ISM 675
METHODS AND MODELS IN BUSINESS ANALYTICS
SPRING 2017

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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 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 online. It blends assignments, online discussions, final project and final exam. All teaching material including text books, assignments, handouts and other learning resources 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:

A. Required Text Books and Readings
(Available on Canvas)

1. Applied Analytics Using SAS® Enterprise Miner™ Course Notes was 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.

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

B. Recommended Text(s):
Multiple eBooks are available for your references. Multiple recommended text references will be available for your reading on canvas.

C. Necessary Software:
This course makes extensive use of SAS® Enterprise Miner™. Multiple options are available for you to use the SAS Enterprise Miner through the UNCG SAS Academic License.

SAS on the cloud (Recommended):
The easiest way for you to access the latest version of SAS Enterprise Miner is through the cloud at mycloud.uncg.edu. You would log on using your UNCG username and password. Scroll down to see and use SAS Enterprise Miner. Note that there are multiple additional SAS Components available. We will be focusing on using SAS Enterprise miner in this course.

SAS is a complex, multi-component software with multiple components. I strongly recommend that you use the cloud installation since it has minimal impact on your local computer.
For more information about myCloud, please see: https://its.uncg.edu/mycloud/

I recommend you use Kumo to connect your Google Drive files to the mycloud environment for easy access. https://its.uncg.edu/Kumo/

**Local Installations of SAS:**
If you prefer, you can get access to SAS software for local installation on your computer, you may use the information available at: https://its.uncg.edu/software/available/sas/ to download and install the software locally on your machine.

Please note that this install files locally on your computer. Additional information is available at: https://its.uncg.edu/software/available/sas/.

**Evaluation and Grading**
The course is letter graded. The final grade depends on the quality of three project components.

| I. Class discussion and WebEx Participation | 5 % |
| II. Assignments | 50 % |
| III. Final Exams | 45 % |
| **Total** | 100 % |

**Letter Grades and Points:**

**I. Discussion Board and WebEx Participation**
Student are expected to regularly discuss their progress in the course and participate in discussions using WebEx and the topic/assignment specific discussion boards on canvas.

**II. 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.

For details, visit the assignments section on Canvas.

**III. Final Exam**
A timed, 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 under the Course Information and Syllabus module.
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 info 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. Further details are available at: http://sa.uncg.edu/handbook/

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 to Wednesday of a particular week, check the Canvas for that week. You should look for the online 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, Blogs and Wikis to read and enter into the interactive exchanges with other students and the instructor. You should 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 get ready to submit any deliverables
- On Monday, of starting the second week of the course, you should upload your assignment, if any, to Canvas and start over.
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 student identification number 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 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, Prof. Singh does not accept e-mail from unknown sources. Therefore, you must use the subject ISM 675 and your full name typed in the message, or the e-mail may be ignored.
5. It’s impossible for Prof. Singh to be familiar with every e-mail software application on the market, so please don’t ask for technical assistance.
6. You must check your e-mail account regularly throughout the semester. Official announcements will be made by e-mail, and on the course Web site at Canvas.
7. 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.
8. Although you will be publishing (uploading) your assignments, it's 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 of the instructor-presented 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.

To understand how you might learn best and how you might approach the course, it’s suggested that you complete a learning style inventory, use the information given to figure and interpret your score, and plan your learning strategy accordingly. Another couple of online tools of this sort are the Keirsey Temperament Questionnaire (http://www.keirsey.com/sorter/register.aspx) and the Keirsey Character Questionnaire (http://www.keirsey.com/).

This course by design specifically accommodates different learning styles by involving a variety of components, including text, video clips, self-check quizzes, reference lists, online discussion, blogs and wikis. 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 (and with the help of the
online questionnaires mentioned) 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.
- 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 Groups:**

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