SYLLABUS
ACADEMIC YEAR
2019-2020

COURSE GENERAL OVERVIEW

COURSE DETAILS	
Module	DATA ANALYSIS FOR DECISION MAKING
Qualification	MBA
Year	1
Semester	1
ECTS (Credits)	3
Module Type	Core
Department	Quantitative Methods
Area	Quantitative methods for decision making

LECTURERS	
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COURSE DESCRIPTION

Context of the course

The course in the professional context

The effective management of organizations requires knowledge of the contributions that quantitative and analytical methods can have when it comes to providing rationality to decision-making processes.

In the context of this subject a series of analytical tools and techniques commonly used in the field of management and business are presented.

Course objectives

Provide students with the ability to analyze information and data as key elements for decision- making and the identification, formulation and resolution of business problems.

Learn to do a basic descriptive treatment of a set of data, know how to extract conclusions from the same regarding the behavior of certain variables and be able to model simple economic phenomena.

Provide students with the ability to analyze problems of the company and its environment using quantitative methods, distinguish appropriate analysis and modeling techniques and apply them to practical cases of prediction and simulation in business management.

Provide students with a framework for understanding core data-related responsibilities such as:

- **Measurement:** Determining the impact of business efforts and marketing campaigns.
- **Optimization:** Recommending changes in tactics or spending to improve results.
- **Experiments:** Designing and executing tests to isolate causes.
- **Segmentation:** Identifying groups and subgroups of customers and prospects.
- **Predictive modeling:** Building models to improve performance rates.
- **Storytelling:** Communicating messages derived from data to inspire better decisions

Understand the importance of digital transformation and business technologies applied to data analysis

COURSE CONTENT

Course Outline
MODULE 1: Business Data analysis
MODULE 2: The Analytics Lifecycle
MODULE 3: Basic Descriptive Data Analysis
MODULE 4: Risks of Data Analytics
MODULE 5: Analytical Methods: from time series to social media analysis
MODULE 6: Grouping the similar: Clustering
MODULE 7: Data Visualization and Technology

SKILLS AND ABILITIES TO BE DEVELOPED
Generic skills
Generic skills
CG 1. Analysis and synthesis cognitive abilities applied to the business management world CG 2. Information and data management as a key ability to identify, formulate and solve business problems, that is, to make decisions in organizations CG 3. Problem solving and decision making at the strategic, tactical and operational levels of a business organization, considering the interrelation between the different functional and business areas. CG 9. Autonomous learning skills
Course specific skills
CE 9. Be able to analyze problems of the company and its environment through the use of quantitative methods, distinguish appropriate analysis and modeling techniques and apply them to practical cases of prediction and simulation in business management.

PREREQUISITES

Those students without prior training in data analysis should take 2 credits of additional training in the field, in order to homogenize starting levels.

COURSE TEACHING METHODOLOGY
Teaching and learning in the classroom
• Short teaching lectures to introduce the basics of each topic • Development of a model example by the teacher • Guided practice of cases applying the concepts learnt • Oral presentation of the applied practical cases done in group • Presentations by top industry professionals (guest speakers)
Teaching and learning outside the classroom
• Tutored personal work • Individual and group practice work • On-line assessment test after finishing each topic

ASSESSMENT AND GRADIND CRITERIA

Assessment system	Criteria	Weight
Student participation in class	Active participation	15%
Cases assessment at the end of each topic	Knowledge of the subject	25%
Public oral presentation	Quality of the presentation and of the content	15%
Final exam	Knowledge of the subject	45%
To pass the subject, the student should obtain at least the following: Attendance: 50% Final exam: 5/10 Total grade weighting all components equal or superior to 5/10 Those students that do not pass the subject will be able to retake the final exam and repeat the oral presentation of the group practical application.		

Students with an attendance waiver

In order to pass the course, these students will have to the take the final exam (100% of grading), but it is highly recommended to do some of the other online activities in order to modulate and improve final grade.

SUMMARY OF STUDENTS' WORKING HOURS			
CONTACT HOURS			
Lectures	Cases, exercises and other practice methods		
10	20		
WORKING HOURS OUTSIDE THE CLASSROOM			
Individual reading and preparation	Preparation of cases, exercises and other practice methods	Collaborative learning (working in groups)	
8	20	5	
		Total: 3 ECTS:	75 working hours

REFERENCES AND OTHER BIBLIOGRAPHIC RESOURCES

Major references

Class notes

Handouts & slides

Books

- *Quantitative methods for decision makers*
  MIK WISNIEWSKY
  Ed. Prentice Hall 2010 – ISBN 978-027-37-1207-7

Other references

Books

- Big Data: Using Smart Big Data, Analytics and Metrics to Make Better Decisions and Improve Performance
  BERNARD B. MARR
  Ed. John Wiley & Sons 2015 – ISBN 978-111-89-6583-2
- Data Science for Business: What you need to know about data mining and data-analytic thinking
  FOSTER PROVOST
  Ed. O'Reilly Media 2013 – ISBN 978-144-93-6132-7
- Data Science & Big Data Analytics: Discovering, Analyzing, Visualizing and PresentingData
  EMC EDUCATION SERVICES
  Wiley. ISBN: 9781118876138