Master's thesis and examination grading form

Please return this form as a pdf file to g.dresler@bioc.uzh.ch

Student Name			
Matrikel No.			
Title of thesis			
Referee		**Co-Referee***	

**Co-Referee for external Master thesis only*

Master thesis (BCH501) – Grading

	Grade
Written Thesis	
Practical Work	
Final grade	

The grading scale is in quarter grades. In case of either a 6.0 or a ≤ 4.0, a second reviewer has to approve the grade.

Signature and Date Referee

……..

Signature and Date Co-Referee *(for external Master thesis only)*

……..

Master examination (BCH502) – Grading

In the one-hour oral Master's examination, a student must provide proof of general knowledge in the elective major chosen. The referee and co-referee grade the examination with a single grade.

Master's examination final grade
(by referee and co-referee)**:**

Date and Signatures

……..

Referee:

……..

Co-Referee:

Declaration of Academic Honesty

Declaration
I declare that the present work is original and written by myself without unauthorized assistance. If it is a work by multiple authors, I confirm that the respective parts of the work have been detailed in an author contribution paragraph. Furthermore, I confirm that none of this work has been submitted for credits towards other academic achievements at the University of Zurich or any other university or educational institution, nor will be submitted in the future by my own actions as credit towards any further academic achievement.

Use of Sources
I declare that I provided a reference list for all information of the work that derives from external sources, and that I cited original research sources whenever possible. Likewise, I confirm that I provided appropriate references for unpublished results and/or statements quoted in the work.

Guidelines on the Use of A. I. Tools
I discussed with my supervisors when and to what extent it is appropriate to use automatic text generation. I am aware that it should enhance the quality of a work, and that it is never a shortcut to avoid a deep engagement with the subject matter. I am fully responsible for the selection, adoption, and for all results of the A. I.-generated output that I use. I specified the A. I. tools used in a dedicated methods section.
Furthermore, I am aware of the "Guidelines on A.I. tools for lecturers and students" of the Faculty of Science of University of Zurich (Link: Studium und KI).

Sanctions
I acknowledge that work violating the principles stated in this declaration of academic honesty, particularly those that contain unattributed quotations or paraphrases, will be considered as plagiarism, and may entail corresponding legal and disciplinary consequences (in accordance with §§ 11ff of the Disciplinary Regulations of the University of Zurich).

I hereby confirm adherence to the guidelines with my signature:

Signature and Date: ……..

Master's thesis – Grading Criteria

Thesis	Practical work
1. Abstract and Introduction • Concise overview of the research field relevant to the thesis, and identification of important open questions • Clear description of the problem addressed in the thesis, and clear statement of the project goals • Appropriate literature citations in a uniform and consistent style and format (applies to whole thesis)	**4. Lab work** • High quality of experimental work • Solid understanding of the theory behind experimental techniques • Detailed documentation in the lab book • Organized and efficient planning of experiments
2. Methods and Results • Clear and complete description of the methods used such that all experiments can be reproduced by others • Clear description of the logic and hypotheses underlying the choice of performed experiments • Clear and complete presentation and correct interpretation of the experimental results • Appropriate quality and quantity of results • Correct presentation and labelling of figures and tables • Appropriate information on statistical analysis	**5. Experimental design and independent work** • Demonstrates a clear understanding of the objectives, potential, and limitations of experimental approaches • Capable of independently following lab manuals or protocols • Shows initiative and competence in modifying or adapting experimental designs when required • Chooses suitable experimental controls, and proactively troubleshoots to overcome methodological challenges.
3. Discussion and Conclusions • Concise discussion and critical evaluation of the obtained results with respect to the original goals • Discussion of the results into a more general context within the research field • Discussion of the possibilities and limitations of the applied experimental techniques • Formulation of new hypotheses, outlook for future work	**6. Communication and attitude** • Communicative attitude in the laboratory • Ability to ask for and make constructive use of advice • Reports mistakes promptly and honestly, understanding that errors are part of lab work when handled responsibly. • Concise presentation of the project and the results in group meetings and the final master seminar • Professional attitude towards supervisor and colleagues • Contributes to general lab tasks

Master thesis guidelines for experimental projects

The thesis should have a total length of 40 -70 pages (1.5 line spacing, Source Sans Pro 10pt or similar), excluding the title page, abstract, table of contents, Figures and references. The maximum word count should not exceed 35'000. The thesis can be written using Microsoft word or Overleaf/Tex or similar. The following can be used as a rough guideline:

- Title: Maximum 100 characters (incl. spaces)
- Abstract: ~300 words
- Include Table of Contents
- Introduction/ Background
- Aims of the project
- Material & Methods
- Results
- Discussion
- References: not less than 15, not more than 50.
- Figures: The figures in the results section should be used to illustrate key results of the project (i.e. there is no need to show every single SDS-PAGE gel run during the project) but should be clearly labelled and include a Figure legend. Introductory figure can be adapted from the literature, provided that it is appropriately cited. Format figures into panels where appropriate.

The number of pages is based on the text with figures and tables but does not include the cover page, the list of references and the table of contents. For the main text, please use Source Sans Pro font size 10 pt or similar. Headers can use larger font (12-14 pt) and/or bold typeface. Figure footers and table headers should be distinguishable from the main text (smaller typeface, italic). Please number the pages and include a table of contents. The following fonts (or fonts that look similar) can be used for tables: Arial, Courier, Source Sans Pro, Times New Roman. Please format the text as full justified text.

The thesis should be provided as a word file to the supervisor.

Figures need to be inserted in good quality (min. 300 dpi). Tables should be prepared and inserted directly into the text. The figures and tables need to be numbered, given an appropriate title and are clearly but shortly described by a legend. All figures are referenced in the text via their numbers and the figure numbering needs to be consistent with the order in which the figures are referred to in the text. A consistent figure/table design should be ensured within the thesis.

For references, it is recommended to use reference management software (Citavi, EndNote, Mendeley, RefWorks etc.). If there is no experience in the use of these software, ask for an introduction by the supervisor. Some good citation styles are Vancouver, AMA, Nature, and CSE. Figures adapted from other sources must be clearly credited and referenced in the figure legend.

Thesis structure:

Cover page: Should contain the names of the university, the department, the group, the thesis title, the type of the thesis (Bachelor thesis), the name of the author and the date of submission.

Title: The title should be concise and informative.

Table of contents: Should contain descriptive chapter headers in a logical structure and with numbering. Main chapters can be outlined in individual subsections. The subdivision in sections should help maintain a logical structure and should not divide the text into too short, thematically discontinuous sections (rough guide: at least half a page per subsection).

Abstract: The abstract allows potential readers to judge the relevance of the work described in the thesis. It should include the key terms and briefly but concisely summarize the scope, purpose, results and implications of the project. References should not be included and unconventional abbreviations (excluding common terms) should be avoided. Also avoid details & numbers (except this is your main result).

Introduction: The introduction should cover the scientific background of the subject matters and describe the literature (i.e. the "state of the art") relevant to the project. The introduction should introduce the reader to the topic, set the focus of the project and summarize the relevant aspects/goals/relevant questions that motivate the project's aims. The description of the background should be accessible to a broad scientific readership and not assume detailed knowledge of the subject matter. Therefore, jargon and concepts not familiar to non-specialists should be avoided if not adequately described. To improve comprehensibility, subheadings can be used to guide the reader through different thematic sections.

Objectives: This section should state the main scientific goal of the project (i.e. "big picture") in terms of a scientific question that is being addressed by the work. While the introduction focuses on what is known about the topic, the Aims section focuses on the unknown. Provide an outline of the specific aims of the project an how they address the overall goals. The objectives should be stated at the end of the introduction.

Methods: The methods section provides the experimental details and protocols used during the project. These should be written concisely but with sufficient level of detail.

Results: The main text will provide a description of the experimental work and should be broken up into section describing each experimental step. Note that the results should not be a copy of the experimental methods section. Instead, the description of each experiment or experimental step should begin with a few sentences explaining the context and the motivation for the experiment and the overall approach. The results of the experiment are then described with reference to relevant figures/tables. This is followed by a few sentences to interpret the results and describe the meaning for the problem. Use logical subheadings in order to prevent yourself from writing long and unstructured paragraphs and to communicate the focus of your text to the reader

Discussion/Conclusion: The discussion should briefly summarize the results and their interpretation, and should provide an outlook of future follow-up work, unsolved scientific questions or problems, challenges associated with the experimental approach take in the thesis and alternative approaches. Moreover, the conclusion provides a platform to the author to include and discuss their assessment of the subject matters in an adequate manner, and provide forward looking recommendations on further studies.

Tables and Figures: Illustrations are a good tool to help the reader understand complex scientific matters. Thus, you should consider including a figure that summarizes the results or the main concepts of the thesis in the discussion. Figures illustrating results should be of good quality and designed to convey key results of the experiments. Ensure uniform formatting of figures/tables. Furthermore, for each figure/table an appropriate title describing the key content/key concept of the illustration is to be given, as well as a descriptive legend in written form that helps understanding the basic content of the figure without previous knowledge and without the need of reading the main text of the thesis (includes abbreviations, colors, illustrative symbols, the type of experiment, etc). Make sure that the size of used images, the font size and the quality of the images in general allow the reader to recognize everything depicted in the illustration.

Information on modules BCH501 and BCH502

1. Information on module BCH501 = Master thesis

- Module BCH501 Master's Thesis (Masterarbeit) can be started only after completion and attestation of compulsory module BCH408 Research Project (see Guidelines on the studies in biochemistry; Wegleitung zum Biochemiestudium, and VVZ, the course catalog). Students are responsible for finding a hosting group and organizing a project, according to their interests. The starting date is not fixed, and is determined in coordination with the hosting group leader and the direct supervisor. The hosting group and the starting date should be communicated to the module coordinator.
- Lab safety: Students have to visit the lab safety lecture before any lab work. A health insurance that covers accidents is mandatory. Especially students with a non-swiss insurance should make sure that their health insurance covers medical costs for accidents during studies, as this is not covered by the UZH. More information: https://www.students.uzh.ch/en/studentlife/finances.html.
- The experimental work and the compilation of the thesis document should be finished within 9 months (approx. 6 months laboratory work + approx. 3 months writing up; see VVZ). In justified cases, a one-time extension of up to four weeks is possible. The extension should be requested before the end of the regular timespan (e-mail to the module coordinator, along with a short explanatory statement of the group leader).
- Master students are entitled to up to 3 weeks of vacation. The extent and exact time period should be discussed with and approved by the responsible group leader in advance.
- After 3 months, students should arrange for a meeting with their supervisor to discuss their progress. If there are concerns regarding the project, the module coordinator should be notified.
- The first, uncorrected version of the master thesis will be graded. The group leader should sign the Master thesis grading form.
- In the case of grade 6.0 or grade 4.0 or below a second opinion of a qualified person is required, and must be provided by the group leader.
- The thesis document (graded final version) must be deposited as a PDF file at the Institute's Office (Mrs. Gunda Dresler; email: institut@bioc.uzh.ch).
- As part of the module a master seminar will be given by the student (20-25 minutes oral presentation of the topic and the results of the Master project + discussion). The seminar will be organized by the group hosting the Master's project. The time slot is not a priori fixed. The seminar will be advertised at BCI. At least 10 days before the seminar the student should provide the following information (e-mail to Mr. Daniel Egloff, seminars@bioc.uzh.ch): title, a short abstract (1/3 page), date, time, venue, contact person.
- The accepted MSc leads to acquisition of 45 ECTS.

Information on external Master projects

- External Master's thesis projects can be carried out at institutions affiliated with the Faculty of Natural Sciences and Mathematics (MNF) and the Faculty of Medicine (MeF), as well as at other Swiss universities. An application for an external Master's thesis must be submitted no later than 6 weeks before the anticipated starting date to the module coordinator. The application includes:
    - Motivation letter (reasons for the choice of research institution; reasons why the anticipated experimental work cannot be accomplished in any research group at BCI).
    - Brief description of the project: scientific background, planned experiments, expected outcome, experimental techniques that will be used, provisional time schedule.

- Written confirmation of the hosting group leader. Note that the hosting group leader must be holder of the right to confer PhD degree (Promotionsrechte an der MNF/MeF).
- The application is assessed by the module coordinator. Approved external Master's theses are supervised by the module coordinator or by qualified members of BCI. The student should present their project plan to the internal supervisor approximately 4-8 weeks after starting the project.

- External Master's theses are conducted according to the rules defined by BCI UZH (see above), and not according to the rules at the hosting institution. External Master students are responsible for the organization of the seminar at the corresponding institution.
- External Master's theses are graded by the internal supervisor at BCI upon consultation with the external supervisor/group leader, who provides a justified suggestion. The internal supervisor should sign the Master thesis grading form.

2. Information on module BCH502 = Biochemistry: An Overview

- The final exam is oral, in the form of free discussion of approximately one hour duration. Exam language is German or English; the candidate has the choice to specify the language. Prerequisite for a successful passing of the Master's examination is recapitulation of the contents and deepening of the knowledge acquired in the following modules, which represent the core of the biochemistry curriculum at UZH:

  BCH201: Biochemistry I
  BCH202: Biochemistry II
  BCH252 RNA and Proteins
  BCH310: Biochemistry III
  BCH301: Molecular Cell Biology
  BCH304: Protein Biophysics
  BCH306: Biochemical and Biophysical Methods BCH420: Advanced Protein Engineering
  BCH630: Protein Crystallography and Electron Microscopy BIO390: Bioinformatics
  Furthermore, expected is understanding of the theory, application area and informational content of experimental methods which have been instructed during the studies of biochemistry (lectures and practical units).
- Registration for module BCH502 *Biochemistry: An Overview* (final MSc exam) is done by e-mail to the module coordinator. The following information is required: student matriculation number, the exact title and the abstract of the Master's thesis, specification of a time span (10-14 days) in which the exam is intended.
- The exam is conducted by two qualified persons who are appointed by the module coordinator.
- The module coordinator organizes the examiners and notifies the candidate. The candidate arranges the exam date and the exam venue directly with the examiners. Submission of a copy of the thesis to the examiners is not mandatory, unless they do explicitly ask for a copy.
- The successful Master's examination (grade > 4.0) leads to acquisition of 10 ECTS. This generally corresponds to a workload of 300 hours. A preparation of 8 to 12 weeks is estimated to be necessary for successful passing of the final exam.
- The exam can be cancelled up to 10 days before the scheduled date (e-mail to the module coordinator and the two examiners). The candidate is responsible for scheduling a new date upon agreement with the examiners.
- After the exam, the examiners need to sign the Master thesis and examination grading form. The student needs to return the signed form to the module coordinator.

Completion of BCH501 and BCH502

- On successful completion of modules BCH501 and BCH502, the student is required to send the filled and signed Master thesis and examination grading form to the module coordinator.
- Once the grading form is completed, as well as all other mandatory modules within the Master's program Biochemistry (total of 90 ECTS) the candidate fills out the electronic form to be found at:

  https://studentadmin.mnf.uzh.ch

  and notifies the module coordinator by email, attaching also the title page of the thesis document. All subsequent steps leading to official graduation are executed by the Dean's Office of Student Affairs (shortly after submission of the electronic graduation request form the Dean's Office will issue *upon request* a provisional document certifying the completion of studies at UZH).

- The registration (matriculation) is mandatory for the semester in which the exam takes place. For exams taking place in the lecture-free periods, completion of the module can be predated, as long as studies are completed before the official begin of the next semester.