Data-based Marketing and Behaviour-based Marketing

Code: 43931
ECTS Credits: 10

2025/2026

Degree	Type	Year
Marketing	OP	1

Contact

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Teachers

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Teaching groups languages

You can view this information at the end of this document.

Prerequisites

Familiarity with the RCloud environment and data analysis.

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.

Learning Outcomes

1. CA11 (Competence) Use neuromarketing techniques, such as gaze and emotion analysis, to better understand consumer preferences and reactions to marketing stimuli.
2. KA15 (Knowledge) Identify learning algorithms based on big data analytics to predict consumer behaviour trends and patterns.
3. KA16 (Knowledge) List the neuroscientific foundations in consumer decision-making.
4. KA17 (Knowledge) Indicate the characteristics of the different neuromarketing techniques to analyse consumer responses to marketing stimuli.
5. SA14 (Skill) 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.
6. SA15 (Skill) Conduct neuromarketing experiments to investigate consumers' emotional and cognitive response to marketing stimuli.
7. SA16 (Skill) Correctly use computer tools to analyse market and advertising data, qualitatively evaluating the information obtained.
8. SA17 (Skill) Apply machine learning algorithms to analyse large volumes of marketing data and extract predictive patterns that guide strategic decision-making.

Content

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

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 (heat rate).
- Neuromarketing research: data analysis.
- Applications in marketing (advertising, web, social media, pricing, branding, e-commerce, etc.)

Activities and Methodology

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

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
For this subject, the restricted use of Artificial Intelligence (AI) technologies is permitted, exclusively in support tasks, such as bibliographic or information searches, text correction or translations. The student must clearly identify which parts have been generated with this technology, specify the tools used and include a critical reflection on how these have influenced the process and the final result of the activity. The lack of transparency in the use of AI in an assessable activity will be considered a lack of academic honesty and may lead to a partial or total penalty in the grade of the activity, or greater sanctions in serious cases.

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	CA11, SA15, SA16, SA17
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

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 abou 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 anaverage 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 whohave 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 assesment 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 evaluationof the same subject, the final grade of this subject will be 0"*. ***Section 10 of Article 116. Results of the evaluation. (UAB Academic Regulations).***

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BLOCK I:

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- Miller, T. W. (2015). Marketing Science: Modeling Techniques in Predictive Analyticswith R and Python (1 edition). OldTappan, New Jersey: Pearson FT Press. (Https://mdsr-book.github.io/exercises.html)
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- 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:

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- Cisneros Enríquez, A. (2017). Neuromarketing y neuroeconomía (3a. Ed.). ECOE Ediciones. https://elibro.net/es/ereader/uab/70497?page=1
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- Gentner, F. (2012). Neuromarketing in the BTB sector: Importance, potential and its implicacions for brand management. Pro Quest Ebook Central https://ebookcentral.proquest.com
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Software

R software

R CLOUD

Biometric Gazepoint

Pupil Lab

Groups and Languages

Please note that this information is provisional until 30 November 2025. You can check it through this link. To consult the language you will need to enter the CODE of the subject.

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