

63228 - Disciplinary Content of Technology

Syllabus Information

Academic year: 2023/24

Subject: 63228 - Disciplinary Content of Technology

Faculty / School: 107 - Facultad de Educación

Degree: 584 - Master's Degree in Teaching Compulsory Secondary Education

590 - University Master's Degree in Teaching, specializing in Geography and History

591 - Master's Degree in Teaching, specializing in Philosophy

592 - Master's Degree in Teaching, specializing in Business and Economics

593 - Master's Degree in Teaching, specializing in Mathematics

594 - Master's Degree in Teaching, specializing in Technology and Computer Science

595 - Master's Degree in Teaching, specializing in Biology and Geology

596 - Master's Degree in Teaching, specialization in Physics and Chemistry

597 - Master's Degree in Teaching, specializing in Spanish Language and Literature. Latin and Greek

598 - Master's Degree in Teaching, specialization in Foreign Language: French

599 - Master's Degree in Foreign Language Teaching: English

600 - University Master's Degree in Teaching, specializing in Music and Dance

601 - University Master's Degree in Teaching, specializing in Industrial and Construction Processes

602 - University Master's Degree in Teaching, specializing in Administration, Marketing, Tourism, Services to the Community and FOL

603 - Master's Degree in Teaching, specializing in Sanitary, Chemical, Environmental and Health Processes Agri-food

ECTS: 6.0

Year: 1

Semester: Second semester

Subject type: Optional

Module:

1. General information

The objective of the subject is that the student conceives the subject of Technology in the STSE environment (Science, Technology, Society and Environment) and that they considers this approach as adequate to transmit Technology to their students.. Even though technology is a specific discipline, it should be approached as an integral training.

These approaches and objectives are aligned with the Sustainable Development Goals (SDGs) of the 2030 Agenda of United Nations (<https://www.un.org/sustainabledevelopment/es/>), to contribute to their achievement:

Goal 4: Ensure inclusive, equitable and quality education and promote lifelong learning opportunities for all.

Goal 5: Achieving gender equality and empowering all women and girls.

2. Learning results

Describe and analyse the basic contents of the corresponding curricular subject and apply them in a problem-solving context

Value the importance of the corresponding curricular subject from a phenomenological, cultural and epistemological point of view

Analyse and prioritize the different contents of the corresponding curricular subject according to its formative value.

Technology should be conceived as the interrelationship between Science, Technology, Society and the Environment. The students of ESO, Bachillerato and PT acquire a critical attitude and can give their opinion on the advances of technology. Technology is a discipline that evolves at a dizzying pace and therefore teachers must maintain a permanent training and updating work to be able to transmit to students the most current aspects.

3. Syllabus

Theory:

Concept of Technology. STSE Vision.

Thematic blocks (materials, structures, mechanisms, electrical and electronic technology).

Textbooks: Critical analysis of texts. Concept maps.

Sources of multimedia resources. Workshop practices.

Updating of knowledge and research.

Bibliography.

Selection of materials: Problem statement and use of the CES database.

Search for scientific information.

Gender perspective.

Practical content:

I - Material properties

II - Materials testing

III - Experiences.

IV- Software and multimedia.

V - Electronic instruments and laboratory.

VI- Digital electronic systems

VII-Electronic systems with sensors

VIII-Electronic control and actuation systems

IX- Power supply of electronic systems

4. Academic activities

A01 Participatory master class.

A03 Laboratory practices.

A05 Practical application or research work.

A06 Tutorials.

A08 Assessment.

5. Assessment system

Directed work

- To structure and provide content with a STSE approach to a didactic unit corresponding to a subject of the field of Technology. It should include:

o Description and explanation of concepts and fundamentals

o Conceptual map

o Resources used

o How would they, as a teacher, update their knowledge on this subject?

- Analysis of the relevant contribution of a female technologist and/or researcher, highlighting her contribution.

- Analysis from a STSE point of view of a textbook or digital book chapter in Technology

The work will be presented in writing (60% of the grade) and a defence of the didactic unit (40% of the grade)

Practices

- Reports on the completion of the practices (delivered, by groups, 1-2 weeks after each session).

- Proposal of an experiment or workshop practice suitable for a Technology subject (to be handed in, individually, together with the directed work)

This part will be considered in the evaluation if all practical sessions have been attended. Otherwise students should directly undergo global evaluation.

Evaluation criteria

Final Grade = Paper Grade x 0.6 + Practical Grade x 0.4, if Paper Grade > 4 and Practical Grade > 4

Fraud or total or partial plagiarism in any of the evaluation tests will result in not passing the subject with the minimum grade, in addition to the disciplinary sanctions adopted by the Guarantee Committee for these cases.

Global evaluation and second call

The overall evaluation consists of:

- Perform and defend the same deliverables as described above

- Summary and presentation of the scripts of the practices, suggesting a variation of these to adapt it to a technology subject

In the second call, the directed work and/or the practical part must be resubmitted, pointing out and justifying the variations introduced according to the assessment of the teachers in the previous call.

Fifth and sixth calls

- In each call, the work done by the student will be maintained, asking the same as for the second call, to indicate the improvements and their justification based on the assessment made by the teachers in the previous call.

Finally, it must be taken into account that the Regulations of the Norms of Coexistence of the University of Zaragoza will be applicable to the irregularities committed in the evaluation tests by means of academic fraud, as well as the application of article 30 of the Regulations of the Norms of Evaluation of Learning in relation to irregular practices other than academic fraud.