



UNITED INTERNATIONAL UNIVERSITY

SYLLABUS

INTRODUCTION TO BUSINESS ANALYTICS SPRING 2019

Faculty Name: Ahmed Imran Kabir	Email: iamahmedimrankabir@gmail.com Website: ahmedimrankabir.weebly.com Semester: Spring 2018
Course Title: Business Analytics (Section A)	Course Code : BUS 509 Credit Hours:03
Time Slot: SUNDAY (6:30 – 9:30) PM	Program: MBA/ EMBA
Class Duration: 3 Hours Venue: Computer Lab 2; Room 0227	Counseling Hours: Room 218 Sunday (3: 00 – 6: 30) PM. (You can take an appointment to meet me on a suitable time)

COURSE DESCRIPTION

To achieve the learning goals, this class focuses on the primary element of business intelligence (business analytics) or decision support systems: database platforms that store data. For this, students learn fundamental design elements in terms of data modeling and database implementation, data visualization and report making. The data warehouse intended to better support business intelligence/analytics tasks is also discussed

LEARNING OBJECTIVES

- To **understand** what business and data analytics are; how they differ from business intelligence and data mining; and why organizations are actively adopting this orientation for strategic advantage
- To introduce students to key information technology/system concepts that will allow them to **understand** how they provide the necessary data and information for business analytics.
- To introduce and provide some practice with core and necessary statistics concepts so that students can **participate** in, and lead analytics-based projects
- To introduce and provide some practice with core and necessary data mining techniques so that students understand how to work with large data sets and **apply** the appropriate data mining technique to answer business questions.
- To be able to **analyze & evaluate** output from statistical and data mining procedures and draw correct conclusions from it.
- To be able to **communicate** the results of the data analysis to management by writing a detailed report.

- To be **aware** of the special ethical issues that arises when utilizing these techniques.

READINGS

Essentials of Business Analytics (1st Ed.)

by Camm/Cochran/Fry/Ohlmann/Anderson/Sweeney/Williams

ISBN: 978-1-285-18727-3

SOFTWARE

- MS Access and SQL workbench will be used to support database modeling and database/data warehouse implementation.
- MS Excel will be used to learn time series analysis, market basket analysis, linear regress, linear optimization, Monte Carlo simulation and more.
- R studio, Python, Tableau will be used to learn data visualization and reporting.

GROUP PROJECTS

Each group of three students works on a semester-long project (You can choose group members). Based on collective work experience, each group should identify and execute a decision support-oriented database design project. Topics can vary widely depending on student experience and interests, and can include areas such as healthcare (e.g., factors that drive operating efficiency and quality of care), finance and financial services (e.g., trading strategies, predicting loan defaults), and electronic commerce (e.g., online customer acquisition/retention, customization and pricing strategies, sentiment analysis). Students will have to work with the database and finally create a report using data visualization tools (R, Python, Tableau). Students will have to present their topic at the end of the semester in group.

The key tasks are:

- To identify a business problem a client firm is experiencing due to lack of a decision support database
- Assess if a particular database can help in addressing the problem and the scope of the database.
- Design and develop the database by going through all necessary design stages and activities systematically.
- Write a final report of up to 20 PPT slides including the executive summary and screen shots (Font size is 28 for the slide title and 18 for the text). The cover is not counted toward the 20 slide limit.
- Use data visualization tools and create a report on their findings.
- Prepare a 20 minutes' class presentation.

INDIVIDUAL ASSIGNMENTS

There will be several individual assignments based on textbook exercises.

CELL PHONES AND LAPTOPS

Please show respect towards others by turning off all cell phones during the class. Please do not surf the web, text message, or email during class. Laptops are allowed for taking notes, but the instructor reserves the right to disallow laptops if deemed necessary.

GRADING

A student's total score will be decided by aggregating:

- Quizzes: 15 points
- Individual Assignments 10 points
- Group presentation: 15 points
- Midterm 1: 25 points
- Final Exam: 30 points
- Attendance: 5 points

Course Learning Outcomes (CLOs) and Mapping with the Program Learning Outcomes (PLOs)

After the successful completion of this course, the students will be able to:

CLO	Link with PLO
Enable all participants to recognize, understand and apply the language, theory and models of the field of business analytics	PLO-1
Foster an ability to critically analyze, synthesize and solve complex unstructured business problems	PLO-2
Interpret results/solutions and identify appropriate courses of action for a given managerial situation whether a problem or an opportunity	PLO-2
Design and develop a database by going through all necessary design stages and activities systematically in a team and visualize the data to assess the business problem and present it o	PLO-3, PLO-4

Grading Policy

Grading Policy	Letter Grade	Marks %	Grade Point	Letter Grade	Marks%	Grade Point
	A (Plain)	90-100	4.00	C+ (Plus)	70-73	2.33
	A- (Minus)	86-89	3.67	C (Plain)	66-69	2.00
	B+ (Plus)	82-85	3.33	C- (Minus)	62-65	1.67
	B (Plain)	78-81	3.00	D+ (Plus)	58-61	1.33
	B- (Minus)	74-77	2.67	D (Plain)	55-57	1.00
				F (Fail)	<55	0.00

COURSE OUTLINE

The weekly progress may vary and certain chapters may be started before or after the scheduled date. All scheduled tests, however, are held on the date specified.

	Coverage	Due	CLOs
Week 1	Syllabus, Introduction: business analytics		1
Week 2	Introduction to database		1
Week 3	The Relational Model	Assignment #1	1
Week 4	Structured Query Language, Descriptive statistics	Assignment #2	1,2
Week 5	Linear Regression, Time Series Analysis		1,2
Week 6	Exam 1	Assignment #3	
Week 7	Data Mining (Cluster Analysis, Market Basket Analysis)	Group project proposal	1,2,3
Week 8	Spreadsheet Models, Linear Optimization	Assignment #4	2
Week 9	Integer Linear Optimization, Nonlinear Optimization		2
Week 10	Monte Carlo Simulation, Decision Analysis	Assignment #5	2
Week 11	Data mining – Supervised Learning		1,2
Week 12	Visualization of data (exploratory data analysis) and uses of data visualization tools (R studio, Python, Tableau)		2,3
Week 13	Project presentation	Group project report	3,4
Week 14	Final Exam		