



# Master in Bioinformatics

## Academic year 2014-15

**MASTER'S THESIS GUIDE**

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## **1. The Master's Thesis**

The Master's Thesis (MT) is an autonomous and individually research work that gives the student the opportunity to focus on some of the topics dealt with in the academic modules of the Master, as well as, to integrate all together the capacities and competences achieved along the Master's degree.

The MT must show that the student is capable of carrying out sound and rigorous academic research. It should present an original argument that is carefully documented from primary and secondary sources. The student must do the work for oneself with the guide of an advisor. The MT does not imply a practice internship nor the collaboration of the student in a research group or a research department. However, the work can be related to the project developed by the student during the Professional Practice Module.

The MT document must not exceed 15,000 words, excluding appendices and bibliography. It must be written in English. To evaluate the MT, the student has to deliver three printed copies of the work and expound orally the results to the Master Thesis Committee.

## **2. Management of the module**

The responsible persons for the Master's Thesis Module are:

- The Coordinator of the Module
- The Academic Tutors
- The Master Thesis Committee (consist of 3 PhD members)

### **A. Coordinator of the Module**

The coordinator of the MT module appoints an academic tutor from the UAB to each student of the master, depending on the topic of his/her work.

The coordinator must guarantee the correct functioning of the module. Whenever any question appears to students and/or academic tutors during the development of the MT, they can request a meeting with the coordinator of the module for advice or help.

### **B. Academic Tutor**

The MT dissertation must be written under the guidance of an advisor. The advisor has to be a PhD professor from a department or a research

centre of the UAB. The academic tutor will supervise the student's follow-up, providing general guidance, and helping the student to refine the objective of the work and to develop the argument of the thesis. Once the student has met the academic tutor, they will consider the best date for the presentation of the dissertation and will agree on a timetable for meetings and submission of drafts. **It is the responsibility of the student to keep the tutor informed of his/her progress!**

### C. Masters' Thesis Committee

There will be a Master's Thesis Committee for each student, consisting of 3 PhD members responsible for the evaluation of the thesis. These members will be:

- The master coordinator
- The academic tutor of the thesis
- One professor of the master (who will be appointed by the master coordinator)

## 3. Schedule

The Master's Thesis Module (15 ECTS) is scheduled on the second term of the course and involves 375 hours of student work.

The student will agree with the academic tutor on the hours to be devoted to writing up the work and determine the date on which the thesis will be submitted.

The student can deliver the MT any time along the year, but two deadlines are set depending on the time when the thesis defence will take place.

Master Thesis Defence Calls	Approximate Dates for Defence*	Thesis submission deadline
First MT Evaluation Call	July 13-15th, 2015	July 6th, 2015
Second MT Evaluation Call	September 7-9th, 2015	September 1st, 2015

The MT work must be delivered to the Master Coordinator in three printed copies and a digital version in PDF or similar format, before the submission dates indicated above. The Master Coordinator will deliver a printed copy of the work to the rest of the committee members.

\*The final number of MT Committee sessions will depend on the number of students presenting their work in each term. For this reason, the precise dates and hours for the oral presentations will be determined one month before the thesis defence.

#### 4. Mentoring

During the MT Module, the student has the right to up to 10 hours of tutoring with the academic tutor. However, a minimum of tutorial meetings is advised, following the schedule below:

- **First “get-in-touch” meeting** (January-February): initial contact with the academic tutor and discussion of potential topics for the work. The main goal of a MT is to answer a specific scientific question.
- **Initial meeting** (March-April): MT scheme approval including tentative research questions to be answered and bibliography.
  - Discussion of the sources and the existing preliminary information on the topic of the thesis and the main question(s) to be addressed.
  - A proposal of the objective(s) of the MT and the extent to which the question/problem proposed will be developed.
  - General explanation of the methodology that will be used to achieve the objectives.
  - Identification of the necessary steps to develop the work, setting a realistic schedule to carry it out.
  - Bibliography, references and complementary sources consulted.
- **Progression meeting:** (April-June): supervision of the MT development.
  - Assessment of the chronogram with regards to the MT landmarks. Any changes done or planned to be incorporated in the short term must be indicated and justified to the academic tutor.
  - If it’s necessary, identify and justify any changes in the objective and methodology of work planned.
  - Bibliography, references and complementary sources consulted.
- **Final meeting** (June- July/September): discussion of MT drafts and delivery of the final version to the academic tutor.
  - Assessment of the chronogram with regards to the MT landmarks. Any changes done or planned to be incorporated in the short term must be indicated and justified.
  - General explanation of the methodology that has been followed, highlighting any changes done with respect to the initial proposal.

- Information on the sources consulted.
- Format and presentation of the results.
- Discussion of the results.
- Conclusions.

## 5. Typologies of the Master's Thesis

Within a common design, the MT can be developed according to different typologies. The three most frequently schemes used for a MT are described below:

- A. Research project:** consists in developing a basic or applied original research project that must include the following items:
- Title and author
  - Table of contents
  - State of the art
  - Initial hypothesis and objectives
  - Material and methods
  - Expected results
  - Diffusion plan
  - Bibliography
- B. Bibliographic review:** argued summary about the state of the art of a research topic. It considers the following items as a minimum one:
- Title and author
  - Table of contents
  - Topic description
  - Relevant results
  - State of the art
  - Conclusions
  - Bibliography
- C. Open project:** The student can propose a specific topic to the academic tutor who has to accept or deny the proposal. The work must include the following aspects:
- Title and author
  - Table of contents
  - Theme description

- Objective
- Project development
- Results and conclusions
- Bibliography

Note: The items previously cited are to be considered as a guide of examples of thesis typologies. The student and the academic tutor can include other items and customize the work.

## 6. Presentation format of the Master's Thesis

The aspects that have to be taken in consideration are:

- The MT document must be delivered in three printed copies and a digital version in PDF or similar format (**word documents won't be acceptable!**).
- The work has to be written in English.
- It is recommended that the maximum extension of the work do not exceed 15,000 words (excluding Bibliography and Appendices)
- The formal criteria (good presentation, orthography, grammar, use the standards rules when citing references...) must be complied for the work to be evaluated.
- The cover page must include the thesis title and the following information: Student's name and surname, master's degree title, submission date, the name of the academic tutor and the department or institution associated. In the appendix of these guidelines, examples of appropriate cover pages are given.
- The MT has to be approved and signed (in the cover page or the second page) by the academic tutor of the UAB.
- When the MT has been developed during the practice internship in an external institution, the student may also include the name and the signature of the tutor in practice in the cover page if he/she considers that the supervisor for the internship helped him/her with the development of the thesis.
- The student must always work under the good practices and behaviour codes for research and professional practices. Every time that the student expresses a relevant idea that is not his/hers, the student must cite the reference of its source, allowing the reader to contrast the information. If the Master's Thesis Committee detects PLAGIARISM, the MT will be immediately voided.

Please, read page in next link to know what is considered plagiarism:  
<http://www.plagiarism.org>

## 7. The Master's Thesis defence

The Thesis defence will include:

- **A student's turn:** the student exposes its work during 20 minutes approx.
- **A questions turn:** The three committee members talk during 10 minutes each one to evaluate the exposed thesis and ask questions to the defender.
- **A reply turn:** the student has 10 minutes more to answer the questions formulated by the committee.

For the thesis defence the student has to prepare a presentations in a PowerPoint format or similar. It is advisable that the presentation won't exceed 20 slides.

## 8. Assessment

The MT is evaluated by the Master's Thesis Committee, which consist of three PhD members, professors of the UAB. Two of these members will be the Coordinator of the Module and the Academic Tutor of the defended thesis, so the MT Committee can differ from one student to another. The ultimate composition of the MT Committee will be announced well in advance.

The final assessment will result of:

- The delivered MT (50%)
- The oral exposition and defence of the MT (50%)

The following points will be taken in consideration in the evaluation:

- The time and effort devoted by the student to the development of the different parts of the work.
- The extent to which organizational standards, structure of the work and formal aspects detailed in this guide have been followed.
- The achievement of the skills and competences developed in the Master's Thesis module, such as:
  - i) Having and providing original knowledge in bioinformatics for the development of new ideas within a research context.



- ii) Applying and integrating the knowledge and abilities reached along the master to face new goals and unknown environments.
- iii) Critical and reflection skills.
- iv) Ability to propose innovative solutions to research problems in the field of study.
- v) The design, management and development of a research project, being capable of understanding and interpreting the results obtained and extracting conclusions.
- vi) Clearly communicating the research conclusions.
- vii) Having a current and future perspective of the scope of bioinformatics.

## **9. Publication and confidentiality**

The Master's Thesis should be published in the UAB Digital Data Deposit (DDD). This tool collects, manages, preserves and disseminates scientific, academic and institutional production at the University. For more information about the DDD consult: <http://serveis.uab.cat/ddd/>

The publication of the Master Thesis in the DDD is NOT COMPULSORY and requires the authorization of the author, the thesis director and the external tutor, when the thesis has been based on the practice work.

The standard agreement for the Thesis publication on the DDD is available in the MT webpage.

## 10. Appendices

### Examples of cover page

**TITLE**

*Student's name and surname*

**Master in Bioinformatics**

**Universitat Autònoma de Barcelona**

*Date*

**Academic director:** *Name and surname of the academic tutor*

**External director:** *Name and surname of the responsible in practice and the Institution where he/she works.*

# TITLE

*Student's name and surname*

*Name and surname*

**Academic director**

*(Signature)*

*Name and surname*

**External director**

*Institution*

*(Signature)*

**Master in Bionformatics**

**Universitat Autònoma de Barcelona**

*Date*