Universitat Autònoma de Barcelona

2017/2018

Master's Dissertation

Code: 43345
ECTS Credits: 12

Degree	Type	Year	Semester
4314660 Computer Engineering	OB	2	1

Contact

Name: Anna Bàrbara Sikora

Email: Anna.Sikora@uab.cat

Use of languages

Principal working language: english (eng)

Prerequisites

The main objective is that students can put into practice the knowledge acquired during the courses. It is recommended that the student has finished the courses (first and second semester).

Objectives and Contextualisation

The main objective is for students to apply all the knowledge acquired throughout the Master in a particular case.

The objectives of the module are:
1. Propose a scientific work using the acquired knowledge and a research methodology. It can be research or professional. It must be viable and of predetermined duration.
2. Perform a search for information and critical evaluation of sources.
3. Analyze the problem, propose an initial hypothesis to solve it, designing the appropriate methodology to validate this hypothesis and draw conclusions from their work.
4. As a final result, students must write a final report of the work done and defend publicly before a master thesis committee.

Skills

- Communicate and justify conclusions clearly and unambiguously to both specialised and non-specialised audiences.
- Communicate orally and in writing in English.
- Complete an original, individual, integrated, professionally-oriented project in computer engineering that combines the competences acquired on the programme, and defend it before a university examining board.
- Continue the learning process, to a large extent autonomously
- Define and communicate results, guaranteeing high levels of performance and quality.
- Integrate and apply the knowledge acquired and solve problems in new or little-known situations within broader (or multidisciplinary) contexts.
- Integrate knowledge and use it to make judgements in complex situations, with incomplete information, while keeping in mind social and ethical responsibilities.
- Propose, calculate and design products, processes and installations in all areas of computer engineering.
- Responsibly manage information and knowledge when leading multidisciplinary groups and/or projects.
- Solve problems in new or little-known situations within broader (or multidisciplinary) contexts related to the field of study.

- Understand and apply ethical responsibility, legislation and codes of practice to professional activity in computer engineering.
- Undertake mathematical modelling, calculation and simulation in technological centres and engineering companies, especially in research, development and innovation tasks in all areas related to computer engineering.
- Use acquired knowledge as a basis for originality in the application of ideas, often in a research context.

Learning outcomes

1. Communicate and justify conclusions clearly and unambiguously to both specialised and non-specialised audiences.
2. Communicate orally and in writing in English.
3. Continue the learning process, to a large extent autonomously
4. Define and communicate results, guaranteeing high levels of performance and quality.
5. Integrate and apply the knowledge acquired and solve problems in new or little-known situations within broader (or multidisciplinary) contexts.
6. Integrate knowledge and use it to make judgements in complex situations, with incomplete information, while keeping in mind social and ethical responsibilities.
7. Plan and undertake innovation and research projects with content specific to the topic assigned.
8. Propose, calculate and design products, processes and installations in all areas of computer engineering.
9. Responsibly manage information and knowledge when leading multidisciplinary groups and/or projects.
10. Solve problems in new or little-known situations within broader (or multidisciplinary) contexts related to the field of study.
11. Understand and apply ethical responsibility, legislation and codes of practice to professional activity in computer engineering.
12. Undertake mathematical modelling, calculation and simulation in technological centres and engineering companies, especially in research, development and innovation tasks in all areas related to computer engineering.
13. Use acquired knowledge as a basis for originality in the application of ideas, often in a research context.

Content

The contens of the master thesis has to be original.

Methodology

Each student will be assigned a supervisor and the work will be developed according to the guidelines established by this supervisor.
The student must work autonomously, and manage their own objectives, tasks and time.

During the work, the following items will be taken into account:

1.- the use of the appropriate literature,

2.- the correct and proper development from the point of view of thesis goals,

3.- the follow of the rules of presentation agreed by the coordinator of the module.

The teaching methodology will combine meetings with the advisor, autonomous work, and presentation of results.

In addition, students can attend working sessions of the research groups of the departments involved in this Master. In these sessions, students can exchange opinions, expand their knowledge and eventually, discuss

their results.

The student must design, develop and write a research paper, and a presentation of the results.

Activities

Title	Hours	ECTS	Learning outcomes
Type: Supervised			
Meetings with the advisor and or research group	100	4	1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Type: Autonomous			
Reseach and development activities	199	7.96	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13

Evaluation

The student must write a final report of the work done and defend it publicly before a committee of the master's thesis.
The report format must follow the rules of any research paper presented at a conference or published in a research journal with a size of 20-30 pages.
The committee will be formed by three researchers from the departments involved in the master. The presentation may include any demonstration.
The student must provide the final report to the committee members one week before the date of defense.
The supervisor shall draw up an assessment report and made available to committee members. The final grade is calculated according to the weights specified in the table above.

Evaluation activities

Title	Weighting	Hours	ECTS	Learning outcomes
Oral defense of the Master's Thesis	20%	1	0.04	2, 4, 9
Report of the Master's Thesis	40%	0	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Supervisor Report	40%	0	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13

Bibliography

http://www.columbia.edu/cu/biology/ug/research/paper.html