

63227 - Master's Dissertation (Mathematics)

Syllabus Information

Academic year: 2023/24

Subject: 63227 - Master's Dissertation (Mathematics)

Faculty / School: 107 - Facultad de Educación

Degree: 584 - Master's Degree in Teaching Compulsory Secondary Education
593 - Master's Degree in Teaching, specializing in Mathematics

ECTS: 6.0

Year: 1

Semester: Annual

Subject type: Master Final Project

Module:

1. General information

It is intended that the student in the realization of this subject can integrate mathematical knowledge for teaching referred to a certain school mathematical object in its two aspects: as mathematical knowledge and as a pedagogical knowledge of mathematical content, and be able to show a high degree of professional competences of the mathematics teacher.

SDG: 4, 5 and 10 (<https://www.un.org/sustainabledevelopment/es/>)

2. Learning results

1. Produce an academic paper containing original contributions by applying the knowledge, skills, abilities, aptitudes and attitudes acquired throughout the master's studies.
2. Work autonomously and responsibly to achieve the proposed objectives.
3. Critically evaluate their own work.
4. Present their work, orally and in writing, and defend it with order, clarity, argumentative rigor and linguistic correctness.

Competencies: [CG03.CG04.CB9.CB10.CE34.CE35.CE36.CE40.](#)

3. Syllabus

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4. Academic activities

The MFP, which will be carried out individually, may be directed by one or co-directed by a maximum of three teachers of the master. The task of directing the MFP will involve continuous monitoring (with regular meetings) of the work done for the preparation, written presentation and oral defines before the MFP board. The director(s) will offer the student general guidelines on the nature and requirements of the type of work proposed to be done and will validate and supervise the process of carrying out the work. The director may submit a report on the work to the evaluating board on their own initiative or that of the board. The student will choose between one of the following two modalities:

Modality A. Design of a didactic sequence on a mathematical object that includes aspects of innovation and educational research. The report will include: presentation and definition of the mathematical object, study of the state of its teaching-learning, analysis of the students' previous knowledge about it, establishment of the rationale, problem fields, techniques and technologies of the mathematical object in the sequence, didactic sequencing, chronogram, evaluation and bibliography.

Modality B: works of initiation to research related to lines of innovation or research previously carried out by the teachers in the field of Didactics of Mathematics. The report of the modality B will consist of an original work to start in educational research or

innovation integrated in one of the lines proposed by the faculty of the Master for the specialty of Mathematics in the field of Didactics of Mathematics. The report will include: problem statement and theoretical framework, methodological design, data analysis and results; conclusions, consequences and implications; bibliography.

5. Assessment system

For the evaluation of the MFP and its defence, the Quality Assurance Committee will appoint a board of examiners that will apply the following assessment criteria:

A. Competences to synthesize and integrate acquired learning and to contribute own ideas (Quality of the report 60%)

Indicators:

- Demonstrated level of professional skills in basic techniques and procedures related to curriculum design and development.
- Degree of acquisition of mathematical knowledge for teaching: both content knowledge and didactic knowledge of the content.
- Evidence of understanding and knowledge of current trends and debates in the field of Didactics of Mathematics
- Use of references that support arguments, discussion and analysis.
- Degree of timeliness, comprehensiveness, adequacy and didactic relevance of the references and sources used.
- Originality and quality of proposals and contributions.
- Degree of coherence in the reasoning and lines of argument followed in the development of the work.
- Accuracy and rigor in the use of terms, concepts and contents, both general and specific, related to the teaching of mathematics
- Demonstrated positive and constructive attitude toward the teaching profession.

B. Written communication skills (Quality of writing and written presentation 20 %).

Indicators:

- Compliance with the established format.
- Structure and expository order.
- Adequate compliance with APA regulations.
- Adequate and coherent organization of the different sections of the work.
- Demonstrated level of general and professional speech.
- Written expression, spelling and grammar.

C. Oral communication skills (Quality of presentation and defence, 20 %).

Indicators:

- Mastery and understanding of the subject matter.
- Clarity, rhythm and organization of the presentation.
- Use of body language and voice.
- Selection and presentation of key information.
- Synthesis capacity
- Compliance with established deadlines.
- Adequate and pertinent argumentation in response to the questions and comments of the members of the Board.

The report and its defence will follow a specific format of which the students will be previously informed.

Fifth and Sixth calls: For the evaluation of students in this situation, the evaluation criteria and requirements indicated above are applied depending on whether it is the first or second call of the school year.

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.