UAB

Universitat Autònoma de Barcelona

2020/2021

Masters Dissertation

Code: 43385
ECTS Credits: 15

Degree	Type	Year	Semester
4314828 Remote Sensing and Geographical Information Systems	OB	0	2

The proposed teaching and assessment methodology that appear in the guide may be subject to changes as a result of the restrictions to face-to-face class attendance imposed by the health authorities.

Contact

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Use of Languages

Principal working language: catalan (cat)

Prerequisites

Prerequisites are not required

Objectives and Contextualisation

At the end of the course, the student will be able to:

1. Use concepts from various disciplines studied during the master with special emphasis on the choice of geographic data, whether obtained by remote sensors or in-situ, in order to give the optimal answer to the problems raised at work, be it theoretical or methodological or applied.
2. Apply remote sensing techniques in the development of the final master's project.
3. Use multivariate, geostatistical and interpolation techniques to extract the best knowledge from the available geographic data.
4. Properly treat direct and indirect information both in the processing stage and in its preparation for general access through the Internet.
5. Apply optimal solutions that respond to the challenges and questions posed in the final master's degree project, from the combined principle of environmental sensitivity and technical feasibility.

Competences

- Analyse and exploit geographic data from different sources to generate new information from pre-existing data.
- Choose the most suitable tools and applications to fulfil the objectives of a project in the field of spatial planning or analysis.
- Continue the learning process, to a large extent autonomously.
- Design and apply a methodology, based on the knowledge acquired, for studying a particular use case.
- Design and apply solutions based on GIS tools for managing and exploiting natural resources or administrative information with a spatial component.
- Handle different data and metadata formats appropriately and take the importance of international standards into account when storing them and publishing them on internet.
- Identify and propose innovative, competitive applications based on the knowledge acquired.
- Integrate knowledge and use it to make judgements in complex situations, with incomplete information, while keeping in mind social and ethical responsibilities.
- Use the different techniques for obtaining information from remote images.
- Write up and publicly present work done individually or in a team in a scientific, professional context.

Learning Outcomes

1. Apply remote sensing techniques in developing the master's dissertation.
2. Continue the learning process, to a large extent autonomously.
3. Deal suitably with direct and indirect information, both at the processing stage and when preparing it for general publication on internet.
4. Design and apply a methodology, based on the knowledge acquired, for studying a particular use case.
5. Find optimal solutions to the challenges and questions posed in the master's degree dissertation, combining environmental sensitivity and technical feasibility from the outset.
6. Identify and propose innovative, competitive applications based on the knowledge acquired.
7. Integrate knowledge and use it to make judgements in complex situations, with incomplete information, while keeping in mind social and ethical responsibilities.
8. Use concepts from various disciplines worked on during the master's programme, especially in choosing the geographic data obtained from remote sensors or in situ, in order to best tackle the problems posed in an assignment, whether this is theoretical, methodological or applied in nature.
9. Use multivariate, geostatistical and interpolation techniques to generate maximum knowledge from the available geographic data.
10. Write up and publicly present work done individually or in a team in a scientific, professional context.

Content

The contents of the TFM will depend on the proposals presented by the teaching staff and the different sensibilities of the students.

Methodology

Learning activities:
1. Targeted:
1.1 Master classes / exhibitions
2. Supervised:
2.1 Tutorials
3. Autonomous:
3.1 Master thesis

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Master classes / exhibitions	10	0.4	5, 1, 4, 6, 7, 2, 10, 3, 8, 9
Type: Supervised			
Tutorials	20	0.8	5, 1, 4, 6, 7, 2, 10, 3, 8, 9
Type: Autonomous			
Master thesis	345	13.8	5, 1, 4, 6, 7, 2, 10, 8, 9

Assessment

The Master Thesis will consist in a written report and an oral defence. The written report will be valued by a court formed by 3 members in public session. Only members of the court are involved in this assessment.

The assessment will take into account the following aspects:

1. Aspects of form to the oral presentation

- Clear speech and structure of the exhibition
- Emphasis on the presentation of the main ideas
- Structure and format for easy understanding

2. Aspects of form in written work

- Clear and structured speech
- Emphasis on the presentation of the main ideas
- Easy comprehension writing and format
- Proper contextualization of work

3. Content of the Master Thesis

4. Membership and viability of the objectives set

5. Correspondence between objectives, methodology and results

6. Proper treatment of the questions and observations of the court

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Elaboration of a research paper	60 % - 70 %	0	0	5, 1, 4, 6, 2, 10, 3, 8, 9
Oral presentation	30 % - 40 %	0	0	5, 1, 4, 6, 7, 2, 10, 3, 8, 9

Bibliography

The biblography for the master thesis will be suggested to the student by the supervisor in each case.

The student will perform his/her own bibliographic research.