

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

Code: 36414
Name: Data, science and society
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	1	First quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
1406 - Degree in Data Science	Data and Society	BASIC

COORDINATION

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SUMMARY

Data, Science and Society is a subject of the first course of the Degree in Data Science of the University of Valencia. Its main objective is to introduce the most important concepts of Data Science that will be developed in detail throughout the degree. It will deal with the profession of Data Scientist and the revolution that is taking place in fields such as economics, industry and research as a result of the exploitation of the data generated by an increasingly digitalised world. Issues such as the legal and ethical implications and the progress it will bring to society will also be addressed.

Theory lessons will be taught in Spanish and practical and laboratory lessons as according to the information sheet available on the web page of the degree.

PREVIOUS KNOWLEDGE**RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE**

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



OTHER REQUIREMENTS

No requirements

COMPETENCES / LEARNING OUTCOMES

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(CB3) Students must have the ability to gather and interpret relevant data (usually in their field of study) to make judgements that take relevant social, scientific or ethical issues into consideration.

(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

(CE14) To understand and apply the ethical, legal and normative aspects related to data treatment and the application of the obtained knowledge.

(CG01) Knowledge of basic subjects and technologies that enable students to learn new methods and technologies, and to provide them with versatility to adapt to new situations.

(CG02) Ability to solve problems with initiative and creativity and to communicate and transmit knowledge, abilities and skills, which should include the ethical and professional responsibility of the activity of a data scientist.

(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.

(CT01) To be able to access (bibliographical) information tools and appropriately use them in the development of their daily tasks.

(CT02) To be able to complete technical, scientific, social and human training in general, and to organise self-learning with a high degree of autonomy.

Students must have acquired knowledge and understanding in a specific field of study, on the basis of general secondary education and at a level that includes mainly knowledge drawn from advanced textbooks, but also some cutting-edge knowledge in their field of study.

DESCRIPTION OF CONTENTS

1. Degree in Data Science

Introduction to Data Science
Degree in Data Science Curriculum
Structure, organisation and services of the University



ETSEUV, Virtual Classroom, timetable, exam calendar

2. Data Scientist

Data Scientist: Competences
Data Science Languages: SQL, R and Python
Major Programs in Data Science
Professional profiles and areas of activity

3. Data

Types and characteristics
Data sources
Data quality

4. Stages in Data Science

Extract, Transform and Load
Exploratory Analysis
Segmentation, Grouping
Modelling, Forecasting, Classification
Knowledge extraction and decision making

5. Automatic learning

Machine learning
Supervised, unsupervised and reinforced learning
Operating measures
Learning difficulties

6. Data and Society

Reproducible Research
Biased models and ethical implications
Legislation

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Theory	42,00



Laboratory	10,00
Classroom practices	8,00
Total hours	60,00

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	0,00
Individual or group project	16,00
Independent study and work	29,00
Preparation of lessons	14,00
Preparation for assessment activities	26,00
Resolution of case studies	5,00
Total hours	90,00

TEACHING METHODOLOGY

Classes will combine theoretical and practical content:

MD1 - Theoretical activities. Development of expository of the matter with the participation of the student in the resolution of specific questions. Conducting individual evaluation questionnaires.

In the theoretical activities of a face-to-face nature, the subjects of the course will be developed, providing a global and integrating vision, analysing in greater detail the key aspects and of greater complexity, encouraging, at all times, the participation of students.

MD2 - Practical activities. Learning through problem solving, exercises and case studies through which skills are acquired in the different aspects of the subject.

Theoretical activities are complemented by practical activities with the aim of applying the basic concepts and extending them with the knowledge and experience acquired during the performance of the proposed work.

MD4 -Laboratory and/or computer classroom work. Learning through activities developed individually or in small groups and carried out in laboratories and/or computer rooms.

In addition to face-to-face activities, students will be required to do personal homework (outside the classroom) on: issues and problems, as well as preparing for classes and exams (study). These tasks will be carried out mainly on an individual basis, in order to encourage autonomous work, but will also include work, especially the preparation and resolution of laboratory practices, which require the participation of small groups of students (2-3) to foster the capacity for integration into work groups.

EVALUATION

The learning of the knowledge and competences achieved by students will be continuously evaluated



throughout the course, and will consist of the following evaluation blocks:

SE1 - Objective test, consisting of one or more examinations with both theoretical and practical questions and problems (50%) (Note: All percentages refer to the final grade)

- SE1-1 (35%) Theory examination

- SE1-2 (15%) Laboratory examination

SE2 - Evaluation of practical activities based on the preparation of papers/memories and/or oral presentations (30%)

- SE2-1 (15%) Implementation of a mini-project consisting of an introduction to the Data Science stages.

- SE2-2 (15%) Laboratory lessons

SE3 - Continuous assessment of each student, based on the participation and degree of involvement of the student in the teaching-learning process, taking into account the regular attendance to the planned face-to-face activities and the resolution of issues and problems proposed periodically. (20%)

- SE3-1 (5%) Regular attendance at planned face-to-face activities. (NON-recoverable activity)

- SE3-2 (15%) Resolution of proposed issues and problems. (NON-recoverable activity)

The final grade of the course will be calculated as the weighted average of each of the previous sections, according to the following criteria: SE-1 (50%), SE-2 (30%), SE-3 (20%).

Particular considerations about the evaluation:

- A minimum score of 4.5 (out of 10) is required in the evaluation sections SE1-1, SE1-2 and SE2-1.

- The SE3-1 and SE3-2 activities are not recoverable.

The evaluation criteria will be the same in both exam sessions. Grades obtained in the passed parts during the first session will be retained for the second session. However, students will have the option to retake those parts if they wish to improve their grade.

In any case, the evaluation system will be governed by the provisions of the Evaluation and Qualification Regulations of the University of Valencia for Degrees and Masters:

<https://webges.uv.es/uvTaeWeb/MuestraInformacionEdictoPublicoFrontAction.do?accion=start&idEdictSelected=5639>



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 ([ACGUV 123/2020](#)).

REFERENCES

- Mike Loukides (2010). What is Data Science?. https://www.oreilly.com/data/free/what-is-data-science.csp?intcmp=il-data-free-lp-lgen_free_reports_page
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