

Degree programme	Type	Course
Marketing	OP	1

Contact lecturer

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Group languages

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

Prerequisites

Familiarity with the RCloud environment and data analysis.

Objectives

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.

Learning outcomes

- CA11 (Use neuromarketing techniques, such as gaze and emotion analysis, to better understand consumer preferences and reactions to marketing stimuli.) Use neuromarketing techniques, such as gaze and emotion analysis, to better understand consumer preferences and reactions to marketing stimuli.
- KA15 (Identify learning algorithms based on big data analytics to predict consumer behaviour trends and patterns.) Identify learning algorithms based on big data analytics to predict consumer behaviour trends and patterns.
- KA16 (List the neuroscientific foundations in consumer decision-making.) List the neuroscientific foundations in consumer decision-making.
- KA17 (Indicate the characteristics of the different neuromarketing techniques to analyse consumer responses to marketing stimuli.) Indicate the characteristics of the different neuromarketing techniques to analyse consumer responses to marketing stimuli.
- SA14 (Compare the different types of predictive models of consumer behaviour in virtual stores (recommendation, segmentation and prediction) in the optimisation of marketing strategies and customer experience.) Compare the different types of predictive models of consumer behaviour in virtual stores (recommendation, segmentation and prediction) in the optimisation of marketing strategies and customer experience.
- SA15 (Conduct neuromarketing experiments to investigate consumers' emotional and cognitive response to marketing stimuli.) Conduct neuromarketing experiments to investigate consumers' emotional and cognitive response to marketing stimuli.
- SA16 (Correctly use computer tools to analyse market and advertising data, qualitatively evaluating the information obtained.) Correctly use computer tools to analyse market and advertising data, qualitatively evaluating the information obtained.
- SA17 (Apply machine learning algorithms to analyse large volumes of marketing data and extract predictive patterns that guide strategic decision-making.) Apply machine learning algorithms to analyse large volumes of marketing data and extract predictive patterns that guide strategic decision-making.

Contents

Block I: Data-Driven Marketing and Artificial Intelligence (5 ECTS - J. L. Vicario, E. Macias, G. Lamberti)

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 data-driven marketing topic, considering real or synthesized data from digital marketing companies. Machine learning concepts applied to marketing will be discussed, 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).
- Generative AI for marketing campaigns (support for brainstorming and content creation, customer segmentation, etc.).

Block II: Neuromarketing (5 ECTS - P. López, D. Escandon)

This part of the module is based on the development of a mini-research project in neuromarketing using biosensors, including 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.
- Applications in marketing (advertising, web, social media, pricing, branding, e-commerce, etc.)

Learning activities and methodology

Title	Hours	ECTS	Learning outcomes
Tutorials and follow-up of the essays to be carried out and of the cases of analysis	50	2	CA11, KA15, SA15, SA16, SA17
Assigned readings, preparation of assignments and practical exercises, study and elaboration of schemes	100	4	KA16, KA17, SA14, SA15
Lectures, case discussion and presentation of short essays	75	3	CA11, KA15, SA14

Teaching methodology

A whole set of teaching methodologies are combined:

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

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.

Use of Artificial Intelligence (AI) technologies

In this course, the use of Artificial Intelligence (AI) technologies is permitted as an integral part of the development of the work, provided that the final outcome reflects a significant contribution by the student in terms of analysis and personal reflection. Students must clearly identify which parts have been generated using this technology, specify the tools used, and include a critical reflection on how these tools have influenced both the process and the final outcome of the activity. Failure to disclose the use of AI will be considered a breach of academic integrity and may result in a penalty to the grade awarded for the activity or more serious sanctions in cases of particular severity.

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

Continuous assessment activities

Title	Weight	Hours	ECTS	Learning outcomes
Exercises for individual assessment	40%	3	0.12	KA15, KA16, KA17, SA14
Individual or group exercises	40%	12	0.48	CA11, SA14, SA15, SA16, SA17
Attendance and participation in class discussions	20%	10	0.4	CA11, SA15, SA16, SA17

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

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).**

The completion of assessment activities is subject to the provisions set out in this course guide and in the "[Policy of the School of Economics and Business on the Detection of Irregularities during Assessment Activities](#)", which regulates the conditions under which assessment tasks are conducted and the procedures applicable in cases where indications of irregularities are detected. Students are encouraged to consult the policy.

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. ProQuestEbook Central <https://ebookcentral.proquest.com> Part B:
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- Chapman, C. and E. McDonnellFeit (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

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>
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- Kahneman, D. (1990). Experimental Tests of the Endowment Effect and the Coase Theorem. Journal of Political Economy, 98 (6), 1325-1348.
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- 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

Pupil Lab

Course groups and languages

The information provided is provisional until November 30. After this date, you will be able to consult the language of each group through this [link](#). To access the information, you will need to enter the course CODE

Type of teaching	Group	Language	Semester	Shift
(TEm) Theory (master)	30	Spanish	second semester	morning-mixed