

**Sabancı Master's in Business Analytics (Thesis) Program
Fall 2020**

BAN 500 – Introduction to Business Analytics

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Web: SUCourse+
Office Hours: By appointment

Type	Time	Days	Where
Class	9:40 am - 12:30 pm	Wednesday	Online

Course Objective:

Business Analytics is the practice of using past business data and business experience in explorative, analytical and methodological ways to make better business decisions. As an introductory course to the Business Analytics M.Sc. Program, the course will cover topics on the conceptual framework of business analytics, various sectoral application areas and a general introduction to analytical and statistical methods used.

Learning Outcomes:

Upon successful completion of the course, the student should be able to:

1. Define Business Analytics and its role and contributions in decision making,
2. Describe methodological approaches to Business Analytics and their application contexts,
3. Interpret use of descriptive, predictive and prescriptive analytics methods on business data under corresponding decision making contexts,
4. Analyze a business case, select and apply an appropriate method to reach a business decision,
5. Understand the nature of Big Data and how it can be exploited to create value.

Course Material:

Camm, Cochran, Fry, Ohlmann, Anderson, Sweeney and Williams, *Business Analytics*, 3rd Edition, Cengage Learning, © 2018, or the “e-book” version (*details will be posted*).

Purchasing the textbook is optional, but this book will be followed to a large extent and there will also be assignments from the book. Some additional material will also be provided in due time.

Additional Reading:

Hair, Black, Babin, Anderson, *Multivariate data analysis: A global perspective*, 7th Edition, Prentice Hall, © 2010.

Henseler, J., Ringle, C.M., Sinkovics, R.R., 2009. The use of partial least squares path modeling in international marketing. *Advances in International Marketing*, 20, 277–319.

Peng, D.X., Lai, F., 2012. Using partial least squares in operations management research: A practical guideline and summary of past research. *Journal of Operations Management*, 30, 467–480.

Course Web:

In this course, students will actively use the SUCourse+ online system. Lecture notes, slides and additional material will be available on SUCourse+. Students are recommended to visit the course web site at least two or three times a week. SUCourse+ will also be used for any in-class exercises, short assignments and uploading/downloading all course-related files.

Students will submit all assignments via SUCourse+. Sabanci University uses a very powerful web-based tool called Turnitin. Turnitin is the worldwide standard in online plagiarism prevention. It allows instructors to compare student papers against a database composed of millions of articles. Every paper submitted by students will be scanned and cross-checked by Turnitin, and results will be reflected in students' grades.

Instructional Design:

This course is intended to be interactive, engaging students in active learning through exercises in addition to standard lecture material. To facilitate this process, students are expected to come to class prepared by reading the assigned material, and to actively and meaningfully participate in class discussions.

Grading:

Attendance & Participation	: 20%
Assignments (8-10)	: 30%
Quizzes (8-10)	: 50%

Requirements:

Attendance & Participation: Attendance score is awarded for attending the online lectures. Participation score is awarded for in-class participation. Participation generally means joining in class discussions and intellectually contributing to the learning in the classroom by voicing one's ideas, comments, feedback, etc. regarding the subject matter. Participation also includes closely following the class discussion and the subject matter.

Assignments: There will be 8-10 homework (HW) assignments. The assignments will consist of data analysis exercises that must be done via a software as well as analytical or

conceptual questions. The assignments must be individually submitted to the “Assignments” section on SuCourse+ no later than the posted due date and time. Late submissions are not allowed.

Quizzes: There will be 8-10 quizzes that will be held at the start of the lectures. Quizzes will include mostly problem solving type of questions, but there may also be multiple-choice and short essay questions. They will be closed book and closed notes.

If you miss a particular assignment (including class attendance) due to sickness, accident, etc., you must bring in an official report describing the situation before you can request a make-up for the missed grade. No other excuses will be accepted for make-up purposes.

Academic Honesty:

Learning is enhanced through cooperation and as such you are encouraged to work in groups, ask for and give help freely in all appropriate settings. At the same time, as a matter of personal integrity, you should only represent your own work as yours. Any work that is submitted to be evaluated in this class should be an original piece of writing, presenting your ideas in your own words. Everything you borrow from books, articles, or web sites (including those in the syllabus) should be properly cited. Although you are encouraged to discuss your ideas with others (including your friends in the class), it is important that you do not share your writing (slides, MS Excel files, reports, etc.) with anyone. Using ideas, text and other intellectual property developed by someone else while claiming it is your original work is *plagiarism*. Copying from others or providing answers or information, written or oral, to others is *cheating*. Unauthorized help from another person or having someone else write one’s paper or assignment is *collusion*. Cheating, plagiarism and collusion are serious offenses that could result in an F grade and disciplinary action. Please pay utmost attention to avoid such accusations.

Classroom policies and conduct

Sabancı Master’s in Business Analytics (Thesis) Program values participatory learning. Establishing the necessary social order for a participatory learning environment requires that we all:

- Come prepared to make helpful comments and ask questions that facilitate your own understanding and that of your classmates. This requires that you read the material beforehand.
- Listen to the person who has the floor.
- Attend the online class sessions on time.
- Use laptops and other electronic devices *solely for educational* purposes. In some weeks, you will be asked to do in-class exercises and you might consider having a tablet in addition to your laptop/computer or an extended display for both following the lecture and practicing with relevant software(s) required for in-class exercises.
- Come prepared to make helpful comments and ask questions that facilitate your own understanding and that of your classmates. This requires that you complete the assigned readings for each session before class starts.
- Listen to the person who has the floor.

Course Schedule:

The following timeline is tentative; it may be revised according to the progress in the course.

Week 1	Dates: October 7, 2020
	Topics: <i>Course Introduction</i> <i>Introduction to Business Analytics</i> <i>Descriptive Analytics</i>
	Requirements: Reading – Chapters 1 & 2
Week 2	Dates: October 14, 2020
	Topics: <i>Descriptive Analytics</i> <i>Data Visualization</i>
	Requirements: Reading – Chapters 2 & 3
Week 3	Dates: October 21, 2020
	Topic: <i>Statistical Inference</i>
	Requirements: Reading – Chapter 6
Week 4	Dates: October 28, 2020
	Topic: <i>Linear Regression</i>
	Requirements: Reading – Chapter 7
Week 5	Dates: November 4, 2020
	Topics: <i>Quiz 2</i> <i>Linear Regression</i> <i>Logistics Regression</i>
	Requirements: Reading – Chapters 7 & 9.3
Week 6	Dates: November 11, 2020
	Topics: <i>Quiz 3</i> <i>Structural Equation Modelling</i> <i>Partial Least Squares</i>
	Requirements: Henseler et al. (2009) & Peng and Lai (2012)
Week 7	Dates: November 18, 2020
	Topic: <i>Time Series Analysis and Forecasting (TBD)</i>
	Requirements: Reading – Chapter 8 (TBD)
Week 8	Dates: November 26, 2020
	Topic: <i>Spreadsheet models</i> <i>Monte Carlo Simulation</i>
	Requirements: Reading – Chapters 10 and 11
Week 9	Dates: December 2, 2020
	Topic: <i>Linear Optimization Models</i>
	Requirements: Reading – Chapter 12
Week 10	Dates: December 9, 2020
	Topic: <i>Linear Optimization Models</i>
	Requirements: Reading – Chapter 12
Week 11	Dates: December 16, 2020
	Topic: <i>Integer Linear Optimization Models</i>
	Requirements: Reading – Chapter 13
Week 12	Dates: December 23, 2020

Topic: *Integer Linear Optimization Models*

Requirements: Reading – Chapter 13

Week 13 **Dates:** **December 30, 2021**

Topic: *Nonlinear Optimization Models*

Requirements: Reading – Chapter 14

Week 14 **Dates:** **January 6, 2020**

Topic: *TBA*
