

# **Introduction to the Preparation of Research Proposals and Master Completion Project**

This document is a guide for the Master Project, which includes two compulsory subjects of the second year: Introduction to the Preparation of Research Proposals and Master Completion Project.

## **Competences**

- 1) Ability to develop a strategy to solve a problem under the supervision of a head of group.
- 2) Initiative to tackle the problems along the research (not necessarily solve them).
- 3) Writing capacity of a scientific article.
- 4) Handle the presentation of a proposal and the defense of the work.

## **Learning aims**

Competence on the scientific method and ability to tackle a scientific problem from the Bioinformatic perspective.

Multidimensional dimensional envisage in tackling problems related with macromolecules and abstract biological concepts.

## **Road Map**

- Public access of proposals by the tutors
- Selection of proposals by the students
- The student delivers a proposal of the project before the end of the first term.
- The student delivers a report of the work done after six months.
- Peer review of the report (maximum time to report a review is two weeks).
- The student delivers a final report (revival) with modifications.
- Acceptance to present the work
- Public presentation of the work

## **Research Proposal**

A protocol document of “how to do” the project should be written by the student under the supervision of his/her tutor.

The document has to include:

- Keywords to identify the main lines of the project.
- Introduction of the problem and state of the art
- Working hypothesis and proof of concept.
- Objectives (general and specific)
- Description of the methods to tackle the problem
- Gantt chart of execution (Chronogram)
- Resources and support

Additional tasks attributable to the student, in case there is a supporting grant. The protocol should be reviewed by the tutor and heads of the master-program.

## **Presentation of results and deliverables.**

Report with the agreement from the tutor.

The report will have two parts: 1) a cover letter of the work with less than 3 pages and 2) an article presenting the results.

The cover letter will have a short exposition of the problem and the main conclusions, plus the tasks developed by the student, the keywords that identify the project within a particular area or areas of research, and 5 possible reviewers.

The article has to contain:

Abstract

Introduction with the state of the art, statement of the problem and the objectives suggested on the project.

Methods and software development

Results

Discussion

Conclusion

Supplementary information can also be given (programs, manuals, etc.)

## **Reviewers**

### Report reviewers (experts)

Peer review done by three reviewers from the set of tutors and all teachers of the master.

The selection of the reviewers will be done according to the keywords, identifying the area of research, and a set of possible reviewers selected in the cover letter.

The reviewers will score the work as non-acceptable or A, B, C, for excellent, good and regular, respectively.

The reviewers will propose major modifications in order to accept or improve the report and evaluate the final report after modifications as A,B,C.

### Presentation reviewers (tribunal)

A tribunal will evaluate the work of an area of research joining all masters of the Faculty of Life & Health Sciences (FLHS).

The tribunal will be formed by: 2 experts and 1 moderator.

At least one of the experts will be member of the board of the master program.

The expert reviewers will be chosen from the set of teachers of the master programs related to the area of research. One of them can be substituted by one professional of the area.

The moderator will be one of the students of the master selected randomly.

## Evaluation

The evaluation will be done according to the scores of the reviewers before and after the modifications of the report. If two reviewers do not accept the report the student will fail. If the final report is accepted the score of the reviewers of the report will be the average (A=3, B=2, C=1) and included on the evaluation.

The evaluators of each competence will score as A, B, or C each competence.

The criteria for scoring each competence will be the consensus and it will need to include, consider and mention the reports from the peer reviewers.

The final score will be defined by consensus by the president, secretary and the external expert.

Scores Competence	A	B	C	Evaluators
Learning methods	Learning all methods required for the project with high confidence	Most methods required for the project have been correctly used	Low knowledge on the use of methods required to perform the project	President Secretary External Expert
Quality of the results	High scientific relevance of the results at least on the field of the project	The results are very specific, have limited scientific relevance, but they are consistent.	The results are wrong and/or the author has not understand the results	President Secretary External Expert
Implication of the student in the project	The student knows all the details of the project and its implications to other areas	The student has a limited knowledge of his own area and not all the details of the project.	Serious doubts that the student is the author of the work	President Secretary External Expert Tutor
Written presentation	Acceptable English and formal presentation of the results	The manuscript is difficult to understand.	The text has deficiencies and it is not possible to understand	President Secretary External Expert Moderator
Oral presentation	Coherent exposition of the results. Adequate time of exposition. Good quality of the slides.	Problems to expose coherently the results. OR Inadequate time of exposition. OR Bad quality of the slides	Problems to expose coherently the results. AND Inadequate time of exposition. AND Bad quality of the slides	President Secretary External Expert Moderator

## **Calendar**

Second week of December	Research proposal submission
Second week of May	Report submission
End of May	Receipt of the review
Second week of June	Final report (revival) submission
Third week of June	Acceptance
Last week of June	Oral presentations