Master’s program Biochemistry

Thielallee 63

Takustr. 6
Counseling

Student Advisor
Varvara Plotnikova
studbiochem@zedat.fu-berlin.de

Faculty Advisor
Dr. Jens Peter Fürste
fuerste@zedat.fu-berlin.de

Office of Academic Affairs and Study Advisor
Björn Kleier
studienbuero@biochemie.fu-berlin.de

Examination Office
Janine Heinrich
pruefungsbuero-biochemie@fu-berlin.de
Mentoring
Dr. Jana Petri
mentoring@bcp.fu-berlin.de

Erasmus Advisor
Dr. Bernhard Loll
loll@chemie.fu-berlin.de

BAFöG Advisor
Please send the completed form (Formblatt 5, Bafög Weiterförderung) and an up-to-date transcript of records to the Examination Office

General Academic Advice

Psychological Counseling
### Exemplary curriculum

<table>
<thead>
<tr>
<th>Semester</th>
<th>Basics and electives</th>
<th>Methods</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. (30 ECTS)</td>
<td>Main lecture part I (5 ECTS)</td>
<td>Method module 1. field (5 ECTS)</td>
<td>Research project 1. field (15 ECTS)</td>
</tr>
<tr>
<td></td>
<td>Elective biochemical module (5 ECTS)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. (30 ECTS)</td>
<td>Main lecture part II (5 ECTS)</td>
<td>Method module 2. field (5 ECTS)</td>
<td>Research project 2. field (15 ECTS)</td>
</tr>
<tr>
<td></td>
<td>Elective biochemical module (5 ECTS)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. (30 ECTS)</td>
<td>Free elective module (10 ECTS)</td>
<td>Method module 3. or affine field (5 ECTS)</td>
<td>Research project 3. or affine field (15 ECTS)</td>
</tr>
<tr>
<td>4. (30 ECTS)</td>
<td>Master’s thesis and defence (30 ECTS)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Exemplary means, you can adjust!**
- E.g., finish main lecture, 3 MMs and 2 RPs in semesters 1 and 2
- Could go elsewhere/abroad in 3rd semester for remaining RP, electives
Vorlesungsverzeichnis - Freie Universität Berlin

Vorlesungsverzeichnis für das Wintersemester 2021/2022. Bitte beachten Sie, dass unser Veranstaltungsangebot kontinuierlich aktualisiert und veröffentlicht...

WiSe 20/21
WiSe 20/21: Fachbereich. Studienfach. Lehrveranstaltung...

Biologie, Chemie, Pharmazie
Liebe Neu-Studierende in der Biologie, Dear first semester...

SoSe 21
Lehramt UDK - Politik - Geschichte - ...

Philosophie und...
Institut für Griechische und Lateinische Philologie (WE 2 ...
Vorlesungsverzeichnis für das Wintersemester 2021/2022

Bitte beachten Sie, dass unser Veranstaltungsangebot kontinuierlich aktualisiert und veröffentlicht wird, um den aktuellen Bedingungen Rechnung zu tragen!

Anmeldung zu Modulen und Lehrveranstaltungen
Details zur Anmeldung über Campus Management finden Sie hier.
Den vollständigen Akademischen Terminkalender der Freien Universität finden Sie hier.
Course Catalog for 2021/22 Winter Semester

Classes for the 2021/22 Winter Semester start on October 18, 2021, and end on February 19, 2022.

Registration for modules and classes

You can find details about the Campus Management online system here. The complete Academic Calendar of Freie Universität Berlin can be found here.
2 Winter Semester

Winter semester starts on October 18, 2021, and ends on February 19, 2022.

Apply for courses

The application for courses starts in early summer. You can then choose and book courses in your chosen subject.

For further information, please visit the Management online system here.

Information about the Freie Universität Berlin can be found here.
Biology, Chemistry, and Pharmacy

Immatrikulationsfeier am Fachbereich Biologie, Chemie, Pharmazie für die neuen Bachelor- und Staatsexamensstudierenden der Fächer Biochemie, Biologie, Chemie, Pharmazie Die Veranstaltungsdaten sind: 14.10. 18.00-19.00 (Hybride ...

read more

Biology

Auch für WS21/22 geltend! Corona-Epidemie: Alle die Biologie betreffenden Änderungen und Einschränkungen von Lehrveranstaltungen und Prüfungen, sowie gegebenenfalls weitere Informationen, werden auf einer zentralen Website ...

read more

Lieber Neu-Studierende in der Biologie, Dear first semester students of the biology programs
<table>
<thead>
<tr>
<th>Course Title</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Information and Introductory Courses</td>
<td>210601</td>
</tr>
<tr>
<td>Bachelor's Programme in Biochemistry</td>
<td>210605</td>
</tr>
<tr>
<td>Master's programme in Biochemistry</td>
<td>210611</td>
</tr>
<tr>
<td>Diploma Programme in Biochemistry (1994 study regulations)</td>
<td>210621</td>
</tr>
</tbody>
</table>
Biochemistry

Master's programme in Biochemistry

Welcome Event for Master's Students Attention! The orientation days for the winter semester 21/22 will be held according to the schedule on this website: ...

read more ▼

Tombola for Method Practicals The tombola will take place on Friday, October 15th 2021 at 10:00 a.m. as a Webex meeting. An email containing the invitation link to the meeting will be sent out.
Attention! If you have not ...

read more ▼

Grundmodul: Einführung in die fortgeschrittene Biochemie (10 LP)

216101a LECTURE
Schedule: Lecture: Friday, 15:00 - 16:30 h Seminar: Friday, 16:30 - 17:00 h (Class starts on: 2021-10-22)
Location: Takustr. 6, Hs Kristallographie und/oder Online zeitABhängig

216101c LECTURE
### Course: Introduction to Advanced Biochemistry

**University/Department/Institute:** Freie Universität Berlin/Department of Biology, Chemistry, Pharmacy/Institute of Chemistry and Biochemistry

**Module supervisors:** Lecturers of the module

**Entrance Requirements:** None

**Goals of Qualification:** Students have acquired the latest, structured knowledge of the research fields of structural biochemistry, molecular biology and molecular biomedicine. They are able to assess research facilities and to determine their future field of specialization.

**Contents:** Current developments in the research fields of structural biochemistry, molecular cell biology and molecular medicine

<table>
<thead>
<tr>
<th>Teaching methods</th>
<th>Hours of attendance (semester periods per week)</th>
<th>Forms of active participation</th>
<th>Work effort (hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>3</td>
<td>-</td>
<td>Presence (L) 45</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pre-, post-preparation (L) 90</td>
</tr>
<tr>
<td>Seminar</td>
<td>1</td>
<td>Oral Presentation, Discussions</td>
<td>Presence (S) 15</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pre-, post-preparation (S) 60</td>
</tr>
</tbody>
</table>

**Language offer of lecture:** German and/or English

**Compulsory regular attendance:** Yes

**Work effort (total):** 300 hours 10 CP

**Length of module:** One semester

**Lecture is offered:** Every semester

**Applicability:** Master study program Biochemistry

---

- Studienordnung: https://www.fu-berlin.de/studium/studienangebot/master/biochemie
Winter semester 2022/2023

• All courses in presence

• Course material in Blackboard (e.g., annotated PDFs, voiced-over PPTs, videos, papers/reviews, textbook chapters …)

• Parts of courses may still take place online via WebEx or Zoom

• Specifics will be communicated via Blackboard

• Distribution of slots in Methods Modules (Tombola): Friday, October 14, 2022, 10:00 h
  Online via WebEx
  (No invitation? Contact: studbiochem@zedat.fu-berlin.de)
1st study area: Basics

<table>
<thead>
<tr>
<th>Semester</th>
<th>Basics and electives</th>
<th>Methods</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. (30 ECTS)</td>
<td>Main lecture part I (5 ECTS)</td>
<td>Method module 1. field (5 ECTS)</td>
<td>Research project 1. field (15 ECTS)</td>
</tr>
<tr>
<td></td>
<td>Elective biochemical module (5 ECTS)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. (30 ETCS)</td>
<td>Main lecture part II (5 ECTS)</td>
<td>Method module 2. field (5 ECTS)</td>
<td>Research project 2. field (15 ECTS)</td>
</tr>
<tr>
<td></td>
<td>Elective biochemical module (5 ECTS)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. (30 ETCS)</td>
<td>Free elective module (10 ECTS)</td>
<td>Method module 3. or affine field (5 ECTS)</td>
<td>Research project 3. or affine field (15 ECTS)</td>
</tr>
<tr>
<td>4. (30 ETCS)</td>
<td>Master’s thesis and defence (30 ECTS)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Main lecture: Advanced Biochemistry, parts 1 & 2 (ABC1/2)
- Fridays, 15:00 – 17:00 h
- Partial exams are scheduled 2 weeks apart
• Advanced Biochemistry is one course taught in two parts.
• Both parts are mandatory.
• It will be graded based on your results in two partial exams (at different times) combined.
• You cannot pass or fail only one part (no required minimum points per partial exam)
• One improvement trial per part (up to semester 4)
• Try to finish both parts in the first 2 semesters
### 2nd study area: Methods

<table>
<thead>
<tr>
<th>Semester</th>
<th>Basics and electives</th>
<th>Methods</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. (30 ECTS)</td>
<td>Main lecture part I (5 ECTS) Elective biochemical module (5 ECTS)</td>
<td>Method module 1. field (5 ECTS)</td>
<td>Research project 1. field (15 ECTS)</td>
</tr>
<tr>
<td>2. (30 ETCS)</td>
<td>Main lecture part II (5 ECTS) Elective biochemical module (5 ECTS)</td>
<td>Method module 2. field (5 ECTS)</td>
<td>Research project 2. field (15 ECTS)</td>
</tr>
<tr>
<td>3. (30 ETCS)</td>
<td>Free elective module (10 ECTS)</td>
<td>Method module 3. or affine field (5 ECTS)</td>
<td>Research project 3. or affine field (15 ECTS)</td>
</tr>
<tr>
<td>4. (30 ETCS)</td>
<td>Master’s thesis and defence (30 ECTS)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Several MMs are offered (slots distributed during the Tombola)
- In most MMs it is possible to attend only the **seminar part**
- You can combine **2 such seminars to a 5-CP course** (electives)
- Contact PIs for “decentralized MM” – resembles a 3-week lab rotation; well-suited to combine with a subsequent Research Project
2nd study area: Methods

- Methods subject areas:
  1. Structural Biochemistry
  2. Molecular Biology
  3. Molecular Biomedicine

- Requirements:
  - Three MMs
  - Two MMs from two different subject areas
  - Third MM from third area or a related field ("affine area")
Information for enrolled students

Please find the guideline for your master studies [here](#).

The presentation to the master's studies is [here](#).

You find a summary of the available methods modules [here](#).

A calendar with the respective dates can be found [here](#).

The form for attendance of Lise-Meitner-Kolloquia is available [here](#).
You have to apply for a “decentralized” Methods Module using the relevant form available online at least two weeks before the planned start date. To increase chances that labs will host you for such “decentralized” Methods Courses, it may help if you plan such a course as a prelude to a longer Research Project or Master’s thesis in the same lab.

Please note the rules for active participation (see form): Besides the lab work for the methods module, active participation involves regular participation in the research seminar of the hosting group, a final presentation of about 30 minutes duration in this seminar and the keeping of a lab notebook according to common scientific standards. The lab notebook will remain with the host group. The supervisor has to confirm the active participation on the certificate of performance ("Leistungsnachweis"; pdf scan via email to the Examination Office).
Antrag zur Genehmigung / Anmeldung eines dezentralen 5 LP Methodenmoduls
In Anlehnung an ein unbenotetes 5 LP Forschungsprojekt im Masterstudiengang Biochemie

Name, Vorname: ________________________________ Matrikelnr.: ________________________________

Tel.: ________________________________ ZEDAT E-Mail: ________________________________

Geplante experimentelle Techniken (Methodenmodulcharakter) | Planned experimental techniques (methods module-like):

1. ________________________________
2. ________________________________
3. ________________________________
4. ________________________________
5. ________________________________

Dauer | Duration: 3 Wochen Laborarbeit plus 1 Woche Vor-/Nachbereitung | 3 weeks lab work plus 1 week preparation/post-processing

Beginn/Ende des Methodenmoduls | Start/end dates for the methods module:

Betreuer/in des Methodenmoduls; Name, E-Mail, Arbeitsanschrift | Supervisor of the methods module; name, e-Mail, work address:


Important! Professors, “Privatdozenten”, lecturers with a teaching assignment at the FU Berlin and individuals approved by the examination committee can be supervisors of a methods module. The supervisor has to be approved before the start of the project.
3\textsuperscript{rd} study area: Research

<table>
<thead>
<tr>
<th>Semester</th>
<th>Basics and electives</th>
<th>Methods</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. (30 ECTS)</td>
<td>Main lecture part I (5 ECTS)</td>
<td>Method module 1. field (5 ECTS)</td>
<td>Research project 1. field (15 ECTS)</td>
</tr>
<tr>
<td></td>
<td>Elective biochemical module (5 ECTS)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. (30 ECTS)</td>
<td>Main lecture part II (5 ECTS)</td>
<td>Method module 2. field (5 ECTS)</td>
<td>Research project 2. field (15 ECTS)</td>
</tr>
<tr>
<td></td>
<td>Elective biochemical module (5 ECTS)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. (30 ECTS)</td>
<td>Free elective module (10 ECTS)</td>
<td>Method module 3. or affine field (5 ECTS)</td>
<td>Research project 3. or affine field (15 ECTS)</td>
</tr>
<tr>
<td>4. (30 ECTS)</td>
<td>Master’s thesis and defence (30 ECTS)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Contact the PI of the lab, in which you would like to do a Research Project
- 15 CP: 9 weeks of lab work + 3 weeks of preparation (pre and post)
- Can be discontinuous (if PI agrees)
- Active participation: lab book, group seminar, written report
- Graded based on a presentation with Q&A
3rd study area: Research

• Research subject areas:
  1. Structural Biochemistry
  2. Molecular Biology
  3. Molecular Biomedicine

• Requirements:
  • Three 15-CP graded RPs
  • Two of these from two different subject areas
  • Third RP from third area or a related field (“affine area“)
Forschungsmodule

Ein Forschungsmodul ist, egal ob es intern oder extern absolviert werden soll, vom Studierenden vier Wochen vorher anzumelden.

Bevor ein Forschungsprojekt begonnen werden kann, ist die Genehmigung über den Prüfungsausschuss einzuholen.

Dazu reichen Sie bitte den ausgefüllten Antrag im Original im Prüfungsbüro ein (keine Kopie oder Scan). Sollte das Forschungsprojekt abgelehnt werden oder andere Fragen auftauchen, setzen wir uns mit Ihnen per E-Mail in Verbindung. Andernfalls werden wir Ihnen das Forschungsmodul im Campus Management anmelden (affine Forschungsmodule unbenotet können erst nach der Absolvierung als Anerkennung im Campus Management eingetragen werden).

- Antrag / Anmeldung für ein unbenotetes Forschungsmodul
- Antrag / Anmeldung für ein benotetes Forschungsmodul

Bitte beachten Sie bei den Forschungsprojekten die Richtlinien zur aktiven Teilnahme und

Apply 4 weeks before the planned start date

https://www.bcp.fu-berlin.de/studium-lehre/verwaltung/pruefungsbuero/pruefungsbuero_unterlagen/biochemie_master
Antrag zur Genehmigung / Anmeldung eines benoteten Forschungsprojekts (15 LP)
im Masterstudiengang Biochemie

Name, Vorname: ___________________________________________ Matrikelnr.: ________________________________
Tel.: ___________________________________________________ ZEDAT E-Mail: __________________________________

Thema | Topic: ____________________________________________

Kurzbeschreibung des Arbeitsthemas und der experimentellen Ansätze | Brief description of the research topic and planned procedures:

Beginn/Ende des Forschungsprojekts | Start/end dates for the research project:

Betreuer/in des Forschungsprojekts | Supervisor of the research project; name, e-Mail, work address:


Important! Professors, "Privatdozenten", lecturers with a teaching assignment at the FU Berlin and individuals approved by the examination committee can be supervisors of a research project. The supervisor has to be approved before the start of the project.
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 supervisor and send in digital form to the examination office. The supervisor has to confirm the active participation on the certificate of performance ("Leistungsnachweis").

Exam

The exam consists of an oral presentation (duration about 15 – 30 minutes), which the student gives in front of the host group, and a following defense in front of the supervisor (or another person who is officially eligible as an examiner) and a minute taker (duration about 30 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
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 supervisor
- 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
- Maximum 1 page

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

Results
Literature search, research design & grant writing (216881 a/b)

• Can replace one 15-CP Research Project

• Two parts (5 CP and 10 CP)

• Your performance during the first part decides whether you can continue with the second part
Identify a relevant research problem
(critical literature search)

Develop it into a PhD thesis project
(frame specific questions, assess feasibility)

Describe it coherently according to a template
(an exercise in scientific writing)

---

**216881a**

Lectures/seminars and individual meetings with your mentor

Written summary of your project

**216881b**

Write a research proposal

Peer review one proposal
4th study area: Electives

<table>
<thead>
<tr>
<th>Semester</th>
<th>Basics and electives</th>
<th>Methods</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. (30 ECTS)</td>
<td>Main lecture part I (5 ECTS)</td>
<td>Method module 1. field (5 ECTS)</td>
<td>Research project 1. field (15 ECTS)</td>
</tr>
<tr>
<td>2. (30 ECTS)</td>
<td>Main lecture part II (5 ECTS)</td>
<td>Method module 2. field (5 ECTS)</td>
<td>Research project 2. field (15 ECTS)</td>
</tr>
<tr>
<td>3. (30 ECTS)</td>
<td>Free elective module (10 ECTS)</td>
<td>Method module 3. or affine field (5 ECTS)</td>
<td>Research project 3. or affine field (15 ECTS)</td>
</tr>
<tr>
<td>4. (30 ECTS)</td>
<td>Master’s thesis and defence (30 ECTS)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Lise Meitner Colloquia** (Friday, 12:30 – 13:30 h)
- In-presence or online as announced
- Participation in 15 colloquia counts as a 2.5-CP **partial course**
- Can combine, e.g., with one MM seminar to a 5-CP course
- Documentation of participation: WebEx meeting protocol (*join with identifiable name*) or ...
Information for enrolled students

Please find the guideline for your master studies [here](#).

The presentation to the master's studies is [here](#).

You find a summary of the available methods modules [here](#).

A calendar with the respective dates can be found [here](#).

The form for attendance of Lise-Meitner-Kolloquia is available [here](#).
4th study area: Electives

• It is possible to import 15 CPs from the Biochemistry Bachelor’s program as electives:

  - Bioinformatik
  - Biostatistik
  - Evolution
  - Bioethik
  - Berufsorientierung

  - Only offered in German!
Registering for courses

• Individually through Campus Management

• Plan judiciously what you can manage

• Avoid “hoarding“ of courses
Be flexible and creative

- Apply for Research Projects well ahead of the planned start date.

- Several graded 15-CP research projects can be done in the same lab and their contents can be closely related.

- Ungraded 5/10-CP research projects can also be combined with a graded 15-CP research project in the same lab.

- “Decentralized” Method Modules can be carried out in the form of a short Research Project and can be combined with a Research Project in the same lab.

- “Decentralized” Method Modules and Research Projects can be followed by a Master’s thesis in the same lab.
Be flexible and creative

- In principle, we are open to accept equivalent courses taken elsewhere.
- In principle, we are prepared to accept suitable online courses.
- **Check with Examination Office before enrolling in a course!**
- Detailed info on the course and suggested equivalent to Examination Office.
Questions?

• *Via* email to any faculty member
• *Via* email to Examination Office
• *Via* email to FSI
• *Via* email to Varvara Plotnikova (Student Advisor)
• *Via* email to Jens Peter Fürste (Faculty Advisor)

• Only ask one at a time and allow some response time
• Only use Zedat account for university matters
Many thanks to …

- FSI (consider joining!)
- Student tutors and advisors
- Susanne Jäger (Central Administration Biochemistry)
- Janine Heinrich (Examinations Office)
- Björn Kleier (Office of Academic Affairs)
- Thorsten Grospietsch (Academic Studies and Teaching)