MBA 714: Business Analytics
Spring 2023
Instructor: **Dr. Hamid R. Nemati**
Office: **425 Bryan Building**
Voice Mail: **334-4993**
E-Mail: **nemati@uncg.edu**

COURSE DESCRIPTION:

Study of the techniques and methods of business analytics, including gathering, processing and analyzing large volumes of data to generate insights that inform business decisions.

STUDENT LEARNING OUTCOMES (SLOs):

Upon completion of this course, students should be able to demonstrate a broad knowledge and clear understanding of critical concepts, practices, and issues in developing and using Business Analytics (BA) models and methods to solve business problems.

Specific course outcomes are:
1. Demonstrate an understanding of the principles of Business Analytics.
2. Explain and assess how organizations use business analytics to effectively address problems.
3. Identify, design and assess different business analytical models and methodologies for addressing problems.
4. Explore, develop, and apply descriptive and predictive analytical models to solve problems.
5. Generate data informed solutions to problems through the use of analytics software.
6. Describe and demonstrate how to prepare, formulate, collect, and transform data for use in business analytics.
7. Evaluate and assess the efficacy of business analytics solutions for organizations.

COURSE ATTENDENCE:

This course is **Web based** and delivered **on-line in an asynchronous mode**. The course blends online asynchronous lecture presentations, assignments, an exam, and discussions to achieve its learning objectives. In addition, we will have weekly live streamed zoom lectures and office hours typically on Wednesdays starting at 6:30 PM est. You can join these live streamed lectures via Zoom link available on Canvas. These lectures and discussions will be recorded and can be viewed at your convenience. Although attendance is not required, I strongly urge you to attend these lectures. Whether you attend these classes synchronously or view them later, you are responsible for topics discussed in course.

COURSE, TEXTBOOKS AND OTHER LEARNING MATERIALS:

1. All teaching material, including textbooks, including the following textbooks, articles, assignments, and other learning recourses needed for this course are available to you electronically via course Canvas site. It is your responsibility to read the assigned readings. Please check Canvas for **updates frequently**, as I upload new content throughout the semester. It is your responsibility to read the assigned readings.

2. *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. ISBN 978-1-63526-196-7. Editing and production support was provided by the Curriculum Development and Support Department. Copyright © 2017 SAS Institute Inc. Cary, NC, USA. This textbook is available free via Canvas. I will refer to this text as AA.

3. *Advanced Predictive Modeling Using SAS® Enterprise Miner™ Course Notes* was developed by Jim Georges and Christina Andersson and revised by Jeffrey Thompson and Chip Wells. Additional contributions were made by Mike Patetta, Catherine Truxillo, Anette Almer, Stefan Ahrens, Tamara Fischer, Mihai Paunescu, Torsten Scholz, and Reinhard Struby. Editing and production support was provided by the Curriculum Development and Support Department. Copyright © 2017 SAS Institute Inc. Cary, NC, USA. This textbook is available free via Canvas. I will refer to this text as AP.

4. Power BI on Microsoft Learn: Completion of the following modules are highly recommended. Upon completion of each of these modules, you will receive a certificate of completion. You can submit your certificates for extra credit. Please note that having these certificates on your CV is highly desirable by business analytics recruiters.

   1. Get started with Power BI: https://learn.microsoft.com/en-us/training/paths/get-started-power-bi/ (2 hrs and 35 mins to complete)
   2. Get and transform data with Power BI: https://learn.microsoft.com/en-us/training/paths/get-transform-data-power-bi/ (3 hrs and 26 mins to complete)
   3. Model data with Power BI: https://learn.microsoft.com/en-us/training/paths/model-data-power-bi/ (3 hrs and 10 mins to complete)
   4. Build Power BI visuals and reports: https://learn.microsoft.com/en-us/training/paths/build-power-bi-visuals-reports/ (3 hrs and 31 mins).

SOFTWARE NEEDED FOR THE COURSE:

This course makes extensive use of Microsoft PowerBI and *SAS® Enterprise Miner™* (EM). These two software programs constitute perhaps the most powerful tools for business analytics and are the leading tools available in the market. Both programs are available to you at any computer lab throughout the UNCG campus or can be accessed from UNCG's mycloud (mycloud.uncg.edu). Instructions as how to access them via UNCG's mycloud can be found by searching for mycloud at (https://uncg.service-now.com/support/). If you want to have your own copies of both software, please check with ITS for details. As a UNCG student, you may be entitled to get your own personal copies.

COURSE ASSIGNMENTS:

You will have 3 topical assignments. These assignments must be done in teams of NOT MORE THAN 4 persons. You will be responsible to constitute your own team. I will assist you with team construction if you are unable to create your own team. If you prefer to do your assignments individually, please notify me. Assignments details and due dates will be forthcoming during the course. 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.

FINAL EXAM:

An on-line final exam is required for the course and will be administered during the last week of spring term. The exam will test your knowledge of business analytics topics discussed during the course. Details of the exam will be forthcoming during the course. Final exam should be completed on your own. No teamwork is allowed on this exam.

CLASS DISCUSSION BOARD PARTICIPATION:

Each student is required to regularly participate in on-line discuss forums. I will post questions to the discussion board under "What Do You Think?" threat and ask you to comment on them. Your answers will be graded and counted toward your final grade. Additionally, you are required to post feedback on two of your peer's answers.

EVALUATION AND GRADING:

Descriptive Analytics Assignment (Power BI based)	250
Predictive Analytics Assignments (Enterprise Miner based)	350
Discussion board contribution	150
Final Exam	<u>250</u>
Total	1000

Your letter grade will be based on the following point distribution: Grades are truncated, not rounded.

931-1000 = A,   900-930 = A-,   860-899 = B+,   830-859 = B, 800-829 = B-,
760-799 = C+,   730-759 = C,   700-729 = C-,   690 and below =F

Course Outline

Please note that this schedule is tentative, and changes may be required during the semester.

Week	Topic
Weeks of 1 and 2	Introduction to the Course Introduction to Business Analytics Introduction to Descriptive Analytics and Predictive Analytics Get Started with Power BI
Week 3	Data, Data, Data Everywhere Accessing and Preparing Data Dimensional vs Relational Data Power BI Lab
Week 4	Descriptive Analytics Modeling Power BI Lab
Week 5	Predictive Analytics Modeling Power BI Lab
Week 6	Predictive Analytics Modeling using Decision Trees Get Started EM Lab
Week 7	Predictive Analytics Modeling using Regressions EM Lab
Week 8	Predictive Analytics Modeling using Neural Networks, SVM, Random Forest and Other Modeling Tools EM Lab
Week 9	Predictive Analytics Model Assessment Cluster Analysis Advanced Topic in EM Lab
Week 10	Market Basket Analysis Advanced Topic in EM Lab
Week 11	Big Data Analytics Advanced Topic in EM Lab
Week 12	Business Analytics Organizational and Managerial Issues
Weeks 13	Business Analytics Privacy and Ethical Issues
Weeks 14 +	Prepare for your final exam **Final Exam**