

## TEACHING GUIDE

Course Information	
Full name	Business Data Analytics
Code	0000012185
Degree	<a href="#">Master in International Management</a>
Taught in	Advantere Management School
Level	Postgraduate Official Master's Degree
Term	Third Quarter
Credits	3,0 ECTS
Type	Mandatory
Person in charge	Jaime Castelló Molina
Office hours	Continuous availability via email

Professor Information	
Professor	
Name	Jaime Castelló Molina
Department/Area	Advantere Management School
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## SPECIFIC COURSE INFORMATION

Course contextualization
<p><b>Contribution to the professional profile of the degree</b></p> <p>The course Business Data Analytics presents the following contents: linking Big Data with the organization's strategy; introduction to different quantitative techniques for the collection, analysis and interpretation of corporate data (Hadoop distribution; Cloud computing; cognitive computing; multidimensional analysis; advanced data visualization; predictive models; etc.) and their main applications in the business environment (sentiment analysis, data in social networks, geolocation analysis with GIS) and in the resolution of management problems (Fraud and money laundering, revenue management)</p>

## Competences- Objectives

### Competences

#### GENERAL

CG02	Information and data management as key elements for decision making and business problem identification, formulation and resolution
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- RA1 Be able to search for and analyze information from diverse sources
- RA2 Search, know, synthesize and appropriately use primary and secondary data from various sources
- RA3 Search, know, synthesize and use primary data appropriately
- RA4 Incorporate the information into one's own discourse
- RA5 Properly cite the sources used

**SPECIFIC**

CE15	Knowledge and understanding of quantitative methodologies and computer tools, oriented to the strategic management of available information, and applied to the resolution of real problems and business decision making
RA1	Understand and value the contribution of strategic information management to an organization's competitiveness
RA2	Understand and recognize the challenges arising from the massive generation of data and information available to today's organization.
RA3	Understand the philosophy, methods and theoretical principles that underpin quantitative data collection and analysis.
RA4	Master the various statistical tools and techniques and know how to apply them appropriately to different types of quantitative data.
RA5	Use different computer programs (Excel, SPSS, among others) to work with available data sets, being able to perform the following with them

**THEMES AND CONTENT**
**Themes**

Digital Strategy  
 What is Digital Strategy?  
 The era of Big Data  
 Business Understanding and Data Understanding  
 Introduction to data-analytic thinking  
 Business problems and data science solutions  
 Exploratory data analysis  
 Modeling Techniques

**TEACHING METHODOLOGY**
**General methodological course aspects**
**Presential Methodology: Activities**
**AF1. General theory expository sessions**

*During these sessions the concepts are introduced at a sufficient level to demonstrate sufficient professional maturity to discuss them in a working environment. The lecture sessions will combine lecture with debate and/or discussion on the topic in question corresponding to each class. This requires the student to be prepared to discuss the topic in question and the readings that will have been indicated as bibliographic material for each topic (according to the schedule).*

*The professor will lead the exposition of the basic notions, with the active and collaborative participation of the students, who discuss and debate the obscure points or the nuances that are relevant for the correct understanding of the contents. It will include case studies as the backbone of the exposition of ideas and contents, dynamic presentations and the formal or spontaneous participation of students through various activities.*

*Active participation in the classroom is an excellent tool to enhance the learning of the student who participates and that of his or her peers present in the classroom. A productive learning environment requires that everyone in the classroom is actively involved.*

*The ultimate goal of these sessions is to nurture understanding of the concepts, familiarity with their use and naturalness in applying them to business environments.*

**AF2. On-site practical sessions (labs)**

*The professor will give a brief theoretical presentation on each topic as a reminder and then reinforce the learning by means of live coding sessions.*

During these sessions, the professor or students work on a dataset available through a public repository or provided by the professor. The main objective is to evaluate the necessary hypotheses, the quality of the available data and to identify the best type of task available for the objective to be achieved. The professor and the students simultaneously use the different tools to execute the different steps focused on the implementation of the concepts presented.

### Non-presential Methodology: Activities

#### AF3. Individual resolution of weekly cases

Each student must execute a task according to an example previously done in class. The task consists of replicating the result obtained in class based on instructions, although there is a component of autonomous exploration of the tool.

An important part of this task consists of exposing the student to the different public data sources (Kaggle, KD Nuggets, University of California's Repo of University of California, BigML, Graphext,...)

#### AF4. Cooperative learning:

Application of real tools in a real use case. This activity introduces students to the use of professional tools with real data. Working in groups, a project will be developed: obtaining a dataset for analysis. Students will perform an exploratory analysis on the data, and formulate relevant business hypotheses.

Next, we will proceed to the construction of several predictive models, their comparison, evaluation and analysis of the best implementation for the real use case analyzed.

## SUMMARY OF STUDENT WORK HOURS

PRESENTIAL HOURS			
Professor Exhibition	Analysis and resolution of cases and exercises, both individual and collective	Analysis and resolution of cases and exercises, both individual and collective	
14.00	14.00	2.00	
NON-PRESENTIAL HOURS			
Individual study, documentation and organized reading	Individual study, documentation and organized reading	Analysis and resolution of cases and exercises, both individual and collective	Analysis and resolution of cases and exercises, both individual and collective
15.00	15.00	10.00	5.00

**EVALUATION AND GRADING CRITERIA**

Graded Activities	Evaluation Criteria	% of total grade
Assessment of individual or group work carried out by students, some of them presented in class.	<ul style="list-style-type: none"> <li>• Work adequacy to the objectives set</li> <li>• On time delivery</li> <li>• Goal adequacy and focus.</li> <li>• Reached goals.</li> <li>• The participation of ALL members of each team in the presentations and elaborations is required.</li> </ul>	30
Oral and written examinations, public defenses and multiple-choice tests, concept tests and case studies as exams	<ul style="list-style-type: none"> <li>• Throughout the program, exams or written tests will be given to test the solidity of the concepts acquired.</li> <li>• In order to pass the course, the final exams and tests of each section of the course must be passed. If there are several exams in the same section or block of a course, the weighted average of them must be higher than 4.90 as a necessary condition to pass the course.</li> </ul>	50
Participation and class attendance	<ul style="list-style-type: none"> <li>• When we talk about participation, it is clear that both the positive and negative ones are counted and that the quality of participation is as important as the quantity. The students' participation in class, the quality and timeliness of their interventions, the quality in the preparation and presentation of their work, predisposition and commitment, initiative, attendance.</li> </ul>	20

## **Grades**

### **The evaluation criteria of the course are governed by the following regulations:**

1. All students must comply with 100% attendance on the days set for this course. Any absence must be justified.
2. The final grade corresponds to the sum of the graded activities, evaluation criteria and % of total grade described in the Evaluation and Grading Criteria section.
3. Individual and group work must be delivered on time and in the manner planned by the course professor.
4. A final mark below 5 implies the completion of an extraordinary test. The final grade in this exam may not be higher than the median of those passed at the time of set exams.

### **The Evaluation Criteria to enroll for a second year**

The student enrolled in the course for the second year must comply with the individual and group tasks set by the course professor. The same evaluation criteria described in the Evaluation and Grading Criteria section will be maintained.

For those circumstances not foreseen in this Teaching Guide, the Advantere School of Management Regulations and the Comillas General Regulations will apply.

**Health alert criteria:**

Students must be permanently identified, in class with an identification sign and remotely with their full name. Students should not change the spaces they occupy in the classroom, until a professor or the program management indicates they can do so.

Failure to comply with any of the health recommendations during class sessions may result in failure of the course

## **BIBLIOGRAPHIES AND RESOURCES**

### **Basic Bibliographies**

Data Science for Business; Foster Provost, Tom Fawcett

Publisher(s): O'Reilly Media, Inc.

ISBN: 9781449361327

### **Complementary Bibliographies**

Business Analytics links, such as:

BigML Blog (<https://blog.bigml.com>)

Kaggle (<https://www.kaggle.com>)

Towards Data Science (Medium)

International Institute for Analytics (<http://www.iianalytics.com/>)

KDNUGGETS (<http://www.kdnuggets.com/>)

Search Business Analytics (<http://searchbusinessanalytics.techtarget.com/>)

In compliance with current regulations regarding the **protection of personal data**, we inform you and remind you that you can consult the aspects related to privacy and data protection that [you have accepted in your registration](#) by entering this website and pressing "download".

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