# 63232 - Innovation and Classroom Research in Informatics and Technology

## Syllabus Information

**Academic year:** 2023/24
**Subject:** 63232 - Innovation and Classroom Research in Informatics and Technology
**Faculty / School:** 107 - Facultad de Educación
**Degree:** 584 - Master's Degree in Teaching Compulsory Secondary Education
          594 - Master's Degree in Teaching, specializing in Technology and Computer Science
**ECTS:** 4.0
**Year:** 1
**Semester:** Second semester
**Subject type:** Optional
**Module:**

## 1. General information

Innovation and educational research in technology and computer science is a 4-credit subject that is part of module 6 of the Master's program. This is the module that works, generically, on the competencies related to innovation and improvement of teaching. The teaching innovation and educational research aims to improve day by day the educational processes in the field of the subjects of the specialty.

This subject is closely coordinated with Practicum II. In this phase of the Practicum, innovation and educational research projects are analysed, the foundations of which have been worked on in this Module 6. The projects will be developed before the final end of the internship period, so that the student will have the opportunity to analyse and reflect on the experience, as a final closing activity.

## 2. Learning results

The student, in order to pass this subject, must demonstrate the following results:

Describe and compare the main innovation projects in technology and/or ICT teaching, carried out in Spain and other countries.

Describe the problems related to the teaching and learning of Technology and ICT and how they are addressed in innovation projects and research lines in these areas

Analyse research articles on the didactics of technology or the use of ICT as a support for the improvement of learning.

Identify basic qualitative and quantitative research and innovation methods and techniques from an action research perspective

Design and analyse innovation and research projects taking into account all the elements of the didactic system.

## 3. Syllabus

Research in Computer Science and Technology Didactics and its impact on the teaching-learning process Current lines of innovation and research in Computer Science and Technology Didactics. Analysis of specific experiences.

Basic research and innovation methods and techniques: Qualitative, quantitative, action research. The role of each individual teacher and of the teaching team in the processes of innovation and research in the teaching of Computer Science and Technology.

Repercussions of teachers' conceptions about Computer Science and Technology and their learning in the teaching-learning process

Design of research, innovation and evaluation projects in computer science and technology education. Working in team in innovation, evaluation and research projects.

Evaluation and analysis of the educational proposal, criteria and methods for the evaluation of programming and teaching practice.

## 4. Academic activities

Theoretical classes: presentation of contents by the teachers

Individual tutored work in the computer classroom

Individual analysis and reflection activities

Small group activities for analysis, reflection and application of the contents

Teacher-led large group discussion activities

Organization of the research/innovation work, which may be carried out individually or in small groups

(2 or 3 people): choice of the topic, methodology to be used, data analysis tools, evaluation of results, etc

Non-face-to-face:

Tutoring: individual and/or group counselling

Reading of research articles in Technology or with ICT support

Reading of innovation projects in technology or with ICT support

## 5. Assessment system

Continuous assessment activities:

Design of an innovation project in Computer Science or Technology teaching.

10% of the final grade for this section will be obtained by co-evaluation.

Evaluation and analysis of an innovation project in computer science or technology education. 40% of the final grade.

Analysis of an article on research in didactics in the areas of technology or ICT 30% of the final grade.

Presentation and group discussion of the articles analysed. 20% of the final grade.

Participation in the co-evaluation of the presentations: 10%

Global test:

Present and defend a teaching innovation project. Perform a complete evaluation of an innovation project.

Conduct an analysis of a research article.

In addition, students will have to take an exam with theoretical and practical questions in which they will demonstrate their knowledge and understanding of the subject´s syllabus, as well as their ability to apply the contents and the basis of their reflections. The exam must be passed in order to pass the subject and it will be worth 50% of the final grade. The set of papers handed in will be worth 50%of the final grade.

Second and subsequent calls, including the fifth and sixth calls: It will be developed in the same terms described in the global test.

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.