

MD-PhD

# Milestones of your thesis

For MD-PhDs who enrolled at the UNIL-FBM after  
the spring of 2019

## Doctoral School FBM - Secretary's office

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The logo for the University of Lausanne (Unil), featuring the word 'Unil' in a blue, cursive script.

UNIL | Université de Lausanne

Ecole doctorale de la FBM

The logo for EPFL (École Polytechnique Fédérale de Lausanne), consisting of the letters 'EPFL' in a bold, red, sans-serif font.

## **1. This booklet is intended for MD-PhD students who enrolled officially at the UNIL-FBM as of the spring of 2019**

Welcome! The MD-PhD program is intended for medical students who wish to explore cellular and molecular mechanisms of disease, combine research and clinical activities and acquire a physician-scientist profile. Implicit in this, is the notion that the majority of successful MD-PhDs will pursue an academic career. There are two possible paths toward obtaining an MD-PhD: Track I, where you embark upon your PhD thesis immediately following completion of your medical studies; and Track II, where you engage in your research project after having pursued clinical training for 2-3 years following completion of medical school. The MD-PhD is a Federal program, meaning that federally funded scholarships can be obtained on a competitive basis.

The present document summarizes the necessary steps to enrol in the MD-PhD program, obtain a Federal fellowship and complete the doctorate in Medicine and Science (MD-PhD) at the University of Lausanne or the EPFL according to regulations updated in 2019. We recommend that you download this document from our website, so that you can use the [links](#).

If you enrolled as MD-PhD student before the spring 2019, please refer to the "Directives pour le Doctorat en médecine et ès sciences (MD-PhD) effectué à la Faculté de biologie et de médecine » established in 2013.

## **2. Admission to the Program**

The first step toward admission consists of writing to the secretariat of the program ([mdphd@unil.ch](mailto:mdphd@unil.ch)) indicating your interest in obtaining an MD-PhD. You will be asked to submit a set of documents, including:

- A CV with a photo
- Copies of all relevant diplomas you have obtained
- Transcripts of your medical school exam results
- Certificates of any relevant electives and internships you may have done

The secretary will then set up a meeting with the President of the MD-PhD Committee during which you will be expected to explain your motivation for joining the program and how obtaining an MD-PhD will affect and shape your future career. You will be provided with details regarding the preparatory requirements (see below) and invited to meet the MD-PhD Committee, which convenes four times a year.

### **3. Meeting the MD-PhD Committee**

During your first meeting with the MD-PhD Committee, you will be asked to explain the reasons why you wish to become an MD-PhD and present your future career plans and research project. Following your presentation, you will be formally admitted to the program. A mentor will be appointed to you who will help you prepare your presentation toward obtaining a Federal scholarship and who will be available to discuss any issues that may arise during the preparatory phase (i.e. before you formally engage in your thesis work).

### **4. Selecting a project and a thesis director**

At the time of your meeting with the President and your introduction to the Committee, you may not yet have a project or a thesis director, particularly if you are in your 3rd year of medical school. Your primary missions at this stage are twofold:

- to identify the medical specialty in which you wish to gain both clinical and scientific expertise and which will constitute the core of your future career;
- to find the optimal environment (in the majority of cases, research laboratory) for obtaining an MD-PhD in your field of interest.

The President and Committee members can guide you toward finding a suitable laboratory and thesis director. However, it is up to you to determine the field that you want to make your own – one in which you will become an expert and to whose progress you intend to contribute. Once you have selected your field and identified a potential host laboratory, you will, together with your future thesis director, define your research project.

### **5. Project presentation and Federal scholarships**

Upon elaborating your research project with your thesis director, you will present it to the MD-PhD Committee in the format requested by the Federal program. The format requires 1 minutes of introduction, including the reasons why you wish to obtain an MD-PhD and your career plan, and 5 minutes of description of your project with no more than 3 support slides. The Committee meets four times a year, and you will be invited to present your project on several occasions. The primary goal at this stage is to prepare you to present your project to the Federal Committee in Bern in view of obtaining a Federal scholarship. The MD-PhD Committee members will therefore provide you with comments and suggestions toward optimizing your presentation. In addition to the oral presentation, you will provide a written description of your project in the format of a grant application (details provided below).

For Track I MD-PhD candidates, it is imperative that you have a project at the very latest by the fall semester of your final (6th) year of medical school. In December of your final year, the Committee will select candidates to send to Bern based on the quality and feasibility of their project and the quality of their presentation. Selected candidates will then compete for a Federal scholarship in Bern in May of the following year, which means at the end of your "année à choix" as you prepare to revise for your final exams.

The scholarship provides 3 years of salary support, the fourth year being covered by your host laboratory, according to a prior signed agreement with your thesis director. Candidates who are unsuccessful in obtaining a scholarship in Bern are eligible for a local scholarship. If you obtain neither a local nor a Federal scholarship, it will be up to your host laboratory to provide you with salary support.

The documents you need for participating in the competition in Bern are:

- Letter of motivation
- Project summary (max. 1 page)
- Project description (max. 6 pages, without references), subdivided into the following sections: Background and hypothesis/ Specific aims/ Experimental design/ Potential pitfalls and timeframe / Expected results / References
- CV with a photo
- Degrees, diplomas, incl. grades
- Agreement of thesis director
- Preparatory training (showing the number of credits / diplomas and participation certificates)

One of the MD-PhD Committee's primary missions is to support candidates admitted to the program. The President and the Committee members, including your appointed mentor, will always be available to guide and help you throughout your preparation.

## **6. Preparatory training**

In order to be eligible for the MD-PhD doctorate, you need to obtain 35 credits ECTS (see "Formation préparatoire" in the "Directives pour le Doctorat en médecine et ès sciences (MD-PhD) effectué à la Faculté de biologie et de médecine" updated in 2019).

For both Track I and Track II students, 25 credits can be obtained during the 6 years of medical studies at the UNIL or in another university. A total of 15 credits are awarded for the Master project, 1 credit is awarded for a "cours à option" during the second year

(BMed2) and 3 credits are awarded for a "cours à option" in the third or fourth year (BMed3 or MMed1). Additional credits can be obtained by engaging in summer internships (1 credit/week of internship) and attending summer schools (typically 3 credits per course).

At the end of your medical studies, once you have successfully completed your final exams, you must attend training in one of the following areas:

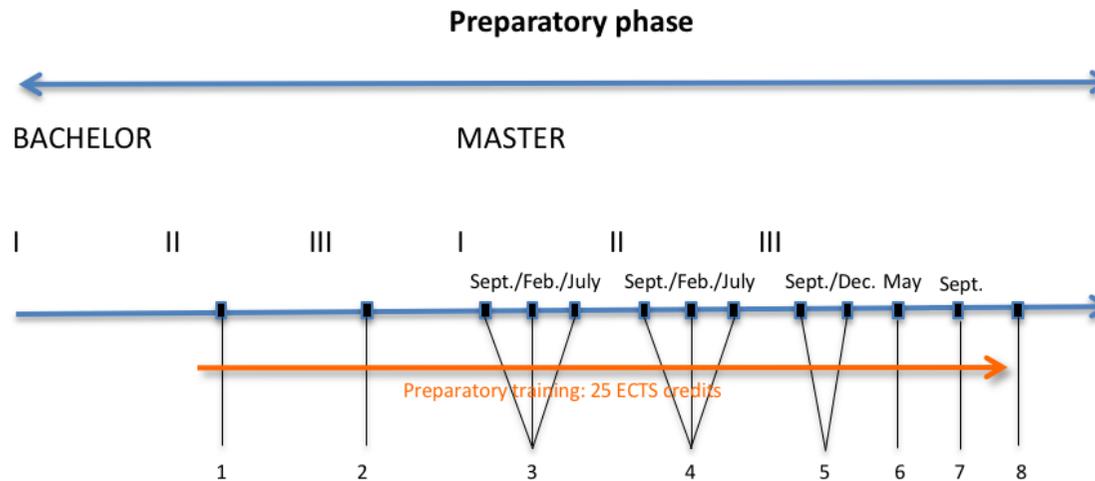
- Molecular biology
- Public health and clinical research
- Imaging and biomedical engineering

Courses are provided by the School of Biology and the Medical School and it is up to you to select the one that best suits your research project. You are encouraged to take a course in bioinformatics and biostatistics as well.

Training in any one of these areas will provide you with the 10 remaining credits. It is designed to provide you with a solid knowledge base to initiate your research project and should ideally be done before starting the MD-PhD doctorate. However, depending on the training you require, the relevant courses may not be available at that moment. You therefore have the possibility to perform the training during your first year of research, but you are encouraged to complete the training as early as possible to allow maximal time for your thesis work.

**N.B.: Students who engage in a research project at EPFL are subjected to EPFL rules and regulations regarding all requirements relative to their thesis.**

## Medical school years



**Interviews President/Secretary:** The student discusses her/his intentions with the President and the Secretary of the MD-PhD Commission and she/he receives all necessary information. During the whole program the President and the Secretary of the MD-PhD Commission stay available for the candidate if new meetings, information or help in searching a laboratory and/or funds are needed.

**1 + 2 MD-PhD Information (BMed2 + BMed3)**

**3 + 4 Presentations to the MD-PhD Committee (Introduction to the MD-PhD Committee, definition of project and presentation to the MD-PhD Committee)**

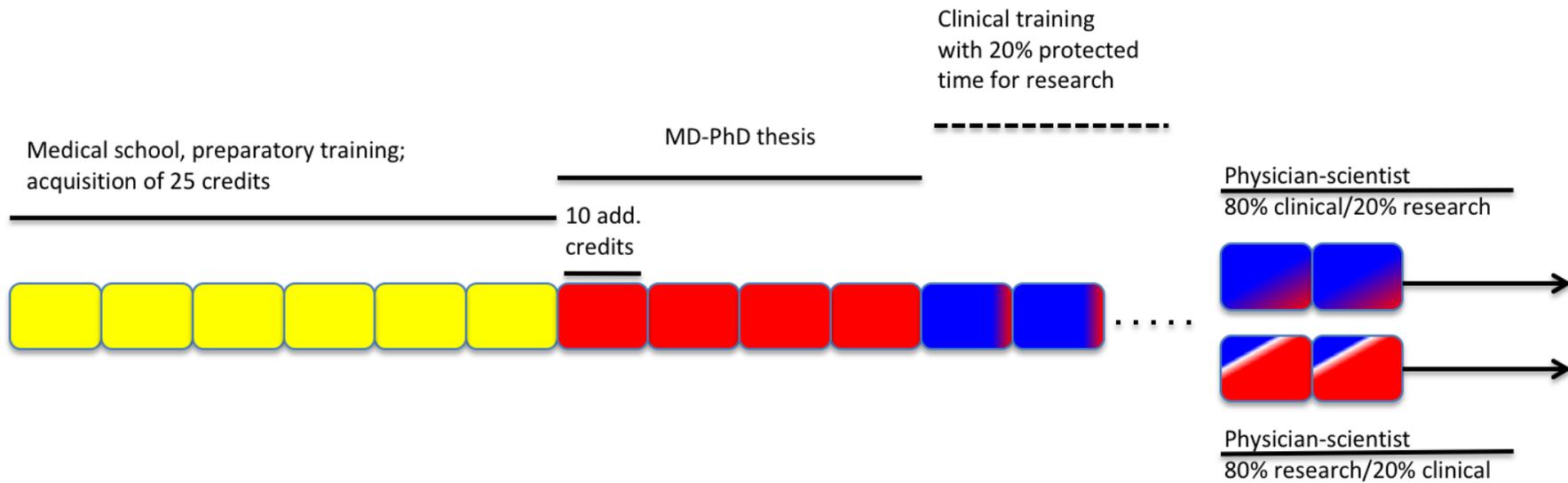
**5 Presentations of finalized project to the MD-PhD Committee**

**6 Presentation to the Federal MD-PhD Committee in Bern**

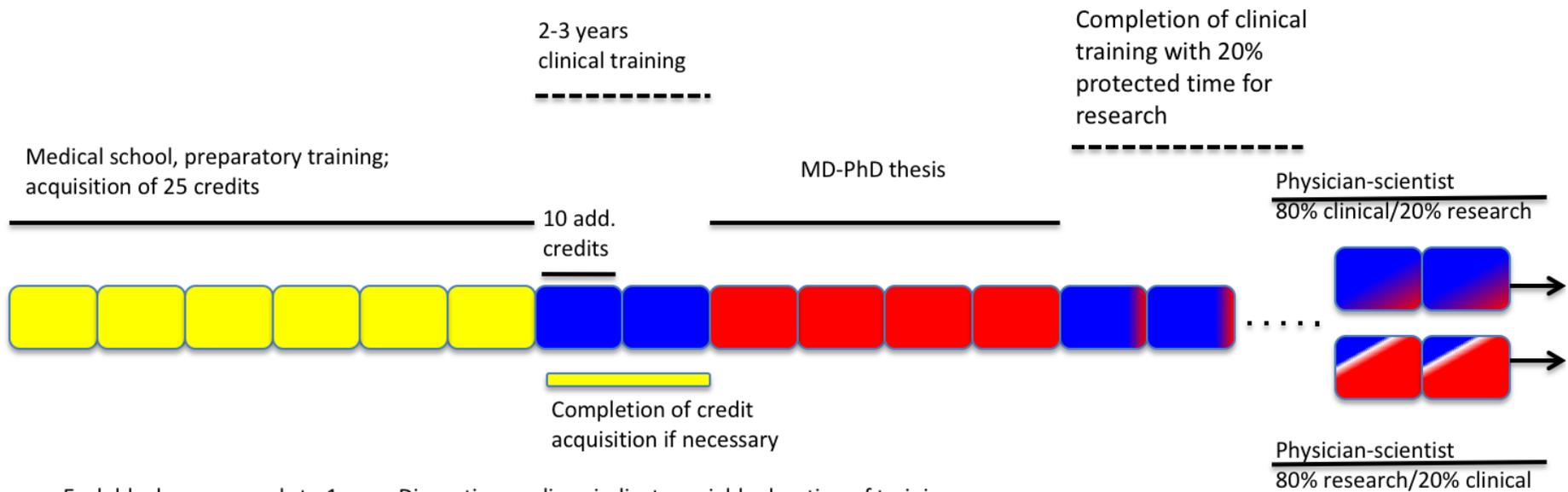
**7 Final medical exams**

**8 Start of MD-PhD thesis (track I) or clinical training prior to the thesis (track II)**

# TRACK I



# TRACK II



Each block corresponds to 1 year. Discontinuous lines indicate variable duration of training.

## **7. Following registration**

At the very beginning of your research work, you must assemble a thesis committee that will follow your progress for the duration of the thesis period. The committee's composition, established in agreement between your thesis director and yourself, must be communicated to the Doctoral School at the latest one semester following your registration.

The committee includes:

1. The thesis director (and co-directors, if applicable)
2. Two experts, of whom at least one must be external to the Department of your thesis director and who must not be collaborators on the thesis project. Note that for the final thesis defence, at least one expert of the Jury must be from outside the University of Lausanne; the expert can either be a member of the thesis committee or you may choose an additional expert who fulfils this requirement
3. The president (mentor nominated by the MD-PhD Committee)

## **8. Credits required during your thesis**

In addition to the 35 credits obtained prior to engaging in your thesis project or by the end of the first year of your doctorate, you must obtain 12 credits for course work during your thesis period. Mechanisms for obtaining these credits are indicated in the "Règlement 2017 pour l'obtention du grade de doctorat ès sciences de la vie (PhD)".

## **9. By the end of the first year**

- You must prepare a short report summarizing the subject of your thesis, the thesis milestones/plan and research progress by the end of the second semester for a first evaluation by the thesis committee. The report should then be sent according to specific instructions to your funding source and by e-mail to ALL the members of the thesis committee with a copy (cc) to the thesis director and the Doctoral School FBM ([mdphd@unil.ch](mailto:mdphd@unil.ch)).
- Compile and complete the ECTS documents. A minimum of 4 ECTS (including 2 tutorials accredited by the Doctoral School) must be obtained by the end of the first year of your thesis.
- Forward all the documents by postal mail to the Doctoral School FBM ([mdphd@unil.ch](mailto:mdphd@unil.ch)).

## **10. Mid-thesis exam**

The mid-thesis evaluation must be held at the latest 18 months following the start of the MD-PhD contract, which in practical terms means the start of your thesis project. The exam provides the means for your thesis committee to ensure that your project is on track and to help resolve any issues that may have arisen up to that point. You are therefore required to present the progress of your research project to your thesis committee according to a format that resembles that of your final thesis exam.

Together with your thesis director(s) and committee members (including the president), you must select an examination date. At least 15 days prior to the mid-thesis exam, you should forward the following information to the Doctoral School:

- A mid-term report presenting the results and research progress (max. 20 pages, double-spaced, 30 references max.). This document should be signed by you and the thesis director and then sent by e-mail to ALL the members of the thesis committee with a copy (cc) to the thesis director and the Doctoral School ([mdphd@unil.ch](mailto:mdphd@unil.ch)).
- An e-mail to [mdphd@unil.ch](mailto:mdphd@unil.ch) specifying the date, time and place of the exam.

For more details (exam duration, format of the report...), please check our "Directives 2019 pour le Doctorat en médecine et ès sciences (MD-PhD)", section "Evaluation intermédiaire".

## **11. Successful completion of the program**

Completion of the program means that you will have completed your research project to a stage where, in agreement with your thesis director, it is admissible for a thesis defence. You will also have obtained a minimum of 12 ECTS as indicated above.

Please forward the documents for validation of the courses you have taken at any time during your thesis, but at the latest 4 weeks before depositing the thesis manuscript at the Doctoral School Secretary's Office (=manuscript for the private oral exam).

Please forward the ECTS documents (minimum 12 ECTS) to the FBM Doctoral School, possibly by postal mail or, if abroad, by e-mail as a PDF file containing all the relevant documents merged in the appropriate order. More information can be found on our guidelines: [here](#).

Should you have any queries regarding the requirements of the credits, contact [program.ls@unil.ch](mailto:program.ls@unil.ch).

## 12. Are you ready to defend your thesis?

In essence, you are expected to write your thesis manuscript and then defend it at the “private defence” session before your selected thesis jury (see below). Following a successful “private defence”, you will be allowed to present your research in a format accessible to non-scientists during a session open to the public. The final decision as to the success of your is based on the following four criteria:

- The quality of the research work (skills and autonomy of the MD-PhD candidate; originality of the MD-PhD project)
- The quality of the written thesis
- The outcome of the private defence/exam (aka: soutenance privée, private exam or oral private exam)
- The quality of public defence/exam (aka: soutenance publique, public exam or oral public exam)

The first three criteria are evaluated by the thesis jury during the “private defence”, whereas the fourth is evaluated during the session open to the public. The thesis defence usually takes place in the [3rd, 4th or 5th year](#) of enrolment in the program, provided that the minimum 12 ECTS of coursework have been obtained and that the mid-thesis exam has been successfully passed. It is your responsibility together with that of the thesis director to determine if a sufficient body of work, of publication quality, has been completed in order to initiate the final stage of thesis.

### A. Thesis format

Consult the “How to format your thesis” section (below) to duly organize and format the thesis document.

### B. Select your thesis committee

A thesis jury needs to have minimum of 4 members and maximum of 6 and should include:

- The thesis director (and co-directors, if applicable)
- Two (or three, see page 2, chapter 2.2) experts, with at least one from outside the University of Lausanne. Note that none of the experts can have collaborated on the thesis project or published with you.
- The jury president (appointed by the MD-PhD Commission to chair the thesis jury).

E-mail all thesis jury members to select a date for the private thesis defence. Once the date is set, reserve a room on the campus to hold the private defence. The composition of the jury, as well as the date and location of the exam should be announced to the secretary of the MD-PhD program: Mrs Thérèse Liechti ([mdphd@unil.ch](mailto:mdphd@unil.ch)) at least *5 weeks prior to the private thesis defence*.

C. Before the private defence (Art. 15 of the "Règlement 2017 pour l'obtention du grade de doctorat ès sciences de la vie (PhD)")

You will need to send the following documents to Mrs Liechti (FBM Doctoral School, Amphipôle 304, Unil-Sorge, 1015 Lausanne) *at least 5 weeks before the private defence*:

- A copy of the thesis (paper version)
- A letter or an e-mail signed by the thesis director indicating the name, address and e-mail (the fax, if any) of each jury member and also the location, date and time chosen for the private defence.
- An updated version of your CV.
- A list of publications, including articles and abstracts related to the thesis project.
- Two one-page summaries of the thesis, one in English and one in French. Each summary must be written on a separate page and must include the title of the thesis, the name of the MD-PhD student and the name of the host Department of the thesis project.
- A one-page summary of the thesis written for the general public, in French (please do not forget to translate the title of the thesis into French).
- The Certificate with the credits obtained during the PhD (has to be requested at the latest 4 weeks before the deposit of the thesis manuscript for the private defence to [program.ls@unil.ch](mailto:program.ls@unil.ch) or for students enrolled in a program with a study option, directly to the program coordinator).
- Along with the items in this checklist: [click here](#).

At the same time, send a copy of the thesis to all jury members. Unless they specifically request the electronic version of the thesis, each jury member should receive a hard copy (the printed document).

The Doctoral School will send an e-mail to the jury, with the MD-PhD candidate in copy (cc) asking them to send their report to the Doctoral School at least one week before the private defence. In this report, they will provide an evaluation of the thesis and indicate whether they consider the thesis eligible for attributing an MD-PhD degree. After receiving these reports, the Doctoral School will send them to the president of the jury.

Upon receiving the thesis, the Doctoral School will send a request of payment for the *exam's registration* (CHF 500.--) to the student's private postal address.

### **13. Private Defence**

During the private thesis defence your knowledge of your thesis field will be evaluated.

The defence (1-2 hours) will be conducted in the following order:

- 30-40 minute oral presentation by the MD-PhD student
- 2 rounds of questions from the experts
- Discussion among the jury members and formal grading

The language of the thesis defence should be either English or French (but preferably English); the choice of language should be decided upon by common agreement among the jury members, the thesis director and the MD-PhD Candidate.

During the discussion, the jury assigns 3 grades (ranging from 1 to 6; a pass grade is 4; half points are accepted) for three aspects of the thesis:

- The research work (skills and autonomy of the MD-PhD candidate; originality of the MD-PhD project)
- The clarity, depth and style of the written document
- The private examination, including the quality of the presentation and responses to questions raised by the jury members

You will need to obtain *a minimum grade of 4 on each of these above-mentioned aspects* in order to pass the exam and to continue to the public defence. Once you have successfully passed the private defence, you must select a date for the public thesis defence, together with the jury members (at a minimum, the jury president and thesis director are required to be present). The public defence should take place *a minimum of 3 weeks following the private exam*. Once the date is agreed upon, you must reserve an auditorium to hold the public defence and announce the location, date and time to Mrs Thérèse Liechti at the FBM Doctoral School ([mdphd@unil.ch](mailto:mdphd@unil.ch)).

If the jury requests corrections of your thesis, they should be specified in the document completed during the private defence (the "procès verbal"). Your thesis director is responsible for checking your corrections. She/he has to receive the corrections and inform Mrs Liechti that the new version of the thesis is acceptable in its revised form, *at least one week before the public defence*.

The *final printed version of the thesis* should be handed to the president of the jury *at, or prior to the public defence*. During the private defence, the "procès verbal" document will be filled out specifying whether the public defence will be held in French or in English (or, exceptionally, in another language, upon agreement of the jury members).

## 14. Public Defence

As indicated above, the public thesis defence takes place at least *3 weeks following the private defence*. At the end of the public defence, the members of the jury decide whether the thesis is judged as acceptable ("réussi") or not ("pas réussi"). If the decision is positive, you will receive the "imprimatur" page (official approval that the thesis can be printed) from the committee president, a copy of which must be included in all final copies of the thesis.

## 15. After the public defence

### A. Bound copies of the thesis document

After the public defence, you have a maximum of six months to prepare official bound copies (see "How to format your thesis" section below) of the thesis document and distribute them as follows:

- 1 copy for the Doctoral School to be sent to Mrs Thérèse Liechi
- 1 copy for the department where the research was done
- 2 copies for the thesis director
- 1 copy for each member of the jury. To avoid wasting paper, time and money, we recommend that the jury members be contacted to make sure they really want a final hard copy of the thesis. You do not need to send a copy to the president, unless she/he requests it
- 3 copies for the BCUL (Bibliothèque Cantonal et Universitaire Lausanne), one of them with a summary of the thesis in English. These 3 copies for the BCUL should be accompanied by a form available on our website [here](#).

Please note that *you have to remain enrolled at the University of Lausanne* until the thesis has been deposited to the BCUL and to the Doctoral School.

### B. On-line publication of the thesis

The thesis can be published on-line at the University of Lausanne, through the [SERVAL website](#).

C. Order your diploma

Fill in the on-line form "Application de commande électronique de grade" available [here](#). Note that the paper version to order the diploma will no longer be accepted. An intermediate official certificate, indicating that a PhD has been awarded, will be sent out by the Doctoral School.

### **How to format your thesis**

A. General formatting requirements for the final thesis version

Some general advice from the "Annexe V, Règlement 2017 pour l'obtention du grade de docteur ès sciences de la vie (PhD)":

- A4 format, 29.7 x 21 cm
- Double-sided printing
- Paper 80 gr/m<sup>2</sup>
- 40 lines/page maximum
- 15 mm external margin minimum
- Clean presentation of text, pictures and tables, without corrections
- Front cover of the thesis in cardstock (130 - 180 gr/m<sup>2</sup>); the official title cover is available [here](#)
- The official title page, identical to the front cover of the thesis, but printed on paper (80 gr/m<sup>2</sup>), with the possibility to include supplementary logos
- An exact reproduction of the "imprimatur" is printed at the back of the second title page (attributed by the thesis jury)
- Please note that the binding of the document cannot be done with rings or plastic.

B. How to organize a thesis with published articles

To include articles in your thesis you need to have one or several articles published or accepted for publication or at least under review, in peer-reviewed journals. Only if your contribution is significant will the article be considered as part of your thesis. The advantage of including articles in your thesis is that articles can replace the chapters of the results section.

A thesis with articles should be structured as follows (Annexe III des Directives 2017 pour le Doctorat ès sciences de la vie):

- Front cover of the thesis in cardstock (130 - 180 gr/m<sup>2</sup>); the official title cover is available [here](#)
- The official title page, identical to the front cover of the thesis, but printed on paper (80 gr/m<sup>2</sup>), with the possibility to include supplementary logos
- An exact reproduction of the Imprimatur page is printed at the back of the second title page (attributed by the thesis jury)
- Acknowledgements (max 1 page)
- Abstract (in English & French, max 1 page)
- Introduction (max 30 pages)
- Brief summary of the results, indicating precisely your contribution to each article (2-3 pages)
- Discussion (5-10 pages)
- References
- Articles

C. How to organize a thesis without published articles

("Annexe V Règlement 2017 pour l'obtention du grade de docteur ès sciences de la vie (PhD)":

This type of thesis should be structured as follows:

- Front cover of the thesis in cardstock (130 - 180 gr/m<sup>2</sup>); the official title cover is available [here](#)
- The official title page, identical to the front cover of the thesis, but printed on paper (80 gr/m<sup>2</sup>), with the possibility to include supplementary logos
- An exact reproduction of the Imprimatur page is printed at the back of the second title page (attributed by the thesis jury)
- Acknowledgements (max 1 page)
- Abstract (in English & French, max 1 page)
- List of Abbreviations
- Table of Contents
- List of Figures
- List of Tables
- Introduction (max 30 pages)
- Materials and Methods
- Results
- Discussion (10-20 pages)
- References

Please keep in mind the following points when writing a thesis with or without articles:

- Please download the [thesis official title page](#) from [our website](#).
- The imprimatur page has to immediately follow the title page in the final thesis version. This can be done by scanning the original imprimatur page and inserting it into the thesis document (please do not use a jpg-photo, the quality is not sufficient).
- A good introduction should show that you have acquired a broad knowledge of the previous and on-going research in your field, do not forget appropriate referencing.
- A good discussion should reflect critical thinking concerning what you have learned and should include:
  - Assessment of your results in light of those of other researchers in the field and an overall analysis of the publications reviewed
  - Analysis of the quality and limitations of your results
  - Formulation of conclusions, which must be supported by the results
- A summary/discussion of future perspectives

## Notes



If you have any question regarding the format of your thesis or the procedure, do not hesitate to contact the [MD-PhD Secretary's office](#):

**Mailing Address:**

**Doctoral School FBM**

MD-PhD Secretary's office  
Amphipôle building, Office n° 304  
Université de Lausanne  
UNIL-Sorge, 1015 Lausanne-Dorigny  
Switzerland

Thérèse Liechti  
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[Ecole doctorale](#)

Faculté de biologie et de médecine



Version spring 2019. Only regulatory texts are authentic. All titles and functions may apply to both women and men.