UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

# SYLLABUS DEL CORSO

## Marketing Analytics

**2526-1-FDS02Q008**

### Aims

This course is aimed at all students with a strong passion for the world of Data Science and Marketing. This is a course that collects the definition of all the main methodologies in the field of Advanced Analytics and Artificial Intelligence related to the world of Marketing. In addition, the course is aimed at understanding the fundamental principles of the entire life cycle for the development of data-driven applications and the tools necessary to enable a data-driven marketing transformation in all business organizations.

### Contents

Introduction to marketing with a data-driven approach: this section of the course introduces the basic concepts necessary for carrying out quantitative marketing analysis.

Methodological study of the models in terms of customer, product and engagement: in this section, a methodological study is carried out on the methods of designing, developing and interpreting the data of the main Advanced Analytics and Artificial Intelligence models in terms of customer, product and optimization of marketing channels . Each theme is explored through a detailed explanation of the logic underlying the model under analysis and a practical exercise available on the digital platform.

Evaluation of the main marketing activities: in this section, the logic of evaluating the performance of campaigns and the digital customer journey is analyzed through the analysis of the main metrics and the development of models for measuring the impact on turnover and return on investment (ROI)

### Detailed program

SECTION 1 - Introduction to marketing with a data-driven approach
Chapter. 1 - Enhancement of marketing activities through a data-driven approach
Chapter. 2 - Technology as a marketing enabler for data analysis
Chapter. 3 - Cloud architectures and technology stacks for marketing
Chapter. 4 - Datalake, containers and microservices
Chapter. 5 - Introduction to using Python for marketing analysis

SECTION 2 - Methodological analysis of the models in terms of customer, product and engagement
Chapter. 6 - Main methodological approaches in a customer centric key
Chapter. 7 - Deterministic segmentation (RFM)
Chapter. 8 - Behavioral segmentation (Cluster Analysis)
Chapter. 9 - The churn and repurchase models
Chapter. 10 - The Customer Life Time Value (CLTV) model
Chapter. 11 - Measurement of Customer Satisfaction
Chapter. 12 - Neuromarketing and Artificial Intelligence
Chapter. 13 - Main methodological approaches for product key analyzes
Chapter. 14 - Main algorithms for the definition of associative rules
Chapter. 15 - Price sensitivity models
Chapter. 16 - Propensity to purchase a product or category of products
Chapter. 17 - The optimization of marketing channels and communications
Chapter. 18 - Models for recognizing objects within images
Chapter. 19 - Natural Language Processing (NLP)

SECTION 3 - Evaluation of the main marketing activities
Chapter. 20 - Main approaches to the measurement of marketing activities
Chapter. 21 - Methods for measuring marketing activities
Chapter. 22 - The attribution model
Chapter. 23 - The marketing mix model

## Prerequisites

Python Programming Language for Data Science students

## Teaching form

Lectures, discussions, video presentations, optional exercises. Invitation to marketing professionals to share their working experience.

## Textbook and teaching resource

Book: Advanced Analytics e Artificial Intelligence per il Marketing: casi e applicazioni
Authors: Sergio Suriano, Nico Di Domenica, Marco Fusi, Luigi Capone
PEARSON

## Semester

second semester

## Assessment method

Marketing Analytics Rubric:
Final Exam: 50%
HW1: 10%
HW2: 10%
Final Project: 30%
Extra Credit Available:
HW3: 10%
HW3 is extra credit, so the impact of trying to complete it fully or partially is only to the student's benefit.

HW1, HW2 and, Final Project are mandatory. Some specific deadlines will be issued for the completion and submission. You will have a 48 hrs grace period for late submission, with the following incremental reduction of available total points:

Late submission
time frames Max Points Available
12 hrs after the deadline 85%
24 hrs after the deadline 72%
36 hrs after the deadline 61%
48 hrs after the deadline 52%

In case of deadline changes requests for students with specific and documented circumstances, change to deadlines will be evaluated on a individual base. Please, if this might apply to you once the assignments are created, reach out privately via email.

## Office hours

On request

## Sustainable Development Goals

GENDER EQUALITY