

Vilnius University  
Faculty of Medicine  
Systems Biology Master Program Committee

**SUPPLEMENT TO THE “METHODOLOGICAL GUIDELINES FOR THE  
PREPARATION, DEFENCE, AND STORAGE OF FINAL THESES AT  
THE FACULTY OF MEDICINE OF VILNIUS UNIVERSITY”**

03/02/2025

Vilnius

This supplement is based on the “Methodological Guidelines for The Preparation, Defence and Storage of Final Theses at the Faculty of Medicine of Vilnius University” APPROVED by Resolution 2023 October 24 No. 10 (717) of the Council of the Faculty of Medicine, Vilnius University.

The supplement was approved by the Systems Biology Study Program Committee, Resolution 2025 February 3 No. (1.3 E) 150000-KT-52.

The “Methodological Guidelines for The Preparation, Defence, and Storage of Final Theses at the Faculty of Medicine of Vilnius University” (Guidelines) provide the possibility for alternative or specific processes or forms applied during the Master Thesis (MT) preparation and defence procedures for different study programs. This Supplement provides the alternatives for the Systems Biology (SB) study program as follows:

## **1. Selection of Master Thesis Topic**

- 1.1. In the Systems Biology program, students are encouraged to find/propose a thesis topic themselves. The proposed topic, with a short abstract and tentative supervisor, should be sent to the Study Program Committee (SPC) Chair by email **no later than the last week of September**. Student and their supervisor must fill in a **request** form provided in the Guidelines as Annex 3.
- 1.2. For those who do not propose a thesis topic, the topic of the MT can be selected from a publicly available list on **VUSIS**. A list of the research topics for MT is prepared in consultation with the scientists from three Vilnius University units that are executing the Systems Biology program: Centre of Life Sciences, Faculty of Medicine and Faculty of Mathematics and Informatics and also in consultation with scientists from the industrial partners of the SB program such as ThermoFisher Scientific Baltics Scientists, whose topics students selected become appointed MT supervisors.

## **2. Thesis preparation guidelines and procedures**

The preparation of MT will consist of three stages described below in SB program.

### **2.1. Research Proposal**

- 2.1.1. The Research Proposal is a complete description of the intended research developed under the supervision of the assigned supervisor. Through the full proposal, the student needs to demonstrate convincingly that the study will contribute with new findings to the Systems Biology field.
- 2.1.2. The full research proposal must be 3 pages (without Title page and References). The Research Proposal should be prepared and submitted at the end of second semester and it will be part of Science Forum I course.
- 2.1.3. Research Proposal is presented to Systems Biology community (SPC, supervisors, other tutors). At this moment, students receive first feedback about relevance, novelty, possible direction of the topic. Detailed instructions about Research proposal preparation are provided with Science Forum I material.

### **2.2. Research progress (mid-term final thesis)**

- 2.2.1. The purpose of Research Progress is to demonstrate how much of the MT has been done. The Research Progress document is an MT template completed with all the research work done for the moment.

- 2.2.2. During the first week of the fourth semester, the master's student sends the title of the MT to the SPC Chair by email.
- 2.2.3. During the second week of the fourth semester, SPC appoints an independent Reviewer for each MT who will read and assess the Research Progress. In the same week, the student receives information about the appointed Reviewer.
- 2.2.4. The student sends an email with the attached report to the Reviewer no later than the week before the scheduled meeting of the Research progress presentation.
- 2.2.5. The Reviewer has to provide the Research Progress review (the form should be found in **Appendix 1**) within five working days.
- 2.2.6. The presentations of the Research Progress should be scheduled **before the last week of March**. You will get a notification in the University email about the exact date of the Research Progress presentation during the first week of March.
- 2.2.7. Mid-Term Final Thesis Assessment form provided in the Guidelines (Annex 4) should be filled in by the student and their supervisor and emailed to the SPC Chair at least one day before the presentation.
- 2.2.8. The student will present the Research progress presentation to the Systems Biology community (SPC, supervisors, and other tutors) in person (with few exceptions of *force major* circumstances). Recommendations from the Reviewer and the audience should be considered for better quality of the final MT.
- 2.2.9. Research progress will be graded by the present SPC members on 10-point scale, and it will represent **25% of the final grade**. For the evaluation criteria, please refer to Section 3 of this document, "Evaluation criteria".

### 2.3. Final Master Thesis

- 2.3.1. Final MT should be prepared according to the Guidelines' recommendations and technical requirements. The type of the thesis – analytical. The MT structure/template to follow can be found in **Appendix 3**.
- 2.3.2. The Final MT is written in a good English language (United Kingdom) and a correct grammar. A summary in Lithuanian is mandatory at the end of the MT.
- 2.3.3. An electronic version of the Final MT as a *.pdf* file together with the Supervisor's report (**Appendix 2**) should be sent via e-mail to the SPC Chair no later than the 2<sup>nd</sup> week of May. The confirmation email should be received.
- 2.3.4. The Reviewer shall submit a technical review and an assessment of the MT (**Appendix 1**).

### 3. Evaluation criteria

The Research progress, written Final MT and its oral presentation are evaluated according to the criteria summarized in this section. Note that oral presentation of the written MT is limited to 12 minutes. The decision of the Defence Committee on the grade for the final thesis shall not be open to appeal.

**3.1. Research progress** evaluation criteria:

- presentation 10%;
- the Reviewer's report 40%;
- work done - filled MT template 50% (minimum requirement for 50%: introduction and problem formulation; literature review; methods).

**3.2. Written MT** evaluation criteria:

- importance of the research topic (if available - evidenced by a peer-reviewed conference presentation or published journal article) 30%;
- adequate literature reviewed and cited (20%);
- correct methods of data analysis and sound statistical analysis (if applicable) 30%;
- clear structure and writing 20%.

**3.3. Oral presentation** evaluation criteria:

- ability to fit into the allocated time for presentation 20%;
- clarity of MT problem and problem-solving (methods, results, conclusions) presentation 25%;
- clarity, and visibility of visual aids supporting presentation; sources citation 25%;
- ability to answer all questions 30%.

**Appendix 1.** Reviewer's report template.

**Appendix 2.** Supervisor's report template.

**Appendix 3.** Master Thesis template.

**Appendix 1.** Reviewer's report template.

Vilnius University  
Faculty of Medicine  
Systems Biology study program  
Research Progress/ Master Thesis

**REVIEWER'S REPORT**

**1. Student (name and surname):**

**2. Title of the Master's Thesis:**

**3. Assessment of the research novelty of the Research progress/ Master Thesis:**

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**4. Assessment of the literature review of the Research progress/ Master Thesis:**

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**5. Assessment of the methods of the Research progress/ Master Thesis:**

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**6. Assessment of the ability to present and summarize Master Thesis results and draw conclusions:**

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**7. Other comments:**

**8. Suggested grade for the Research progress/ Master Thesis:**

- ☐ 10 (excellent - excellent, exceptional knowledge and skills)
- ☐ 9 (very good - strong, good knowledge and skills)
- ☐ 8 (good - knowledge and skills above average)
- ☐ 7 (average - average knowledge and skills, some minor mistakes)
- ☐ 6 (satisfactory - lower than average knowledge and skills)
- ☐ 5 (poor - knowledge and skills meet minimum requirements)
- ☐ 4 (unsatisfactory - minimum requirements not met)

**Reviewer:**

(name, surname)

(signature)

(date)

**Appendix 2.** Supervisor's report template.

Vilnius University  
Faculty of Medicine  
Systems Biology study program  
Master Thesis  
**SUPERVISOR'S REPORT**

1. Student (name and surname): \_\_\_\_\_

2. The place (where the Master's Thesis was carried out): \_\_\_\_\_

3. Title of Master's Thesis: \_\_\_\_\_

No.	Supervisor evaluates	Grade (1-10 scale)
A1	Student's ability to apply knowledge acquired during the studies	
A2	Autonomy and initiative	
A3	Ability to select, analyse and interpret scientific literature	
A4	Ability to apply proper research or experimental methods and evaluate the reliability of theoretical assumptions and the results obtained	
A5	Ability to summarize the results obtained and draw one's own conclusions	
	<b>Overall assessment (arithmetic average of the grades above):</b>	

Additional comments/remarks by the supervisor:

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**Supervisor**

(name, surname)

(signature)

(date)

### **Appendix 3. Master Thesis template.**

## **THE MASTER THESIS TEMPLATE**

This document has been set up to assist students in preparing the text for their Master thesis in Systems Biology. It is NOT intended as a document to guide you through your Master thesis development, but to assist you in setting out the thesis, in terms of text layout, section headings and sub-sections.

The Master thesis is a complete description of the research conducted under the supervision of the assigned supervisor. Through the thesis, the student needs to demonstrate convincingly that the study will contribute with new findings to the Systems Biology field. The full Master thesis must be up to 40 pages including references and not including annexes.

### **How to use this template:**

The template provides ALL the sections, headings and subheadings that you will require in your thesis, as well as the line and paragraph spacing, page breaks, page numbering, referencing system and referencing styles. You should simply edit the text where appropriate and insert your own text as per your proposal, i.e simply type into the document. Do not attempt to change the styles for the headings or subheadings, and do not attempt to use more than three level headings (i.e a main heading, a sub-heading and a sub-sub-heading).

Use heading 1 from the selection above for your main heading. Use all caps, do not use anything else as the table of contents has been automated to use this setting.

Use Heading 2 from the selection of styles on the menu bar above. Do NOT use all capitals, but write as is shown above. Do not use anything else as the Table of Contents has been automated to include this style for a subheading.

Use Heading 3 from the selection of styles on the menu bar above. Do NOT use all capitals, but write as is shown above. Do not use anything else as the Table of Contents has been automated to include this style for a sub-subheading.

**WHEN YOU ARE DONE, DELETE THIS FRONT INSTRUCTION PAGE FROM YOUR THESIS!**



**Faculty of  
Medicine**

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*Study programme (12 pt)*

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*Department, clinic or institute (12 pt)*

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*Student's given name and surname, year, group (12 pt)*

---

*Bachelor's or master's or integrated study master's thesis (12 pt)*

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*Title of the thesis in lithuanian (14 pt)*

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*Title of the thesis in english (14 pt)*

Supervisor

\_\_\_\_\_  
*(pedagogical title, academic degree, given name and surname)*

Head of the department or clinic

\_\_\_\_\_  
*(pedagogical title, academic degree, given name and surname)*

Advisor (if any)

\_\_\_\_\_  
*(pedagogical title, academic degree, given name and surname)*

Vilnius, 202\_

Student's email

\_\_\_\_\_

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## **LIST OF ABBREVIATIONS**

It is advised to include if there are more than 10 abbreviations; listed in alphabetical order; in the text at a first mention the abbreviated phrase has to be fully expressed and abbreviation given in the brackets afterwards as for example: differentially expressed genes (DEG).

## **INTRODUCTION**

Short description and argument (1-2 pages) why the thesis project was performed, why it is important; the introduction leads into one aim and several tasks. Thus there should be formulates one, short, concisely formulated aim. The aim should consist of 3 to 6 clearly formulated and concise objectives. Objectives should reflect main parts of your thesis. The objectives have to correlate with conclusions made at the end. Note that literature review should not be included as an objective.

## **LAY DESCRIPTION**

The lay description is approximately a half-page summary of your work, describing why your work is important, why it is needed, and what you did exactly to achieve the goal raised. But it differs from the scientific abstract/ summary. Keep in mind that people who will read your summary will be an interested audience but are not specialists. Therefore, you should pitch your summary at the same level as an article in a tabloid-style newspaper. Always ask a non-specialist to read through your summary to ensure it is clearly understood.

## **LITERATURE REVIEW**

Aim of the literature review is to show and argue for the necessity of your project; headings not more than three levels deep; at least 40-60 papers reviewed; make interim conclusions/summaries by the end of each part of literature review.



## **METHODS**

The methods section should be detailed to the level enabling an informed person reading the “Methods” section to repeat the project. Usually, methods are structured into data, wet laboratory part description if applicable, methodology or algorithms, versioned software used, statistical methods employed, data, code (also command lines, scripts used), and software availability and bioethics approval if applicable.

## **RESULTS**

The results section presents main results obtained in the project. This section is structured and contains evidence that supports conclusions. Each smaller part of the results starts with text. The results part contains figures, tables and text. It is recommended to make interim conclusions/summary after each results part.

## DISCUSSION

The discussion part is structured according the results part. It discusses your findings with respect to the Literature and most important – **explains discrepancies**. New figures can be used to aid the discussion. The discussion shows how parts of your project interacts and makes a whole project and delivers the main “take home message” of the master project. It is encouraged to discuss limitations of your project.

## **CONCLUSIONS**

The conclusions part has to answer questions raised by the tasks. The conclusions have to be short, clear and concise; please avoid abbreviations in conclusions; there should be no more than five conclusions.

## **RECOMMENDATION**

If your project leads to some recommendations, please include them separately under Recommendations section. It should be a short structured one or two paragraphs.

## **ACKNOWLEDGEMENTS**

The acknowledgements section lists and thanks organizations and sources of funding that supported your project; here you thank people whom you wish to thank, whose help was essential to your project.

## **REFERENCES**

Use Harvard style for references and citation; references are sorted alphabetically by the first letter of the first author surname and numbered; in the main text the references contain the author(s)'s or editor(s)'s surname and year of publication; websites in the reference list must have a "last accessed" statement providing the date of the last visit.

Information about Harvard Style of referencing:

<https://www.mendeley.com/guides/harvard-citation-guide>

## **SUMMARY**

Includes Institution, study program, name, surname, title of thesis, and a short abstract what, why, how it was done and short conclusion (abstract max 300 words).



## **SUMMARY IN LITHUANIAN**

The summary translated to Lithuanian language.

## **APPENDICES**

The appendices must be numbered and have titles; they must be cited in the main text. The appendices can include questionnaires, additional computations, tables, scripts, protocols, some raw data, published articles or conference papers on the subject of the thesis project.