



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## COURSE SYLLABUS

### Marketing Analytics

2526-1-FDS02Q008

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#### 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

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