Universidad Zaragoza

Academic Year/course: 2022/23

63237 - Instructional and Curricular Design in Experimental Sciences

Syllabus Information

Academic Year: 2022/23
Subject: 63237 - Instructional and Curricular Design in Experimental Sciences
Faculty / School: 107 - Facultad de Educación
Degree: 584 -
595 -
596 -
ECTS: 6.0
Year: 1
Semester: First semester
Subject Type: Optional
Module:

1. General information

2. Learning goals

3. Assessment (1st and 2nd call)

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

Every new lesson will be introduced by a presentation of different problems, examples or learning situations where the need to use concepts and procedures aim at the learning process are pointed.

Reflection and exposition of their personal point of view in the issue.

Reasoned discussion on the basic theoretical aspects that support the design of curricular programs. On this basis the students will analyse, plan and asses different curricular designs proposals on Science subjects (Phisics, Chemistry, Biology, Geology or others related to these specialities)

Development of the designed learning activities

Once the individual and group analyses are finished, the students will draw a set of conclusions that permit them to use the concepts and procedures learnt and write them down in their portfolio so that the acquired competences might be reflected.

Students will be allowed to use their personal computers in the classroom to search for information and progressively elaborate their portfolios.

Both Professor and students? explanations will use screen presentations including text, graphics, images, videos, web sites, etc

All the issues and specific materials needed to follow the development of the subject will be provided through the subject?s site in Moodle.

4.2. Learning tasks

EDUCATIONAL ACTIVITY	HOURS	ATTENDANCE
Masterclass	45	100

Problems y cases	15	100
Supervised work	24	0
Individual study	60	0
Assessments	6	100

The subject is based on the following type of main activities:

1. Masterclasses and problems and cases lectures: Theoretical foundations will be introduced through presentations and critical reading of scientific references.
2. Team works: the students will identify the parts of the educational curriculum (objetives, competences, methodology, activities, evaluation criteria) and the coherence between all of them.
3. Discussion sessions aim at training the competences related to both critical analysis and evaluation of the curricular aspects which must be used as a reference.
4. Individual work (see evaluation section).

In general, on-site activities (60 horas) will be structured as follows:

Introductory statement, carried out by the professor, of every lesson basis and the reasons that justify the need to acquire the corresponding training.

Analysis and debate in groups using examples, cases and applications.

Proposals to search for online materials that allow each student to prepare summaries and suggestions related to each discussed subject.

Knowledge sharing.

Development of a personal learning portfolio Students presentations.

4.3. Syllabus

Aragonese curriculum related to natural experimental Sciences in secondary school and high school.

Annual educational programme.

Curricular design based on competences.

Experimental Sciences didactics fundamentals

Students? misconceptions.

Analysing projects and curricular proposals in Experimental Sciences.

Active and collaborative methodologies.

Cognitive and perceptive aspects and their role in Experimental Sciences learning.

Formative assessment as a self-regulating learning process.

4.4. Course planning and calendar

During the first school week, professors will publish on Moodle the list of task to be carried out by the students and the delivery schedule for them.

On site lectures and tasks presentations.

Lectures will be carried out during the first semester. The schedule will be published well in advance.

The date and time for the global assessment will be announced on Moodle well in advance.

All the needed communications related to the subject will be published on Moodle.

4.5. Bibliography and recommended resources

http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=63237&Identificador=C71808