

**COURSE DATA****DATA SUBJECT**

Code: 36430
Name: Business and data science
Cycle: Undergraduate Studies
ECTS Credits: 6
Academic year: 2025-26

STUDY (S)

Degree	Center	Acad. year	Period
1406 - Degree in Data Science	Escola Tècnica Superior d'Enginyeria	3	First quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
1406 - Degree in Data Science	Economics, Business and Management	COMPULSORY

COORDINATION

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SUMMARY

Business and data science is a basic course, taught in the first semester of the third year of the Degree in Data Science. It is part of the 'Business Organization' and 'Marketing and Market Research' areas, and it comprises 6 ECTS credits.

To meet the requirements of the degree, it is proposed a program that provides the student the basic knowledge necessary for the study of current approaches to the Business Management, through a comprehensive and inclusive approach to the analysis and strategic business decisions.

Through this system of management, those responsible for leading companies try to guide the direction and development of those, seeking a balance between development and long-term survival, and profitability and the achievement of short term objectives.

Knowing the process of formulation and implementation of the business strategy will allow the future expert in data science to know the information needs of decision makers, from high-level executives to those in other management positions, by appropriate processing of the data or producing reports that facilitate the interpretation of information generated inside or outside the



company. The aim is to facilitate decision making by offering key indicators for the company's organisation and performance, presented in the form of alerts, graphs, tables, etc., and thus contribute to the difficult task of simplifying the decision-making process.

In addition, the knowledge will be taught to know what the marketing function of a company is and to make and implement the decisions that allow the development of the company's marketing strategy and plan.

In the analytical part, the subject will reveal the need and composition of a company's Marketing Information System, the market research process, market segmentation and the company's positioning, develop consumer behavior. Based on this, the product and service strategy, the pricing, distribution and communication strategy will be designed.

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

There are no specified enrollment restrictions with other subjects of the curriculum.

OTHER REQUIREMENTS

COMPETENCES / LEARNING OUTCOMES

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(CB4) Students must be able to communicate information, ideas, problems and solutions to both expert and lay audiences.

(CE03) Ability to solve classification, modelling, segmentation and prediction problems from a set of data.

(CE05) To understand the most relevant fields of application of data science and understand how data science is used to base and perform decision-making based on data

(CE12) Ability to design and start solutions based on data analysis in the field of medicine and business, taking into account the specific requirements of this type of use cases.

(CG04) Ability to work in a multidisciplinary group in a multilingual environment and to communicate, orally and in writing, knowledge, procedures, results and ideas related to data science.

DESCRIPTION OF CONTENTS

1. Fundamentals of marketing



- 1.1. Marketing management
- 1.2. Marketing information system
- 1.3. Consumer behavior

2. Marketing strategy

- 2.1. Social orientation and value management
- 2.2. Design of a consumer-oriented marketing strategy
- 2.3. Segmentation and selection
- 2.4. Differentiation and positioning

3. Market and consumers analysis

- 3.1. Internal data
- 3.2. External secondary data (big data)
- 3.3. Marketing research

4. Marketing decisions

- 4.1. Marketing mix (goods and services)
- 4.2. Product decisions
- 4.3. Pricing decisions
- 4.4. Place decisions
- 4.5. Promotion decisions

5. Marketing implementation

- 5.1. Marketing plan
- 5.2. Evaluation and control

6. Business fundamentals

- 6.1. Concept of company. Definition and typology
- 6.2. The entrepreneur: ownership and management
- 6.3. Objective and design of the target system
- 6.4. Decision-making and stakeholders

7. Basic functions of the company



- 7.1. Production
- 7.2. Marketing
- 7.3. Logistics
- 7.4. HR
- 7.5. Investment-financing
- 7.6. R&D&I
- 7.7. Information systems in the company

8. Strategic diagnosis

- 8.1. External analysis. The environment
- 8.2. Internal analysis
- 8.3. SWOT and CAME

9. Strategy design

- 9.1. Corporate strategies
 - 9.1.1. Direction of development
 - 9.1.2. Method of development
- 9.2. Competitive strategies

10. Strategy Implementation

- 10.1. Strategic direction process
- 10.2. Strategic planning
- 10.3. Strategic control (balanced scorecard)

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Theory	32,00
Laboratory	20,00
Classroom practices	8,00
Total hours	60,00

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	0,00
Individual or group project	9,00
Independent study and work	13,00
Preparation of lessons	49,00



Preparation for assessment activities	10,00
Resolution of case studies	9,00
Total hours	90,00

TEACHING METHODOLOGY

Theoretical classes will be developed through master classes. However, the active participation of the student will be encouraged and valued very positively. For the study of the subject, students will have to use, the recommended bibliography within the analytical program. (CE12)

Complementary materials will be offered through the virtual classroom, such as videos, press, conferences or websites related to the subject. Students can be asked about their contents throughout the class. (CB4)

Problems and laboratory classes, have as objective the consolidation and practical application of the techniques and tools introduced in the theory, through the resolution of cases or mini-cases, or the realization of teamwork in different formats, using different teaching methodologies. For a correct use of them, the students will have to organize themselves in teams and solve the cases or exercises that will be raised throughout the course, to later discuss the solutions in the classroom. (CB4, CG4, CE03, CE05, CE12)

In particular, laboratories will be worked from the perspective of a CEO who must make decisions (CE05, CE12).

EVALUATION

Theory - Synthesis Exam S1 (contributing 50% to the final grade). This exam, which will be held on the date officially set by the School, may include both multiple-choice questions and short essay questions. In any case, the questions may refer to theoretical and practical content. Ideally, questions will be formulated that require students to relate various concepts of the subject (CB4, CE3, CE5).

Problems S3 (CB4, CG4, CE3 and CE5) and Laboratory S2 (CB4, CG4, CE3, CE5 and CE12) - Continuous assessment (50% of the final grade). The teacher will provide regular feedback, both individually and in groups, on students' progress, as well as on areas for improvement and assessment of activities carried out to date. Throughout the course, students will be asked to submit practical cases and/or take mid-term tests, analyse and discuss readings or videos. These activities will be carried out individually and/or in groups at the teacher's discretion, and will be used to assess students. These activities, which are designed to be carried out, presented or discussed in class, will be assessed out of a maximum of five points (20% for the problems and 30% for the laboratories).

In order to be able to add the theory mark and the continuous assessment mark, it will be necessary to obtain five points out of ten in each of the parts (theory and continuous assessment - problems plus laboratories).

The continuous assessment mark linked to the problems is not recoverable in either the first or second sitting, as these must be solved during the theory class.



Students who do not attend at least 80% of laboratory classes, or who fail this part (laboratory), must retake it in the form of an exam on the official assessment date for the subject.

In any case, the assessment system will be governed by the provisions of the University of Valencia's Assessment and Grading Regulations for Bachelor's and Master's Degrees.

Copying or plagiarism of any activity that is part of the evaluation will result in the impossibility of passing the course, and the student will then be subject to the appropriate disciplinary procedures indicated in the ACTION PROTOCOL FOR FRAUDULENT PRACTICES AT THE UNIVERSITY OF VALENCIA (ACGV 123/2020).

REFERENCES

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- Iborra, M.; Dasí, A.; Dolz, C. y Ferrer, C. (2014): Fundamentos de Dirección de Empresas. Conceptos y habilidades directivas. 2ª Edición. Thomson, Madrid.
- Kotler, P. y Armstrong, G. (2018). Principios de Marketing. 17ª edición. Pearson
- Sainz de Vicuña, J.M. (2018). Plan de marketing en la práctica. 22ª edición. ESIC
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- Santesmases, M. (2012). Marketing, conceptos y estrategias. 6ª edición. Pirámide.
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- Johnson, G, Scholes, K. y Whittington, R. (2006): Dirección Estratégica. Prentice Hall, Madrid, 7ª edición.