ISM 685: Business Analytics for Competitive Advantage

Spring 2018

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**Catalog Description:**

Data is viewed as a strategic organizational asset to gain and sustain competitive advantage. Capabilities and infrastructure needed to achieve this along with recent advances in Business Analytics are discussed.

**Student Learning Outcomes:**

Upon completion of this course, students will demonstrate a broad knowledge and clear understanding of critical concepts, practices and issues in how Business Analytics can be used to achieve and sustain competitive advantage. The course will make extensive use of Business Analytics software including SAS Enterprise Guide, Enterprise Miner, and Visual Analytics. The course introduces students to a number of other emerging topics in Business Analytics and environments such as Google Analytics, social media analytics and others. Specific course outcomes are:

- Describe and interpret the basic concepts of Business Analytics for competitive advantage.
- Evaluate business problems and determine suitable analytical methods in support of a sustainable competitive advantage.
- Evaluate the difficulties presented by massive, opportunistic and big data
- Describe the emerging technologies in Business analytics for competitive advantage.
- Plan, develop and evaluate Business Analytics applications using most up-to-date tools.

**Course Material**

This course is Web based and delivered on-line. All needed teaching material including textbooks, readings, presentations and other learning resources needed for this course are available electronically via UNCG’s Canvas software. Sign into your Canvas account to gain access to the material. It is your responsibility to have read the readings assigned to you prior to coming to class. In addition to the text books, and other teaching material, articles from both academic and practitioner publications will be posted on the Canvas.

Required books for the software based component of the course are: (Required portions from each book will be assigned.)


4. **Other books and articles that will be posted on Canvas throughout the semester**

Highly recommended Books: (The first book is available free via Canvas, others via Amazon and other online book sellers.)

Additional contributions were made by Linda Jordan, Rob McAfee, Ted Meleky, and Kenny Sucher. Editing and production support was provided by the Curriculum Development and Support Department. Copyright © 2012 SAS Institute Inc. Cary, NC, USA. ISBN 978-1-61290-459-7. This text book is available free via Canvas.

6. *Applied Analytics Using SAS® Enterprise Miner™*. By Tom Bohannon, Mike Hardin, Dan Kelly, Bob Lucas, and Sue Walsh, SAS Press. This text is based on course notes that were developed by Jim Georges, Jeff Thompson, and Chip Wells for a course in Business Analytics taught at SAS Institute. ISBN: 978-1-60764-593-1. This text book is available free via Canvas.


**Software Needed for the Course:**
This course makes extensive use of *SAS® Enterprise Guide* and *Visual Analytics*. This two software can be accessed/downloaded via the Internet. Instructions as how to do that are on Canvas. I may also require you to become familiar with other software for text mining and social network analytics.

You can also get your own personal copy of SAS and *SAS® Enterprise Guide™* and install them on your machine. *SAS® 9.3 or 9.4 and SAS Enterprise Guide™* are VERY expensive and powerful tools and having your own personal copies is a good thing. The instruction for getting your personal copies can be found at [http://its.uncg.edu/software/available/sas/](http://its.uncg.edu/software/available/sas/). You need to do this during the first couple of weeks of the term.

**Evaluation and Grading:**

Final Exam:
We will have one comprehensive final exam. The exam may require you to assess the current state of Business Analytics and to be able to demonstrate proficiency in the use of software covered in the course. More details will be coming.

Assignments
We will have four assignment. Three of them are topical assignments each one dealing with specific tools available in *SAS® Enterprise Guide™* and *Visual Analytics*. The fourth assignment deals with strategic assessment of business analytics. I will discuss more details about this assignment as the semester goes on. All assignments are due on date/time specified in your syllabus. Assignments turned in late will be assessed a grading penalty. 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. Also, any assignment that requires rework will be assessed at least 20% penalty

**Grading:** The course grade will be calculated using the following weights:

<table>
<thead>
<tr>
<th>Course Components</th>
<th>Points</th>
<th>% of Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments</td>
<td>650</td>
<td>65%</td>
</tr>
<tr>
<td>Final Examination – Integration/ synthesis</td>
<td>300</td>
<td>30%</td>
</tr>
<tr>
<td>Class Participation</td>
<td>50</td>
<td>5%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>1000</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Letter Grades and Points
93-100%=A    90-92%=A-    87-89%=B+    83-86%=B    80-82%=B-    77-79%=C+
73-76%=C    Below 73%=F
## Course Outline

This schedule is tentative and changes may be required during the course of the semester.

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
</table>
| **Weeks 1 and 2** | Introduction to the Course  
Introduction to Business Analytics for competitive Advantage  
Overview of different type of analytics  
Descriptive Analytics  
Predictive Analytics  
Prescriptive Analytics |
| **Week 3**   | Data, Data, Data Everywhere  
Accessing and Preparing Data  
Get Started with SAS Enterprise Guide |
| **Week 4**   | Dimensional vs Relational Data presentation  
Data Warehousing and OLAP  
Data and SAS Enterprise Guide |
| **Week 5**   | Advanced Analytics using SAS Enterprise Guide  
**Assignment 1 Due** |
| **Week 6**   | Data Visualization  
Introduction to SAS Visual Analytics |
| **Week 7**   | Visual Analytics  
SAS Visual Analytics |
| **Week 8**   | Web and Steam Analytics  
SAS Visual Analytics continues  
**Assignment 2 Due** |
| **Week 9**   | Spring Break |
| **Week 10 & 11** | Text Analytics  
Sentiment Analysis  
**Assignment 3 Due** |
| **Week 12**  | Social Networking  
Social Network Analytics |
| **Week 13**  | Cultural, Legal and Organizational Aspects of Business Analytics |
| **Week 14**  | **Get ready for final exam**  
**Assignment 4 Due** |
| **Week 15**  | Final Exam Due. |

### Attendance Policy:
Since it 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.

**Policy on Server Unavailability or Other Technical Difficulties**

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 windows and provide

**Electronic Mail and Canvas Accounts:**

You should check your UNCG email and Canvas course link regularly as I may send email updates or add new info on Canvas on an ongoing basis. You will be responsible for any information or announcements contained in the email messages or updates on Canvas.

**Academic Integrity Policies:**

Students in the Bryan School must conform to all existing principles found in UNCG’s Academic Integrity Policy and the Student Code of Conduct. Further details may be found at the following site:

http://sa.uncg.edu/handbook/

**Expectations of Faculty and Students in the Bryan School:**

Students should read the Guidelines for Faculty and Students presented on the web pages found at:

http://www.uncg.edu/iae/faculty_student_guidelines.pdf

**Course Evaluation**

Each student will be asked by the University to complete an on-line course evaluation near the end of the course. This evaluation is important to the University in its efforts to continually improve the delivery of courses. More information about the evaluation will be provided later in the course.
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.
- I will respond to emails within 24 hours. I will read and post comments when appropriate in the discussion forums each week between Thursday and Sunday midnight. I will check course statistics each Sunday. The Grade book may be updated each Monday at 8 AM. You may access your grade via Canvas.

What you need to take this course:
1. Your readings list and individual articles and readings in that list for each week.
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.uncg.edu - 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 at canvas.uncg.edu - you must log in to see the course materials.
4. Because of e-mail viruses, Prof. Nemati does not accept e-mail from unknown sources. Therefore, you must use the subject ISM 676 and your full name typed in the message, or the e-mail may be ignored.
5. It’s impossible for Prof. Nemati to be familiar with every 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.uncg.edu.
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. Supplies: 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.
- Try to maintain threads by using the "Reply" button rather starting a new topic.
- Do not make insulting or inflammatory statements to other members of the discussion group. Be respectful of other’s ideas.
- Be patient and read the comments of other group members thoroughly before entering your remarks.
- Be cooperative with group leaders in completing assigned tasks.
- Be positive and constructive in group discussions.
- Respond in a thoughtful and timely manner.

On-line Chats:
- Introduce yourself to the other learners in the chat session.
- Be polite. Choose your words carefully. Do not use derogatory statements.
- Be concise in responding to others in the chat session.
- Be prepared to open the chat session at the scheduled time.
- Be constructive in your comments and suggestion