



Universidad  
de Navarra

***Analytics for Management\_20***  
*Guía docente 2023-24*

## **PRESENTATION**

**Short description:** The purpose of this course is to provide the students with an understanding of how firms may use analytics to make more informed decisions and how this translates into building a competitive advantage. The course will draw examples from Marketing and Human Resources. In the first part of the course the focus will be on prediction models. In the second part of the course, the concept of causality will be introduced, and a number of methods, experimental and non-experimental, to identify causal effects will be discussed.

- **Degree:** Economics and Business, Diploma in Data Analytics.
- **Module and Area:** 7.2. Elective courses.
- **ECTS:** 6
- **Year and semester:** 3rd year, 2nd semester.
- **Course type:** Elective.
- **Professor:** Pedro Mendi (pmendi@unav.es)
- **Language:** English.
- **Room and class schedule:** Mondays, 10:00-12:00, Room B3. Tuesdays, 12:00-14:00, Room 9.

## **COMPETENCIES**

- SSOP1. Accessing and managing massive data.
- SSOP2. Understanding programming languages potentially used to solve economic and/or business problems.
- SSOP3. Working with visual elements that provide insights and an understanding of complex concepts and components of economic and/or business problems.
- SSOP4. Identify patterns and trends and gather useful information from massive data in economics and/or business.
- SSOP5. Effective communication of results to a professional audience in economics and/or business.

## **PROGRAM**

1. Analytics to build a competitive advantage.
2. Predicting analytics in Marketing.
3. Predictive analytics in Human Resource Management.
4. Ethics in data management.
5. Pricing decisions.
6. Introduction to causality.
7. Quasi-experimental methods.
8. Experiments in Marketing.
9. Structural Equation Modeling.

## **EDUCATIONAL ACTIVITIES**

This is a 6 ECTS course, which amounts to 150 hours of work. This is the time distribution of work, by educational activity:



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- **Lectures.** 56 hours. There will be four 45-minute sessions per week. Attendance is mandatory.
- **Exams.** 4 hours. Students will take a midterm and a final exam, 2 hours each.
- **Project.** 45 hours. Students will work on a project that will be presented at the end of the quarter. This could be an individual or a group project, with a clear application to a specific business problem, applying concepts discussed in class.
- **Personal study.** 45 hours. This includes solving exercises in problem sets, reading required materials in advance, and reviewing materials discussed in class.

## STUDENT EVALUATION

### MAY

- Midterm exam (February 12): 30%.
- Project (April): 40%.
- Final exam (May 14): 30%.

### JUNE

- Project (April): 40%.
- Final exam (June, TBA): 60%.

## OFFICE HOURS

Pedro Mendi's email address: [pmendi@unav.es](mailto:pmendi@unav.es)

Office # 4050, Amigos Building.

Office hours: Mondays and Tuesdays, from 3:15 pm to 4:45 pm.

## REFERENCES

The recommended references are:

Chapman, C. and E. McDonnell Feit. 2019. R for Marketing Research and Analytics. 2nd edition. Springer. [Find it in the library.](#)

Cunningham, S. 2021. Causal Inference: The Mixtape. Available at: <https://mixtape.scunning.com/>

Davenport, T. and J. Harris. 2017. Competing on Analytics: The New Science of Winning. 2nd edition. Harvard University Press. [Finding in the library.](#)

Edwards, M. and C. Edwards. 2019. Predictive HR Analytics: Mastering the HR Metric. 2nd edition. Kogan Page. [Finding in the library.](#)

James, G., Witten, D. Hastie, T. and R. Tibshirani. 2021. An Introduction to Statistical Learning: With Applications in R. 2nd edition. Springer. [Link.](#)



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Kohavi, R., D. Tang and Y. Xu. 2020. Trustworthy Online Controlled Experiments. Cambridge University Press. [Finding in the library.](#)