



Introduction

Master Biology

Program coordinator

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STARTSEITE UR

BACHELOR BIOLOGIE

MASTER BIOLOGY

Qualification and Application

First-year Students

Study Program

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Lehramt

BACHELOR EDUCATION

ANSPRECHPARTNER

AKTUELLES UND TERMINE IM STUDIUM

PRÜFUNGSSEKRETARIAT

PRÜFUNGSORDNUNG

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ABSCHLUSSARBEITEN

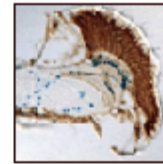
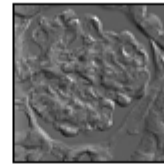
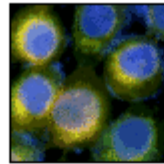
IM AUSLAND STUDIEREN

ANERKENNUNGEN

QUICKLINKS

BAYERNMINT

Master Biology



Since 2018, the **Master of Science in Biology (M.Sc.)** is in English and it is designed to deepen the scientific knowledge and is more strongly research-oriented than the bachelor program.

- start of studies in the winter semester (mid October) or in the summer semester (April)
- regular duration: 4 semesters
- total of 120 credit points

The master's program includes three skills modules and three focus subjects, whereby one focus subject can be replaced by a secondary subject offered by other scientific faculties.

Application deadlines

- **15th of June** for a start in the winter semester
- **15th of December** for a start in the summer semester

Course of study

1. semester 2. semester 3. semester 4. semester

3 focus subjects

master thesis



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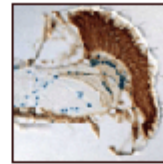
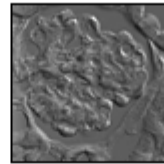
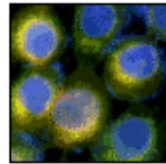
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3 focus subjects

master thesis



1. semester	2. semester	3. semester	4. semester
<p>3 focus subjects or 2 focus subjects + 1 secondary subject (24 CP each subject)</p>		<p>master thesis (30 CP; 9 months)</p>	
<p>skills modules (18 CP)</p>			



Study Program

Focus Subjects



[Overview of modules – focus subjects \(PDF\)](#)

[Biochemistry](#)

[Bioinformatics](#)

[Biophysics](#)

[Plant Cellular Biochemistry and Genetics](#)

[Ecology and Nature Conservation](#)

[Biodiversity](#)

[Evolutionary and Systematic Botany](#)

[Theoretical Ecology](#)

[Molecular Ecology and Evolutionary Biology](#)

[Zoology](#)

[Genetics](#) **places restricted!**

[Microbiology](#) **places restricted!**

[Molecular Human Biology](#) **places restricted!**

[Cell and Developmental Biology](#)

[Neurobiology](#) **places restricted!**

Secondary Subjects

[Bioorganic Chemistry](#)

[Human Genetics](#) **places restricted!**

[Immunology](#) **places restricted!**

[Medical Microbiology](#) **places restricted!**



Focus / Secondary Subject

Theoretical Module (12 CP)

Lectures (2 or more)	no enrolment	no examination	
Seminar	enrolment (see course catalogue)	seminar presentation	flexnow
Module examination	registration with examiner	oral examination; graded	flexnow

Practical Module (12 CP)

Laboratory course with seminar	registration with supervisor	Portfolio (project execution; protocol; seminar presentation) graded	flexnow
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first-year students

Study Program

Focus Subjects



[Overview of modules – focus subjects](#) (PDF)

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[Bioinformatics](#)

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[Ecology and Nature Conservation](#)

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[Genetics](#) **places restricted!**

[Microbiology](#) **places restricted!**

[Molecular Human Biology](#) **places restricted!**

[Cell and Developmental Biology](#)

[Neurobiology](#) **places restricted!**



Molecular Ecology and Evolutionary Biology

Focus Subject – Molecular Ecology and Evolutionary Biology

You have to choose the theoretical module and one practical module.

TM Theoretical Modul (12 CP)

Molecular Ecology and Evolutionary Biology	Prof. Dr. Jürgen Heinze
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PM Practical Modules (12 CP each)

Molecular Ecology and Evolutionary Biology of Social Insects	Prof. Dr. Jürgen Heinze
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Chemical Ecology	Prof. Dr. Joachim Ruther
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Molecular Ecology of Insect–Microbe Interactions	Prof. Dr. Erhard Strohm, PD Dr. Gudrun Herzner
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Molecular, Evolutionary and Behavioural Ecology	Prof. Dr. Erhard Strohm, PD Dr. Gudrun Herzner
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Individual and Collective Decision Making in Social Insects	Dr. Tomer J. Czaczkes
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Aquatic Ecology and Diversity	Prof. Dr. Christoph Schubart
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Molecular Ecology and Genetics of Nature Conservation (link)	Prof. Dr. Christoph Reisch
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Evolutionary and Systematic Botany (link)	Prof. Dr. Christoph Oberprieler
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TM Molecular Ecology and Evolutionary Biology	>
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PM Molecular Ecology and Evolutionary Biology of Social Insects	>
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PM Chemical Ecology	>
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PM Molecular Ecology of Insect–Microbe Interactions	>
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PM Molecular, Evolutionary and Behavioural Ecology	>
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PM Individual and Collective Decision Making in Social Insects	>
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PM Aquatic Ecology and Diversity	>
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TM Molecular Ecology and Evolutionary Biology

**Module components**

















1. at least two lectures in the field of molecular ecology and evolutionary biology (for a selection see LSF)
2. one seminar in the field of molecular ecology and evolutionary biology (for a selection see LSF)

In the seminar a seminar presentation has to be held and registered in Flexnow as an ungraded study achievement (Studienleistung).

Module examination

30 min oral examination (graded)



-		Molecular Ecology and Evolutionary Biology	
-		Theoretical Modules (TM) - Molecular Ecology and Evolutionary Biology	
-		BIO-M-TM-MEE gültig ab SS 2018 - BIO-M-TM-MEE - Theoretisches Modul / Theoretical module: Molecular Ecology and Evolutionary Biology	
+		Module examination: Molecular Ecology and Evolutionary Biology - Module examination	
-		BIO-M-TM-MEE.1 - mind. zwei Vorlesungen aus dem Bereich Molekulare Ökologie und Evolutionsbiologie / at least two lectures in the field of molecular ecology and evolutionary biology	
+		P:(D)-54320 - Lecture: Plant Speciation - Special lecture	
+		P:(D)-54322 - Lecture: Biogeography - Phytodiversity centres of the earth - Special lecture	
+		P:(D)-54325 - Lecture: Methods of evolutionary biology I - macroevolutionary approaches - Special lecture	
+		P:(D)-54505 - Lecture: Chemical ecology - Special lecture	
+		P:(D)-54562 - Lecture: Behavioural and evolutionary biology - Special lecture	
+		P:(D)-54563 - Lecture: Animal cognitive ecology - Special lecture	
-		BIO-M-TM-MEE.2 - ein Seminar aus dem Bereich Molekulare Ökologie und Evolutionsbiologie / one seminar in the field of molecular ecology and evolutionary biology	
+		54162 - Seminar: Evolutionary biology of plants and animals - Seminar	
+		P-54335 - Seminar: Current topics in plant systematics and evolution - Seminar	



Molecular Ecology and Evolutionary Biology

Focus Subject – Molecular Ecology and Evolutionary Biology

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PM Molecular Ecology and Evolutionary Biology of Social Insects



BIO-M-PM-MEESI

Detailed module description – [pdf](#)

Prof. Dr. Jürgen Heinze ([link to research group](#))

The module can be used for

- focus subject Molecular Ecology and Evolutionary Biology
- focus subject Zoology

Module contents

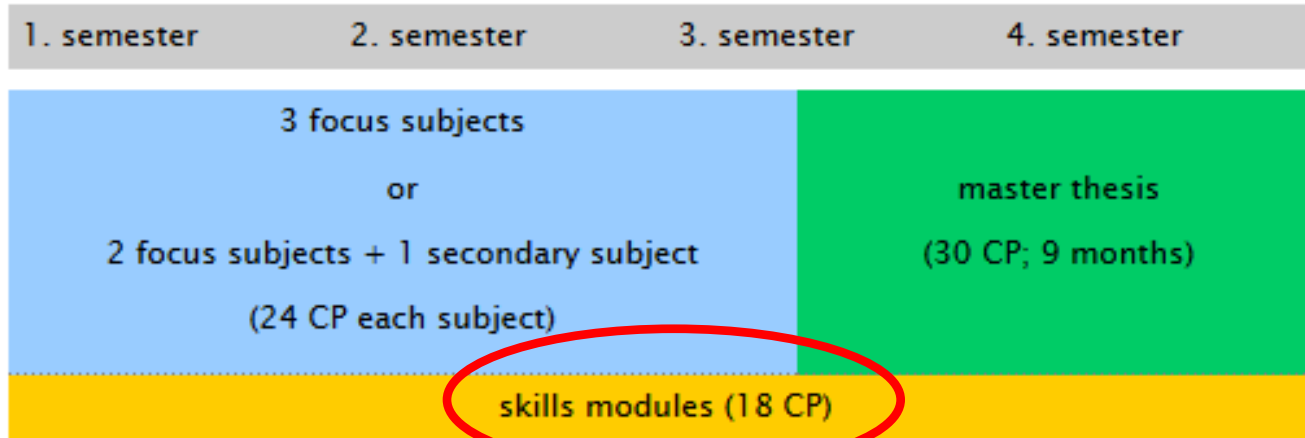
- Individually supervised project on various aspects of social evolution
- Presentation and discussion of own experimental gained data

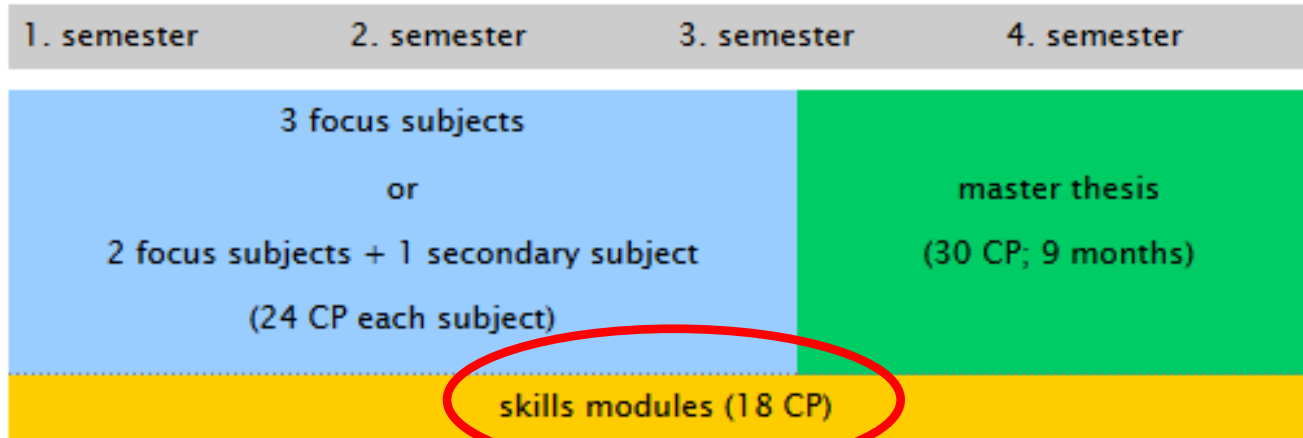
Module components

Laboratory course (6 weeks) with seminar: Molecular Ecology and Evolutionary Biology of social insects

Module examination

Portfolio examination (graded)





- Communication Skills (6 CP)
- Job Skills (6 CP)
- Research Skills (6 CP)



Skills Modules

Communication Skills (6 CP)

Essay (2 CP)	Under supervision, you have to write a scientific essay. This can be accompanying to a seminar or a lecture. Just ask the person in charge of the course.	flexnow
Preparation and presentation of a poster (2 CP)	Under supervision, you have to prepare a scientific poster and present it at a scientific meeting or at the faculty hour. The poster can be prepared accompanying to a seminar or a lab course. Just ask the person in charge of a seminar or ask your supervisor of the lab course.	flexnow
Outline of the master thesis project (2 CP)	Before starting your master thesis, you have to write a master thesis project.	flexnow



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Skills Modules

Job Skills (6 CP)

Excursions
and/or
job qualifying course
and/or
internship

In this module you can choose from different courses.

- botanical / zoological excursions
- industrial excursion
- job qualifying course (e.g. language courses, IT-courses, courses for applications skills, career day for biologists)
- internship "Berufspraktikum" (in companies with activities for biologists)

Excursions:
flexnow

All other:
certificate of participation



Skills Modules

Research Skills (6 CP)

Research Skills course, 3 weeks in a block (after the lecture period of the winter semester)

Course contents:

- Introduction to philosophy and history of science, the scientific method
- Finding a good research question
- Literature research and organization
- Design of experiments and reproducibility
- Data analysis in R
- Visualization
- Introduction to LaTeX
- Scientific writing
- Logic and clarity
- Scientific presentations
- Good scientific practice

flexnow



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INTERNATIONAL MASTER
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Study Program

You have to choose three focus subjects, or two focus subjects and one secondary subject.

Within the focus or secondary subject you have to choose one theoretical and one practical module.

On request by the student, the oral examination in the theoretical module can be in German.

The skills modules are compulsory.

[Master program – overview \(PDF\)](#)

[Possible course of study](#) (möglicher Studienverlauf) (PDF)

Focus Subjects >

Secondary Subjects >

Skills Modules >

Master Thesis >

Important Links

[Module catalogue \(PDF\)](#)

[Prüfungsordnung – Internationaler – Master – Biologie – final \(PDF\)](#)

[Course overview \(LSF\) – link!](#)



Master Biology / possible course of study

Module		CP
1. Semester		30
Research Skills	Course "Resarch Skills" (3 weeks)	6
Focus Subject I / Theoretical Module	Lecture 1	
Focus Subject I / Theoretical Module	Lecture 2	
Focus Subject I / Theoretical Module	Seminar	2
Focus Subject I / Practical Module	Laboratory course (6 weeks) with seminar	12
Focus Subject I / Theoretical Module	Module examination	10
2. Semester		30
Job Skills	Exkursion <i>and/or</i> Job qualifying course <i>and/or</i> Internship	6
Focus Subject II / Theoretical Module	Lecture 1	
Focus Subject II / Theoretical Module	Lecture 2	
Focus Subject II / Theoretical Module	Seminar	2
Focus Subject II / Practical Module	Laboratory course (6 weeks) with seminar	12
Focus Subject II / Theoretical Module	Module examination	10
3. Semester		30
Focus Subject III / Theoretical Module	Lecture 1	
Focus Subject III / Theoretical Module	Lecture 2	
Focus Subject III / Theoretical Module	Seminar	2
Focus Subject III / Practical Module	Laboratory course (6 weeks) with seminar	12
Focus Subject III / Theoretical Module	Module examination	10
Communication Skills	Outline of the master thesis project	2
Master Thesis		4
4. Semester		30
Communication Skills	Essay	2
Communication Skills	Preparation and presentation of a poster	2
Master Thesis		26

Admission for master thesis

- at least 70 credit points
- three practical modules and
- at least two theoretical modules.



Master Biology → **PhD (postgraduate doctoral degree)**



- Biomedicine
- Cellular Biochemistry and Biophysics
- Molecular Ecology and Evolution
- Neurobiology

Qualification: final grade equal or better than 2,0.

If the minimum grade is not achieved → PhD qualification exam



Questions?

Please contact me per E-Mail (elisabeth.brunner@ur.de) or by Phone: 0941 943 3298