



LUDWIG-
MAXIMILIANS-
UNIVERSITÄT
MÜNCHEN



Program Catalog

Master's degree: Biology (Master of Science, M.Sc.)

(60 ECTS points)

Based on the Examination Regulations from September 21, 2012

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Abbreviations and Explanations

CP	Credit Points, ECTS points
ECTS	European Credit Transfer and Accumulation System
h	hours
SS	summer semester
SWS	hours per week per semester/credit hours
WS	winter semester
WP	elective course (<i>Wahlpflicht</i>)
P	compulsory course (<i>Pflicht</i>)

1. Instructions for the program catalog: The program catalog is a list of formal requirements for the elective courses and modules that are described generically according to subject, and for the mandatory final module. An **Elective Course Catalog** (in Appendix) lists individual courses offered in the master's program, including course instructors, detailed descriptions of course contents and qualification goals. Courses are grouped according to subject, according to lectures, practical courses and seminars (in that order). Practical research courses (lab rotations) are not listed individually since the topics vary according to current topics in faculty research groups.

2. Designated ECTS points. In the program catalog assigned ECTS points are designated as follows: ECTS points that are not listed in parentheses are awarded upon successful completion of the respective graded exam. ECTS points listed in parentheses are for calculation purposes only; these courses do not entail a graded exam.

3. Levels of courses can be either as binding or can be considered as a recommendation, according to the stipulations stated in Appendix 1 in the examination regulations. This is reflected in the terminology used, stating either "designated semester" or "recommended semester", respectively.

4. Applicability to other degree programs: Modules are custom-designed to the Master of Science Biology program and are not transferable as entire modules into other degree programs. Some individual, broadly relevant courses may also be applied to teaching degree or bachelor's degree programs. Individual courses as modular elements are exchangeable with those of other master's programs within the boundaries of respective program regulations.

5. Please note: The program catalog serves as an orientation for intended course of studies. For detailed regulations, please see the official examination regulations under www.biologie.uni-muenchen.de/studium/studiengaenge/master_bio .

Contact

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Application:

http://www.en.biologie.uni-muenchen.de/forstudents/studiengaenge/master_bio11/index.html#Application

Master of Science, Biology (60 ECTS points)

Program structure

The Master of Science Biology 60 ECTS program is designed to accommodate students holding an 8-semester bachelor's degree, allowing completion of the master's degree within the conventional duration of a total of 10 semesters (Bachelor + Master). Students further deepen their knowledge through specialized courses taught by the highly qualified staff in the Faculty of Biology. The advantage of the master's program is its flexibility; the goal of the program is to allow as much freedom as possible in the choice of subjects and the organization of courses. The curriculum is kept as research-oriented as possible by offering a broad spectrum of practical courses, research courses and requiring a final research project with a written master's thesis.

Students compose their own curriculum (with few restrictions) according to their interest and course availability. The curriculum is based on elective modules (defined credit-point units composed of subject-related courses) that are offered in Anthropology, Cell Biology, Genetics, Human Biology, Microbiology, Plant Sciences, Systematic Botany and Zoology.

Module structure

The master's program extends over two semesters during which time a total of 60 ECTS points are acquired. In 2 semesters, students select courses/modules to acquire 30 ECTS points per semester. Modules in various subjects are available with 9, 15, or 21 ECTS points (see Figure 1). Interdisciplinary modules worth 3 or 6 ECTS points are also offered. During the 2-semester program, students complete an 18 ECTS points master's final module that includes a 15 ECTS points master's thesis.

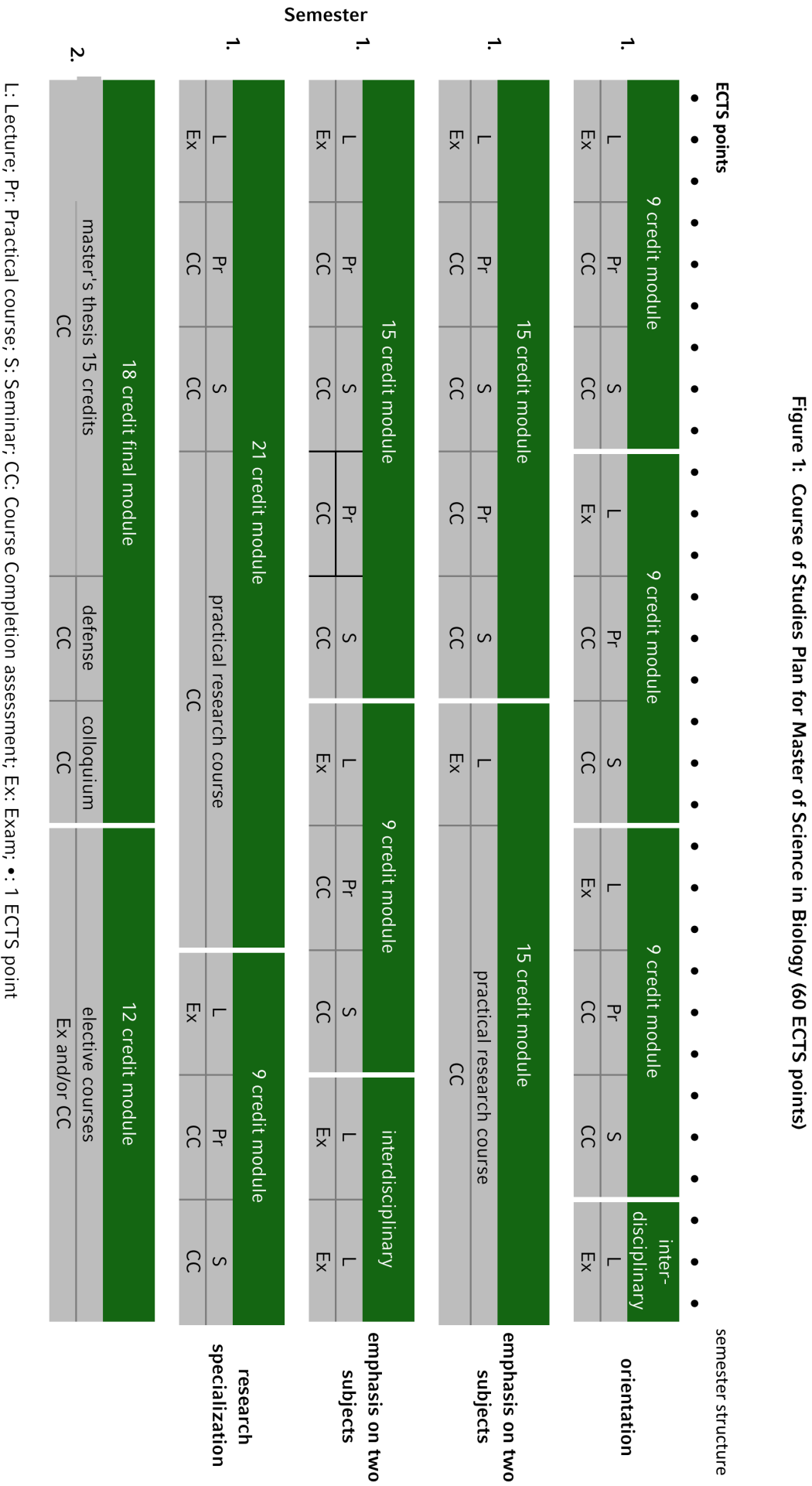
Modules may contain only one lecture. 9-point modules generally include a lecture (3 points), a practical course (3 points), and a seminar (3 points) or include a lecture and a long practical course (6 points). 15-point modules may include two long practical courses and a lecture or a practical research course (12 points) and a lecture in the respective field of study. 21-point modules provide a combination of a practical research course with a 9-point module. For a general overview of module structure, please see Figure 1.

Module assessment

Modules are assessed according to the successful completion of their individual component courses; there are no module exams per se. In an attempt to reduce the number of exams and the student workload toward the end of the semester, different forms of assessment have been implemented (here a general summary):

Course type	Assessment form
Lecture	Graded exam
Seminar	Oral presentation
Practical course	Lab report

For a detailed regimen of different forms of assessment, please see examination regulations.



Module: P 1 Final Master Module

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Required course	Rotation	Class attendance	Preparation	ECTS
Colloquium	P 1.1 Master's Colloquium 1	WS	15 h (1 SWS)	15 h	1
Colloquium	P 1.2 Master's Colloquium 2	SS	15 h (1 SWS)	15 h	1
Master's Thesis	P 1.3 Master's Thesis	SS	-	450 h	15
Defense	P 1.4 Defense	SS	-	30 h	1

Course type	Elective course	Rotation	Class attendance	Preparation	ECTS
Lecture	P 1.5.1 Lecture in Biology 1	SS	30 h (2 SWS)	60 h	3
Lecture	P 1.5.2 Lecture in Biology 2	SS	30 h (2 SWS)	60 h	3
Lecture	P 1.5.3 Lecture in Biology 3	SS	30 h (2 SWS)	60 h	3
Seminar	P 1.5.4 Seminar in Biology	SS	30 h (2 SWS)	60 h	3
Practical course	P 1.5.5 Practical course in Biology 1	SS	45 h (3 SWS)	45 h	3
Practical course	P 1.5.6 Practical course in Biology 2	SS	45 h (3 SWS)	45 h	3
Practical course	P 1.5.7 Practical course in Biology 3	SS	90 h (6 SWS)	90 h	6
Practical course	P 1.5.8 Practical research course in Biology	SS	450 h (30 SWS)	0 h	12

In this module a total of 30 ECTS points must be accrued, 12 ECTS points of which are elective courses. Class attendance is 10-32 SWS; total time, including preparation time, is approx. 900 h.

Type of module Mandatory module with mandatory and elective courses.

Elective guidelines For elective courses in P1 module the following applies: elective courses totaling 12 ECTS points are to be chosen from course listings in the elective course catalog.

Entry requirements Admission to the 60 ECTS points program (completed 8 semester bachelor's degree).

Level Designated semester: 1

Duration The final module spans 2 semesters.

Content The master's final module is composed of a master's thesis, an oral defense, attendance in 20 scientific talks in addition

to elective courses in a related field.

Qualification goals

This module requires all key qualification skills, in particular independent experimental work under supervision of an instructor/advisor.

The module requires skills in organization, strategic methodological planning and performance of experiments, documentation and interpretation of results, in addition to completion of a final thesis written according to international scientific standards. The oral defense tests communication skills, basic and applied knowledge in the given subject, and ability to explain specific processes in a broader context.

Grading

The module is graded according to graded master's thesis.

Pass/fail conditions for ECTS points

ECTS points are awarded according to successful completion of colloquium and disputation, passing grade of written master's thesis and successful completion of elective courses.

Responsible person

Qualified supervisor from the Faculty of Biology.

Language

Master's thesis may be written in German or English.

Other information

Module: WP 1 Specialized courses in Plant Sciences 1

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Required course	Rotation	Class attendance	Preparation	ECTS
Lecture	WP 1.1 Specialized lecture in Plant Sciences	WS	30 h (2 SWS)	60 h	3
Practical course	WP 1.2 Specialized practical course in Plant Sciences	WS	45 h (3 SWS)	45 h	(3)
Seminar	WP 1.3 Seminar accompanying Specialized practical course in Plant Sciences	WS	30 h (2 SWS)	60 h	(3)

This module is comprised of 9 ECTS points. Class attendance is 7 SWS; total time, including preparation time, is 270 h.

Type of module

Elective module with mandatory courses.

Elective guidelines

The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective course catalog). The sum of ECTS points is oriented to 30 ECTS points per semester.

Entry requirements

none

Level

Recommended semester: 1

Duration

The module spans 1 semester.

Content

The 9 point module includes a lecture, seminar and an instructed practical course in Plant Sciences.

Qualification goals

This basic module aims at providing students with theoretical knowledge, training in researching, presenting and critically discussing a topic, as well as practical experience in application and interpretation of methods and concepts. Teamwork, learning strategies, organizational and communication skills are required, and serve as the basis for the master's thesis and future professional roles.

Grading

The module is graded according to lecture grade.

Pass/fail conditions for ECTS points

ECTS points are awarded for individual courses according to successful completion; module completion is dependent on

successful completion of individual elements.

Responsible persons

Prof. Dr. Dario Leister, Prof. Dr. Jürgen Soll (Chairs, Plant Sciences division). Teaching responsibilities for individual courses are listed in elective course catalog.

Language

English, with exception of courses also offered for teaching and bachelor's degrees.

Other information

Module: WP 2 Specialized courses in Plant Sciences 2

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Required course	Rotation	Class attendance	Preparation	ECTS
Lecture	WP 2.1 Specialized lecture in Plant Sciences	WS	30 h (2 SWS)	60 h	3

Course type	Elective course	Rotation	Class attendance	Preparation	ECTS
Practical course	WP 2.2.1 Specialized practical course in Plant Sciences	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 2.2.2 Seminar accompanying specialized practical course in Plant Sciences	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 2.2.3 Specialized practical course in molecular Plant Sciences	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 2.2.4 Seminar accompanying specialized practical course in molecular Plant Sciences	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 2.2.5 Specialized practical research course in Plant Sciences	WS	450 h (30 SWS)	0 h	12
Practical course	WP 2.2.6 Specialized practical course in Cell Biology of plants	WS	90 h (6 SWS)	90 h	6

- May only be chosen with accompanying practical course.

In this module a total of 15 ECTS points must be accrued, 12 ECTS points of which are elective courses. Class attendance is 12-32 SWS; total time, including preparation time, is approx. 450 h.

Type of module	Elective module with mandatory and elective courses.
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Elective guidelines	The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective course catalog). The sum of ECTS points is oriented to 30 ECTS points per semester.
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For elective courses in this module the following applies: elective courses totaling 12 ECTS points are to be chosen from Plant

Sciences listings in the elective course catalog.

Entry requirements

none

Level

Recommended semester: 1

Duration

The module spans 1 semester.

Content

The 15 point module includes one lecture and a combination of basic and molecular topics of Plant Sciences-related seminar(s) and/or instructed practical courses or an independent practical research course.

Qualification goals

The module aims to provide third semester students with theoretical knowledge and opportunities for its transfer and application in practical research. The practical research course, in particular, requires independent planning, organization and performance of experiments, and interpretation and documentation of results. Seminars provide exposure to and critical evaluation of relevant literature on Plant Sciences and training in presentation and communication skills.

Grading

The module is graded according to lecture grade.

Pass/fail conditions for ECTS points

ECTS points are awarded for individual courses according to successful completion; module completion is dependent on successful completion of individual elements.

Responsible persons

Prof. Dr. Dario Leister, Prof. Dr. Jürgen Soll (Chairs, Plant Sciences division). Teaching responsibilities for individual courses are listed in elective course catalog.

Language

English, with exception of courses also offered for teaching and bachelor's degrees.

Other information

Module: WP 3 Specialized courses in Plant Sciences 3

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Required course	Rotation	Class attendance	Preparation	ECTS
Lecture	WP 3.1 Specialized lecture in Plant Sciences	WS	30 h (2 SWS)	60 h	3
Course type	Elective course	Rotation	Class attendance	Preparation	ECTS
Practical course	WP 3.2.1 Specialized practical course in Plant Sciences	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 3.2.2 Seminar accompanying Specialized practical course in Plant Sciences	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 3.2.3 Specialized practical course in molecular Plant Sciences	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 3.2.4 Seminar accompanying Specialized practical course in molecular Plant Sciences	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 3.2.5 Specialized practical research course in Plant Sciences	WS	450 h (30 SWS)	0 h	12
Practical course	WP 3.2.6 Specialized practical course in Cell Biology of plants	WS	90 h (6 SWS)	90 h	6
Practical course	WP 3.2.7 Specialized practical course: Methods in Plant Sciences	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 3.2.8 Seminar accompanying specialized practical course: Methods in Plant Sciences	WS	30 h (2 SWS)	60 h	(3)

* May only be chosen with accompanying practical course.

In this module a total of 21 ECTS points must be accrued, 18 ECTS points of which are elective courses. Class attendance is 17-38 SWS; total time, including preparation time, is approx. 630 h.

Type of module

Elective module with mandatory and elective courses.

Elective guidelines	<p>The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective course catalog). The sum of ECTS points is oriented to 30 ECTS points per semester.</p> <p>For elective courses in this module the following applies: elective courses totaling 18 ECTS points are to be chosen from Plant Sciences listings in the elective course catalog.</p>
Entry requirements	none
Level	Recommended semester: 1
Duration	The module spans 1 semester.
Content	The 21 point module includes one lecture and a combination of basic, molecular, and Plant Sciences-related seminar(s) and/or instructed practical courses or an independent practical research course.
Qualification goals	The module aims to provide students with theoretical knowledge and opportunities for its transfer and application in practical research. The practical research course, in particular, requires independent planning, organization and performance of experiments, and interpretation and documentation of results. Seminars provide exposure to and critical evaluation of relevant literature in Plant Sciences, and training in presentation and communication skills.
Grading	The module is graded according to lecture grade.
Pass/fail conditions for ECTS points	ECTS points are awarded for individual courses according to successful completion; module completion is dependent on successful completion of individual elements.
Responsible persons	Prof. Dr. Dario Leister, Prof. Dr. Jürgen Soll (Chairs, Plant Sciences division). Teaching responsibilities for individual courses are listed in elective course catalog.
Language	English, with exception of courses also offered for teaching and bachelor's degrees.
Other information	

Module: WP 4 Specialized courses in Genetics 1

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Required course	Rotation	Class attendance	Preparation	ECTS
Lecture	WP 4.1 Specialized lecture in Genetics	WS	30 h (2 SWS)	60 h	3
Practical course	WP 4.2 Specialized practical course in Genetics	WS	45 h (3 SWS)	45 h	(3)
Seminar	WP 4.3 Seminar accompanying Specialized practical course in Genetics	WS	30 h (2 SWS)	60 h	(3)

This module is comprised of 9 ECTS points. Class attendance is 7 SWS; total time, including preparation time, is 270 h.

Type of module

Elective module with mandatory courses.

Elective guidelines

The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective course catalog). The sum of ECTS points is oriented to 30 ECTS points per semester.

Entry requirements

none

Level

Recommended semester: 1

Duration

The module spans 1 semester.

Content

The 9 point module includes a lecture, seminar and an instructed practical course in Genetics.

Qualification goals

This basic module aims at providing students with theoretical knowledge, training in researching, presenting and critically discussing a topic, as well as practical experience in application and interpretation of methods and concepts. Teamwork, learning strategies, organizational and communication skills are required, and serve as the basis for the master's thesis and future professional roles.

Grading

The module is graded according to lecture grade.

Pass/fail conditions for ECTS

ECTS points are awarded for individual courses according to

points successful completion; module completion is dependent on successful completion of individual elements.

Responsible person Prof. Dr. Martin Parniske (Chair, Genetics division). Teaching responsibilities for individual courses are listed in elective course catalog.

Language English, with exception of courses also offered for teaching and bachelor's degrees.

Other information

Module: WP 5 Specialized courses in Genetics 2

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Required course	Rotation	Class attendance	Preparation	ECTS
Lecture	WP 5.1 Specialized lecture in Genetics	WS	30 h (2 SWS)	60 h	3

Course type	Elective course	Rotation	Class attendance	Preparation	ECTS
Practical course	WP 5.2.1 Specialized practical course in Genetics	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 5.2.2 Seminar accompanying specialized practical course in Genetics	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 5.2.3 Specialized practical course in molecular Genetics	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 5.2.4 Seminar accompanying specialized practical course in molecular Genetics	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 5.2.5 Specialized practical research course in Genetics	WS	450 h (30 SWS)	0 h	12
Practical course	WP 5.2.6 Specialized practical course in molecular	WS	90 h (6 SWS)	90 h	6

* May only be chosen with accompanying practical course.

In this module a total of 15 ECTS points must be accrued, 12 ECTS points of which are elective courses. Class attendance is 12-32 SWS; total time, including preparation time, is approx. 450 h.

Type of module

Elective module with mandatory and elective courses.

Elective guidelines

The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective course catalog). The sum of ECTS points is oriented to 30 ECTS points per semester.

For elective courses in this module the following applies: elective courses totaling 12 ECTS points are to be chosen from Plant Sciences listings in the elective course catalog.

Entry requirements

none

Level	Recommended semester: 1
Duration	The module spans 1 semester.
Content	The 15 point module includes one lecture and a combination of basic and molecular topics of Genetics-related seminar(s) and/or instructed practical courses or an independent practical research course.
Qualification goals	The module aims to provide students with theoretical knowledge and opportunities for its transfer and application in practical research. The practical research course, in particular, requires independent planning, organization and performance of experiments, and interpretation and documentation of results. Seminars provide exposure to and critical evaluation of relevant literature on Genetics and training in presentation and communication skills.
Grading	The module is graded according to lecture grade.
Pass/fail conditions for ECTS points	ECTS points are awarded for individual courses according to successful completion; module completion is dependent on successful completion of individual elements.
Responsible person	Prof. Dr. Martin Parniske (Chair, Genetics division). Teaching responsibilities for individual courses are listed in elective course catalog.
Language	English, with exception of courses also offered for teaching and bachelor's degrees.
Other information	

Module: WP 6 Specialized courses in Genetics 3

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Required course	Rotation	Class attendance	Preparation	ECTS
Lecture	WP 6.1 Specialized lecture in Genetics	WS	30 h (2 SWS)	60 h	3
Course type	Elective course	Rotation	Class attendance	Preparation	ECTS
Practical course	WP 6.2.1 Specialized practical course in Genetics	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 6.2.2 Seminar accompanying specialized practical course in Genetics	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 6.2.3 Specialized practical course in molecular Genetics	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 6.2.4 Seminar accompanying specialized practical course in molecular Genetics	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 6.2.5 Specialized practical research course in Genetics	WS	450 h (30 SWS)	0 h	12
Practical course	WP 6.2.6 Specialized practical course in molecular	WS	90 h (6 SWS)	90 h	6
Practical course	WP 6.2.7 Specialized practical course: Methods in Genetics	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 6.2.8 Seminar accompanying specialized practical course: Methods in Genetics	WS	30 h (2 SWS)	60 h	(3)

* May only be chosen with accompanying practical course.

In this module a total of 21 ECTS points must be accrued, 18 ECTS points of which are elective courses. Class attendance is 17-38 SWS; total time, including preparation time, is approx. 630 h.

Type of module

Elective module with mandatory and elective courses.

Elective guidelines

The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective course catalog). The sum of ECTS points is oriented to 30 ECTS

points per semester.

For elective courses in this module the following applies: elective courses totaling 18 ECTS points are to be chosen from Genetics listings in the elective course catalog.

Entry requirements	none
Level	Recommended semester: 1
Duration	The module spans 1 semester.
Content	The 21 point module includes one lecture and a combination of basic, molecular, and Genetics -related seminar(s) and/or instructed practical courses or an independent practical research course.
Qualification goals	The module aims to provide students with theoretical knowledge and opportunities for its transfer and application in practical research. The practical research course, in particular, requires independent planning, organization and performance of experiments, and interpretation and documentation of results. Seminars provide exposure to and critical evaluation of relevant literature on Genetics, and training in presentation and communication skills.
Grading	The module is graded according to lecture grade.
Pass/fail conditions for ECTS points	ECTS points are awarded for individual courses according to successful completion; module completion is dependent on successful completion of individual elements.
Responsible person	Prof. Dr. Martin Parniske (Chair, Genetics division). Teaching responsibilities for individual courses are listed in elective course catalog.
Language	English, with exception of courses also offered for teaching and bachelor's degrees.
Other information	

Module: WP 7 Specialized courses in Human Biology 1

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Required course	Rotation	Class attendance	Preparation	ECTS
Lecture	WP 7.1 Specialized lecture in Human Biology	WS	30 h (2 SWS)	60 h	3
Practical course	WP 7.2 Specialized practical course in Human Biology	WS	45 h (3 SWS)	45 h	(3)
Seminar	WP 7.3 Seminar accompanying specialized practical course in Human Biology	WS	30 h (2 SWS)	60 h	(3)

This module is comprised of 9 ECTS points. Class attendance is 7 SWS; total time, including preparation time, is 270 h.

Type of module

Elective module with mandatory courses.

Elective guidelines

The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective course catalog). The sum of ECTS points is oriented to 30 ECTS points per semester.

Entry requirements

none

Level

Recommended semester: 1

Duration

The module spans 1 semester.

Content

The 9 point module includes a lecture, seminar and an instructed practical course in Human Biology.

Qualification goals

This basic module aims at providing students with theoretical knowledge, training in researching, presenting and critically discussing a topic, as well as practical experience in application and interpretation of methods and concepts. Teamwork, learning strategies, organizational and communication skills are required, and serve as the basis for the master's thesis and future professional roles.

Grading

The module is graded according to lecture grade.

Pass/fail conditions for ECTS

ECTS points are awarded for individual courses according to

points

successful completion; module completion is dependent on successful completion of individual elements.

Responsible person

Prof. Dr. Heinrich Leonhardt (Chair, Human Biology division). Teaching responsibilities for individual courses are listed in elective course catalog.

Language

English, with exception of courses also offered for teaching and bachelor's degrees.

Other information

Module: WP 8 Specialized courses in Human Biology 2

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Required course	Rotation	Class attendance	Preparation	ECTS
Lecture	WP 8.1 Specialized lecture in Human Biology	WS	30 h (2 SWS)	60 h	3
Course type	Elective course	Rotation	Class attendance	Preparation	ECTS
Practical course	WP 8.2.1 Specialized practical course in Human Biology	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 8.2.2 Seminar accompanying Specialized practical course in Human Biology	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 8.2.3 Specialized practical course in molecular Human Biology	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 8.2.4 Seminar accompanying specialized practical course in molecular Human Biology	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 8.2.5 Specialized practical research course in Human Biology	WS	450 h (30 SWS)	0 h	12
Practical course	WP 8.2.6 Cell Biology-oriented practical course in Human Biology	WS	90 h (6 SWS)	90 h	6

* May only be chosen with accompanying practical course.

In this module a total of 15 ECTS points must be accrued, 12 ECTS points of which are elective courses. Class attendance is 12-32 SWS; total time, including preparation time, is approx. 450 h.

Type of module

Elective module with mandatory and elective courses.

Elective guidelines

The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective course catalog). The sum of ECTS points is oriented to 30 ECTS points per semester.

For elective courses in this module the following applies: elective

courses totaling 12 ECTS points are to be chosen from Plant Sciences listings in the elective course catalog.

Entry requirements none

Level Recommended semester: 1

Duration The module spans 1 semester.

Content The 15 point module includes one lecture and a combination of basic and molecular topics of Human Biology-related seminar(s) and/or instructed practical courses or an independent practical research course.

Qualification goals The module aims to provide students with theoretical knowledge and opportunities for its transfer and application in practical research. The practical research course, in particular, requires independent planning, organization and performance of experiments, and interpretation and documentation of results. Seminars provide exposure to and critical evaluation of relevant literature on Human Biology and training in presentation and communication skills.

Grading The module is graded according to lecture grade.

Pass/fail conditions for ECTS points ECTS points are awarded for individual courses according to successful completion; module completion is dependent on successful completion of individual elements.

Responsible person Prof. Dr. Heinrich Leonhardt (Chair, Human Biology division). Teaching responsibilities for individual courses are listed in elective course catalog.

Language English, with exception of courses also offered for teaching and bachelor's degrees.

Other information

Module: WP 9 Specialized courses in Human Biology 3

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Required course	Rotation	Class attendance	Preparation	ECTS
Lecture	WP 9.1 Specialized lecture in Human Biology	WS	30 h (2 SWS)	60 h	3
Course type	Elective course	Rotation	Class attendance	Preparation	ECTS
Practical course	WP 9.2.1 Specialized practical course in Human Biology	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 9.2.2 Seminar accompanying specialized practical course in Human Biology	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 9.2.3 Specialized practical course in molecular Human Biology	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 9.2.4 Seminar accompanying specialized practical course in molecular Human Biology	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 9.2.5 Specialized practical research in Human Biology	WS	450 h (30 SWS)	0 h	12
Practical course	WP 9.2.6 Cytological practical course in Human Biology	WS	90 h (6 SWS)	90 h	6
Practical course	WP 9.2.7 Specialized practical course: Methods in Human Biology	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 9.2.8 Seminar accompanying specialized practical course: Methods in Human Biology	WS	30 h (2 SWS)	60 h	(3)

* May only be chosen with accompanying practical course.

In this module a total of 21 ECTS points must be accrued, 18 ECTS points of which are elective courses. Class attendance is 17-38 SWS; total time, including preparation time, is approx. 630 h.

Type of module

Elective module with mandatory and elective courses.

Elective guidelines	<p>The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective course catalog). The sum of ECTS points is oriented to 30 ECTS points per semester.</p> <p>For elective courses in this module the following applies: elective courses totaling 18 ECTS points are to be chosen from Human Biology listings in the elective course catalog.</p>
Entry requirements	none
Level	Recommended semester: 1
Duration	The module spans 1 semester.
Content	The 21 point module includes one lecture and a combination of basic, molecular, and Human Biology-related seminar(s) and/or instructed practical courses or an independent practical research course.
Qualification goals	The module aims to provide students with theoretical knowledge and opportunities for its transfer and application in practical research. The practical research course, in particular, requires independent planning, organization and performance of experiments, and interpretation and documentation of results. Seminars provide exposure to and critical evaluation of relevant literature on Human Biology, and training in presentation and communication skills.
Grading	The module is graded according to lecture grade.
Pass/fail conditions for ECTS points	ECTS points are awarded for individual courses according to successful completion; module completion is dependent on successful completion of individual elements.
Responsible person	Prof. Dr. Heinrich Leonhardt (Chair, Human Biology division). Teaching responsibilities for individual courses are listed in elective course catalog.
Language	English, with exception of courses also offered for teaching and bachelor's degrees.
Other information	

Module: WP 10 Specialized courses in Microbiology 1

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Required course	Rotation	Class attendance	Preparation	ECTS
Lecture	WP 10.1 Specialized lecture in Microbiology	WS	30 h (2 SWS)	60 h	3
Practical course	WP 10.2 Specialized practical course in Microbiology	WS	45 h (3 SWS)	45 h	(3)
Seminar	WP 10.3 Seminar accompanying specialized practical course in Microbiology	WS	30 h (2 SWS)	60 h	(3)

This module is comprised of 9 ECTS points. Class attendance is 7 SWS; total time, including preparation time, is 270 h.

Type of module

Elective module with mandatory courses.

Elective guidelines

The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective course catalog). The sum of ECTS points is oriented to 30 ECTS points per semester.

Entry requirements

none

Level

Recommended semester: 1

Duration

The module spans 1 semester.

Content

The 9 point module includes a lecture, seminar and an instructed practical course in Microbiology.

Qualification goals

This basic module aims at providing students with theoretical knowledge, training in researching, presenting and critically discussing a topic, as well as practical experience in application and interpretation of methods and concepts. Teamwork, learning strategies, organizational and communication skills are required, and serve as the basis for the master's thesis and future professional roles.

Grading

The module is graded according to lecture grade.

Pass/fail conditions for ECTS points

ECTS points are awarded for individual courses according to successful completion; module completion is dependent on successful completion of individual elements.

Responsible person

Prof. Dr. Kirsten Jung (Chair, Microbiology division).
Teaching responsibilities for individual courses are listed in elective course catalog.

Language

English, with exception of courses also offered for teaching and bachelor's degrees.

Other information

Module: WP 11 Specialized courses in Microbiology 2

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Required course	Rotation	Class attendance	Preparation	ECTS
Lecture	WP 11.1 Specialized lecture in Microbiology	WS	30 h (2 SWS)	60 h	3

Course type	Elective course	Rotation	Class attendance	Preparation	ECTS
Practical course	WP 11.2.1 Specialized practical course in Microbiology	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 11.2.2 Seminar accompanying specialized practical course in Microbiology	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 11.2.3 Specialized practical course in molecular, cytological Microbiology	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 11.2.4 Seminar accompanying specialized practical course in molecular, cytological Microbiology	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 11.2.5 Specialized practical research course in Microbiology	WS	450 h (30 SWS)	0 h	12
Practical course	WP 11.2.6 Cytological, molecular practical course in Microbiology	WS	90 h (6 SWS)	90 h	6

* May only be chosen with accompanying practical course.

In this module a total of 15 ECTS points must be accrued, 12 ECTS points of which are elective courses. Class attendance is 12-32 SWS; total time, including preparation time, is approx. 450 h.

Type of module	Elective module with mandatory and elective courses.
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Elective guidelines	The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective course catalog). The sum of ECTS points is oriented to 30 ECTS points per semester.
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For elective courses in this module the following applies: elective

courses totaling 12 ECTS points are to be chosen from Plant Sciences listings in the elective course catalog.

Entry requirements none

Level Recommended semester: 1

Duration The module spans 1 semester.

Content The 15 point module includes one lecture and a combination of basic and molecular topics of Microbiology -related seminar(s) and/or instructed practical courses or an independent practical research course.

Qualification goals The module aims to provide students with theoretical knowledge and opportunities for its transfer and application in practical research. The practical research course, in particular, requires independent planning, organization and performance of experiments, and interpretation and documentation of results. Seminars provide exposure to and critical evaluation of relevant literature on Microbiology and training in presentation and communication skills.

Grading The module is graded according to lecture grade.

Pass/fail conditions for ECTS points ECTS points are awarded for individual courses according to successful completion; module completion is dependent on successful completion of individual elements.

Responsible person Prof. Dr. Kirsten Jung (Chair, Microbiology division). Teaching responsibilities for individual courses are listed in elective course catalog.

Language English, with exception of courses also offered for teaching and bachelor's degrees.

Other information

Module: WP 12 Specialized courses in Microbiology 3

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Required course	Rotation	Class attendance	Preparation	ECTS
Lecture	WP 12.1 Specialized lecture in Microbiology	WS	30 h (2 SWS)	60 h	3

Course type	Elective course	Rotation	Class attendance	Preparation	ECTS
Practical course	WP 12.2.1 Specialized practical course in Microbiology	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 12.2.2 Seminar accompanying specialized practical course in Microbiology	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 12.2.3 Specialized practical course in molecular and cell-biological Microbiology	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 12.2.4 Seminar accompanying specialized practical course in molecular and cell-biological Microbiology	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 12.2.5 Specialized practical research in Microbiology	WS	450 h (30 SWS)	0 h	12
Practical course	WP 12.2.6 Molecular and cell-biological practical course in Microbiology	WS	90 h (6 SWS)	90 h	6
Practical course	WP 12.2.7 Specialized practical course: Methods in Microbiology	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 12.2.8 Seminar accompanying specialized practical course: Methods in Microbiology	WS	30 h (2 SWS)	60 h	(3)

* May only be chosen with accompanying practical course.

In this module a total of 21 ECTS points must be accrued, 18 ECTS points of which are elective courses. Class attendance is 17-38 SWS; total time, including preparation time, is approx. 630 h.

Type of module	Elective module with mandatory and elective courses.
Elective guidelines	<p>The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective course catalog). The sum of ECTS points is oriented to 30 ECTS points per semester.</p> <p>For elective courses in this module the following applies: elective courses totaling 18 ECTS points are to be chosen from Microbiology listings in the elective course catalog.</p>
Entry requirements	none
Level	Recommended semester: 1
Duration	The module spans 1 semester.
Content	The 21 point module includes one lecture and a combination of basic, molecular, and Microbiology -related seminar(s) and/or instructed practical courses or an independent practical research course.
Qualification goals	The module aims to provide students with theoretical knowledge and opportunities for its transfer and application in practical research. The practical research course, in particular, requires independent planning, organization and performance of experiments, and interpretation and documentation of results. Seminars provide exposure to and critical evaluation of relevant literature in Microbiology, and training in presentation and communication skills.
Grading	The module is graded according to lecture grade.
Pass/fail conditions for ECTS points	ECTS points are awarded for individual courses according to successful completion; module completion is dependent on successful completion of individual elements.
Responsible person	Prof. Dr. Kirsten Jung (Chair, Microbiology division). Teaching responsibilities for individual courses are listed in elective course catalog.
Language	English, with exception of courses also offered for teaching and bachelor's degrees.
Other information	

Module: WP 13 Specialized courses in Cell Biology 1

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Required course	Rotation	Class attendance	Preparation	ECTS
Lecture	WP 13.1 Specialized lecture in Cell Biology	WS	30 h (2 SWS)	60 h	3
Practical course	WP 13.2 Specialized practical course in Cell Biology	WS	45 h (3 SWS)	45 h	(3)
Seminar	WP 13.3 Seminar accompanying specialized practical course in Cell Biology	WS	30 h (2 SWS)	60 h	(3)

This module is comprised of 9 ECTS points. Class attendance is 7 SWS; total time, including preparation time, is 270 h.

Type of module

Elective module with mandatory courses.

Elective guidelines

The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective course catalog). The sum of ECTS points is oriented to 30 ECTS points per semester.

Entry requirements

none

Level

Recommended semester: 1

Duration

The module spans 1 semester.

Content

The 9 point module includes a lecture, seminar and an instructed practical course in Cell Biology.

Qualification goals

This basic module aims at providing students with theoretical knowledge, training in researching, presenting and critically discussing a topic, as well as practical experience in application and interpretation of methods and concepts. Teamwork, learning strategies, organizational and communication skills are required, and serve as the basis for the master's thesis and future professional roles.

Grading

The module is graded according to lecture grade.

Pass/fail conditions for ECTS

ECTS points are awarded for individual courses according to

points successful completion; module completion is dependent on successful completion of individual elements.

Responsible person Prof. Dr. Barbara Conradt (Chair, Cell and Developmental Biology division). Teaching responsibilities for individual courses are listed in elective course catalog.

Language English, with exception of courses also offered for teaching and bachelor's degrees.

Other information

Module: WP 14 Specialized courses in Cell Biology 2

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Required course	Rotation	Class attendance	Preparation	ECTS
Lecture	WP 14.1 Specialized lecture in Cell Biology	WS	30 h (2 SWS)	60 h	3
Course type	Elective course	Rotation	Class attendance	Preparation	ECTS
Practical course	WP 14.2.1 Specialized practical course in Cell Biology	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 14.2.2 Seminar accompanying specialized practical course in Cell Biology	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 14.2.3 Specialized practical course in molecular Cell Biology	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 14.2.4 Seminar accompanying specialized practical course in molecular Cell Biology	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 14.2.5 Specialized practical research in Cell Biology	WS	450 h (30 SWS)	0 h	12
Practical course	WP 14.2.6 Practical course in Cell Biology	WS	90 h (6 SWS)	90 h	6

* May only be chosen with accompanying practical course.

In this module a total of 15 ECTS points must be accrued, 12 ECTS points of which are elective courses. Class attendance is 12-32 SWS; total time, including preparation time, is approx. 450 h.

Type of module

Elective module with mandatory and elective courses.

Elective guidelines

The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective course catalog). The sum of ECTS points is oriented to 30 ECTS points per semester.

For elective courses in this module the following applies: elective courses totaling 12 ECTS points are to be chosen from Plant Sciences listings in the elective course catalog.

Entry requirements	none
Level	Recommended semester: 1
Duration	The module spans 1 semester.
Content	The 15 point module includes one lecture and a combination of basic and molecular topics of Cell Biology -related seminar(s) and/or instructed practical courses or an independent practical research course.
Qualification goals	The module aims to provide students with theoretical knowledge and opportunities for its transfer and application in practical research. The practical research course, in particular, requires independent planning, organization and performance of experiments, and interpretation and documentation of results. Seminars provide exposure to and critical evaluation of relevant literature in Cell Biology and training in presentation and communication skills.
Grading	The module is graded according to lecture grade.
Pass/fail conditions for ECTS points	ECTS points are awarded for individual courses according to successful completion; module completion is dependent on successful completion of individual elements.
Responsible person	Prof. Dr. Barbara Conradt (Chair, Cell and Developmental Biology division). Teaching responsibilities for individual courses are listed in elective course catalog.
Language	English, with exception of courses also offered for teaching and bachelor's degrees.
Other information	

Module: WP 15 Specialized courses in Cell Biology 3

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Required course	Rotation	Class attendance	Preparation	ECTS
Lecture	WP 15.1 Specialized lecture in Cell Biology	WS	30 h (2 SWS)	60 h	3
Course type	Elective course	Rotation	Class attendance	Preparation	ECTS
Practical course	WP 15.2.1 Specialized practical course in Cell Biology	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 15.2.2 Seminar accompanying specialized practical course in Cell Biology	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 15.2.3 Specialized practical course in molecular Cell Biology	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 15.2.4 Seminar accompanying specialized practical course in molecular Cell Biology	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 15.2.5 Specialized practical research course in Cell Biology	WS	450 h (30 SWS)	0 h	12
Practical course	WP 15.2.6 Practical course der Cell Biology	WS	90 h (6 SWS)	90 h	6
Practical course	WP 15.2.7 Specialized practical course: Methods in Cell Biology	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 15.2.8 Seminar accompanying specialized practical course: Methods in Cell Biology	WS	30 h (2 SWS)	60 h	(3)

* May only be chosen with accompanying practical course.

In this module a total of 21 ECTS points must be accrued, 18 ECTS points of which are elective courses. Class attendance is 17-38 SWS; total time, including preparation time, is approx. 630 h.

Type of module

Elective module with mandatory and elective courses.

Elective guidelines

The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective

course catalog). The sum of ECTS points is oriented to 30 ECTS points per semester.

For elective courses in this module the following applies: elective courses totaling 18 ECTS points are to be chosen from Cell Biology listings in the elective course catalog.

Entry requirements	none
Level	Recommended semester: 1
Duration	The module spans 1 semester.
Content	The 21 point module includes one lecture and a combination of basic, molecular, and Cell Biology-related seminar(s) and/or instructed practical courses or an independent practical research course.
Qualification goals	The module aims to provide students with theoretical knowledge and opportunities for its transfer and application in practical research. The practical research course, in particular, requires independent planning, organization and performance of experiments, and interpretation and documentation of results. Seminars provide exposure to and critical evaluation of relevant literature in Cell Biology, and training in presentation and communication skills.
Grading	The module is graded according to lecture grade.
Pass/fail conditions for ECTS points	ECTS points are awarded for individual courses according to successful completion; module completion is dependent on successful completion of individual elements.
Responsible person	Prof. Dr. Barbara Conradt (Chair, Cell and Developmental Biology division). Teaching responsibilities for individual courses are listed in elective course catalog.
Language	English, with exception of courses also offered for teaching and bachelor's degrees.

Other information

Module: WP 16 Specialized courses in Zoology 1

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Required course	Rotation	Class attendance	Preparation	ECTS
Lecture	WP 16.1 Specialized lecture in Zoology	WS	30 h (2 SWS)	60 h	3
Practical course	WP 16.2 Specialized practical course in Zoology	WS	45 h (3 SWS)	45 h	(3)
Seminar	WP 16.3 Seminar accompanying specialized practical course in Zoology	WS	30 h (2 SWS)	60 h	(3)

This module is comprised of 9 ECTS points. Class attendance is 7 SWS; total time, including preparation time, is 270 h.

Type of module

Elective module with mandatory courses.

Elective guidelines

The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective course catalog). The sum of ECTS points is oriented to 30 ECTS points per semester.

Entry requirements

none

Level

Recommended semester: 1

Duration

The module spans 1 semester.

Content

The 9 point module includes a lecture, seminar and an instructed practical course in Zoology.

Qualification goals

This basic module aims at providing students with theoretical knowledge, training in researching, presenting and critically discussing a topic, as well as practical experience in application and interpretation of methods and concepts. Teamwork, learning strategies, organizational and communication skills are required, and serve as the basis for the master's thesis and future professional roles.

Grading

The module is graded according to lecture grade.

Pass/fail conditions for ECTS

ECTS points are awarded for individual courses according to

points successful completion; module completion is dependent on successful completion of individual elements.

Responsible person Prof. Dr. Gerhard Haszprunar, Prof. Dr. Matthias Starck (Chairs, Zoology division). Teaching responsibilities for individual courses are listed in elective course catalog.

Language English, with exception of courses also offered for teaching and bachelor's degrees.

Other information

Module: WP 17 Specialized courses in Zoology 2

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Required course	Rotation	Class attendance	Preparation	ECTS
Lecture	WP 17.1 Specialized lecture in Zoology	WS	30 h (2 SWS)	60 h	3

Course type	Elective course	Rotation	Class attendance	Preparation	ECTS
Practical course	WP 17.2.1 Specialized practical course in Zoology	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 17.2.2 Seminar accompanying specialized practical course in Zoology	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 17.2.3 Specialized practical course: Methods in Zoology	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 17.2.4 Seminar accompanying specialized practical course: Methods in Zoology	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 17.2.5 Specialized practical research in Zoology	WS	450 h (30 SWS)	0 h	12
Practical course	WP 17.2.6 Specialized practical course in Zoology	WS	90 h (6 SWS)	90 h	6
Exkursion	WP 17.2.7 Specialized zoological excursion	WS	90 h (6 SWS)	90 h	6

* May only be chosen with accompanying practical course.

In this module a total of 15 ECTS points must be accrued, 12 ECTS points of which are elective courses. Class attendance is 12-32 SWS; total time, including preparation time, is approx. 450 h.

Type of module	Elective module with mandatory and elective courses.
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Elective guidelines	The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective course catalog). The sum of ECTS points is oriented to 30 ECTS points per semester.
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For elective courses in this module the following applies: elective courses totaling 12 ECTS points are to be chosen from Zoology listings in the elective course catalog.

Entry requirements	none
Level	Recommended semester: 1
Duration	The module spans 1 semester.
Content	The 15 point module includes one lecture and a combination of basic and molecular topics of Zoology-related seminar(s) and/or instructed practical courses or an independent practical research course.
Qualification goals	The module aims to provide third semester students with theoretical knowledge and opportunities for its transfer and application in practical research. The practical research course, in particular, requires independent planning, organization and performance of experiments, and interpretation and documentation of results. Seminars provide exposure to and critical evaluation of relevant literature in Zoology and training in presentation and communication skills.
Grading	The module is graded according to lecture grade.
Pass/fail conditions for ECTS points	ECTS points are awarded for individual courses according to successful completion; module completion is dependent on successful completion of individual elements.
Responsible person	Prof. Dr. Gerhard Haszprunar, Prof. Dr. Matthias Starck (Chairs, Zoology division). Teaching responsibilities for individual courses are listed in elective course catalog.
Language	English, with exception of courses also offered for teaching and bachelor's degrees.
Other information	

Module: WP 18 Specialized courses in Zoology 3

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Required course	Rotation	Class attendance	Preparation	ECTS
Lecture	WP 18.1 Specialized lecture in Zoology	WS	30 h (2 SWS)	60 h	3

Course type	Elective course	Rotation	Class attendance	Preparation	ECTS
Practical course	WP 18.2.1 Specialized practical course in Zoology	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 18.2.2 Seminar accompanying specialized practical course in Zoology	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 18.2.3 Specialized practical course: Methods in Zoology	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 18.2.4 Seminar accompanying specialized practical course: Methods in Zoology	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 18.2.5 Specialized practical research in Zoology	WS	450 h (30 SWS)	0 h	12
Practical course	WP 18.2.6 Specialized practical course in Zoology	WS	90 h (6 SWS)	90 h	6
Exkursion	WP 18.2.7 Specialized zoological excursion	WS	90 h (6 SWS)	90 h	6
Exkursion	WP 18.2.8 Specialized zoological excursion	WS	180 h (12 SWS)	180 h	12

* May only be chosen with accompanying practical course.

In this module a total of 21 ECTS points must be accrued, 18 ECTS points of which are elective courses. Class attendance is 18-38 SWS; total time, including preparation time, is approx. 630 h.

Type of module	Elective module with mandatory and elective courses.
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Elective guidelines	The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective course catalog). The sum of ECTS points is oriented to 30 ECTS points per semester.
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For elective courses in this module the following applies: elective

courses totaling 18 ECTS points are to be chosen from Zoology listings in the elective course catalog.

Entry requirements

none

Level

Recommended semester: 1

Duration

The module spans 1 semester.

Content

The 21 point module includes one lecture and a combination of basic, molecular, and Zoology-related seminar(s) and/or instructed practical courses or an independent practical research course.

Qualification goals

The module aims to provide students with theoretical knowledge and opportunities for its transfer and application in practical research. The practical research course, in particular, requires independent planning, organization and performance of experiments, and interpretation and documentation of results. Seminars provide exposure to and critical evaluation of relevant literature in Zoology, and training in presentation and communication skills.

Grading

The module is graded according to lecture grade.

Pass/fail conditions for ECTS points

ECTS points are awarded for individual courses according to successful completion; module completion is dependent on successful completion of individual elements.

Responsible person

Prof. Dr. Gerhard Haszprunar, Prof. Dr. Matthias Starck (Chairs, Zoology division). Teaching responsibilities for individual courses are listed in elective course catalog.

Language

English, with exception of courses also offered for teaching and bachelor's degrees.

Other information

Module: WP 19 Specialized courses in Anthropology 1

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Required course	Rotation	Class attendance	Preparation	ECTS
Lecture	WP 19.1 Specialized lecture in Anthropology	WS	30 h (2 SWS)	60 h	3
Practical course	WP 19.2 Specialized practical course in Anthropology	WS	45 h (3 SWS)	45 h	(3)
Seminar	WP 19.3 Seminar accompanying specialized practical course in Anthropology	WS	30 h (2 SWS)	60 h	(3)

This module is comprised of 9 ECTS points. Class attendance is 7 SWS; total time, including preparation time, is 270 h.

Type of module

Elective module with mandatory courses.

Elective guidelines

The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective course catalog). The sum of ECTS points is oriented to 30 ECTS points per semester.

Entry requirements

none

Level

Recommended semester: 1

Duration

The module spans 1 semester.

Content

The 9 point module includes a lecture, seminar and an instructed practical course in Anthropology.

Qualification goals

This basic module aims at providing students with theoretical knowledge, training in researching, presenting and critically discussing a topic, as well as practical experience in application and interpretation of methods and concepts. Teamwork, learning strategies, organizational and communication skills are required, and serve as the basis for the master's thesis and future professional roles.

Grading

The module is graded according to lecture grade.

Pass/fail conditions for ECTS points

ECTS points are awarded for individual courses according to successful completion; module completion is dependent on successful completion of individual elements.

Responsible person

Prof. Dr. Gisela Grupe (acting Chair, Anthropology division). Teaching responsibilities for individual courses are listed in elective course catalog.

Language

English, with exception of courses also offered for teaching and bachelor's degrees.

Other information

Module: WP 20 Specialized courses in Anthropology 2

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Required course	Rotation	Class attendance	Preparation	ECTS
Lecture	WP 20.1 Specialized lecture in Anthropology	WS	30 h (2 SWS)	60 h	3
Course type	Elective course	Rotation	Class attendance	Preparation	ECTS
Practical course	WP 20.2.1 Specialized practical course in Anthropology	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 20.2.2 Seminar accompanying specialized practical course in Anthropology	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 20.2.3 Specialized practical course: Methods in Anthropology	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 20.2.4 Seminar accompanying specialized practical course: Methods in Anthropology	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 20.2.5 Specialized practical research in Anthropology	WS	450 h (30 SWS)	0 h	12
Practical course	WP 20.2.6 Specialized practical course in Anthropology	WS	90 h (6 SWS)	90 h	6
Exkursion	WP 20.2.7 Specialized anthropological excavation/excursion	WS	90 h (6 SWS)	90 h	6

* May only be chosen with accompanying practical course.

In this module a total of 15 ECTS points must be accrued, 12 ECTS points of which are elective courses. Class attendance is 12-32 SWS; total time, including preparation time, is approx. 450 h.

Type of module

Elective module with mandatory and elective courses.

Elective guidelines

The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective course catalog). The sum of ECTS points is oriented to 30 ECTS points per semester.

For elective courses in this module the following applies: elective courses totaling 12 ECTS points are to be chosen from Anthropology listings in the elective course catalog.

Entry requirements	none
Level	Recommended semester: 1
Duration	The module spans 1 semester.
Content	The 15 point module includes one lecture and a combination of basic and molecular topics of Anthropology-related seminar(s) and/or instructed practical courses or an independent practical research course.
Qualification goals	The module aims to provide third semester students with theoretical knowledge and opportunities for its transfer and application in practical research. The practical research course, in particular, requires independent planning, organization and performance of experiments, and interpretation and documentation of results. Seminars provide exposure to and critical evaluation of relevant literature in Anthropology and training in presentation and communication skills.
Grading	The module is graded according to lecture grade.
Pass/fail conditions for ECTS points	ECTS points are awarded for individual courses according to successful completion; module completion is dependent on successful completion of individual elements.
Responsible person	Prof. Dr. Gisela Grupe (acting Chair, Anthropology division). Teaching responsibilities for individual courses are listed in elective course catalog.
Language	English, with exception of courses also offered for teaching and bachelor's degrees.
Other information	

Module: WP 21 Specialized courses in Anthropology 3

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Required course	Rotation	Class attendance	Preparation	ECTS
Lecture	WP 21.1 Specialized lecture in Anthropology	WS	30 h (2 SWS)	60 h	3
Course type	Elective course	Rotation	Class attendance	Preparation	ECTS
Practical course	WP 21.2.1 Specialized practical course in Anthropology	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 21.2.2 Seminar accompanying specialized practical course in Anthropology	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 21.2.3 Specialized practical course: Methods in Anthropology	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 21.2.4 Seminar accompanying specialized practical course: Methods in Anthropology	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 21.2.5 Specialized practical research course in Anthropology	WS	450 h (30 SWS)	0 h	12
Practical course	WP 21.2.6 Specialized practical course in Anthropology	WS	90 h (6 SWS)	90 h	6
Exkursion	WP 21.2.7 Specialized anthropological excavation/excursion	WS	90 h (6 SWS)	90 h	6
Exkursion	WP 21.2.8 Specialized anthropological excavation/excursion	WS	180 h (12 SWS)	180 h	12

* May only be chosen with accompanying practical course.

In this module a total of 21 ECTS points must be accrued, 18 ECTS points of which are elective courses. Class attendance is 18-38 SWS; total time, including preparation time, is approx. 630 h.

Type of module

Elective module with mandatory and elective courses.

Elective guidelines	<p>The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective course catalog). The sum of ECTS points is oriented to 30 ECTS points per semester.</p> <p>For elective courses in this module the following applies: elective courses totaling 18 ECTS points are to be chosen from Anthropology listings in the elective course catalog.</p>
Entry requirements	none
Level	Recommended semester: 1
Duration	The module spans 1 semester.
Content	The 21 point module includes one lecture and a combination of basic, molecular, and Anthropology-related seminar(s) and/or instructed practical courses or an independent practical research course.
Qualification goals	The module aims to provide students with theoretical knowledge and opportunities for its transfer and application in practical research. The practical research course, in particular, requires independent planning, organization and performance of experiments, and interpretation and documentation of results. Seminars provide exposure to and critical evaluation of relevant literature in Anthropology, and training in presentation and communication skills.
Grading	The module is graded according to lecture grade.
Pass/fail conditions for ECTS points	ECTS points are awarded for individual courses according to successful completion; module completion is dependent on successful completion of individual elements.
Responsible person	Prof. Dr. Gisela Grupe (acting Chair, Anthropology division). Teaching responsibilities for individual courses are listed in elective course catalog.
Language	English, with exception of courses also offered for teaching and bachelor's degrees.
Other information	

Module: WP 22 Specialized courses in Systematic Botany 1

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Required course	Rotation	Class attendance	Preparation	ECTS
Lecture	WP 22.1 Specialized lecture in Systematic Botany	WS	30 h (2 SWS)	60 h	3
Practical course	WP 22.2 Specialized practical course in Systematic Botany	WS	45 h (3 SWS)	45 h	(3)
Seminar	WP 22.3 Seminar accompanying specialized practical course in Systematic Botany	WS	30 h (2 SWS)	60 h	(3)

This module is comprised of 9 ECTS points. Class attendance is 7 SWS; total time, including preparation time, is 270 h.

Type of module

Elective module with mandatory courses.

Elective guidelines

The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective course catalog). The sum of ECTS points is oriented to 30 ECTS points per semester.

Entry requirements

none

Level

Recommended semester: 1

Duration

The module spans 1 semester.

Content

The 9 point module includes a lecture, seminar and an instructed practical course in Systematic Botany.

Qualification goals

This basic module aims at providing students with theoretical knowledge, training in researching, presenting and critically discussing a topic, as well as practical experience in application and interpretation of methods and concepts. Teamwork, learning strategies, organizational and communication skills are required, and serve as the basis for the master's thesis and future professional roles.

Grading

The module is graded according to lecture grade.

Pass/fail conditions for ECTS points

ECTS points are awarded for individual courses according to successful completion; module completion is dependent on successful completion of individual elements.

Responsible person

Prof. Dr. Susanne Renner (Chair, Systematic Botany and Mycology division). Teaching responsibilities for individual courses are listed in elective course catalog.

Language

English, with exception of courses also offered for teaching and bachelor's degrees.

Other information

Module: WP 23 Specialized courses in Systematic Botany 2

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Required course	Rotation	Class attendance	Preparation	ECTS
Lecture	WP 23.1 Specialized lecture in Systematic Botany	WS	30 h (2 SWS)	60 h	3

Course type	Elective course	Rotation	Class attendance	Preparation	ECTS
Practical course	WP 23.2.1 Specialized practical course in Systematic Botany	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 23.2.2 Seminar accompanying specialized practical course in Systematic Botany	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 23.2.3 Specialized practical course: Methods in Systematic Botany	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 23.2.4 Seminar accompanying specialized practical course: Methods in Systematic Botany	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 23.2.5 Specialized practical research in Systematic Botany	WS	450 h (30 SWS)	0 h	12
Practical course	WP 23.2.6 Specialized practical course in Systematic Botany	WS	90 h (6 SWS)	90 h	6
Exkursion	WP 23.2.7 Excursion for systematic Botany	WS	90 h (6 SWS)	90 h	6

* May only be chosen with accompanying practical course.

In this module a total of 15 ECTS points must be accrued, 12 ECTS points of which are elective courses. Class attendance is 12-32 SWS; total time, including preparation time, is approx. 450 h.

Type of module

Elective module with mandatory and elective courses.

Elective guidelines

The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective course catalog). The sum of ECTS points is oriented to 30 ECTS points per semester.

For elective courses in this module the following applies: elective

	courses totaling 12 ECTS points are to be chosen from Systematic Botany listings in the elective course catalog.
Entry requirements	none
Level	Recommended semester: 1
Duration	The module spans 1 semester.
Content	The 15 point module includes one lecture and a combination of basic and molecular topics of Systematic Botany -related seminar(s) and/or instructed practical courses or an independent practical research.
Qualification goals	The module aims to provide students with theoretical knowledge and opportunities for its transfer and application in practical research. The practical research course, in particular, requires independent planning, organization and performance of experiments, and interpretation and documentation of results. Seminars provide exposure to and critical evaluation of relevant literature in Systematic Botany and training in presentation and communication skills.
Grading	The module is graded according to lecture grade.
Pass/fail conditions for ECTS points	ECTS points are awarded for individual courses according to successful completion; module completion is dependent on successful completion of individual elements.
Responsible person	Prof. Dr. Susanne Renner (Chair, Systematic Botany and Mycology division). Teaching responsibilities for individual courses are listed in elective course catalog.
Language	English, with exception of courses also offered for teaching and bachelor's degrees.
Other information	

Module: WP 24 Specialized courses in Systematic Botany 3

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Required course	Rotation	Class attendance	Preparation	ECTS
Lecture	WP 24.1 Specialized lecture in Systematic Botany	WS	30 h (2 SWS)	60 h	3
Course type	Elective course	Rotation	Class attendance	Preparation	ECTS
Practical course	WP 24.2.1 Specialized practical course in Systematic Botany	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 24.2.2 Seminar accompanying specialized practical course in Systematic Botany	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 24.2.3 Specialized practical course: Methods in Systematic Botany	WS	45 h (3 SWS)	45 h	(3)
* Seminar	WP 24.2.4 Seminar accompanying specialized practical course: Methods in Systematic Botany	WS	30 h (2 SWS)	60 h	(3)
Practical course	WP 24.2.5 Specialized practical research course in Systematic Botany	WS	450 h (30 SWS)	0 h	12
Practical course	WP 24.2.6 Specialized practical course in Systematic Botany	WS	90 h (6 SWS)	90 h	6
Exkursion	WP 24.2.7 Excursion for Systematic Botany	WS	90 h (6 SWS)	90 h	6
Exkursion	WP 24.2.8 Excursion for Systematic Botany	WS	180 h (12 SWS)	180 h	12

* May only be chosen with accompanying practical course.

In this module a total of 21 ECTS points must be accrued, 18 ECTS points of which are elective courses. Class attendance is 18-38 SWS; total time, including preparation time, is approx. 630 h.

Type of module

Elective module with mandatory and elective courses.

Elective guidelines

The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective course catalog). The sum of ECTS points is oriented to 30 ECTS

points per semester.

For elective courses in this module the following applies: elective courses totaling 18 ECTS points are to be chosen from Systematic Botany listings in the elective course catalog.

Entry requirements	none
Level	Recommended semester: 1
Duration	The module spans 1 semester.
Content	The 21 point module includes one lecture and a combination of basic, molecular, and Systematic Botany-related seminar(s) and/or instructed practical courses or an independent practical research course.
Qualification goals	The module aims to provide students with theoretical knowledge and opportunities for its transfer and application in practical research. The practical research course, in particular, requires independent planning, organization and performance of experiments, and interpretation and documentation of results. Seminars provide exposure to and critical evaluation of relevant literature on Systematic Botany, and training in presentation and communication skills.
Grading	The module is graded according to lecture grade.
Pass/fail conditions for ECTS points	ECTS points are awarded for individual courses according to successful completion; module completion is dependent on successful completion of individual elements.
Responsible person	Prof. Dr. Susanne Renner (Chair, Systematic Botany and Mycology division). Teaching responsibilities for individual courses are listed in elective course catalog.
Language	English, with exception of courses also offered for teaching and bachelor's degrees.
Other information	

Module: WP 25 Specialized biology-related courses

Program Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Required course	Rotation	Class attendance	Preparation	ECTS
Lecture	WP 25.1 Specialized lecture for biology-related general topics	WS	30 h (2 SWS)	60 h	3
Practical course	WP 25.2 Specialized practical training course	WS	45 h (3 SWS)	45 h	(3)
Seminar	WP 25.3 Seminar in a biology-related general topic	WS	30 h (2 SWS)	60 h	(3)

This module is comprised of 9 ECTS points. Class attendance is 7 SWS; total time, including preparation time, is 270 h.

Type of module Elective module with mandatory courses.

Elective guidelines The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective course catalog). The sum of ECTS points is oriented to 30 ECTS points per semester.

Entry requirements none

Level Recommended semester: 1

Duration The module spans 1 semester.

Content The 9 point module includes a lecture, seminar and an instructed practical course in specialized biology-related courses.

Qualification goals This basic module aims at providing students with theoretical knowledge, training in researching, presenting and critically discussing a topic, as well as practical experience in application and interpretation of methods and concepts. Teamwork, learning strategies, organizational and communication skills are required, and serve as the basis for the master's thesis and future professional roles.

Grading The module is graded according to lecture grade.

Pass/fail conditions for ECTS ECTS points are awarded for individual courses according to

points successful completion; module completion is dependent on successful completion of individual elements.

Responsible person Teaching staff, Faculty of Biology or related Faculty

Language English, with exception of courses also offered for teaching and bachelor's degrees.

Other information

Module: WP 26 Interdisciplinary lectures and seminars in Biology 1

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Elective course	Rotation	Class attendance	Preparation	ECTS
Lecture	WP 26.0.1 Specialized lecture in Plant Sciences	WS	30 h (2 SWS)	60 h	3
Lecture	WP 26.0.2 Specialized lecture: Methods in Plant Sciences	WS	30 h (2 SWS)	60 h	3
Lecture	WP 26.0.3 Specialized lecture in Genetics	WS	30 h (2 SWS)	60 h	3
Lecture	WP 26.0.4 Specialized lecture: Methods in Genetics	WS	30 h (2 SWS)	60 h	3
Lecture	WP 26.0.5 Specialized lecture in Human Biology	WS	30 h (2 SWS)	60 h	3
Lecture	WP 26.0.6 Specialized lecture: Methods in Human Biology	WS	30 h (2 SWS)	60 h	3
Lecture	WP 26.0.7 Specialized lecture in Microbiology	WS	30 h (2 SWS)	60 h	3
Lecture	WP 26.0.8 Specialized lecture: Methods in Microbiology	WS	30 h (2 SWS)	60 h	3
Lecture	WP 26.0.9 Specialized lecture in Cell Biology	WS	30 h (2 SWS)	60 h	3
Lecture	WP 26.0.10 Specialized lecture: Methods in Cell Biology	WS	30 h (2 SWS)	60 h	3
Lecture	WP 26.0.11 Specialized lecture in Zoology	WS	30 h (2 SWS)	60 h	3
Lecture	WP 26.0.12 Specialized lecture: Methods in Zoology	WS	30 h (2 SWS)	60 h	3
Lecture	WP 26.0.13 Specialized lecture in Anthropology	WS	30 h (2 SWS)	60 h	3
Lecture	WP 26.0.14 Specialized lecture: Methods in Anthropology	WS	30 h (2 SWS)	60 h	3
Lecture	WP 26.0.15 Specialized lecture in Systematic Botany	WS	30 h (2 SWS)	60 h	3
Lecture	WP 26.0.16 Specialized lecture: Methods in Systematic Botany	WS	30 h (2 SWS)	60 h	3
Seminar	WP 26.0.17 Student teaching	WS	45 h (3 SWS)	45 h	3

Practical course	WP 26.0.18 Specialized practical training course	WS	45 h (3 SWS)	45 h	3
Seminar	WP 26.0.19 Professional skills	WS	30 h (2 SWS)	60 h	3

This module is comprised of 6 ECTS points, 6 ECTS points of which are elective courses. Class attendance is 4-6 SWS; total time, including preparation time, is 180 h.

Type of module	Elective module with elective courses.
Elective guidelines	<p>The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective course catalog). The sum of ECTS points is oriented to 30 ECTS points per semester.</p> <p>For elective courses in this module the following applies: elective courses totaling 6 ECTS points are to be chosen from listings in the elective course catalog or from other LMU faculty courses.</p>
Entry requirements	none
Level	Recommended semester: 1
Duration	The module spans 1 semester.
Content	This module includes the student's choice of one lecture, a seminar and/or a practical course in one or varying subjects, including student teaching and qualifying courses in professional skills.
Qualification goals	This module allows students to broaden exposure to subjects diverging from their major research interest, and to achieve professional skills.
Grading	The module is graded according to lecture grade.
Pass/fail conditions for ECTS points	ECTS points are awarded for individual courses according to successful completion; module completion is dependent on successful completion of individual elements.
Responsible person	Teaching staff, Faculty of Biology
Language	English, with exception of courses also offered for teaching and bachelor's degrees.
Other information	

Module: WP 27 Interdisciplinary lectures and seminars in Biology 2

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Elective course	Rotation	Class attendance	Preparation	ECTS
Lecture	WP 27.0.1 Specialized lecture in Plant Sciences	WS	30 h (2 SWS)	60 h	3
Lecture	WP 27.0.2 Specialized lecture: Methods in Plant Sciences	WS	30 h (2 SWS)	60 h	3
Lecture	WP 27.0.3 Specialized lecture in Genetics	WS	30 h (2 SWS)	60 h	3
Lecture	WP 27.0.4 Specialized lecture: Methods in Genetics	WS	30 h (2 SWS)	60 h	3
Lecture	WP 27.0.5 Specialized lecture in Human Biology	WS	30 h (2 SWS)	60 h	3
Lecture	WP 27.0.6 Specialized lecture: Methods in Human Biology	WS	30 h (2 SWS)	60 h	3
Lecture	WP 27.0.7 Specialized lecture in Microbiology	WS	30 h (2 SWS)	60 h	3
Lecture	WP 27.0.8 Specialized lecture: Methods in Microbiology	WS	30 h (2 SWS)	60 h	3
Lecture	WP 27.0.9 Specialized lecture in Cell Biology	WS	30 h (2 SWS)	60 h	3
Lecture	WP 27.0.10 Specialized lecture: Methods in Cell Biology	WS	30 h (2 SWS)	60 h	3
Lecture	WP 27.0.11 Specialized lecture in Zoology	WS	30 h (2 SWS)	60 h	3
Lecture	WP 27.0.12 Specialized lecture: Methods in Zoology	WS	30 h (2 SWS)	60 h	3
Lecture	WP 27.0.13 Specialized lecture in Anthropology	WS	30 h (2 SWS)	60 h	3
Lecture	WP 27.0.14 Specialized lecture: Methods in Anthropology	WS	30 h (2 SWS)	60 h	3
Lecture	WP 27.0.15 Specialized lecture in Systematic Botany	WS	30 h (2 SWS)	60 h	3
Lecture	WP 27.0.16 Specialized lecture: Methods in Systematic Botany	WS	30 h (2 SWS)	60 h	3
Practical	WP 27.0.17 Specialized	WS	45 h (3 SWS)	45 h	3

course	practical training course					
Seminar	WP 27.0.18 Student teaching	3	WS	45 h (3 SWS)	45 h	3
Seminar	WP 27.0.19 Professional skills	3	WS	30 h (2 SWS)	60 h	3

In this module a total of 3 ECTS points must be accrued, 3 ECTS points of which are elective courses. Class attendance is 2-3 SWS; total time, including preparation time, is approx. 90 h.

Type of module	Elective module with elective courses.
Elective guidelines	<p>The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective course catalog). The sum of ECTS points is oriented to 30 ECTS points per semester.</p> <p>For elective courses in this module the following applies: elective courses totaling 3 ECTS points are to be chosen from listings in the elective course catalog or from other LMU faculty courses.</p>
Entry requirements	none
Level	Recommended semester: 1
Duration	The module spans 1 semester.
Content	This module includes the student's choice of one lecture, a seminar or a practical course, including a practical unit for student teaching and qualifying courses in professional skills.
Qualification goals	This module allows students to broaden exposure to subjects diverging from their major research interest, and to achieve professional skills.
Grading	The module is graded according to lecture grade.
Pass/fail conditions for ECTS points	ECTS points are awarded for individual courses according to successful completion; module completion is dependent on successful completion of individual elements.
Responsible person	Teaching staff, Faculty of Biology
Language	English, with exception of courses also offered for teaching and bachelor's degrees.
Other information	

Module: WP 28 Individual research training 3

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Required course	Rotation	Class attendance	Preparation	ECTS
Practical course	WP 28.1 Practical course: Individual research training 3: Pilot study	WS	9 h (0,6 SWS)	291 h	10
Seminar	WP 28.2 Seminar: Skills 4: Grant writing	WS	30 h (2 SWS)	30 h	2
Seminar	WP 28.3 Seminar and discussion 3: Hot topics in Evolution, Ecology and Systematics	WS	30 h (2 SWS)	60 h	3

In this module a total of 15 ECTS points must be accrued. Class attendance is 4-6 SWS; total time, including preparation time, is approx. 450 h.

Type of module

Elective module with mandatory courses.

Elective guidelines

The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective course catalog). The sum of ECTS points is oriented to 30 ECTS points per semester.

Entry requirements

none

Level

Recommended semester: 1

Duration

The module spans 1 semester.

Content

Students carry out a pilot study as preparation for their master's thesis. The topic of the project should be in the field of Evolution, Ecology or Systematics. They find and read relevant literature. They write a small research plan and discuss this plan with various people. They collect preliminary data and /or do some preliminary analysis. They do a short (15 minutes) presentation in the group where they did the research. They write a grant proposal whose form follows standards from a big grant agency (e.g. DFG). They learn how to make a time plan and a budget. They get an overview of the most important grant agencies in Germany and Europe. They also learn how to compile a good job

application, including CV and statement of interest.

The seminar is co-taught by three faculty members representing evolution, ecology and systematics. Students read scientific publications on hotly debated issues in the three research areas. They prepare presentations of different formats on important scientific contributions. Students also lead and contribute to scholarly discussions on the topics of the studies. The publications on hotly debated topics in Ecology, Evolution and Systematics are chosen by the lecturers.

Qualification goals

Students learn how to design a research project and write a scientific grant proposal based on preliminary data or analyses from their own pilot study. Students will be able to write a good job application and grant proposal. They will know the most important funding agencies of Germany and Europe. Students will have read and disputed a series of scientific studies on hotly debated topics in Ecology, Evolution and Systematics. They will further improve their experience with presentations in different formats, asking critical questions about papers, participating in and leading of discussions.

Grading

The module is graded.

Pass/fail conditions for ECTS points

ECTS points are awarded for passing the exam, which is allocated to the module.

Responsible person

Prof. Dr. John Parsch

Language

English

Other information

Module: WP 29 Concepts and methods in subdivisions of Evolutionary Biology, Ecology and Systematic Botany/Mycology and related disciplines

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Elective course	Rotation	Class attendance	Preparation	ECTS
Lecture	WP 29.0.1 Lecture: Functional Morphology	WS or SS	8 h (0,5 SWS)	22 h	(1)
* Practical course	WP 29.0.2 Practical course: Functional Morphology	WS or SS	38 h (2,5 SWS)	22 h	(2)
Lecture	WP 29.0.3 Lecture: Functional Anatomy and Archeobiology	WS or SS	15 h (1 SWS)	15 h	(1)
* Practical course	WP 29.0.4 Practical course: Functional Anatomy and Archeobiology	WS or SS	30 h (2 SWS)	30 h	(2)
Lecture	WP 29.0.5 Lecture: Biogeography and nature conservation	WS or SS	15 h (1 SWS)	15 h	(1)
* Practical course	WP 29.0.6 Practical course: Biogeography and nature conservation	WS or SS	45 h (3 SWS)	15 h	(2)
Lecture	WP 29.0.7 Lecture: New perspectives in Systematic Botany	WS and SS	15 h (1 SWS)	15 h	(1)
* Tutorial	WP 29.0.8 Tutorial: New perspectives in Systematic Botany	WS and SS	30 h (2 SWS)	30 h	(2)
Lecture	WP 29.0.9 Lecture: Current insights in Systematic Botany	WS and SS	15 h (1 SWS)	15 h	(1)
* Practical course	WP 29.0.10 Practical course: Current insights in Systematic Botany	WS and SS	30 h (2 SWS)	30 h	(2)
Lecture	WP 29.0.11 Marine Biology Lecture	WS or SS	30 h (2 SWS)	30 h	(2)
* Practical course	WP 29.0.12 Practical course: Marine Biology	WS or SS	60 h (4 SWS)	60 h	(4)
Lecture	WP 29.0.13 Paleobiology Lecture	WS or SS	30 h (2 SWS)	30 h	(2)
* Practical course	WP 29.0.14 Practical	WS or SS	30 h (2 SWS)	0 h	(1)

course	course: Paleobiology	SS			
Lecture	WP 29.0.15 Lecture: Mycology	WS or SS	15 h (1 SWS)	15 h	(1)
* Exkursion and Practical course	WP 29.0.16 Excursion and Practical course: Mycology	WS or SS	45 h (3 SWS)	15 h	(2)
Lecture	WP 29.0.17 Lecture: Microbiology	WS and SS	30 h (2 SWS)	30 h	(2)
* Practical course	WP 29.0.18 Practical course: Microbiology	WS and SS	30 h (2 SWS)	0 h	(1)
Lecture	WP 29.0.19 Lecture: Genetics	WS and SS	30 h (2 SWS)	30 h	(2)
* Practical course	WP 29.0.20 Practical course: Genetics	WS and SS	30 h (2 SWS)	0 h	(1)
Lecture	WP 29.0.21 Lecture: Advanced general Biology	WS and SS	15 h (1 SWS)	15 h	(1)
* Tutorial	WP 29.0.22 Tutorial: Advanced general Biology	WS and SS	30 h (2 SWS)	30 h	(2)
Lecture	WP 29.0.23 Lecture: Empirical general Biology	WS and SS	15 h (1 SWS)	15 h	(1)
* Practical course	WP 29.0.24 Practical course: Empirical general Biology	WS and SS	30 h (2 SWS)	30 h	(2)
Lecture	WP 29.0.25 Lecture: Introduction to Bioinformatics for Biologists	WS and SS	30 h (2 SWS)	30 h	(2)
* Practical course	WP 29.0.26 Bioinformatics for Biologists Practical course	WS and SS	60 h (4 SWS)	60 h	(4)
Lecture	WP 29.0.27 Lecture: Evertebrates	WS or SS	30 h (2 SWS)	60 h	(3)
* Practical course	WP 29.0.28 Practical course: Evertebrates	WS or SS	45 h (3 SWS)	45 h	(3)
Seminar	WP 29.0.29 Preparatory seminar: Summer School:	WS or SS	15 h (1 SWS)	15 h	(1)
* Sommerschule	WP 29.0.30 Participation in Summer School	WS or SS	30 h (2 SWS)	30 h	(2)
Seminar	WP 29.0.31 Seminar: Experimental Plankton Ecology	WS or SS	15 h (1 SWS)	15 h	(1)
* Practical course	WP 29.0.32 Practical course: Experimental Plankton Ecology	WS or SS	30 h (2 SWS)	30 h	(2)

* May only be chosen with accompanying practical course.

In this module a total of 6 ECTS points must be accrued, 6 ECTS points of which are elective

courses. Class attendance is 5-8 SWS; total time, including preparation time, is approx. 180 h.

Type of module	Elective module with elective courses.
Elective guidelines	<p>The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective course catalog). The sum of ECTS points is oriented to 30 ECTS points per semester.</p> <p>For elective courses in this module the following applies: elective courses totaling 6 ECTS points are to be chosen from courses in the EES master's program.</p>
Entry requirements	none
Level	Recommended semester: 1
Duration	The module spans 1 semester.
Content	In complementary theoretical and practical course classes, students will be introduced in depth to concepts and methods in selected fields of evolution, ecology and systematics and related disciplines.
Qualification goals	Students acquire a firm knowledge of specific concepts and methods in selected fields of Evolution, Ecology and Systematics and related disciplines.
Grading	The module is graded.
Pass/fail conditions for ECTS points	ECTS points are awarded for individual courses according to successful completion; module completion is dependent on successful completion of individual elements.
Responsible person	Prof. Dr. John Parsch
Language	English
Other information	

Module: WP 30 Preparation for master's thesis

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Elective course	Rotation	Class attendance	Preparation	ECTS
Lecture	WP 30.0.1 Lecture: Specialized topic	WS and SS	15 h (1 SWS)	30 h	(1,5)
* Tutorial	WP 30.0.2 Tutorial: Specialized topic lecture	WS and SS	30 h (2 SWS)	15 h	(1,5)
Lecture	WP 30.0.3 Lecture: Theoretical methods	WS and SS	15 h (1 SWS)	30 h	(1,5)
* Tutorial	WP 30.0.4 Tutorial: Theoretical methods lecture	WS and SS	30 h (2 SWS)	15 h	(1,5)
Lecture	WP 30.0.5 Lecture: Empirical methods	WS and SS	15 h (1 SWS)	30 h	(1,5)
* Practical course	WP 30.0.6 Practical course: Empirical methods	WS and SS	30 h (2 SWS)	15 h	(1,5)

* May only be chosen with accompanying practical course.

In this module a total of 6 ECTS points must be accrued, 6 ECTS points of which are elective courses. Class attendance is 6 SWS; total time, including preparation time, is approx. 180 h.

Type of module

Elective module with elective courses.

Elective guidelines

The module is composed of thematically related course elements. The sum of ECTS points is oriented to 30 ECTS points per semester.

For elective courses in this module the following applies: elective courses totaling 6 ECTS points are to be chosen from listings in the elective course catalog.

Entry requirements

none

Level

Recommended semester: 1

Duration

The module spans 1 semester.

Content

In this module, students learn about concepts, new advances and methods in a specific research area that is related to their master's project.

Students acquire a deeper knowledge of concepts, new

Qualification goals advances and methods in a specific research area that is related to their master's project.

Grading The module is graded.

Pass/fail conditions for ECTS points ECTS points are awarded for passing the exams, which are allocated to the module.

Responsible person Prof. Dr. Herwig Stibor

Language English

Other information

Module: WP 31 Interdisciplinary Training

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Required course	Rotation	Class attendance	Preparation	ECTS
Choice of: lecture, colloquium, practical course, excursion, tutorial or seminar	WP 31.1 Interdisciplinary training 1	WS and SS	135 h (9 SWS)	45 h	6
Choice of: lecture, colloquium, practical course, excursion, tutorial or seminar	WP 31.2 Interdisciplinary training 2	WS and SS	90 h (6 SWS)	0 h	3
	WP 31.3 Interdisciplinary training 3	WS and SS	90 h (6 SWS)	0 h	3
Choice of: lecture, colloquium, practical course, excursion, tutorial or seminar	WP 31.4 General seminar	WS	30 h (2 SWS)	60 h	3

In this module a total of 15 ECTS points must be accrued. Class attendance is 23 SWS; total time, including preparation time, is approx. 450 h.

Type of module

Elective module with mandatory courses.

Elective guidelines

The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective course catalog). The sum of ECTS points is oriented to 30 ECTS points per semester.

Entry requirements

none

Level	Recommended semester: 1
Duration	The module spans 1 semester.
Content	Contents of this module are additional theoretical and practical skills in the scientific field of individual interest and interdisciplinary discussions.
Qualification goals	In this module the student will learn to focus his or her own scientific profile. Furthermore the students gain practice integrating insights from different fields on a common topic and enhance their ability to take part in interdisciplinary discussions.
Grading	The module is graded.
Pass/fail conditions for ECTS points	ECTS points are awarded for individual courses according to successful completion; module completion is dependent on successful completion of individual elements.
Responsible person	Prof. Dr. Christian Leibold
Language	English
Other information	

Module: WP 32 Research course and research project

Program Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Required course	Rotation	Class attendance	Preparation	ECTS
Supervised scientific work	WP 32.1 Practical course	WS and SS	60 h (4 SWS)	30 h	3
Supervised scientific work	WP 32.2 Research project - Neurosciences	WS and SS	135 h (9 SWS)	45 h	6

In this module a total of 9 ECTS points must be accrued. Class attendance is 13 SWS; total time, including preparation time, is approx. 270 h.

Type of module Elective module with mandatory courses.

Elective guidelines The module is composed of thematically related course elements (in general lecture, practical course and seminar, see elective course catalog). The sum of ECTS points is oriented to 30 ECTS points per semester.

Entry requirements none

Level Recommended semester: 1

Duration The module spans 1 semester.

Content Content of this research project is guided working on an elective scientific question. The topic is to be chosen together with the mentors.

Qualification goals Goal of this research project is gaining practice in general skills of scientific working and good laboratory practice. In the end the student shall be able to denominate a novel question of scientific interest.

Grading The module is graded according to lab report.

Pass/fail conditions for ECTS points ECTS points are awarded for individual courses according to successful completion; module completion is dependent on successful completion of individual elements.

Responsible person Members of the faculty of the Graduate School of Systemic

Neurosciences

Language

English

Other information

Module: WP 33 Teaching and Training

Program

Master's degree: Biology (Master of Science, M.Sc.)

Assigned courses

Course type	Required course	Rotation	Class attendance	Preparation	ECTS
Tutorium	WP 33.1 Tutoring for beginners	WS and SS	15 h (1 SWS)	15 h	(1)
Workshop	WP 33.2 Non-scientific skills I	WS and SS	15 h (1 SWS)	15 h	(1)
Workshop	WP 33.3 Non-scientific skills II	WS and SS	15 h (1 SWS)	15 h	(1)

In this module a total of 3 ECTS points must be accrued. Class attendance is 3 SWS; total time, including preparation time, is approx. 90 h.

Type of module

Elective module with mandatory courses.

Elective guidelines

The Non-Scientific Skills workshops are announced on our homepage: http://www.gsn.uni-muenchen.de/seminars_events/workshops

Entry requirements

none

Level

Recommended semester: 1

Duration

The module spans 1 semester.

Content

Contents of this module are specialized complementary skills e.g. teaching as well as social, lingual and time management skills.

Qualification goals

The goal of this module is to prepare the student for different career demands.

Type of grade

Oral exam

Grading

This module is not graded.

Pass/fail conditions for ECTS points

ECTS points are awarded for successful completion; module completion is dependent on successful completion of individual elements.

Responsible person

Dr. Alexander Kaiser, Prof. Dr. Benedikt Grothe

Language

English

Other information