

Guidelines literature thesis

Master's programme Biomedical Sciences

Version Jan 2024

Introduction

The literature thesis is an obligatory component of the BMS Master's programme of 6 ECTS. The purpose of the literature thesis is to obtain profound insight into a specific topic related to a biomedical problem through guided self-study and to express this insight by means of writing a coherent scientific essay or review paper.

The subject must be broad enough to justify a time investment of 4 weeks (full-time), but not so broad that the existing knowledge cannot be summarized and critically evaluated in the time available.

The literature thesis should be more than just a summary of literature. It is important that in your thesis you formulate, address and then solve a problem/scientific question. Preferably, you take a defined perspective or position about a controversy in the current literature that you defend (e.g. Nanomedicine in cancer medicine: hope or hype?) or address an acute conceptual gap in understanding (e.g. From mice to men: Translational relevance of mechanistic insight in animal models for Parkinson's research). Typically these two examples are rather broad, however, you can also focus on more specific biomedical questions.

On the website (same location as this manual) you can find a representative selection of three recent literature theses in the 'Literature thesis' folder.

Learning objectives

After completing the literature thesis, you are able to:

- conduct an in-depth literature review on a specific, self-selected topic, related to a biomedical problem within a defined, limited time;
- present the results of your literature research in a structured, concise fashion in the form of an essay or review paper using relevant articles from scientific journals;
- reflect on the state-of-knowledge of a given subject, place this subject into context, defend a perceived controversy and propose future lines of research;
- emphasise and professionally support your written statements by relevant references and by composing scientific figures and tables that visualize key principles of your specific subject;
- work with various literature systems.

Guidelines

Organization (planning) of the thesis:

- The literature thesis comprises 6 ECTS, the equivalent of a four weeks full-time course. If, according to the study plan, the literature thesis is the only activity in the given period, then the literature thesis must be concluded (= the thesis is submitted for grading) within four weeks. If other activities such as course(s) or an internship is/are taken in parallel, with permission by the Specialisation Coordinator the time for the literature thesis may be extended by the time dedicated to these other activities. This extension must not exceed 3 months.
- The student can choose the period in which the literature thesis takes place and defines this period in the study plan.
- The student hands in an application form for the literature thesis containing the tentative title of the subject, a short description of the subject, the name of the supervisor and the planned time period. The student should complete this form electronically and-after approval of the supervisor of the literature thesis - send it to the Specialisation Coordinator. If the application is clear/suitable/feasible, the Specialisation Coordinator should – after approval- send the form to Stip@radboudumc.nl. The Specialisation Coordinator does not have to sign the form, sending it to Stip@radboudumc.nl means the Specialisation Coordinator approves the application.
Since 2024, the literature thesis application does not require check/approval by the Board of Examiners.
- The student can start working on the literature thesis after approval by the Specialisation Coordinator.
- Should the report not be concluded in time and there are no exceptional reasons to justify this delay, the literature thesis will be scored as failed. A repetition will require a new literature thesis with a new subject and supervisor.

Supervision of the thesis:

- The literature thesis is performed under the supervision of and in collaboration with a researcher with a PhD (i.e. a doctorate, abbreviation Dr.) who has sufficient expertise in the field of study to guide the preparation of the thesis and evaluate the content and form.
- The supervisor for the literature thesis cannot also be the supervisor of the student's master internship.
- The student is expected to meet at least 4 times with the supervisor:
 1. Discussing the subject = starting meeting
 2. meeting to discuss progress after one week
 3. meeting to obtain first feedback on the thesis
 4. final meeting to discuss the evaluation of the thesis

The initiative to arrange these meetings is with the student. Preferentially, all appointments will be made before the thesis starts and are stated in the thesis application form.

- The thesis supervisor is not allowed to delegate the task of guidance/evaluation to another member in his/her research group.

Content of the thesis:

- Each thesis should typically comprise of 5000 to 7000 words (word count excluding reference list) and must contain the following:
 - The **Title** page (title, name of the author, place and date);
 - An **abstract** (brief summary);
 - An **introduction** in which the problem or controversy is introduced and formulated;
 - A **main section** in which the burden of proof, the articles used, is/are examined. Proof should preferably be presented in figures, graphs and/or tables, as well as be described in the text. The figures should have a legend that is self-explanatory.
 - A **discussion** with critical comments with respect to the articles that are used and conclusions concerning the problem as formulated;
 - **In-text-citations** and a corresponding **list of references** in an appropriate format.
- The subject of the literature thesis can relate to the subjects of an internship, however, in this case the choice of the subject must be motivated and it must be explained by the student in which way the subject is different/complementary to the subject of the internship.
- The examiner/supervisor will check for plagiarism, for example via Urkund, before grading the thesis.

Use of AI tools (e.g. ChatGPT) and plagiarism check

- AI tools (e.g. ChatGPT) are allowed to be used. However, it is important to remind yourself of the reason WHY you are studying. It is unlikely that letting a chatbot do your work will improve your skills and let you reach the learning goals mentioned above. In addition, transparency is one of the core values of science .
 - It is therefore crucial to be transparent about HOW you used AI tools such as ChatGPT in preparation and writing of your thesis. All use of AI tools needs to be transparent, i.e. clearly cited and the pipelines of use fully explained.
 - Consider AI tools as useful for supporting workflow and for generating initial knowledge platforms (for your own understanding) and for starting up reflections.
 - The use of e.g. ChatGPT will support you if you possess suitable a priori knowledge and understanding of the specific topics of relevance: the queries as well as the generated output always require a very careful planning and a critical reflection by the user. Do NOT use it as main search tool for your literature. ChatGPT is not fit for ensuring an always correct, fully reflected and comprehensive query (yet).
 - Consider AI output as being biased, not complete and not ideal for generating novel out of the box ideas. That's a skill you should learn and train by exercise. Only in combination with your (the student's) knowledge, skills and creativity will AI support you in excellent use and generating output.
- Your literature thesis needs to be checked for originality (plagiarism check). See the manual below (Appendix).

Assessment

The literature thesis will be evaluated following an assessment form that is addressing the following criteria:

- Quality of the Abstract;
- Introduction: Quality of the introduction on the background in the field;
- Introduction: Justification of the problem/scientific question/controversy;
- In depth coverage of problem/scientific question/controversy;
- Scientific quality of the discussion;
- Conclusion: Answering of problem/scientific question/ defense of controversy;
- Conclusion: Identification of relevant future lines of research;
- Use of figures to illustrate key concepts & quality of figures, tables and layout;
- Appropriateness of selected literature & correct citations/references;
- Overall writing skills; grammar use in report;

The supervisor should use the literature thesis assessment form to register the assessment. Use the assessment form on the website. The supervisor (assessor) of the literature thesis can send the completed/signed form to the Stip (email to Stip@radboudumc.nl). Additionally, the criteria on the assessment form are a guideline for supervision.

Writing support: Radboud Writing Lab

Radboud Writing Lab offers help with any writing assignment that is part of your studies. Their writing-coaches are available to help you for various reasons, including:

- You have trouble with shaping and defining the focus of your research;
- You want to know whether your text is properly structured;
- You want to know if your arguments are well structured and easy to grasp;
- You want to learn how to write more academically;
- You would like to have more of an incentive to get things done;
- You want to incorporate your supervisor's feedback;
- You feel stuck in your writing;
- You have dyslexia and would like to have a writing strategy.

To make an appointment with one of the writing-coaches or for more information: <https://www.ru.nl/writinglab/english/>

Appendix

Manual plagiarism check

You can hand in your final literature thesis to your supervisor by email. But first you are required to hand in your literature thesis to Brightspace for the plagiarism check (originality check). In the Master Biomedical Sciences Brightspace page there is an assignment for students to generate an originality report (Click Activities > Assignments > Thesis originality check). After submitting your thesis to Brightspace you'll get a originality report which you'll need to add to the literature thesis when you hand it in to you supervisor. Your supervisor will do the plagiarism check using the originality report.

Step 1: Hand in your report

Please note, is your report larger than 100 MB? Please split your report into files that are all smaller than 100 MB and upload these individual files separately.

1. Open the edition of the Biomedical Sciences Brightspace page that you have access to (e.g. students who started in academic year 22-23 have are in the Brightspace page '**2223 Master Biomedical Sciences**').
2. Go to **Activities > Assignments**
3. Choose **Thesis Originality Check**
4. **Add a File > My Computer** and upload your thesis (if needed, as separate files)
5. **Submit**


Step 2: Find your plagiarism report

It can take a while for the plagiarism check to finish, after you've uploaded your report. Wait for at least an hour and then:

1. Open the Master Biomedical Sciences Brightspace page
2. Visit **Activities** and choose **Original (Urkund)**
3. **Continue**
4. Choose **Thesis Original Report**
5. Click on **Show Details [+]** under your name

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6. Choose the name of the **document** you handed in
7. Choose **View Report**
8. If you encounter an Error message instead of View Report, please contact brightspace.rha@radboudumc.nl or Dorothe.vanTilburg@radboudumc.nl and mention in which course and for which Assignment you've received an Error message.
9. If you see Rejected that probably means your report was too large (larger than 100 MB). Please hand it separate files that are less than 100 MB big. If you see Rejected once more,

please contact brightspace.rha@radboudumc.nl or Dorothe.vanTilburg@radboudumc.nl and mention in which course and in which Assignment your report was rejected.

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10. A new page containing the report will be opened. Click on the arrow to download the plagiarism report.

11. Choose **Save as PDF (Opslaan als PDF)** to download the report to your computer.

- If you've handed in more than one file, please download all plagiarism reports this way.
12. Add the plagiarism report(s) to your literature thesis when you hand it in to your supervisor.