1. OVERVIEW

Subject area	Digital Economy
Degree	Bachelor's Degree in Data Science
School/Faculty	Faculty of Science, Engineering and Design
Year	Second
ECTS	4.5 ECTS
Type	Mixed (compulsory, core)
Language(s)	Spanish and Valencian
Delivery Mode	On campus
Semester	Second semester

2. INTRODUCTION

As we now find ourselves in the so-called 4th Industrial Revolution of the past 20 years, we can see how the digital revolution has had a huge impact on how markets work, the competition in different economic sectors and how companies do business. These changes have been brought about as existing businesses undergo digital transformation processes and new companies emerge based on technology and digital platforms. Ultimately, the significance of these technological changes is determined by their current and future impact on how companies can do business, grow and transform their culture starting with their workforce.

This course teaches students the core issues behind the information economy, large trends in technology, layered modular architecture of digital products, the most important enabling technology, the digital business models, and the value data provides. We also study the metrics and analytics of the digital economy.

3. SKILLS AND LEARNING OUTCOMES

Basic skills (CB, by the acronym in Spanish):

- CB4: Students can communicate information, ideas, problems and solutions to both specialist and non-specialist audiences.
- CB5: Students have developed the learning skills necessary to undertake further study in a much more independent manner.

Cross-curricular skills (CT, by the acronym in Spanish):

- CT01: Ethical values: Ability to think and act in line with universal principles based on the value of a person, contributing to their development and involving commitment to certain social values.

- CT03: Teamwork: ability to integrate and collaborate actively with other people, areas and/or organisations to reach common goals.
- CT04. Written/spoken communication: ability to communicate and gather information, ideas, opinions and viewpoints to understand and be able to act, spoken through words or gestures or written through words and/or graphic elements.
- CT05. Analysis and problem-solving: be able to critically assess information, break down complex situations, identify patterns and consider different alternatives, approaches and perspectives in order to find the best solutions and effective negotiations.
- CT06. Adapting to change: be able to accept, consider and integrate different perspectives, adapting your own approach as required by the situation at hand, and to work effectively in ambiguous situations.
- CT07. Leadership: be able to direct, motivate and guide others by identifying their skills and abilities, in order to effectively manage their development and common interests.
- CT08. Entrepreneurial spirit: ability to take on and carry out activities that generate new opportunities, foresee problems or lead to improvements.
- CT09. Global mindset: Be able to show interest in and understand other customs and cultures, be aware of your own biases and work effectively as part of a global community.

Specific skills (CE, by the acronym in Spanish):

- CE14. Ability to apply knowledge of the principles of organisation and management and understand the social, institutional and legal frameworks.
- CE15. Ability to apply technological and innovative strategies as a way to grow, develop and improve a company's competitiveness.

Learning outcomes (RA, by the acronym in Spanish):

- RA1: Apply the core concepts of the digital economy and its importance to businesses.
- RA2: Analyse case studies on technological innovation in companies.

The following table shows how the skills developed in the subject area match up with the intended learning outcomes:

Skills	Learning outcomes
CB4, CB5, CT1, CT4-CT9, CE14, CE15	• RA1: Apply the core concepts of the digital economy and its importance to businesses. • RA2: Analyse case studies on technological innovation in companies.

4. CONTENTS

Unit 1
- Introduction to the digital economy
- Basics of the business sector

Unit 2
- Principles of the digital economy
- Principles of the digital industry

Unit 3
- Digital products

-   Digital business models

Unit 4
-   Trends in the digital economy
-   Metrics and analytics in the digital economy

5. TEACHING/LEARNING METHODS

The types of teaching/learning methods are as follows:

-   Master lectures
-   Case studies
-   Collaborative learning
-   Problem-based learning and projects
-   Learning based on laboratory work (laboratory, workshop and simulation environments)
-   Gamification
-   Field work (visits)

6. LEARNING ACTIVITIES

The types of learning activities, plus the amount of time spent on each activity, are as follows:

On campus:

Learning activity	Number of hours
Master lectures	24h
Problem solving and case studies	15h
Practical seminars and debates/discussions	13h
Field work	4h
Learning contract	1h
Autonomous learning	57h
Tutorials	6h
TOTAL	**120h**

7. ASSESSMENT

The assessment methods, plus their weighting in the final grade for the subject area, are as follows:

On campus:

Assessment system	Weighting
On campus tests to evaluate objectives of theory/practical learning (exam-type objective tests, written compositions, spoken presentations, case studies/problem solving, debates, simulation tests)	40%

On campus laboratory tests (activity reports, spoken presentations)	25%
Off-site tests to assess theory/practical learning (case studies/problem solving)	20%
Attitude assessment tests (attitude assessment rules, class participation)	10%
Self- and co-assessment (learning contract, learning outcomes)	5%
TOTAL	**100%**

On the Virtual Campus, when you open the subject area, you can see all the details of your assessment activities and the deadlines and assessment procedures for each activity.

8. BIBLIOGRAPHY

The reference publications to accompany this subject are:

- García, F. P., Broseta, B., Duré, B. B., Pérez, F., Consejo Económico y Social (Espanya), Esteve, A. E., Tello, A. G., Lahiguera, L. H., Silla, J. M. P. & Martínez, L. S. (2020). Cambios tecnológicos, trabajo y actividad empresarial: el impacto socioeconómico de la economía digital. Consejo Económico y Social España

The recommended bibliography is indicated below:
- Brynjolfsson E. y McAfee A. (2014), The Second Machine Age: Work, Progress and Prosperity in a Time of Brilliant Technologies. W.W. Norton & Company. Existe traducción Española en A. Bosch Eds. con el título La Carrera contra la M.áquina (2013)
- McAfee A. y Brynjolfsson E. (2017), Machine Platform, Crowd: Harnessing our Digital Future. W.W. Norton & Company.
- Shapiro C. y Varian H. (1999), Information Rules: A Strategic Guide to the Network Economy. Harvard Business Schools Press, Boston MA. Existe traducción Española en A. Bosch Eds. con el título El Dominio de la Información (2000)