

Degree	Type	Year
4313148 Marketing	OT	0

## Contact

Name: Maria Pilar Lopez Belbeze

Email: pilar.lopez@uab.cat

## Teachers

Maria Pilar Lopez Belbeze

Antoni Morell Perez

Jose Lopez Vicario

Giuseppe Lamberti

## Teaching groups languages

You can view this information at the [end](#) of this document.

## Prerequisites

There are no prerequisites

## Objectives and Contextualisation

The course "Data-Driven and Behavioral Marketing" provides comprehensive and advanced training in analytical techniques and neuromarketing for strategic marketing decision-making. Students will acquire skills in data analysis using emerging technologies and develop a deep understanding of consumer behavior through neuroscience. This dual approach ensures solid and practical preparation to face current and future challenges in the field of marketing.

### Block I: Data-Driven Marketing

This block focuses on equipping students with practical skills in data analysis using Machine Learning and Artificial Intelligence techniques to solve marketing problems based on real data. Through mini-projects with the R environment, they will apply their knowledge to data from companies like Airbnb, Tripadvisor, and Amazon. Students will learn to implement advanced classification and prediction models such as Random Forests, Neural Networks, and Recommendation Systems to analyze and predict consumer behavior, as well as conduct sentiment analysis, ultra-segmentation, and brand engagement on social media platforms.

## Block II: Consumer Behavior Marketing

In this block, students will explore the use of neuroscience to understand and predict consumer behavior. By conducting research projects using biosensors and techniques like Eye Tracking and galvanic skin response, students will evaluate the effectiveness of various marketing actions (web pages, packaging, logos, mobile apps,...). This interdisciplinary approach combines knowledge from psychology, neurology, and behavioral economics to provide a deep and applied understanding of consumer behavior.

### Competences

- Address business situations and/or problems that imply an ethical dilemma on the basis of critical reflection.
- Design and implement marketing plans, applying criteria of effectiveness and efficiency.
- Design, plan and direct marketing actions in the new scenarios posed by the information society.
- Develop management and leadership skills.
- Draft clear, precise reports on commercial problems.
- Generate innovative, competitive ideas and solutions.
- Implement emerging techniques in the field of marketing.
- Provide innovative solutions to commercial problems.
- Work in interdisciplinary teams.
- Work with the data sources, methodologies and techniques of scientific research, and the IT tools of marketing.

### Learning Outcomes

1. Address business situations and/or problems that imply an ethical dilemma on the basis of critical reflection.
2. Analyse survey data using the appropriate statistical software.
3. Apply cutting-edge marketing planning tools.
4. Apply the different research methods.
5. Correctly use IT tools to analyse data.
6. Define key strategic positions for different product-market situations.
7. Develop management and leadership skills.
8. Draft clear, precise reports on commercial problems.
9. Establish processes of analysis and evaluation of actions by competing businesses.
10. Evaluate market dynamics.
11. Formulate realistic and innovative strategies.
12. Generate innovative, competitive ideas and solutions.
13. Identify and distinguish the new trends in marketing.
14. Identify and filter the principal emerging trends and technologies.
15. Identify the characteristics of the database in order to analyse the data.
16. Identify the key elements of the principal marketing strategies.
17. Make detailed proposals for planning or organisation in marketing.
18. Use advanced models and criteria for forecasting and monitoring.
19. Use models of strategic diagnosis.
20. Use resources to present summaries of data and results attractively.
21. Work in interdisciplinary teams.

### Content

Block I: Data-Driven Marketing and Artificial Intelligence (5 ECTS - A. Morell, J. L. Vicario)

This part of the module is based on the development of mini-projects in the R data analysis environment. Based on a programming strategy supported by generative AI (Co-pilot), each mini-project develops a topic on data-driven marketing, considering real data from digital marketing companies or synthesized data. Concepts of machine learning applied to marketing will be worked on, concluding with an introduction to the use of Artificial Intelligence to support campaign definition.

- Introduction to Machine Learning applied to Marketing.
- Consumer Behavior (Churn Prediction).
- Advanced Classification Mechanisms (Random Forests, Neural Networks).
- Recommendation Systems (Basket Market Analysis, Association Rules).
- Prediction Models for marketing decision-making.
- Generative AI for marketing campaigns (support for brainstorming and content creation, customer segmentation, etc.).

Block II: Marketing of consumer behavior (5 ECTS - P. López, G. Lamberti)

This part of the module is based on the development of a mini-research project in neuromarketing through the use of biosensors based on their experimental design, data capture and analysis.

- Neuroscience applied to marketing: Neuromarketing.
- Neuromarketing Techniques: Eye Tracking
- Neuromarketing techniques: GSR (galvanic skin response) and HR (heart rate)
- Neuromarketing research: data analysis.
- Marketing applications (advertising, web, social networks, price, brand, e-commerce...)

## Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Lectures, case discussion and presentation of short essays	75	3	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20
Type: Supervised			
Tutorials and follow-up of the essays to be carried out and of the cases of analysis	50	2	4, 5, 9, 15, 17, 20
Type: Autonomous			
Assigned readings, preparation of assignments and practical exercises, study and elaboration of schemes	100	4	2, 4, 5, 8, 12, 15, 20, 21

### Teaching methodology

A whole set of teaching methodologies are combined:

- Master classes,
- Discussion of articles / cases in class,
- Internship / case classes,
- Preparation and presentation of mini-projects.
- Tutorials.

- Personal study.

Note: 15 minutes of a class will be reserved, within the calendar established by the center / degree, for the complementation by the students of the Surveys of evaluation of the performance of the teaching staff and of evaluation / module.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

## Assessment

### Continous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Attendance and participation in class discussions	20%	10	0.4	5, 8, 13, 14, 15, 16, 17, 21
Exercises for individual assessment	40%	3	0.12	6, 10, 11, 12, 13, 14, 15, 16
Individual or group exercises	40%	12	0.48	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21

This subject/module does not offer the option for comprehensive evaluation.

#### Assessment

- Participation in class discussions (20%)
- Deliveries of individual or collective work (40%)
- Individual assessment through individual examination or delivery (40%)

#### A. General information about assessment rules

This module is structured in different sections that are in charge of different professors. The final grade of the module are the average grades of both sections.

This module does not offer the option for comprehensive evaluation.

It is considered that the module has been approved if:

1. the mark of each part of the module is greater than or equal to 5 (on a scale of 0 to 10) and
2. the final grade of the module is greater than or equal to 5 (on a scale of 0 to 10)

If the module is not approved, the coordination of the master's degree will offer the student the possibility of re-evaluating the parts that make up the module and that have not been passed if the grade is greater than or equal to 3.5, according to the evaluation of the professors. modules and coordination. If the student passes the reassessment, the maximum mark that will be obtained in the re-assessed part will be 5. The re-assessment calendar will be made public along with the list of module marks.

The note of each part of the module

The student will have a mark of Not Assessed if he does not attend at least 80% of the face-to-face classes (a control will be kept with a signature sheet) or if he does not carry out at least 50% of the continuous assessment activities. Each professor will specify in this guide the way in which he will evaluate the students. If not specified in the guide, these evaluation standards will be delivered on the first day of class in writing.

#### B. Calendar of evaluation activities

The dates of the evaluation activities (midterm exams, exercises in the classroom, assignments, ...) will be announced well in advance during the semester.

The date of the final exam is scheduled in the assessment calendar of the Faculty.

*"The dates of evaluation activities cannot be modified, unless there is an exceptional and duly justified reason why an evaluation activity cannot be carried out. In this case, the degree coordinator will contact both the teaching staff and the affected student, and a new date will be scheduled within the same academic period to make up for the missed evaluation activity."* **Section 1 of Article 115. Calendar of evaluation activities (Academic Regulations UAB).** Students of the Faculty of Economics and Business, who in accordance with the previous paragraph need to change an evaluation activity date must process the request by filling out an Application for exams' reschedule

[https://eformularis.uab.cat/group/deganat\\_feie/application-for-exams-reschedule](https://eformularis.uab.cat/group/deganat_feie/application-for-exams-reschedule)

#### Grade Review Procedure

Coinciding with the final exam, the day and medium in which the final grades will be published will be announced. In the same way, the procedure, place, date and time of the review of exams will be informed in accordance with the regulations of the University.

#### Recovery Process

"To participate in the recovery process, students must have been previously evaluated in a set of activities that represents a minimum of two thirds of the total grade for the subject or module." Section 3 of Article 112 ter. Recovery (UAB Academic Regulations). Students must have obtained an average grade for the subject between 3.5 and 4.9.

All students are required to perform the evaluation activities. If the student's grade is 5 or higher, the student passes the course and it cannot be subject to further evaluation. If the student grade is less than 3.5, the student will have to repeat the course the following year. Students who have obtained a grade that is equal to or greater than 3.5 and less than 5 can take a second chance exam. The lecturers will decide the type of the second chance exam. When the second exam grade is greater than 5, the final grade will be a PASS with a maximum numerical grade of 5. When the second exam grade is less than 5, the final grade will be a FAIL with a numerical grade equal to the grade achieved in the course grade (not the second chance exam grade).

A student who does not perform any evaluative task is considered "not evaluable", therefore, a student who performs a continuous assessment component can no longer be qualified with a "not evaluable".

The date of the retake exam will be posted in the calendar of evaluation activities of the Faculty. Students who take this exam and pass, will get a grade of 5 for the subject. If the student does not pass the retake, the grade will remain unchanged, and hence, student will fail the course.

#### Irregularities in the assessment process

In spite of other disciplinary measures deemed appropriate, and in accordance with current academic regulations, *"in the case that the student makes any irregularity that could lead to a significant variation in the grade of an evaluation activity, it will be graded with a 0, regardless of the disciplinary process that can be instructed. In case of various irregularities occur in the evaluation of the same subject, the final grade of this subject will be 0"*. **Section 10 of Article 116. Results of the evaluation. (UAB Academic Regulations).**

## Bibliography

### BLOCK I:

- Sharma, T., D. Sarkar, R. Bali (2017) [Learning Social Media Analytics with R: Transform data from social media platforms into actionable business insights.](#)
- Lilien, G.L. and Rangaswamy, A., (2004) Marketing Engineering: Computer Assisted Marketing Analysis and Planning, Ed. Prentice Hall.
- Chapman, N.C., and McDonnell, E., Feit. (2015) R for Marketing Research and Analytics, Springer-Verlag, Switzerland, 2015
- Miller, T. W. (2015). Marketing Science: Modeling Techniques in Predictive Analytics with R and Python (1 edition). Old Tappan, New Jersey: Pearson FT Press. (<https://mdsr-book.github.io/exercises.html> )
- Grigsby, M. (2015). Marketing Analytics: A practical guide to real marketing science (1 edition). London: Philadelphia: Kogan Page.
- Winston, W. L. (2014). Marketing analytics: Data-driven techniques with microsoft excel. ProQuest Ebook Central <https://ebookcentral.proquest.com> Part B:
- Arthur, L. (2013). Big data marketing: Engage your customers more effectively and drive value. ProQuest Ebook Central <https://ebookcentral.proquest.com>
- Lantz, B. (2015) Machine Learning with R, Packt Publishing.
- Chapman, C. and E. McDonnell Feit (2015) R for Marketing Research and Analytics, Springer.
- Rocha, A., Reyes, J. L., Peter, M. K., & Bogdanovic, Z. (2020). Marketing and Smart Technologies. In Smart Innovation, Systems and Technologies (Vol. 167). [https://doi.org/10.1007/978-981-15-1564-4\\_6](https://doi.org/10.1007/978-981-15-1564-4_6)

### BLOCK II:

- Casado Aranda, L. (2021): [Neurociencia del consumidor](#), Ediciones Pirámide; 1ª edición (7 octubre 2021)
- Cisneros Enríquez, A. (2017). Neuromarketing y neuroeconomía (3a. Ed.). ECOE Ediciones. <https://elibro.net/es/ereader/uab/70497?page=1>
- Dham, S. (2016). The Foundations of Behavioral Economic Analysis. Oxford: OUP Oxford.
- Gentner, F. (2012). Neuromarketing in the BTB sector: Importance, potential and its implications for brand management. Pro Quest Ebook Central <https://ebookcentral.proquest.com>
- Kahneman, D. (1990). Experimental Tests of the Endowment Effect and the Coase Theorem. Journal of Political Economy, 98 (6), 1325-1348.
- Kahneman, D. (2003). Experienced utility and objective happiness: a time-based approach. In I. Brocas & J. D. Carrillo (Eds.), The Psychology of Economic Decisions. Vol 1: rationality and well-being. Oxford: Oxford University Press.
- Kahneman, D. (2012). Thinking, Fast and Slow. London: Penguin.
- LOK, J. C. (n.d.). Judgement The difference between Behavioral Economy and Psychological Methods To Predict Consumption.
- Patzer, G. (1996). Experiment-Research Methodology in Marketing: Types and Applications. Praeger.
- Thaler, R. H. (2016). Misbehaving: The Making of Behavioural Economics (01 edition). London: Penguin. Disponible en castellano como: La Psicología Económica. Bilbao: Deusto.
- Thaler, R. H., & Sunstein, C. R. (2008). Nudge: improving decisions about health, wealth, and happiness. New Haven: Yale University Press.
- Wilkinson, N. (2008). An Introduction to Behavioral Economics. Palgrave Macmillan.

## Software

R software

R CLOUD

Biometric GazePoint

## Language list

Name	Group	Language	Semester	Turn
(TEm) Theory (master)	30	Spanish	second semester	afternoon