

Academic Year: (2023 / 2024)

Review date: 20-05-2023

Department assigned to the subject: Library and Information Sciences Department

Coordinating teacher: MENDEZ RODRIGUEZ, EVA MARIA

Type: Electives ECTS Credits : 6.0

Year : 4 Semester :

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

The students of this course are required to have a basic knowledge of:

- General understanding of digital information in the research and innovation processes
- Research cycle and research outputs (publications, data, software, etc.)
- General knowledge about the current Scientific communication system and academic and scientific publishers; strategies.
- Basics about Open Access to publications.
- Bibliometrics and scientometric: methodologies and indicators.

OBJECTIVES

- Describe the concepts and objectives of Open Science
- Determine the appropriate route to take when publishing Open Access papers/articles and other materials and be capable to understand and negotiate with scientific publishers.
- Set up an Open Science sharing strategy (papers and data) to increase institutional research visibility.
- Select the right tools to implement collaborative and open science (tools to create repositories, data management plans, scientific reproducibility/replicability and improve the transparency and visibility of researchers).
- Identify the benefits of a Virtual Research Environment for sharing and using research data.
- Analyse and discuss the benefits and barriers of particular Open Science cases (including different countries and disciplines).

DESCRIPTION OF CONTENTS: PROGRAMME

The course lasts for 14 weeks and it is distributed in 7 Didactical Units, lessons or modules. The 7 lessons are:

Lesson 1: Introduction to OpenScience

- 1.1. Concept, Context, Evolution and fundaments
 - 1.2. Components of Open Science from different perspectives
 - 1.3. Policies and funding: EU Open Science Policies.
 - 1.4. Challenges of Open Science: Responsible Research Assessment (DORA, CoARA, etc.). Global, European and Spanish perspective
 - 1.5. Use case: COVID-19 or SDG (Sustainable Development Goals).
- Practice: Activity 1

Lesson 2: Understanding the Research cycle and Research outcomes

- 2.1. Phases of the Research cycle and funding models
 - 2.2. Digital Research and Data-driven Research
 - 2.3. Research outcomes: types of outcomes and their dissemination.
 - 2.4. Tools and infrastructures to hold and share research development (Virtual Research Environments, Open Notebook and research collaborative tools).
- Practice: Activity 2

Lesson 3: Rewards, Incentives and Research integrity

- 3.1. Research visibility: initiatives, tools and standards
 - 3.2. Research evaluation: Next Generation Metrics and Open Science indicators
 - 3.3. Ethical issues of Scientific Research
 - 3.4. Academic and Research Integrity
- Practice: Activity 3

Lesson 4: Open Access and Scholarly Communication mechanisms

- 4.1. Open Access Policies: history and evolution

- 4.2. Gold, Green, Diamond and black Open Access
- 4.3. Creation of a publications repository: standards, software and management
- 4.4. Copyright and Open Licensing
- 4.5 Plan S: principles, implementation and cOAlition S
- 4.6. Future of Scholarly Communication
- Practice: Activity 4

Lesson 5: Open/FAIR Research Data.

- 5.1. Data and the Public Sector Information: Open Data and Open Research Data.
- 5.2. The diversity of Research Data
- 5.3. Data stewardship: creation of Data Management Plans (DMP) and Actionable DMPs
- 5.4. FAIR data principles: scope and implementation.
- 5.5. Research Data Repositories and accreditation (Core Trust Seal): domain agnostic repositories and domain specific repositories
- 5.6. EOSC (European Open Science Cloud) and the ESFRI roadmap
- Practice: Activity 5

Lesson 6: Citizen Science

- 6.1. Science with and for Society. Science Transfer vs Citizen Science
- 6.2. Citizen Science vs Public Engagement
- 6.3. Spaces for Citizen Science: libraries, Maker-spaces, living-LABs, science shops
- 6.4. Natural Citizen Scientist: patients
- 6.5. Projects and Initiatives of Citizen Science
- 6.6. Citizen Science Toolkit
- Practice: Activity 6

Lesson 7: Design and implementation of a full-fledged Open Science initiative

Group Practice: final project (steps and technical implementation of the project)

LEARNING ACTIVITIES AND METHODOLOGY

THEORETICAL-PRACTICAL CLASSES. They will present the knowledge that students must acquire. They will receive the class notes and will have basic reference texts to facilitate the monitoring of the classes and the development of subsequent work. Exercises, practical problems will be solved by the student and workshops will be held to acquire the necessary skills. For subjects of 6 ECTS, 42 hours will be dedicated as a general rule with 100% attendance.

TUTORIALS. Individualized assistance (individual tutorials) or in groups (collective tutorials) to students by the teacher. For subjects of 6 credits, 4 hours will be dedicated with 100% attendance.

INDIVIDUAL OR GROUP WORK BY THE STUDENT. For subjects of 6 credits, 78 hours will be dedicated 0% face-to-face, but online tutorials.

THEORY CLASS. Presentations in class by the teacher with the support of computer and audiovisual media, in which the main concepts of the subject are developed and the materials and bibliography are provided to complement the learning of the students.

PRACTICES. Resolution of practical cases, etc. raised by the teacher individually or in groups.

TUTORIALS. Individualized assistance (individual tutorials) or in groups (collective tutorials) to students by the teacher.

ASSESSMENT SYSTEM

The assessment methodology entails:

- Exam (25%)
- Group activity (Final work, 50%)
- Individual activities (2, 20%)
- Participation (5%) both online and in class

% end-of-term-examination: 25

% of continuous assessment (assignments, laboratory, practicals...): 75

BASIC BIBLIOGRAPHY

- Colaborative bibliography in Zotero: https://www.zotero.org/groups/415096/open_science_bibliography, ..., 2023

BASIC ELECTRONIC RESOURCES

- . Comprenhensive Shared Bibliografy about Open Science (Zotero):
https://www.zotero.org/groups/415096/open_science_bibliography