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# Business Analytics

## Introduction

Business decision making involves the analysis of available information, frequently presented in the form of quantitative data. In this course, we use simple and complex techniques to illustrate how the analysis of quantitative data enlightens managerial decision making. The cases discussed cover various aspects of the business activity, such as pricing, customer relationship management, competitor analysis, investment analysis, expert systems, operations or sales forecasting.

## Objectives

The student is expected to get experience in business-oriented quantitative analysis and familiarity with the elementary techniques of data analysis. The course takes advantage of technical notes, cases, assignments and in-class simulations to present a range of situations which illustrate how the quantitative analysis contributes to describe and predict economic behavior.

## Learning Outcomes

RA12. Equip students with learning skills that enable them to continue studying independently and self-directedly.

RA1. Possess and comprehend knowledge that provides a basis or opportunity to generate original ideas in the development and application of concepts, often within a research context.

RA19. Enable students to apply acquired knowledge and solve problems in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their area of study.

RA11. Enable students to integrate knowledge and address the complexity of making judgments based on incomplete or limited information, including reflections on social and ethical responsibilities linked to the application of their knowledge and judgments.

RA20. Enable students to communicate their conclusions, along with the knowledge and rationale supporting them, to both specialized and non-specialized audiences clearly and unambiguously.

RA14. Critically evaluate information and the context of a business situation to reach prudent decision-making conclusions (Critical thinking).

RA2. Apply well-established ethical criteria in business decision-making, respecting the inherent dignity of each individual and the pursuit of the common good. (Integrity)

RA15. Develop a proactive mindset open to organizational change to design and promote process improvement initiatives and facilitate adaptability to new organizational cultures (Innovative spirit).

RA3. Identify relevant data to diagnose a business problem and generate sensible decision alternatives.

RA23. Develop communication skills in a business context following the classic framework of logos, ethos, and pathos to structure a solid, convincing argument, accompanied by body language and effective storytelling.

RA4. Analyze and design optimized operations and logistics systems focused on customer orientation, following Lean philosophy principles (eliminate non-value-adding activities).
RA5. Model the impact of the global macroeconomic and industry-specific microeconomic environment on concrete business activities to formulate action plans for adapting to these contexts in uncertain conditions.

## Content

The main topics covered by this course are:
- Simple linear regression
- Multiple linear regression
- Classification
- Sales forecasting
- Recommendation systems
- A/B testing

## Instructional Activities

AF1: Training sessions and meetings with the teacher (classes, seminars, lectures, tutorials, company visits, simulations): 20hrs
AF2: Individual student work (personal study, preparation of assignments): 34hrs
AF3: Teamwork (preparation of group assignments and execution of simulations): 4hrs
AF4: Evaluation tests: 2hrs

## Evaluation

The evaluation is based on

- Class participation (40%)
- Quiz (60%)

The IESE Business School's Honor Code and Learning Partnership apply to all activities in this course. For individual assignments, unless explicitly stated, you should not interact with anyone else. For deliverables to be done in teams you should interact only with the members of your team