NJIT New Jersey Institute of Technology

MARTIN TUCHMAN SCHOOL OF MANAGEMENT

MGMT 216 - Business Data Analytics

Course Syllabus

Course Code: MGMT 216, Sec: 452, Credits: 3.00

Instructor: Dr. Shubham Gupta
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Note: e-mail is the best form of contact;
Please add *MGMT216* as a part of the subject line
Office: 4005 Central Avenue Building (CAB), a.k.a. the library building
Phone: 973-596-6425

Class Website: NJIT Canvas for course materials. For information on how Canvas meets accessibility requirements, see the Accessibility Certification Statement from Canvas.
Office Hour: by appointment **via Zoom**

Textbook (Optional):

Text 1:
David Anderson, Dennis Sweeney, Thomas Williams.
Essentials of Modern Business Statistics with Microsoft® Excel®, 8th Edition
ISBN-13: 978-0357131626; ISBN-10: 0357131622

Text 2:
David Anderson, Dennis Sweeney, Thomas Williams, Jeffrey Camm, James Cochran.
Modern Business Statistics with Microsoft® Excel®, 7th Edition
ISBN-13: 978-0357131381; ISBN-10: 035713138X

Prerequisites

MGMT 116 (Quantitative Analysis w/ Applications for Business) or MATH 105 (Elementary Probability and Statistics)

Software (Required):

Microsoft Excel	Available as part of Microsoft Office 2013, or 2016 (Windows OS); Office: Mac 2011 or 2016 (Mac OS). You may download and install MS Excel from the link. Please be aware of the differences among versions in features and layout. We shall only use Excel 2013 for Windows OS. If needed, please take the advantage of on-campus computers.
LockDown Browser and Respondus	Please download and install LockDown Browser and Respondus from the link. LockDown Browser & Respondus is required to take the exam properly from Canvas. Canvas further needs to access your webcam to proctor the exam. Please make sure you are comfortable with Canvas-LockDown Browser prior to the exam to ensure a smooth exam experience.

Course Description

This course introduces statistical concepts and tools that can be leveraged for business data analytics. The emphasis is on knowing what analytical techniques to use to address specific business questions, on the use of computer software to perform business statistical analysis. In particular, it covers descriptive statistics, confidence interval estimation, hypothesis testing, inferential statistics and regression analysis. It ends with a brief introduction to time-series analysis and forecasting.

Course Learning Outcomes (CLOs)

In this course on the use of analytics in business we will cover why a technique is important, what a technique is actually doing, when it would be appropriate to use it and how to use it. Upon successful completion of this course you should be able to do the following:

1. Identify the theories and methodologies used in business data analysis;
2. Critically analyze business data to solve novel problems;
3. Apply data-based methodologies and theories to process and analyze data related to business problems;
4. Use Excel spreadsheets and formulas to analyze data;
5. Interpret and communicate the results of data analysis to a variety of business stakeholders.

Course Structure

This course is organized by weekly modules. Each week, students must watch lecture or lab videos, complete weekly assignment(s), and participate in a class discussion forum by the time indicated in the course schedule.

Grading Policy:

Grading:		Points
Midterm Exam	1 Exam	20
Projects	3 Projects (15 pts.each)	45
Final Presentation	1 Presentation (15 pts.)	15
Lab Exercise	3 Exercises	5
Discussion Forum	7 Topics (1.5 pts. each for wk 1-6; 1 pt. for wk 7)	10
Reflection Journal	7 weeks	5
Sum		**100**

Grading scheme is as follows:

A for Superior performance (90% or higher)
B+ for excellent performance (85 to 89.99%)
B for very good performance (80 to 84.99%)
C+ for acceptable performance (75 to 79.99%)
C for fair performance (70 to 74.99%)
D for minimal performance (60 to 69.99%)
F Otherwise.

Professional and personal circumstances that preclude you from performing at satisfactory levels will not be considered in the determination of the course grade. The effect of your grade on overall GPA, eligibility for graduation, loss of scholarship, loss of a United States resident card, placement on academic probation, etc., are ***NOT*** considered in the determination of your grade. **There are no extra credit assignments. Individual requests for alternative ways to improve your course grade will not be considered.**

Midterm Examination:

An exam of Predictive Analytics is given and proctored by LockDown Browser and Respondus. A page of cheat sheet (US letter, double-sided, hand-written) is allowed, required, and weighs 7% of final grade. The purpose of the exam is to reinforce learning of important concepts about Predictive Analytics, and exam questions are composed of multiple choice and true and false questions developed based on all materials covered in lectures, labs, and exercises. Please review the examination policy for more information on your rights and responsibilities

Individual Student Projects:

There are three individual projects throughout the semester (i.e., Project 1, 2, and 3). Each project requires a report and a presentation; a lab session is given to guide students to prepare each project. The project report is due on Day 1 the week after the lab session; the presentation must be shared in the Discussion Forum (as Original Post) by Day 5 that week for questions and comments. Peer Discussion is required to comment on your peers' works about their strength(s) and improvement opportunity, which is due on Day 7. These are ***NOT*** group projects! Projects are to be submitted by each student by the designated date, including data output and formulas. ***Late projects will be penalized at a rate of 5% per calendar day.*** In

addition, once the deadline has passed, no further feedback will be given. Students submitting spreadsheets that are not unique will receive ***a zero grade*** for the project!

Final Presentation:

A group of 3-4 students is formed in the week 2 of the semester for the group presentation. A topic is selected by the instructor, and the purpose of the group project and presentation is to hone students' skills of communication, teamwork, research, strategic thinking, and data and business analysis. In week 1, students are provided an opportunity to pitch their project idea in the discussion forum. In week 3, each team is required to prepare a project proposal for research question(s), methodology, project outline, plan and schedule. Each student is required to give a 5-minute presentation (total 15min for a team of 3 and 20min for a team of 4), and the presentations of the team must be compiled into a video clip and shared on Canvas for questions and comments in week 7.

Kahoot Quiz and Lab Exercise:

There is either a Kahoot Quiz or a lab exercise (depending on whether a lecture or a lab is scheduled for that week) every week. 1) Kahoot Quiz: A link for Kahoot Quiz with 4-5 questions is given for the weeks scheduled for lectures, and students are required to finish the Kahoot Quiz by Day 6 (not graded). 2) Lab Exercise: If the week is scheduled for Lab, lab exercises covered in the lab session must be completed and submitted to Canvas by Day 6.

Discussion Forum:

A discussion forum is set up every week. A question for discussion is provided every week by the instructor, and students are required to: 1) Answer the question/Original post (100-200 words); (2) Reply to at least two classmates /Peer Discussion (50-100 words). The discussion forum must be completed by Day 5.

Reflection Journal:

Three questions are asked every week to ensure learning progress, including: 1) What was your biggest takeaway or insight? And why? 2) What was your biggest challenge? What resources may you review to help overcome that challenge? 3) What are you most looking forward to next week? Students are required to answer those questions by Day 7.

E-mail and course communication

Students are to use their NJIT email (ucid@njit.edu) in communicating with the instructor. The instructor will respond to all emails within 24 hours. Quizzes, homework, and discussions will be graded weekly. I will deliver feedback on each assignment using the comments feature in Canvas.

Computer/Webcam Requirement and Access to the Internet

NJIT requires all students to have access to a computer with a webcam and a microphone at their place of residence. Details as to this requirement may be found on the college's website on the page describing NJIT's Undergraduate Student Computer Requirement.

Incompletes
Incompletes will be given only to students who cannot finish the course on time due to major reasons outside of their control (e.g., illness, family tragedy, military service). Students may need to contact the Dean of Students' office and have it determine that the reasons given for not doing the work on time are valid.

Accessibility
This course is offered through an accessible learning management system. For more information, please refer to Canvas's Accessibility Statement.

Requesting Accommodations
The Office of Accessibility Resources and Services works in partnership with administrators, faculty, and staff to provide reasonable accommodations and support services for students with disabilities who have provided their office with medical documentation to receive services.

If you are in need of accommodations due to a disability, please contact the Office of Accessibility Resources and Services to discuss your specific needs.

Resources for NJIT Online Students
NJIT is committed to student excellence. To ensure your success in this course and your program, the university offers a range of academic support centers and services. To learn more, please review these Resources for NJIT Online Students, which include information related to technical support.

Statement on Academic Integrity
"Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found here.

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu"

Some Weblinks for Reference
- Bureau of Labor statistics
- Census Bureau
- Statista
- US Government
- Yahoo Finance
- NJIT Canvas - Student Orientation

Tentative Schedule

(Deviations may be necessary)

Week	Topics	Learning Materials	Assessment
0	Course Intro	Syllabus	
1	Module 1: Descriptive Analytics	Video Lectures Lecture Slides Video Labs Lab Exercise: Project 1	Discussion Forum: Final Presentation Idea Pitch (Day5/7) Kahoot Quiz: Descriptive Analytics (Day6) Reflective Journal (Day7)
2	Module 2: Sales Forecasting	Video Lectures Lecture Slides	Project 1 (Day1) Discussion Forum: Project 1 Presentation (Day5/7) Kahoot Quiz: Forecasting (Day6) Reflective Journal (Day7) Final Presentation: Team Formation (Day7)
3	Module 3: Simple Linear Regression & Error Measurement	Video Lectures Lecture Slides	Discussion Forum: Examples of Forecasting Methods (Day5/7) Kahoot Quiz: Simple Regression (Day6) Reflective Journal (Day7) Final Presentation: Project Proposal (Day7)
4	Module 4: Forecasting Lab	Video Labs Lab Exercise: Forecasting	Exam Cheat Sheet (Day1) Exam (Day3) Discussion Forum: Forecasting (Day5/7) Lab Exercise: Forecasting (Lab6) Reflective Journal (Day7)
5	Module 5: Multiple Linear Regression	Video Lectures Lecture Slides Lab Exercise: Multiple Linear Regression	Project 2 (Day1) Discussion Forum: Project 2 Presentation (Day5/7) Lab Exercise: Regression (Lab6) Reflective Journal (Day7)
6	Module 6: Simulation & Decision Analysis	Video Lectures Lecture Slides Video Labs Lab Exercise: Simulation	Project 3 (Day1) Discussion Forum: Decision Analysis (Day5/7) Lab Exercise: Simulation (Day6) Reflective Journal (Day7)
7	Module 7: Final Presentation		Final Presentation (Day5) Discussion Forum: Peer Review (Day7) Reflective Journal (Day7)

Week	Day 1 (Mon)	Day 2 (Tue)	Day 3 (Wed)	Day 4 (Thu)	Day 5 (Fri)	Day 6 (Sat)	Day 7 (Sun)
1					M1 Discussion (1.5%): Orig. Post due (Final Presentation Pitch)	M1 Kahoot Quiz (1.67%) due	M1 Discussion: Peer Discussion due Reflection Journal due
2	Project 1 (15%) due				M2 Discussion (1.5%): Orig. Post due (Project1 Presentation)	M2 Kahoot Quiz (1.67%) due	M2 Discussion: Peer Discussion due Reflection Journal due Team Formation due
3					M3 Discussion (1.5%): Orig. Post due (Forecasting Method)	M3 Kahoot Quiz (1.67%) due	M3 Discussion: Peer Discussion due Reflection Journal due Final Presentation Proposal due
4	Midterm Exam cheat sheet (7%) due		Midterm Exam (8%) due		M4 Discussion (1.5%): Orig. Post due (Line Chart)	Forecasting Lab Exercise (1.67%) due	M4 Discussion: Peer Discussion due Reflection Journal due
5	Project 2 (15%) due				M5 Discussion (1.5%): Orig. Post due (Project2 Presentation)	Regression Lab Exercise (1.67%) due	M5 Discussion: Peer Discussion due Reflection Journal due
6					M6 Discussion (1.5%): Orig. Post due (Decision Analysis)	Simulation Lab Exercise (1.67%) due	M6 Discussion: Peer Discussion due Reflection Journal due
7	Project 3 (15%) Due				M7 Discussion (1%): Orig. Post due (Final Presentation; 15%)		M7 Discussion: Peer Discussion due Reflection Journal due