

Masters Degree Dissertation

Code: 44779
ECTS Credits: 9

| Degree | Type | Year | Semester |
|-------------------------|------|------|----------|
| 4318299 Computer Vision | OB | 0 | 2 |

Contact

Name: Maria Isabel Vanrell Martorell

Email: maria.vanrell@uab.cat

Teaching groups languages

You can check it through this [link](#). To consult the language you will need to enter the CODE of the subject. Please note that this information is provisional until 30 November 2023.

Prerequisites

Degree in Engineering, Maths, Physics or similar.

Objectives and Contextualisation

The main goal of this module is the development of a project where students should apply the knowledge acquired in the previous modules and their own skills and abilities to solve a practical problem in Computer Vision.

For students willing to pursue a PhD program after completion of the master, the master thesis should be the first stage of their PhD thesis.

To this end, students must be able to analyse the problem, pose an initial hypothesis to solve it, design an appropriate methodology to validate this hypothesis and draw relevant conclusions from their work.

As a result, students must write a final report and pass a public defence before an evaluation committee where they should show their ability to communicate in a clear way their work. The expected total workload of this module thesis is about 300 hours.

Learning Outcomes

- CA04 (Competence) Develop all the components of a system of vision in the context of the final Master's degree dissertation.
- CA05 (Competence) Plan the execution, evaluation and dissemination and transfer of a project of vision.

- KA07 (Knowledge) Identify the components at all levels that should be solved in the context of a final Master's degree dissertation.
- KA11 (Knowledge) Select the best algorithms and experiments to resolve and train the components of a system in the context of the final Master's degree dissertation.
- KA15 (Knowledge) Provide the best mathematical modelling to solve each of the part of a system of vision in the context of the final Master's degree dissertation.
- KA19 (Knowledge) Know how to construct a state of the art and cite all related bibliography for a problem of vision at all levels.
- SA16 (Skill) Prepare a scientific document that describes the detailed analysis and illustration of the results of a project of vision.
- SA18 (Skill) Defend the results of the final Master's degree project in an oral presentation before an assessment panel.

Content

The Master dissertation is an individual academic work, consisting of 3 well differentiated parts, which are:

- the realization of the project,
- the writing of the technical report, and
- the public presentation and defense of the project, which will take place at the end of the first semester of the second.

The aim of the Project realization is the student to apply the steps of the scientific method.

All the information about these steps are given at the C8 moodle room in the Campus Virtual (cv.uab.cat), there you can find:

- Calendar divided in three steps:
 - Project proposals (October-March) are visible as soon as they arrive and are validated by the M9 coordinators. You are welcome to start discussing with the academic supervisors the proposals that interest you. Take note that a good number of proposals enter the system late and will only be visible by the end of March. Project proposals can be seen at:
Academic Project Proposals <[here](#)>
Company Project Proposals <[here](#)>

We recommend you to take your time to take a decision, specially we suggest to wait for having started all the remaining courses (C5 and C6) in order to have a global overview about what topic you do prefer.

- Selection period (April) during the selection period the students should discuss with academic supervisors and select a project. The students will have to select their preferred project using the Webpage of the Master, we will give you specific information about how to perform the assignment process, since you need to receive a confirmation of the assigned project.

Master project development (May to July or September) carries 300 hours of work, starting with the elaboration of the state of the art of your topic and agreeing with your supervisor on a time plan in advance to ensure that you will complete your project on time.

- Defense of the thesis (July or September) requires to deliver a report of your work and being evaluated by a committee of 3 members

Methodology

Each student will have to select a project, it can be an academic project proposed by the academic staff, or can be a project proposed by a company.

Students can also propose their own project proposal. In any case an academic supervisor will be assigned from any of the 4 university departments involved in the master.

The supervisor will guide the student in a personalized manner in the completion of the project. The academic selects and provides guidance around the objectives of the project, supervises and resolves doubts.

A series of activities will be carried out (deliveries and meetings) that allow to control the follow-up of the work carried out by the student. Students should contact their tutor to arrange the meetings they will hold throughout the course.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Activities

| Title | Hours | ECTS | Learning Outcomes |
|------------------------------|-------|------|--|
| Type: Supervised | | | |
| Meetings with the supervisor | 28 | 1.12 | CA05, KA07, KA11, KA19, SA16, CA05 |
| Type: Autonomous | | | |
| Autonomous work | 156 | 6.24 | CA04, CA05, KA07, KA11, KA15, KA19, SA16, SA18, CA04 |

Assessment

The final mark for this module will be computed with the following formula:

$$\text{Final Mark} = 0.25 \times \text{Supervisor Mark} + 0.75 \times \text{Committee Mark}$$

where,

Supervisor Mark: is the result of applying a three stage rubric to the document of the thesis proposal. The project advisor will evaluate the student before the presentation, and provide the evaluation scores to the Master Thesis committee.

Committee Mark: is the average mark provided by the three members of the evaluation committee. The committee members will receive the Master Thesis document at least 7 days before the public presentation. After each presentation the three members will discuss privately the evaluation of the written reports and the presentations.

Assessment Activities

| Title | Weighting | Hours | ECTS | Learning Outcomes |
|------------------------------|-----------|-------|------|------------------------------|
| Master thesis | 0.5 | 30 | 1.2 | CA04, KA15, KA19, SA16 |
| Meetings with the supervisor | 0.25 | 10 | 0.4 | CA05, KA07, KA11, SA16, SA18 |

Bibliography

Specific bibliography will depend on individual projects and will be suggested by the academic in charge

Software

Specific software depends on the individual project topic