**Business Analytics and data driven decision making**

Prof. Giovanni Guastella

***COURSE AIMS AND INTENDED LEARNING OUTCOMES***

The digitalisation of business procedures has allowed organisations to access an unparalleled quantity of data and information about business management. Standard business analytics tools based on spreadsheets and pivot tables are clearly insufficient to effectively manage such an information quantity. The course aims at providing students with the advanced instruments for business analytics, among which ANOVA analysis, regression models and classification approaches, and at illustrating how these instruments can be integrated in business decision processes.

At the end of the course the student will be able to identify the business decision problems and translate them in analytical terms based on available data and using the acquired instruments. The mix between theoretical lectures and empirical laboratories will allow the students not only to acquire the basic analytical instruments but also to familiarize with their practical use.

***COURSE CONTENT***

Course presentation

Analytical thinking in business decision process

Business problems and data science solutions

A/B testing in decision making

Introduction to regression models: linear regression, logistic regression, and time-series regression

Causal effect identification: controls, endogeneity, selection

Data reduction: principal component, factor and cluster analysis

Non quantitative data analysis: text as data

In addition to class lectures, the course includes 10 hours of laboratory with applications to specific case studies using the R statistical software.

***READING LIST***

Materials are provided by the instructor.

***TEACHING METHOD***

Theoretical lectures and laboratories

***ASSESSMENT METHOD AND CRITERIA***

The acquisition of knowledge will be assessed with a written test in which students will answer to multiple short questions based on the analysis of cases studies reporting the results of empirical analysis. The acquisition of competences will be assessed with an essay that students will delivered before the course ending. Students will be asked to produce a report in which to show their capacity to use the instruments acquired during the course to solve a specific business problem.

The final grade of the written exam will be assigned valuing the correctness of the aswers provided. The final grade of the essay will be determined by the correctness of the analysis, the results, and the procedure used to obtain them.

***NOTES AND PREREQUISITES***

The course provides basic elements of statistical analysis of business data and, hence, does not require previous knowledge of the topics.

Covid 19

In case the current Covid-19 health emergency does not allow frontal teaching, remote teaching will be carried out following procedures that will be promptly notified to students.

*Orario e luogo di ricevimento studenti*

The instructure receives students in his office, on the last floor of the building in via dei Musei 41, Brescia. Students are requested to send an email to schedule the meeting.