ANX-PR/CL/001-01

LEARNING GUIDE

SUBJECT

43000679 - Introduction To Master's Thesis

DEGREE PROGRAMME

04AP - Master Universitario Ingenieria De Estructuras, Cimentaciones Y Materiales

ACADEMIC YEAR & SEMESTER

2024/25 - Semester 2

Index

Learning guide

1. Description

1.1. Subject details

Name of the subject	43000679 - Introduction To Master's Thesis
No of credits	1.5 ECTS
Type	Compulsory
Academic year ot the programme	First year
Semester of tuition	Semester 2
Tuition period	February-June
Tuition languages	English
Degree programme	04AP - Master Universitario Ingenieria de Estructuras, Cimentaciones y Materiales
Centre	04 - E.T.S. De Ing. De Caminos Canales Y P.
Academic year	2024-25

2. Faculty

2.1. Faculty members with subject teaching role

Name and surname	Office/Room	Email	Tutoring hours *
Diego Guillermo Manzanal Milano (Subject coordinator)	6 planta	d.manzanal@upm.es	W - 09:00 - 13:00 W - 14:00 - 16:00 Se definirá con la disponibilidad de los alumnos

* The tutoring schedule is indicative and subject to possible changes. Please check tutoring times with the faculty member in charge.

2.3. External faculty

Name and surname	Email	Institution
Ana Jimenez-rivero	ana.jimenez@upm.es	ICE - UPM

3. Prior knowledge recommended to take the subject

3.1. Recommended (passed) subjects

The subject - recommended (passed), are not defined.

3.2. Other recommended learning outcomes

- The student must be assigned a TFM topic and a tutor. After the TFM Offering Day and before the end of the first semester, the student must complete the forms on the website with the commitment signed by the tutor.

4. Skills and learning outcomes *

4.1. Skills to be learned

C9 - [Proviene de las competencias CE9-CE16]: Capacidad para la investigación predoctoral en diseño de estructuras y sus cimentaciones y materiales, simulación y modelización de estructuras, cimentaciones y materiales, Mantenimiento y conservación de estructuras, sus cimentaciones y sus materiales TIPO: Competencias

K1 - [Proviene parcialmente de la competencia CG1]: Aplica e integra conocimientos científicos avanzados de tipo mecánico, físico y matemático en contextos de investigación científica y tecnológica en el ámbito de las estructuras, las cimentaciones y los materiales TIPO: Conocimientos o contenidos

K2 - [Proviene de la competencia CG2]: Identifica los componentes determinantes para ejercer las funciones de diseño, construcción, conservación y evaluación técnica de estructuras, cimentaciones y materiales, mediante el uso de normativa y documentación científica nacional e internacional. TIPO: Conocimientos o contenidos

K3 - [Proviene de la competencia CG3]: Identifica y explica los aspectos determinantes para diseñar, analizar e interpretar experimentos relevantes, así como usar varios lenguajes de computación, programas de análisis y simulación, y modelos avanzados en ingeniería estructural, geotécnica y de materiales estructurales. TIPO: Conocimientos o contenidos

Sk4 - [Proviene de la competencia CB10]: Demuestra que puede adquirir conocimientos complejos y continuar estudiando de un modo que habrá de ser en gran medida auto-dirigido o autónomo TIPO: Habilidades o destrezas

Sk6 - [Proviene de la competencia CG5]: Aplica los servicios de comunicación y de obtención de información para su transformación en conocimiento aplicable al ejercicio de las competencias en ingeniería de estructuras, cimentaciones y materiales. TIPO: Habilidades o destrezas

Sk7 - [Proviene de las competencias CB9 y CT1]: Prepara y presenta comunicaciones orales, escritas y gráficas, estructurada y argumentadamente, y es capaz de discutirlas con otras personas. TIPO: Habilidades o destrezas

Sk9 - [Proviene de la competencia CT3]: Aplica los estándares de deontología en la investigación avanzada TIPO: Habilidades o destrezas

4.2. Learning outcomes

RA12 - "Presenta comunicaciones orales, escritas y gráficas, estructurada y argumentadamente, en lengua española e inglesa"

RA31 - Realiza individualmente un proyecto o una preinvestigación originales de Ingeniería estructural, geotécnica o de materiales estructurales

RA22 - familiarizarse con la metodología científica de las disciplinas en que se apoya la asignatura

RA15 - Aplica normativa europea e internacional de ingeniería estructural, geotécnica y de materiales estructurales en proyecto, construcción, conservación y evaluación técnica

* The Learning Guides should reflect the Skills and Learning Outcomes in the same way as indicated in the Degree Verification Memory. For this reason, they have not been translated into English and appear in Spanish.

5. Brief description of the subject and syllabus

5.1. Brief description of the subject

The Introduction Seminar for the Thesis of Master (siTFM) provides an overview of the general methodological aspects essential for the development of projects and research in the fields of structures, foundations, and materials. To enroll, students must have a defined master?s thesis topic and an assigned supervisor.

The seminar is divided into two main parts:

General Methodological Aspects
This section focuses on methodologies applicable to the preparation of the Master s Thesis (TFM), with particular emphasis on ethical considerations, the preparation of written technical documents (e.g., scientific articles, theses, posters), and the delivery of effective oral presentations.

Technical Topic Guidance
Delivered by the supervisor, this part addresses the specific technical aspects of the thesis topic that the student has chosen.

The final outcome of the seminar includes:

A bibliographic review of the state of the art related to the selected thesis topic,
A written justification of the project,
An oral presentation, and
A detailed work plan for the thesis.

These deliverables will be used by the coordinator and the supervisor to evaluate the performance of the students in the course.

5.2. Syllabus

1. Introduction to Seminar for the TFM
    1.1. Normativa y criterios de elaboración de TFM
    1.2. Presentación de temas y tutores de TFM
    1.3. Presentación de seminarios especificos
2. Search and Compilation of Documentation
    2.1. Reference Management Tools
    2.2. Introduction to the UPM Polysearch Tool - Ingenio
    2.3. Repositories and Academic Search Engines
    2.4. Science and Technology Databases
3. Technical Document Writing
    3.1. Structure and Writing Techniques for Master's Theses
    3.2. Poster Design and Creation
    3.3. Scientific Article Writing
4. Oral Presentation Techniques
    4.1. Structure of a Slide Presentation
    4.2. Stages of a Presentation: Motivation, Materials and Methods, and Conclusions

6. Schedule

6.1. Subject schedule*

Week	Type 1 activities	Type 2 activities	Distant / On-line	Assessment activities
1	**Module 1: Introduction to the TFM Introductory Seminar** Duration: 00:30 **Module 2: Searching and Collecting Technical Documentation** Duration: 01:00	**Group Work: TFM Planning** Duration: 00:30 **Exercise on Bibliographic References** Duration: 01:00		
2	**Module 2: Search and Collection of Technical Documentation** Duration: 01:30	**Exercises on Writing a TFM Abstract** Duration: 01:30		**Presentation of Bibliographic References for the Specific TFM** Progressive assessment and Global Examination Not Presential Duration: 00:00
3	**Module 3: Writing Technical Documents** Duration: 01:30	**TFM Preparation Exercise: Format, General Index, Table and Figure Index, Objectives and Motivations, Introduction** Duration: 01:30		**Writing Exercise: 300-Word TFM Abstract** Progressive assessment and Global Examination Presential Duration: 01:00
4	**Module 3: Technical Document Writing** Duration: 01:30	**TFM Preparation Exercise: Development of the State of the Art** Duration: 01:30		
5	**Module 4: Oral Presentation Techniques** Duration: 01:30	**Group Work: 2-Minute Presentation Technique** Duration: 01:30		
6				
7				
8				
9				
10				
11				**Submission of Written Document in the Specified Format on the State of the Art of the TFM** Progressive assessment and Global Examination Not Presential Duration: 00:00 **Oral Presentation of the State of the Art for the TFM** Progressive assessment and Global

				Examination Presential Duration: 01:00
12				
13				
14				
15				
16				
17				

Depending on the programme study plan, total values will be calculated according to the ECTS credit unit as 26/27 hours of student face-to-face contact and independent study time.

7. Activities and assessment criteria

7.1. Assessment activities

7.1.1. Assessment

Week	Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
2	Presentation of Bibliographic References for the Specific TFM		No Presential	00:00	5%	5 / 10	Sk4 Sk9
3	Writing Exercise: 300-Word TFM Abstract		Face-to-face	01:00	5%	5 / 10	Sk9 Sk7 Sk4
11	Submission of Written Document in the Specified Format on the State of the Art of the TFM		No Presential	00:00	50%	5 / 10	Sk4 K1 K2 K3 C9
11	Oral Presentation of the State of the Art for the TFM		Face-to-face	01:00	40%	5 / 10	

7.1.2. Global examination

Week	Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
2	Presentation of Bibliographic References for the Specific TFM		No Presential	00:00	5%	5 / 10	Sk4 Sk9
3	Writing Exercise: 300-Word TFM Abstract		Face-to-face	01:00	5%	5 / 10	Sk9 Sk7 Sk4
11	Submission of Written Document in the Specified Format on the State of the Art of the TFM		No Presential	00:00	50%	5 / 10	Sk4 K1 K2 K3 C9
11	Oral Presentation of the State of the Art for the TFM		Face-to-face	01:00	40%	5 / 10	

7.1.3. Referred (re-sit) examination

Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
Presentación oral del Estado del Arte del TFM de cada estudiante		Face-to-face	03:00	40%	5 / 10	Sk6 Sk9 K1 K2 Sk7 Sk4 K3 C9
Entrega de documento escrito según formato sobre Estado del Arte del TFM		Face-to-face	00:00	50%	5 / 10	Sk7 Sk4 Sk6 Sk9 K1 K2 K3 C9

7.2. Assessment criteria

Presentation of Bibliographic References for the TFM

Description: The pertinence and ability to gather different technical and scientific sources related to the specific Master's Thesis will be assessed, along with the method used to format bibliographic citations according to established models.

Grade: From 1 to 10

Writing a 300-Word TFM Abstract

Description: The clarity and technical specificity of the abstract will be evaluated. The abstract should convey the importance of the Master's Thesis and the methodological aspects it aims to develop within 300 words.

Grade: From 1 to 10

Oral Presentation of the State of the Art for the TFM

Description: Students should effectively communicate their objectives, conclusions, and the knowledge and reasoning that support their Master's Thesis in a clear and unambiguous manner, both in slides and oral expression. The Master's Thesis work plan will also be evaluated. This activity carries a weight of 40%.

Grade: From 1 to 10

Written Document on the State of the Art for the TFM

Description: The correct formulation of objectives, the appropriateness of the chosen methodology for the document, the rigor of the analysis and background study, and the relevance of the proposed work plan for the Master's Thesis will be assessed.

Grade: From 1 to 10

8. Teaching resources

8.1. Teaching resources for the subject

Name	Type	Notes
Bibliography Provided by Each TFM Advisor	Bibliography	
Bibliographic and Citation Resources of UPM	Web resource	