

Please read carefully and follow the instructions

The person identified as the “examiner” in the following is the official supervisor of the research project.

The form consists of three parts (application, proof of performance and examination protocol). All parts must be completed, signed and submitted electronically. Handwritten or scanned forms will not be accepted.

*Part 1 (2 pages) is the **application** form. To apply for a research project, only part 1 needs to be completed and submitted. Part 1 is to be completed and signed by the student and by the examiner, and is to be sent to the examination office by email.*

*Part 2 contains the **proof of performance** (1 page), part 3 the **examination protocol** (1 or more pages). Parts 2 and 3 must be completed, signed and emailed to the examination office by the examiner.*

***In addition**, a written **report** on the research project must be prepared in the format provided and submitted in electronic form (pdf) to the examiner. The examiner must submit the written report to the examination office by email together with the proof of performance and the examination protocol.*

On the following pages you will find:

- *Guidelines for active participation and the oral exam*
- *Outline for a report on the research project*
- *Notes on the authorization to examine*

Registration of a graded research project (15 LP) Master Biochemistry, in accordance with StO/PO v. 22.05.2024

To be completed and signed by the student

Name, first name: Matriculation number:

Tel.: ZEDAT E-Mail:@zedat.fu-berlin.de

Topic:

Scientific Background:

Questions or aims:

Experimental approach/techniques:

Planned start/end dates of the research project: -

Institution, at which the research project will be carried out:

Examiner; name, email, work address:

Important! The indicated examiner has to be authorized to examine. Professors, "Privatdozent/innen", lecturers and individuals approved by the examination committee are authorized to examine. *See separate notes on the authorization to examine.*

Subject area of the research project:

Research Design and Grant Writing 15 LP

Molecular Biology 15 LP

Structural Biology and Biophysics 15 LP

Molecular Genetics 15 LP

Cell Biology 15 LP

Computational Biology, Bioinformatics, Data Analysis
 15 LP

Molecular Biomedicine 15 LP

Related Area 15 LP

Related Areas e.g.: Biology, Chemistry, Pharmacy, Physics, Bioinformatics or Medicine

I register bindingly for the above research project.

.....
City, date

.....
Signature of applicant

To be completed and signed by the examiner

- I agree to supervise and evaluate the above research project.
 I confirm that the research project is not primarily a commercial enterprise.
 I will conduct the examination according to the guidelines (see below).

.....
City, date

.....
Signature examiner

Do not complete

Chair of the Examination Board:

Approved | not approved

.....
Date, Signature

Examination Office:

Registration in Campus Management has been completed.

.....
Date, Signature

Certificate of performance for a graded research project (15 LP)
Master Biochemistry, in accordance with StO/PO v. 22.05.2024

Name, first name of the student:

Student ID:

Topic of the research project:

Start/end dates of the research project: -

Examiner:

Important! The indicated examiner has to be authorized to examine. Professors, "Privatdozent/innen", lecturers and individuals approved by the examination committee are authorized to examine. See separate notes on the authorization to examine.

Subject area of the research project:

Research Design and Grant Writing 15 LP

Molecular Biology 15 LP

Structural Biology and Biophysics 15 LP

Molecular Genetics 15 LP

Cell Biology 15 LP

Computational Biology, Bioinformatics, Data Analysis
 15 LP

Molecular Biomedicine 15 LP

Related Area 15 LP

I certify the active participation by the student in the research project according to the guidelines.

I conducted the oral exam according to the guidelines.

A written report on the research project is included.

The quality of the written report is sufficient.

Grade:
numerical *spelled out*

Grading scheme: 1,0; 1,3 (very good); 1,7; 2,0; 2,3 (good); 2,7; 3,0; 3,3 (satisfactory); 3,7; 4,0 (sufficient); 5,0 (failed)

.....
City, date

.....
Signature examiner

Examination Office:
Entry in campus management has been made.

.....
Date, signature

Protocol for a graded research project (15 LP)
Master Biochemistry, in accordance with StO/PO v. 22.05.2024

Presentation ca. 15 minutes, defense ca. 15 minutes

Student (Name, first name):

Examiner (Name, first name):

Minute taker (Name, first name):

The candidate confirms his/her ability to be examined. *yes* *no*

Start and end time: -

Minutes (defense questions):

.....
City, date

.....
Signature examiner

.....
Signature minute taker

Guidelines active participation and oral exam graded research project (15 LP)

Students in the Master program Biochemistry enroll in three research projects worth 15 LP (at least 360 hours project work, 450 hours total). For the successful completion of a research project, students have to document their **active participation** and have to pass an **exam** after completion of the practical work.

Active participation

Besides the lab work for the research project, active participation involves **regular participation in the research seminar** of the hosting group and the **keeping of a lab notebook** according to common scientific standards. The lab notebook will remain with the host group. In addition, students have to compose a **short written report** (about 5 pages) according to the attached format, which they have to hand in to the examiner and send in digital form to the examination office. The examiner has to confirm the active participation on the certificate of performance ("Leistungsnachweis").

Exam

The exam consists of an **oral presentation** (duration about 15 minutes), which the student gives in front of the host group, and a following **defense** in front of the examiner (or another person who is officially eligible as an examiner) and a minute taker (duration about 15 minutes). The person giving the exam must be officially entitled to be an examiner. Professors, "Privatdozenten", lecturers with a teaching assignment at the FU Berlin and individuals approved by the examination committee are automatically entitled to give exams. In exceptional cases, other persons can be declared eligible as examiners (please address corresponding questions to the examination office). The minute taker must hold at least a Master's degree or equivalent. The examiner has to certify on the certificate of performance ("Leistungsnachweis") that the exam has been conducted according to the rules.

If the student agrees, members of the host group and/or the general academic public can attend the defense and can participate in the discussion after conclusion of the official questioning by the examiner and the minute taker. Only answers to questions of the examiner and the minute taker shall be considered for the final grade (see below regarding notes on how to decide on a final grade).

The minute taker documents the exam on the attached examination form ("Prüfungsprotokoll"). At the beginning of the exam, students have to declare themselves ready to take the exam. The answer to this question, the names of candidate, examiner and minute taker, place/date as well as start/end of the exam have to be documented. Only the questions, not the answers, should be listed in the protocol (if need be, use the back page and/or attach additional sheets). Both examiner and minute taker have to sign the protocol (all pages).

The original, completed, signed examination protocol must be sent to the examination office.

It is recommended that the exam be held within one month of completion of the research work.

Grading

The exam must be graded according to the scheme *very good* (1.0; 1.3) – *good* (1.7; 2.0; 2.3) – *satisfactory* (2.7; 3.0; 3.3) – *sufficient* (3.7; 4.0). A failed exam will be graded 5.0.

Oral presentation and defense shall each account for 50 % of the grade. Consider structure of the talk, quality of the slides, way of presentation, quality of the lab work (according to the presented results) as well as discussion/critical evaluation of the results when grading the presentation. For evaluation of the lab work, emphasis should be on the technical performance. Useful ideas that the student brought up should be considered a plus. Examiners should take the limited time available to the student to carry out the project into account, which may limit the possibility to repeat experiments. Negative and positive results are to be considered equally valuable.

Examples: Gels/blots should be of sufficient quality to document technically sound conductance of the experiments (clear bands?) and allow reliable conclusions. The type of conclusion (e.g. support or disproval of an original hypothesis) is not relevant for the grade. An experiment that could be conducted only once due to time constraints should not negatively influence the grade, except in cases where students ran out of time due to their own repeated technical errors. However, the student should point out during the presentation (e.g. when discussing results), if repetition of an experiment was required to ultimately clarify a question, or if a question should be additionally addressed through an alternative approach.

Questions during the defense should be motivated by the scientific background and data presented during the talk, but also cover the larger subject area. E.g., initial questions could refer to the present state of knowledge,

the scientific question addressed in the project, the principles/advantages/limitations of chosen approaches or interpretation of the results. Subsequent questions could deal with alternative methods/approaches, possible future studies or related biological systems. To support the students in their preparation for the exam, the examiner shall provide them with a total of five project-relevant review articles, text book chapters and/or original articles (not more, not less).

Contact Examination Office

Prüfungsbüro Biochemie
Arnimallee 22
D-14195 Berlin

email: pruefungsbuero@biochemie.fu-berlin.de

outline for a report on a graded research project (15 LP)

Cover Page

- Title of the research project
- Name of the student
- Student ID
- Name of the examiner
- Host institution
- Place and Date

Abstract/Summary

- Maximum 0.5 pages

Introduction

- Concise description of the state of the art, focusing on the aspects that led to the project
- About 1.5 pages

Materials and Methods

- In sufficient detail or referenced to allow independent reproduction
- Length variable

Results

- Main results with graphics/tables integrated into the text
- About 3 pages

Discussion

- Avoid repetition of results
- Possible aspects: Reliability of results, clarity of results, comparison to results from others, comparison to related biological systems, possible future experiments/questions
- About 1.5 pages

References

- In a format typical in the Molecular Life Sciences
- Length variable

Notes on the authorization to examine

- (1) The person referred to below as the “examiner” is the official supervisor of a research project or thesis.
- (2) Only authorized examiners (professors, private lecturers, postdoctoral lecturers and persons approved by the examination board) can be official supervisors and examiners of research projects or theses. External persons can't be listed.
- (3) For theses, both the first and second examiners must be authorized examiners, and at least one examiner must be employed at the Institute of Chemistry and Biochemistry or affiliated with the Department of Biochemistry. Only authorized examiners can certify performance in a research project or thesis or the fulfillment of active participation.
- (4) Independent research group leaders who have sufficient academic teaching experience can apply for examination authorization limited to a research project/thesis supervised by them (by e-mail with CV, list of publications, previous academic teaching experience to the Examinations Office; pruefungsbuero@biochemie.fu-berlin.de).
- (5) Research projects may be designed and supervised by persons who are not authorized to conduct examinations and hold a doctorate. Persons who are not authorized to conduct examinations may take part in the examination (as assessor or in addition to the assessor), ask questions and be involved in the assessment of performance or active participation. In the case of conception and guidance by a non-authorized examiner, an authorized examiner must act as official examiner.
- (6) Most institutions that offer research projects and theses employ authorized examiners in accordance with point (2). One of these persons should assume the function of the official examiner if a module is carried out under the supervision of a person who is not authorized to conduct examinations and holds a doctorate. If no authorized examiner at the host institute can act as examiner, the examination can possibly be taken over by one of the authorized university lecturers of the BCP department; see point (1).
- (7) In any case, the examiner specified on the form (both examiners in the case of theses) must take part in the examination, and only this authorized examiner can officially certify the work performed and active participation (first examiner in the case of theses).