

69757 - Information Management

Syllabus Information

Academic Year: 2021/22

Subject: 69757 - Information Management

Faculty / School: 100 - Facultad de Ciencias

Degree: 627 -

ECTS: 6.0

Year: 01

Semester: Second semester

Subject Type: Optional

Module:

1. General information

1.1. Aims of the course

The Information Management course is designed to understand the fundamentals of the acquisition and use of information through different devices for the proper functioning of the Circular Economy. This objective is aligned with Sustainable Development Goal (SDG) No. 12 (Responsible consumption and production) of the United Nations 2030 Agenda (<https://www.un.org/sustainabledevelopment/es/>), in such a way that the acquisition of the learning results of the subject provides training and competence to contribute to some extent to its achievement.

1.2. Context and importance of this course in the degree

The Information Management course is taught in the second semester as an optional subject of the scientific-technical module. It is designed for students from Science or Engineering degrees to allow understanding the fundamentals of the acquisition and use of information through different devices for the proper functioning of the Circular Economy. The course is taught from the Public University of Navarra.

1.3. Recommendations to take this course

Regular use of the teaching platform and daily study of the concepts presented are recommended, with special emphasis on solving practical activities. Likewise, it is vital to consult the doubts and questions that pose difficulties in the teaching and learning process, for which personalised tutorials should be used.

2. Learning goals

2.1. Competences

BASIC COMPETENCES

CB6 - Have demonstrated knowledge and understanding that is founded upon and extends and/or enhances that typically associated with the first cycle, and that provides a basis or opportunity for originality in developing and/or applying ideas, often within a research context.

CB7 - Can apply their knowledge and understanding, and problem solving abilities in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study.

CB8 - Have the ability to integrate knowledge and handle complexity, and formulate judgements with incomplete or limited information, but that include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgements.

CB9 - Can communicate their conclusions, and the knowledge and rationale underpinning these, to specialist and nonspecialist audiences clearly and unambiguously.

CB10 - Have the learning skills to allow them to continue to study in a manner that may be largely self-directed or autonomous.

GENERAL COMPETENCES

CG1 - Obtain information in Spanish and English using information technologies efficiently

CG2 - Manage, critically analyze and synthesise information

- CG3 - Critically reflect in a systemic way and using causal relationships
- CG4 - Formulate, analyze, evaluate and compare in a multidisciplinary way new or alternative solutions for different problems
- CG5 - Work in interdisciplinary groups
- CG6 - Transmit information efficiently through information and communication technologies
- CG7 - Develop management skills (decision making, goal setting, problem definition, design, and evaluation)
- CG8 - Properly manage available resources on time

2.2. Learning goals

The student, passing this subject, achieves the following results:

To be able to propose improvements in Circular Economy systems through information and communication technologies.

2.3. Importance of learning goals

Obtaining the learning results is essential to understand the fundamentals of the acquisition and use of information through different devices for the proper functioning of the Circular Economy.

3. Assessment (1st and 2nd call)

3.1. Assessment tasks (description of tasks, marking system and assessment criteria)

The course will be evaluated using two assessment methods (continuous and global), so that the student will be assigned the grade that is most beneficial to him. For this, the grades obtained in the following tests will be used:

* A report (rated I). The report will consist of a memory on a topic related to the subject, a study of the state of the art related to information processing tools and techniques, or the critical analysis of a research or dissemination article. The required report structure and format will be communicated to students through moodle. The report will be sent to the teacher electronically.

* A seminar (rated S). The seminar will consist of the preparation of the memory, exhibition and public defense of a work on a subject related to the matter, promoting the implementation aspects and practical treatment of information systems. The report will be carried out individually or in groups, depending on the specific topic. For the qualification, it will be assessed whether the work follows a coherent structure and provides an appropriate bibliography, as well as clarity and order in the presentation and maturity in the debate.

* Final short, long and/or development answer test (scored as F). The test will be held simultaneously at each university under conditions that guarantee the proper identification of students and the impossibility of fraud in them.

The grades obtained by each student in the aforementioned evaluation activities will be weighted according to the following formulas:

Formula 1:

Final mark of the course: $0.5 \times I + 0.2 \times S + 0.3 \times F$

Formula 2:

Final grade for the course: F

It is not necessary to achieve minimum marks in the evaluation tests for the application of the above formulas. The final grade for the course will be the best grade obtained in each case after applying formula 1 and formula 2.

The number of official exam sessions to which enrollment entitles (2 per enrollment) as well as the consumption of these calls will be adjusted to the Rules of Permanence in Master's Studies and the Rules of Learning Assessment of the University of Zaragoza (<https://ciencias.unizar.es/normativas-asuntos-academicos>). To this last regulation, the general criteria for the design of the tests and the grading system will also be adjusted, and according to the same, the time, place and date on which the review will be held when publishing the qualifications will be made public.

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

Learning on this course is based on the combination of the expository method and flipped classroom.

According to the expository method, the professor develops the presentation of the topics before the students present in the

same classroom or other universities through videoconference. In addition, other teaching materials will be included in the Moodle platform that will allow dedicating some of the classes to interact with students, posing questions that allow relating concepts.

Problem-Based Learning is an instructional and learning-oriented educational approach in which students tackle real problems in small groups and under the supervision of a tutor.

Cooperative learning in small groups

In case of studies, students carry out case studies or solve practical assumptions, in such a way that the student is required to elaborate an argued solution regarding a question, solve a series of specific questions or carry out a global reflection. The solutions to the problems or assumptions or the critical analysis of the case are evaluated. It involves the presentation of work and the teacher's feedback on them.

Project-oriented learning is based on situations in which the student must explore and work on a practical problem applying interdisciplinary knowledge. Project learning is an example of autonomous learning, in which students in small groups must develop a project or document as a result of applying the acquired knowledge to a specific case.

All these training activities will be supported by tutorials from teachers via videoconference, as well as virtualised systems for carrying out practical exercises.

4.2. Learning tasks

Master class: 12 hours

Problem and case resolution: 3 hours

Teaching work: 68 hours

Study: 67 hours

4.3. Syllabus

1. Information and communication technologies.
2. Mobile and wireless communications networks. 5G networks.
3. Smart cities and Industry 4.0.
4. Emerging technologies geared towards the circular economy: internet of things (IoT), business intelligence (BI), robotronics, Distributed Ledger Technology (DLT), blockchain, cloud/edge/fog computing.
5. Data analysis. From data to knowledge (artificial intelligence, machine learning, data analysis...).

4.4. Course planning and calendar

Information on schedules, calendar and exams is published on the Master's page on the website of the Faculty of Sciences of the University of Zaragoza (<https://ciencias.unizar.es/master-en-economia-circular>). The presentation of reports will be carried out according to the calendar that will be announced in due course through the Moodle page of the subject.

4.5. Bibliography and recommended resources

<http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=69757&Identificador=C74187>