four individuals to work on a project. More details about the project will be given during the course.

III. Final Exam

An on-line final exam is required for the course. The exam will test your knowledge of business analytics topics and the use of software to develop analysis and answer questions around concepts that are covered in class.

Schedule

A tentative schedule is available on canvas.

Attendance:

This is an online class. No physical, class-room attendance is required. It is the student's responsibility to stay on track with readings and assignments to be successful in the course.

Netiquette:

The same guidelines that apply to traditional classes should be observed in the virtual classroom environment. Please use proper netiquette when interacting with class members and the professor.

Server Unavailability

The university is committed to providing a reliable online course system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty which prevents students from completing a time sensitive assessment activity, the instructor will extend the time window and provide a revised due date.

Please note that this does not apply to local computing issues since all aspects of the course can be done on-line.

Electronic Mail and Canvas Accounts:

You must check your UNCG email and Canvas course regularly. I may send email updates or add new information on Canvas on an ongoing basis.

You will be responsible for any information or announcements provided to you through email and for any updates on Canvas.

Academic Integrity:

Students in the Bryan School must conform to UNCG's Academic Integrity Policy and the Student Code of Conduct. Academic misconduct includes all forms of cheating, such as illicit possession of examinations or examination materials, forgery, or plagiarism. Students will not make, borrow, or "share" copies of their assignments or files with other students. Plagiarism is presenting as one's own work, that work which is, in whole or in part, the work of another person or persons without giving proper credit to the appropriate source. This includes submitting work done by another, as one's own work. Helping one another is allowed, but copying, even electronically, is cheating. This practice is against the UNCG Academic Integrity Policy and defeats the purpose of this course. No credit will be received for shared work, and other penalties may be imposed. UNCG's Academic Integrity Policy (AIP) can be downloaded from <http://sa.uncg.edu/handbook/academic-integrity-policy/>.

Bryan School Faculty-Student Guidelines:

Students should be familiar with the Guidelines for Faculty and Students available at: http://bryan.uncg.edu/wp-content/uploads/2012/08/faculty_student_guidelines.pdf

Course Routine and Schedule

To provide some structure to each week of study, we will follow the routine described below:

- On each Monday of a particular week, check the Canvas for that week. You should look for the outline of topics for the week, and download and start reading the week's reading and plan on viewing the multimedia files, etc.
- By Thursday or Friday of each week, you should have completed the readings and tutorial and start working on any assignments. In those days, you should look on Canvas a couple of times a day for Discussion Board questions, and enter into the interactive exchanges with other students and the instructor. You can post your comments about the week's readings, assignments or any other questions.
- On Saturday or Sunday of the week, you should be wrapping up your reading and get ready for next week and submit any deliverables

What you need to take this course:

1. Your reading list and individual articles and readings in that list.

2. You must have access to a computer that connects to the Internet. The course materials are only accessible online by logging in to Canvas- your uncg login is required. If you do not own a computer, the computer labs on campus will be open during this semester.
3. You must have a working UNCG e-mail account. Your first assignment will be to update your e-mail address on the course Web site. Instructions are online on Canvas- you must log in to see the course materials.
4. Because of e-mail viruses, Professor Zhao only accept e-mail from your uncg email account. In addition, you must have ISM 675 included in the subject and your full name typed in the message. Otherwise the e-mail may be ignored.
5. You must check your UNCG e-mail account regularly throughout the semester. Official announcements will be made by e-mail, and on the course Web site at Canvas.
6. You are responsible for saving all assignments correctly, so you can turn them in electronically. You should be comfortable using word processing software, and have reasonable keyboarding skills. All assignments will REQUIRE you to use word processing or text editing software. No assignments will be accepted in handwritten form.
7. Although you will be publishing (uploading) your assignments, it is a good idea to keep copies of everything.

A note about you and this course

Students learn best in quite different ways. One of the advantages of the online format of the course is that it allows students to approach the course in ways that suit their personal styles and preferences. In classrooms, instructors are inclined to teach either as they themselves were taught, or as they think "the average student" prefers. Online, all the class material is laid out at once, and students can do with it whatever they prefer in order to learn in as personal and unique a fashion as possible.

This course by design specifically accommodates different learning styles by involving a variety of components, including text, video clips, self-check quizzes, reference lists and online discussion. Since you are probably used to learning more or less as prescribed or required by a classroom teacher and are not used to designing your own learning strategy, it might take a little time to do that and to settle into a comfortable routine. I think you'll find that as you figure out on your own how to learn the material, everything will fall into place. Online learning, you will find, is quite different than classroom learning. It requires different attitudes, responsibilities, and communication skills.

Emails:

- Always include a subject line. Include ISM 675 plus the issue in the subject and type your full name in the message.
- Remember without facial expressions some comments may be taken the wrong way. Be careful in wording your emails. Use of emoticons might be helpful in some cases.
- Use standard fonts.
- Do not send large attachments without permission.

- Special formatting such as centering, audio messages, tables, html, etc. should be avoided unless necessary to complete an assignment or other communication.
- Respect the privacy of other class members

Discussion Board:

- Review the discussion threads thoroughly before entering the discussion. Be a lurker then a discussant.