

Cohort 4, 2024-2026

Master Thesis Guidelines

A. The Master Thesis rationale

In doing the Master's project, the students must utilize and demonstrate the knowledge and maturity acquired during the Master program. The purpose of the thesis is to test the students' ability to combine their knowledge and skills in solving challenging problems in a scientific way.

In addition, the work on the master project and thesis will develop student's ability to:

- Independently and under realistic circumstances, solve a concrete, well defined problem within the area of the subject (e.g., investigate the radiation vulnerability of a technology, exploit the radiation response of a device for radiation detection or dosimetry);
- Document this work in a report that describes the student's achievements and that demonstrates his/her abilities to present the project in a thoroughly and easy to comprehend manner, and
- Orally present his/her work.

The master thesis gives **30 ECTS** credits, which correspond from **five up to six months (maximum of 924 hours of effective presence at the institution)** of full-time work. **The master thesis should end before August 31, 2026.**

A.1 Scientific work

The following demands must be fulfilled in a scientific report:

- Statements that are not evident should be substantiated. This may be done by logical reasoning or by referring to a source.
- The work and the achievements must be compared and related to relevant work reported in the literature and to results that have been published in research literature.
- Facts must clearly distinguish from interpretations of facts.
- Reported results obtained by the student must clearly be distinguished from results that other people have achieved.

- The source of facts and information found elsewhere must be referenced correctly and completely. This is also true when summarizing someone's work or ideas.
- The report must describe not only the achieved results but also how results were achieved. The description of the methods must be clearly separated from the description of the results.
- Problems that are encountered must be described honestly; the report must document how the problems were overcome, were worked around, or were left unsolved because no solution was found or because time ran out before a solution was found.

A.2 The Report

- The report should be written for fellow students as well as for people working in the field. It should contain a description of the problem and the problem area as well as the methods used and the theory behind them. Large blocks of theory may be presented very briefly if a reference to a text book is included.
- **The report is public and RADMEP coordinating institution will publish the report on the web.** If there should be confidential parts in the thesis work, those parts have not to be reported in the public report and will be excluded from the evaluation.
- The title of the report is important. It should give a good description of the work, be understandable, and preferably sound interesting. Abbreviations not commonly known must be avoided and terminology not commonly known must be explained

The report will have to be completed by RADMEP students cannot be written by ChatGPT or any other artificial intelligence. The RADMEP steering committee will check and will penalized the student doing so as if it is plagiarism. Written productions have to be written by students themselves.

A.2.1 The following formal requirements are put on the report:

- The report should be written in correct English and it should have a title and an abstract. It may have title and abstract in other languages as well.
- There is no fixed number of pages for the report. **The reports should be 50 pages maximum plus appendixes**, but the length of the report depends not only on the type of work that has been done but also on the writing style of the author. The report should preferably be written using Word. The report should have a suitable typographical layout and be delivered in PDF on the TOLEDO platform at KU Leuven.
- The reports will be published on the web (parts of the report can remain confidential if stated in the Master Thesis Agreement or specific confidentiality agreement). This means that one can print the reports it one-sided or double-sided. So the layout must work in

both cases. Thus do not number the introductory pages (abstract etc.) and let the first page of the first chapter be page number one.

- The report should introduce the problem area as well as the relevant theory. It should clearly state the problem being studied, describe the methods used to solve it and criteria used to choose those methods, describe the results achieved, present the student's conclusions based on these results, and what likely effects the study may cause. The order may be different than the above.
- A detailed thesis structure and typography is annexed at the end of this document. The report should be carefully proofread. The number of typing mistakes etc. should be very low. Hyphenations must be correct.
- The report should have a table of contents and the pages must be numbered.
- Illustrations and diagrams should have a legend under the illustration/diagram. Give each illustration a number.
- Tables should have table headers and should be numbered.
- Illustrations, diagrams, and tables should be placed close to the corresponding text. The text should refer to the illustration so that the reader knows when to look at it and what it illustrates. All illustrations must be of good typographic quality suited for presentation on paper. The author should bear in mind that printouts usually are made in grey scale.
- When presenting facts read elsewhere the author must give a reference. A reference is needed also if one gives a summary of someone's work.
- There must be a consistent and complete literature review.
- If program listings are included, they should be put in appendix.
- Material that gives additional details to the work but is not needed to understand the work may be put in appendices (questionnaires, instructions that the student has written etc.). Appendices must be numbered (Appendix 1, Appendix 2 etc.). All pages must also be numbered. Each appendix may start from page 1, or there may be a consecutive numbering through the report and all appendices.

A.2.2 Layout and Structure:

- A complete and approved version of the report in PDF shall be handed in when the necessary corrections are made after the oral presentation. The layout should be as follows, where each item should start on a new page:

- Cover provided by RADMEP (see last page)
- Title page
- Abstract
- Preface (optional)
- Table of contents.
- The chapters of the report ending with the bibliography. We recommend to follow a specific thesis structure similar to an article including:
 - Introduction (research question plus state of the art)
 - Approach/methodology
 - Results
 - Conclusions
 - Future work
- Appendix A, B, etc.

A.2.3 References:

- Scientific work is usually based on the results achieved by others. It is therefore necessary to obtain a thorough understanding of what others have done in the field. The academic supervisor may give the students hints on where to search for literature.
- There are several different reference standards. RADMEP recommends the following of IEEE standard (article, book, anthology, and web publication):
<https://journals.ieeeauthorcenter.ieee.org/create-your-ieee-journal-article/create-the-text-of-your-article/ieee-editorial-style-manual/>
- References to information found on the web should be as exhaustive as possible (i.e., author, title, etc. must be included if possible). Also state when the page was last visited. In the text, we recommend giving the reference number brackets ([x]).

B. Organisation and Evaluation of the Master Thesis

B.1 The Master's Project

A master project is the work of an individual student. Different students may solve problems that are closely related, but they must write individual reports. The master project consists of two parts: the investigation the students make and the report they write.

Both parts are important. The following requirements relate to the investigation part, and must be fulfilled during the course of the project:

- At the beginning of the project the student makes a specification of the project including a time schedule and a reading list.
- In liaison with UJM administrative coordinator for UJM students and UM administrative coordinator for UM students (who are in charge of the RADMEP Master Thesis Agreements) the student organizes to complete thoroughly the Master Thesis Agreement and to obtain all required signatures.
- Prior to the oral presentation at the thesis defense seminar, the draft of the Master Thesis must be approved by the academic supervisor.
- The student must give an acceptable oral presentation of the master thesis at the concluding master defense seminar.

B.2 Role of the host supervisor

- Each student has a supervision team which consists of the **internal RADMEP supervisor(s)** and in the case of projects performed in organizations other than the four full partners an **external supervisor(s)**. The supervision team judges whether the proposed project is suitable for a master thesis. The student must have regular contact with his/her supervision team. When the Master thesis project is based in an external institution or company, it is recommended that the internal RADMEP supervisor visit(s) both the student and the external supervisor on the work place at least once.
- **The student is responsible for keeping regular and frequent contact with his/her supervision team** and to give them reasonable time to read the report. As a general rule, it is reasonable to count at least 10 days for a thorough read.
- The **supervision team** will evaluate the student for his/her research skills, personal and communication skills, ability to work in a team and progress made along the Master thesis. **25% of the overall grade will be allocated to this issue.** See template “*RADMEP_Supervision_Team_Evaluation*”.

B.3 The Master Thesis

Throughout the fourth semester, students are expected to work in close consultation with an internal RADMEP academic supervisor(s), forming a coherently-argued thesis that demonstrates scholarly research skills and knowledge of the selected area of study. It is recommended to discuss the structure of the thesis with the supervisor well before starting on the report writing.

B.3.1 The Master Thesis public presentation

- All Master Thesis projects must be presented orally at the Master Thesis defense seminar. The presentations are public and held at Saint-Etienne.
- The **25 minutes** presentation of the draft Thesis should include an introduction to the problem, a description of the actual project, the results achieved, the student's interpretation of the results, and a discussion of what influence the results may have. Questions from the reviewers as well as audience will follow the presentation.
- The Master Thesis presentation slides must be sent to the RADMEP program coordinator at the latest **three days before the day of presentations** (common deadline for all students).
- The thesis presentations will take place on the **8th of September 2026**.
- The Master Thesis presentation will be scored by a minimum of two reviewers who will complete an evaluation form. The average scores by categories will be returned to the student at the latest the **next working day after the presentation**. Students will be able to make an official appeal about their Master Thesis presentation grade. Without any appeal by the student, within the above deadlines, the grade is considered accepted.
- **The Master Thesis public presentation represents 25% of the overall semester 4 grade.** See template "*RADMEP_Master_Thesis_Oral_Presentation_Evaluation*".

B.3.2 The Master Thesis Report

- Students are expected to follow the requirements and recommendations for corrections given by their supervision team. If any doubts as to what to change, the student should ask the internal RADMEP supervisor.
- At the latest, by the **24th of August 2026**, students must **submit their report**. The final version must be approved by the Internal RADMEP supervisor before it is delivered and uploaded on the Toledo platform. The submitted theses will be scored by at least two reviewers.
- The reviewers will complete an evaluation form. The average scores by categories will be returned which will be returned to students by the **4th September 2026**, before the Master Thesis public presentation. Students will be able to make an official appeal about the evaluation of their Master Thesis report. Appeals should be done before the **7th of September 2026**. **The report will represent 50% of the overall Semester 4 grade.** See template "*RADMEP_Master_Thesis_Report_Evaluation*".

B.4 Failing the Master Thesis

- A Master Thesis will fail and be graded F (for further details about grading look to the master thesis rules) if:
 - It is not submitted in time,
 - The student did not fulfill the requirements listed in section A. 2.1, or
 - The quality of the submitted thesis is below what is considered as sufficient to pass.
- A student who fails to pass the master's thesis has the right to a second attempt. In this case the student can:
 - Either chooses to find a new topic for the second attempt and must write an application, including a new project plan, for this new project. The same or a different supervisor will be appointed, depending on the new topic.
 - Or choose to use the same topic if this has been agreed in advance by the Joint Graduate committee members. The same or a different supervisor could be appointed depending on the situation.
- The second attempt (to obtain the 30 ECTS of the Master Thesis) will take place the year following the failure and the student will have to register again in person at UJM and pay any local fee at UJM at the beginning of the year. The student could complete his/her Master thesis at a distance, keeping regular contacts and visits with the supervision team and will need to present his work at UJM during the Master thesis defense seminar which will be organized in August or September the following academic year.
- The student forfeits the rights to complete the Master's program if failing to pass on the second attempt.

RADMEP

Thesis structure and typography

Thesis structure	Details	Comments																					
Page format	10 pt, Georgia Straight margins 14 pt line spacing Justified	Page number at bottom, middle of page. Page numbering starts at the first page of chapter one. The pages preceding this are to be numbered in Roman style, that is abstract, table of contents, (acknowledgements and) (table of figures). Page format is A4, two sided. Margins should be 4,5 cm outside, 3 cm inside, 3 cm bottom and 4 cm bottom.																					
Title page	Provided by UJM	Can be downloaded from the UJM Moodle																					
Abstract	Heading 14 pt, Georgia Not numbered Text 10 pt, Georgia	The abstract should be able to be read alone. It should be self-containing, that is containing no references, abbreviations, or anything else that forces the reader to read the thesis to understand what is meant. It should entice the reader to the whole thesis. It must not be more than one page long. It includes 1) short descriptions of the problem, 2) the method used to solve the problem and 3) a summary of the main results.																					
Table of contents	Heading 14 pt, Georgia Text 10 pt, Georgia	Contains three levels of headings. 0 indent at level 1, 0,35 cm indent at level 2 and 0,85 cm indent at level 3.																					
Headings	<p>Only three levels of numbered headings are to be used.</p> <table> <tr> <td><i>Level one</i></td> <td><i>Level two</i></td> <td><i>Level three</i></td> </tr> <tr> <td>14 pt, Georgia</td> <td>12 pt, Georgia</td> <td>10,5 pt, Georgia</td> </tr> <tr> <td>Bold, centered</td> <td>Bold, left alignment</td> <td>Bold, left alignment</td> </tr> <tr> <td>6 pt before, 12 pt after</td> <td>10 pt before, 4 pt after</td> <td>6 pt before, 2 pt after</td> </tr> <tr> <td>Numbered level 1</td> <td>Numbered level 2</td> <td>Numbered level 3</td> </tr> <tr> <td>Page brake before</td> <td></td> <td></td> </tr> <tr> <td>Odd page</td> <td></td> <td></td> </tr> </table>		<i>Level one</i>	<i>Level two</i>	<i>Level three</i>	14 pt, Georgia	12 pt, Georgia	10,5 pt, Georgia	Bold, centered	Bold, left alignment	Bold, left alignment	6 pt before, 12 pt after	10 pt before, 4 pt after	6 pt before, 2 pt after	Numbered level 1	Numbered level 2	Numbered level 3	Page brake before			Odd page		
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Figures and tables	Figure/table number and text under figure/table 9 pt, Georgia	Figures and tables numbered continuously but separately. For example, Figure 1, Figure 2, Table 1, Table 2. Use the same format, font and style for all figures. Use the same format, font and style for all tables. Left alignment recommended.
Quotes	9 pt, Georgia 6 pt before, 6 pt after 3 pt indent before 3 pt indent after	Quotes are precise copies of small portions of text. Quotes are to be used sparingly, when a central point is to be presented.
Heading	Georgia, 7 pt line under	Heading contains the title of the thesis. Right aligned on odd pages and left aligned on even pages.



***Master Radiation and its Effects on MicroElectronics and Photonics
Technologies (RADMEP)***



[TITLE]

Master Thesis Report

Presented by

[First name Family name]

and defended at

University Jean Monnet

[day month year]

Academic Supervisor(s): [Title, name]

Host Supervisor (if applicable) [Title, name]

Jury Committee:

[Title, name, University]

[Title, name, University]