LMU LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN

Module Catalogue

Master's Programme: Molecular and Cellular Biology

(Master of Science, M.Sc.)

(120 ECTS credits)

Based on the *Prüfungs- und Studienordnung* of 29. November 2019

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Abbreviations and annotations

CP	Credit Points, ECTS credits
ECTS	European Credit Transfer and Accumulation System
h	hours
SoSe	summer semester
SWS	contact hours
WiSe	winter semester
WP	compulsory elective course
P	mandatory course

1. The ECTS credits assigned in the Module Catalogue are designated as follows: Credit Points not listed in parentheses are awarded when the pertinent examination of the module or module parts have/has been completed successfully. Credit Points in parentheses are listed for calculatory purposes only.

2. The semester for taking a module can either be binding or may be considered as a recommendation, depending on the applicable data in Anlage 2 of the *Prüfungs- und Studienordnung* for your Programme. In this Module catalogue, the options are indicated as „scheduled semester“ and „recommended semester“.

3. Please note: The Module Catalogue is merely intended to serve as an orientation whereas the provisions of the applicable version of the *Prüfungs- und Studienordnung* (in German only) of your Programme are legally binding. See: www.lmu.de/studienangebot and select your Programme.

Overarching qualification goals of the master's course Molecular and Celluar Biology

The overarching educational goal of the Master's degree in Molecular and Cellular Biology is to qualify students for research-related professional activities in the fields of genetics, human biology, microbiology and cell biology. Graduates have acquired a broad knowledge of molecular and cellular structures and processes including their dynamics and regulation in organisms in the course of their successful master's degree. They have more specific knowledge and skills in at least one of the four fields of genetics, human biology, microbiology and cell biology.

Graduates can safely apply the common laboratory methods of molecular and cell biology, analyze problems that arise and adapt existing methods to new questions. The laboratory methods mastered by the graduates include, for example, RNA and DNA extraction, DNA amplification using PCR, cloning methods, electrophoresis techniques, transfection and transformation approaches, methods of protein isolation, purification and characterization, blotting techniques, microscopy, the analysis of interactions between biomolecules and sequencing methods. Graduates can correctly implement the safety provisions of the various methods.

Graduates have in-depth knowledge of the common model organisms and the associated advantages and disadvantages for dealing with specific molecular and cell biological issues. They can apply the common evaluation methods and computer programs of molecular and cell biology as well use it to analyze the data, evaluate the results and derive new questions.

The evaluation also includes processing the data with the appropriate statistical methods, presenting and visualizing the results accordingly. Complex subject areas can be presented, discussed, and assessed by the graduates in a subject-specific manner in both written and oral form. On this basis, they can derive and evaluate new questions and create and carry out corresponding experiments.

Based on the respective research data, the graduates can describe, analyze and explain the overall context, as well as taking into account the interconnections of the molecular and cell biological areas. They are able to work on the main topics of the course independently.

Graduates of the master's degree have trained analytical thinking and judgment skills, as well as practical research skills and knowledge of methods and concepts of scientific research, i.e, their planning, implementation and evaluation, in the field of molecular and cell biology.
They can work independently and scientifically in the research field of molecular and cell biology. Furthermore, they can classify scientific findings from molecular and cell biology, discuss them with colleagues in specialist vocabulary and convey them to society in simple language.

They have their own ethical awareness and values regarding the subject areas of the study program. They are empowered to take on management functions and to act in a responsible manner. Besides that, they are able to deal competently with questions from the areas of molecular and cell biology in research at universities, research institutes and industry as well as in public and private companies.

Module: P 1 Labormethoden der Molekular- und Zellbiologie/Lab methods in Molecular and Cell Biology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Practical course	P 1.1 Labormethoden der Molekular- und Zellbiologie – Übung/ Lab methods in Molecular and Cell Biology – practical course	WiSe	45 h (3 SWS)	45 h	(3)
Seminar	P 1.2 Labormethoden der Molekular- und Zellbiologie – Seminar/ Lab methods in Molecular and Cell Biology - seminar	WiSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 5 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Mandatory module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	None
Entry requirements	None
Semester	Scheduled semester: 1
Duration	The completion of the module takes 1 semester.
Content	Within the course the students will learn the following contents: -RNA Extraction -RT-PCR -PCR -Cloning -Miniprep -gel electrophoresis -E.coli transformation -transfection -plant transformation -fluorescence microscopy -protein extraction -Co-immunoprecipitation -Western blotting -Model organisms: *E. coli*, mouse and human cell culture, *Arabidopsis* and *N. benthamiana*, *C. elegans*

Learning outcomes	The students are capable of - molecular and cellular biology techniques: safe handling with the help of established protocols - writing of scientific reports based on journal guidelines - analysis and interpretation of figures using image softwares - scientific presentation
Type of examination	Report and presentation
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Anna Gasperotti, Dagmar Hann, Frank Landgraf, Daniela Meilinger, Tamara Mikeladze-Dvali, Natascha Zhang
Language(s)	English
Additional information	None

Module: P 2 Software-Anwendungen in der Molekular- und Zellbiologie/Software applications in Molecular and Cell Biology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Practical course	P 2.1 Software-Anwendungen in der Molekular- und Zellbiologie – Übung/ Software applications in Molecular and Cell Biology – practical course	WiSe	45 h (3 SWS)	45 h	(3)
Lecture	P 2.2 Software-Anwendungen in der Molekular- und Zellbiologie – Vorlesung/ Software applications in Molecular and Cell Biology - lecture	WiSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 5 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Mandatory module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	None
Entry requirements	None
Semester	Scheduled semester: 1
Duration	The completion of the module takes 1 semester.
Content	Within the course the students will learn the following contents: - Literature search and evaluation (Web of science, PubMed, Google Scholar and journal websites) - Literature Managment (Endnote) - Citations and Plagiarism - Protein function prediction (homology based searches, protein localization prediction, post-translational modification prediction, structural predictions) - CLC (sequence analysis, primer design, in silico cloning) - Phylogenetic analysis (basic concepts for evolution, the basics of building and interpreting phylologenies) - Protein modelling (chimera) - Image J/ Fiji (image preparation and quantification) - Basics of the statistical programming language R

Learning outcomes	The students are capable of - safe usage of basic computational biology tools - basic understanding of the underlaying computational principles - understanding of the evaluation criteria used for these bioinformatic tools - understanding of potential applications of the shown bioinformatic tools
Type of examination	Report or written exam
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Prof. Dr. Martin Parniske
Language(s)	English
Additional information	None

Module: WP 1 Genetik/Genetics

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 1.1 Genetik – Vorlesung/Genetics - lecture	WiSe	30 h (2 SWS)	60 h	(3)
Seminar	WP 1.2 Genetik – Seminar/Genetics - seminar	WiSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex I
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Written exam and presentation
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English
Additional information	None

Module: WP 2 Theorien der Genetik/Theories in Genetics

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 2.1 Mechanismen der Genregulation/Mechanisms of gene regulation	WiSe	30 h (2 SWS)	60 h	(3)
Lecture	WP 2.2 Konzepte der genetischen Stabilität und Variabilität/Concepts of genetic stability and variability	WiSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex I
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Written exam
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English

Additional information	None

Module: WP 3 Methoden der Genetik/Methods in Genetics

Programme	Master's Programme:Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Seminar	WP 3.1 Methoden der Genetik – Seminar/ Methods in Genetics - seminar	WiSe	30 h (2 SWS)	60 h	(3)
Practical course	WP 3.2 Methoden der Genetik – Übung/Methods in Genetics – practical course	WiSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 5 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex I
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Presentation and report
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English
Additional information	None

Module: WP 4 Humanbiologie/Human Biology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 4.1 Humanbiologie – Vorlesung/Human Biology - lecture	WiSe	30 h (2 SWS)	60 h	(3)
Seminar	WP 4.2 Humanbiologie – Seminar/Human Biology - seminar	WiSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex I
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Written exam and presentation
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English
Additional information	None

Module: WP 5 Theorien der Humanbiologie/Theories in Human Biology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 5.1 Theoretische Konzepte der Humanbiologie/Theoretical concepts of Human Biology	WiSe	30 h (2 SWS)	60 h	(3)
Lecture	WP 5.2 Molekularbiologische Mechanismen in der Humanbiologie/Molecular biological mechansims in Human Biology	WiSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex I
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Written exam
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.

Language(s)	English
Additional information	None

Module: WP 6 Methoden der Humanbiologie/Methods in Human Biology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Seminar	WP 6.1 Methoden der Humanbiologie – Seminar/ Methods in Human Biology - seminar	WiSe	30 h (2 SWS)	60 h	(3)
Practical course	WP 6.2 Methoden der Humanbiologie – Übung/ Methods in Human Biology – practical course	WiSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 5 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex I
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Presentation und Report
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.

Language(s)	English
Additional information	None

Module: WP 7 Mikrobiologie/Microbiology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 7.1 Mikrobiologie – Vorlesung/Microbiology - lecture	WiSe	30 h (2 SWS)	60 h	(3)
Seminar	WP 7.2 Mikrobiologie – Seminar/Microbiology - seminar	WiSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex I
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Written exam and presentation
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English
Additional information	None

Module: WP 8 Theorien der Mikrobiologie/Theories in Microbiology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 8.1 Zellbiologie und Physiologie von Bakterien/Cell Biology and physiology of Bacteria	WiSe	30 h (2 SWS)	60 h	(3)
Lecture	WP 8.2 Molekularbiologische Mechanismen in der Mikrobiologie/Molecular biological mechanisms in Microbiology	WiSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex I
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Klausur
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.

Language(s)	English
Additional information	None

Module: WP 9 Methoden der Mikrobiologie/Methods in Microbiology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Seminar	WP 9.1 Methoden der Mikrobiologie – Seminar/ Methods in Microbiology - seminar	WiSe	30 h (2 SWS)	60 h	(3)
Practical course	WP 9.2 Methoden der Mikrobiologie – Übung/ Methods in Microbiology – practical course	WiSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 5 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex I
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Presentation and report
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.

Language(s)	English
Additional information	None

Module: WP 10 Zellbiologie/Cell Biology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 10.1 Zellbiologie – Vorlesung/Cell Biology - lecture	WiSe	30 h (2 SWS)	60 h	(3)
Seminar	WP 10.2 Zellbiologie – Seminar/Cell Biology - seminar	WiSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex I
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Written exam and presentation
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English
Additional information	None

Module: WP 11 Theorien der Zellbiologie/Theories in Cell Biology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Vorlesung	WP 11.1 Theoretische Konzepte der Zellbiologie/Theoretical concepts in Cell Biology	WiSe	30 h (2 SWS)	60 h	(3)
Vorlesung	WP 11.2 Molekularbiologische Mechanismen in der Zellbiologie/Molecular biological mechanisms in Cell Biology	WiSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex I
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Written exam
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.

Language(s)	English
Additional information	None

Module: WP 12 Methoden der Zellbiologie/Methods in Cell Biology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Seminar	WP 12.1 Methoden der Zellbiologie – Seminar/ Methods in Cell Biology - seminar	WiSe	30 h (2 SWS)	60 h	(3)
Practical course	WP 12.2 Methoden der Zellbiologie – Übung/ Methods in Cell Biology – practical course	WiSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 5 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex I
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Presentation and report
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.

Language(s)	English
Additional information	None

Module: WP 13 Pflanzenwissenschaften/Plant Sciences

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 13.1 Pflanzenwissenschaften – Vorlesung/Plant Sciences - lecture	WiSe	30 h (2 SWS)	60 h	(3)
Seminar	WP 13.2 Pflanzenwissenschaften – Seminar/Plant Sciences - seminar	WiSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex I
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Plant Sciences.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Plant Sciences.
Type of examination	Written exam and presentation
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Plant Sciences.
Language(s)	English

Additional information	None

Module: WP 14 Theorien der Pflanzenwissenschaften/Theories in Plant Sciences

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 14.1 Theorien der Pflanzenwissenschaften 1 – Vorlesung/ Theories in Plant Sciences 1 - lecture	WiSe	30 h (2 SWS)	60 h	(3)
Lecture	WP 14.2 Theorien der Pflanzenwissenschaften 2 – Vorlesung/ Theories in Plant Sciences 2 - lecture	WiSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory effective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex I
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Plant Sciences.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Plant Sciences.
Type of examination	Written exam
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Plant Sciences.

Language(s)	English
Additional information	None

Module: WP 15 Methoden der Pflanzenwissenschaften/Methods in Plant Sciences

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Seminar	WP 15.1 Methoden der Pflanzenwissenschaften – Seminar/ Methods in Plant Sciences - seminar	WiSe	30 h (2 SWS)	60 h	(3)
Practical course	WP 15.2 Methoden der Pflanzenwissenschaften – Übung/ Methods in Plant Sciences – practical course	WiSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 5 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex I
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Plant Sciences.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Plant Sciences.
Type of examination	Presentation und Report
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Plant Sciences.

Language(s)	English
Additional information	None

Module: WP 16 Neurobiologie/Neurobiology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 16.1 Grundlagen der Neurowissenschaften – Vorlesung/Fundamentals in Neuroscience 1 - Lecture	WiSe	60 h (4 SWS)	120 h	(6)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory course
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex I
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Type of examination	Written exam or oral examination
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Language(s)	English
Additional information	None

Module: WP 17 Theorien der Neurobiologie I/Theories in Neurobiology I

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 17.1 Systemneurowissenschaften 1 – Vorlesung/Systems Neuroscience 1 - Lecture	WiSe	30 h (2 SWS)	60 h	(3)
Lecture	WP 17.2 Theoretische Biophysik und Zellphysiologie – Vorlesung/Theoretical Biophysics and Cellular Physiology - Lecture	WiSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex I
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Type of examination	Written exam
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.

Language(s)	English
Additional information	None

Module: WP 18 Theorien der Neurobiologie II/Theories in Neurobiology II

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 18.1 Sestemneurowissenschaften 1 – Vorlesung/Systems Neuroscience 1 - Lecture	WiSe	30 h (2 SWS)	60 h	(3)
Lecture	WP 18.2 Der Neuronale Code - Vorlesung/The Neural Code - Lecture	WiSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex I
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Type of examination	Written exam
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Language(s)	English

Additional information	None

Module: WP 19 Theorien der Neurobiologie III/Theories in Neurobiology III

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 19.1 Theoretische Biophysik und Zellphysiologie – Vorlesung/Theoretical Biophysics and Cellular Physiology - Lecture	WiSe	30 h (2 SWS)	60 h	(3)
Lecture	WP 19.2 Der Neuronale Code – Vorlesung/The Neural Code - Lecture	WiSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex I
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Type of examination	Written exam
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.

Language(s)	English
Additional information	None

Module: WP 20 Methoden der Neurobiologie/Methods in Neurobiology

Programme	Master's Programme: Molecular and Cellular Biology Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Seminar	WP 20.1 Interdisziplinäres Training 5 – Seminar/Interdisciplinary Training 5 - seminar	WiSe and SoSe	30 h (2 SWS)	60 h	(3)
Practical course	WP 20.2 Methoden der Neurobiologie – Übung/ Methods in Neurobiology – practical course	WiSe and SoSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 5 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex I
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Type of examination	Presentation and report
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.

Language(s)	English
Additional information	None

Module: WP 21 Evolutionsbiologie, Ökologie und Systematik/Evolutionary Biology, Ecology and Systematics

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 21.1 Evolutionsbiologie, Ökologie und Systematik – Vorlesung/ Evolutionary Biology, Ecology and Systematics - lecture	WiSe	30 h (2 SWS)	60 h	(3)
Seminar	WP 21.2 Aktuelle Publikationen in der Evolutionsbiologie, Ökologie und Systematik – Seminar/Current publications in Evolutionary Biology, Ecology and Systematics - seminar	WiSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex I
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Evolution, Ecology and Systematics.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Evolution, Ecology and Systematics.
Type of examination	Written exam and presentation
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.

Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Evolution, Ecology and Systematics.
Language(s)	English
Additional information	None

Module: WP 22 Theorien der Evolutionsbiologie, Ökologie und Systematik/Theories in Evolutionary Biology, Ecology and Systematics

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 22.1 Theoretische Konzepte in Evolutionsbiologie, Ökologie und Systematik – Vorlesung/Theoretical concepts in Evolutionary Biology, Ecology and Systematics - lecture	WiSe	30 h (2 SWS)	60 h	(3)
Lecture	WP 22.2 Mechanismen in der Evolutionsbiologie, Ökologie und Systematik – Vorlesung/Mechanisms in Evolutionary Biology, Ecology and Systematics - lecture	WiSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex I
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Evolution, Ecology and Systematics.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Evolution, Ecology and Systematics.
Type of examination	Written exam
Type of assessment	The successful completion of the module will be graded.

Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Evolution, Ecology and Systematics.
Language(s)	English
Additional information	None

Module: WP 23 Methoden der Evolutionsbiologie, Ökologie und Systematik/Methods in Evolutionary Biology, Ecology and Systematics

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Seminar	WP 23.1 Aktuelle Publikationen zu den Methoden von Evolutionsbiologie, Ökologie und Systematik – Seminar/Current publications on the methods in Evolutionary Biology, Ecology and Systematics - seminar	WiSe	30 h (2 SWS)	60 h	(3)
Practical course	WP 23.2 Methoden in der Evolutionsbiologie, Ökologie und Systematik – Übung/Methods in Evolutionary Biology, Ecology and Systematics – practical course	WiSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 5 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex I
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Evolution, Ecology and Systematics.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Evolution, Ecology and Systematics.
Type of examination	Presentation and report
Type of assessment	The successful completion of the module will be graded.

Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Evolution, Ecology and Systematics.
Language(s)	English
Additional information	None

Module: WP 24 Theoretische Themen in den Biowissenschaften/Theoretical topics in Life Sciences

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 24.1 Theoretische Themen in den Biowissenschaften – Vorlesung/ Theoretical topics in Life Sciences - lecture	WiSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 3 ECTS credits have to be acquired. Class attendance averages about 2 contact hours. Including time for self-study, 90 hours have to be invested.

Module type	Compulsory module with mandatory course
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	With regard to the compulsory elective modules WP 24 – WP 31, two compulsory elective modules must be taken.
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Written exam
Type of assessment	The successful completion of the module will not be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English

Additional information	None

Module: WP 25 Theoretische Konzepte in den Biowissenschaften/Theoretical concepts in Life Sciences

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 25.1 Theoretische Konzepte in den Biowissenschaften – Vorlesung/Theoretical concepts in Life Sciences - lecture	WiSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 3 ECTS credits have to be acquired. Class attendance averages about 2 contact hours. Including time for self-study, 90 hours have to be invested.

Module type	Compulsory elective module with mandatory course
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	With regard to the compulsory elective modules WP 24 – WP 31, two compulsory elective modules must be taken.
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Written exam
Type of assessment	The successful completion of the module will not be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English

Additional information	None

Module: WP 26 Forschungsthemen in den Biowissenschaften/Research topics in Life Sciences

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Seminar	WP 26.1 Aktuelle Publikationen zu Forschungsthemen in den Biowissenschaften – Seminar/Current publications on research topics in Life Sciences - seminars	WiSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 3 ECTS credits have to be acquired. Class attendance averages about 2 contact hours. Including time for self-study, 90 hours have to be invested.

Module type	Compulsory elective module with mandatory course
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	With regard to the compulsory elective modules WP 24 – WP 31, two compulsory elective modules must be taken.
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Presentation
Type of assessment	The successful completion of the module will not be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.

Language(s)	English
Additional information	None

Module: WP 27 Methoden der Biowissenschaften/Methods in Life Sciences

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Seminar	WP 27.1 Aktuelle Publikationen zu Methoden in den Biowissenschaften – Seminar/Current publications on methods in Life Sciences - seminar	WiSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 3 ECTS credits have to be acquired. Class attendance averages about 2 contact hours. Including time for self-study, 90 hours have to be invested.

Module type	Compulsory elective module with mandatory course
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	With regard to the compulsory elective modules WP 24 – WP 31, two compulsory elective modules must be taken.
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Presentation
Type of assessment	The successful completion of the module will not be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.

Language(s)	English
Additional information	None

Module: WP 28 Labormethoden in den Biowissenschaften/Lab methods in Life Sciences

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Practical course	WP 28.1 Labormethoden in den Biowissenschaften – Übung/Lab methods in Life Sciences – practical course	WiSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 3 ECTS credits have to be acquired. Class attendance averages about 3 contact hours. Including time for self-study, 90 hours have to be invested.

Module type	Compulsory elective module with mandatory course
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	With regard to the compulsory elective modules WP 24 – WP 31, two compulsory elective modules must be taken.
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Report
Type of assessment	The successful completion of the module will not be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English

Additional information	None

Module: WP 29 Computergestützte Methoden in den Biowissenschaften/Computational methods in Life Sciences

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Practical course	WP 29.1 Computergestützte Methoden in den Biowissenschaften – Übung/ Computational methods in Life Sciences – practical course	WiSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 3 ECTS credits have to be acquired. Class attendance averages about 3 contact hours. Including time for self-study, 90 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	With regard to the compulsory elective modules WP 24 – WP 31, two compulsory elective modules must be taken.
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Report
Type of assessment	The successful completion of the module will not be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English

Additional information	None

Module: WP 30 Betreuung von Studierenden I/Tutoring of students I

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Practical course	WP 30.1 Betreuung von Studierenden – Übung/ Tutoring of students – practical course	WiSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 3 ECTS credits have to be acquired. Class attendance averages about 3 contact hours. Including time for self-study, 90 hours have to be invested.

Module type	Compulsory elective module with mandatory course
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	With regard to the compulsory elective modules WP 24 – WP 31, two compulsory elective modules must be taken.
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	Tutoring of students: the students are tutoring other students in different courses. The courses could be on Bachelor or Master level. Requirement is sufficient knowledge in the specific field.
Learning outcomes	Besides the content of the specific course students gain knowledge about course preparation including administration, preparation of material for experiments, answering strategies of questions and how to handle requirements of different students. They learn about self organization, necessary preparation for the different contents and the necessary knowledge between understanding and teaching content to other students.
Type of examination	Presentation
Type of assessment	The successful completion of the module will not be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory

	and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Dean of studies, all teaching staff of the different courses, in which students are involved as tutors
Language(s)	English
Additional information	None

Module: WP 31 Berufsqualifikation I/Vocational course I

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Practical course	WP 31.1 Berufsqualifikation 1 – Übung/ Vocational course 1 – practical course	WiSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 3 ECTS credits have to be acquired. Class attendance averages about 3 contact hours. Including time for self-study, 90 hours have to be invested.

Module type	Compulsory elective module with mandatory course
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	With regard to the compulsory elective modules WP 24 – WP 31, two compulsory elective modules must be taken.
Entry requirements	None
Semester	Recommended semester: 1
Duration	The completion of the module takes 1 semester.
Content	This module contains courses which equip students for their future career with necessary skills besides their biological knowledge. This could be courses e.g. about time management, self-organization, leadership, language and communication skills, entrepreneurship as well as internships in companies about marketing, human resources, management or administration.
Learning outcomes	At the end of the module each student will have a realistic perspective of the future work expectations regarding the soft skills. The objectives are to help students gain good self-positioning, self-reflection and self-organization, an understanding how to be a good communicator and listener with problem-solving skills in a modern work environment.
Type of examination	Presentation or report
Type of assessment	The successful completion of the module will not be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential

	elective compulsory module parts) has/have been completed successfully.
Responsible contact	Dean of studies, teaching staff of the different courses
Language(s)	English
Additional information	None

Module: WP 32 Vertiefende Genetik/Advanced Genetics

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 32.1 Vertiefende Genetik – Vorlesung/Advanced Genetics - lecture	SoSe	30 h (2 SWS)	60 h	(3)
Seminar	WP 32.2 Vertiefende Genetik – Seminar/ Advanced Genetics seminar	SoSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex II
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 Semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Written exam and presentation
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English
Additional information	None

Module: WP 33 Vertiefende Theorien der Genetik/Advanced theories in Genetics

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 33.1 Vertiefende Mechanismen der Genregulation/Advanced mechanisms in gene regulation	SoSe	30 h (2 SWS)	60 h	(3)
Lecture	WP 33.2 Vertiefende Konzepte der genetischen Stabilität und Variabilität/Advanced concepts in genetic stability and variability	SoSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex II
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Written exam
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.

Language(s)	English
Additional information	None

Module: WP 34 Vertiefende Methoden der Genetik/Advanced methods in Genetics

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Seminar	WP 34.1 Vertiefende Methoden der Genetik – Seminar/ Advanced methods in Genetics - seminar	SoSe	30 h (2 SWS)	60 h	(3)
Practical course	WP 34.2 Vertiefende Methoden der Genetik – Übung/Advanced methods in Genetics – practical course	SoSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 5 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex II
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Presentation and report
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.

Language(s)	English
Additional information	None

Module: WP 35 Vertiefende Humanbiologie/Advanced Human Biology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 35.1 Vertiefende Humanbiologie – Vorlesung/ Advanced Human Biology - lecture	SoSe	30 h (2 SWS)	60 h	(3)
Seminar	WP 35.2 Vertiefende Humanbiologie – Seminar/ Advanced Human Biology - seminar	SoSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex II
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Written exam and presentation
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.

Language(s)	English
Additional information	None

Module: WP 36 Vertiefende Theorien der Humanbiologie/ Advanced theories in Human Biology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 36.1 Vertiefende theoretische Konzepte der Humanbiologie/Advanced theoretical concepts in Human Biology	SoSe	30 h (2 SWS)	60 h	(3)
Lecture	WP 36.2 Vertiefende molekular-biologische Mechanismen in der Humanbiologie/Advanced molecular biological mechanisms in Human Biology	SoSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex II
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Written exam
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.

Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English
Additional information	None

Module: WP 37 Vertiefende Methoden der Humanbiologie/ Advanced methods in Human Biology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Seminar	WP 37.1 Vertiefende Methoden der Humanbiologie – Seminar/ Advanced methods in Human Biology - seminar	SoSe	30 h (2 SWS)	60 h	(3)
Practical course	WP 37.2 Vertiefende Methoden der Humanbiologie – Übung/ Advanced methods in Human Biology – practical course	SoSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 5 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex II
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Presentation and report
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.

Language(s)	English
Additional information	None

Module: WP 38 Vertiefende Mikrobiologie/Advanced Microbiology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 38.1 Vertiefende Mikrobiologie – Vorlesung/ Advanced Microbiology - lecture	SoSe	30 h (2 SWS)	60 h	(3)
Seminar	WP 38.2 Vertiefende Mikrobiologie – Seminar/ Advanced Microbiology - seminar	WiSe and SoSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex II
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Written exam and presentation
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.

Language(s)	English
Additional information	None

Module: WP 39 Vertiefende Theorien der Mikrobiologie/ Advanced theories in Microbiology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 39.1 Vertiefende Zellbiologie und Physiologie von Bakterien/Advanced Cell Biology and physiology of bacteria	SoSe	30 h (2 SWS)	60 h	(3)
Lecture	WP 39.2 Vertiefende molekular-biologische Mechanismen in der Mikrobiologie/Advanced molecular biological mechanisms in Microbiology	SoSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex II
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Written exam
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.

Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English
Additional information	None

Module: WP 40 Vertiefende Methoden der Mikrobiologie/ Advanced methods in Microbiology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Seminar	WP 40.1 Vertiefende Methoden der Mikrobiologie – Seminar/ Advanced methods in Microbiology - seminar	SoSe	30 h (2 SWS)	60 h	(3)
Practical course	WP 40.2 Vertiefende Methoden der Mikrobiologie – Übung/ Advanced methods in Microbiology – practical course	SoSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 5 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex II
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Presentation and report
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.

Language(s)	English
Additional information	None

Module: WP 41 Vertiefende Zellbiologie/Advanced Cell Biology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 41.1 Vertiefende Zellbiologie – Vorlesung/ Advanced Cell Biology - lecture	SoSe	30 h (2 SWS)	60 h	(3)
Seminar	WP 41.2 Vertiefende Zellbiologie – Seminar/ Advanced Cell Biology - seminar	SoSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex II
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Written exam and presentation
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English

Additional information	None

Module: WP 42 Vertiefende Theorien der Zellbiologie/Advanced theories in Cell Biology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 42.1 Vertiefende theoretische Konzepte der Zellbiologie/Advanced theoretical concepts in Cell Biology	SoSe	30 h (2 SWS)	60 h	(3)
Lecture	WP 42.2 Vertiefende molekular-biologische Mechanismen in der Zellbiologie/Advanced molecular biological mechanisms in Cell Biology	SoSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex II
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 Semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Written exam
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.

Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English
Additional information	None

Module: WP 43 Vertiefende Methoden der Zellbiologie/ Advanced methods in Cell Biology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Seminar	WP 43.1 Vertiefende Methoden der Zellbiologie – Seminar/ Advanced methods in Cell Biology - seminar	SoSe	30 h (2 SWS)	60 h	(3)
Practical course	WP 43.2 Vertiefende Methoden der Zellbiologie – Übung/ Advanced methods in Cell Biology – practical course	SoSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 5 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex II
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Presentation and report
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.

Language(s)	English
Additional information	None

Module: WP 44 Vertiefende Pflanzenwissenschaften/Advanced Plant Sciences

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 44.1 Vertiefende Pflanzenwissenschaften – Vorlesung/ Advanced Plant Sciences - lecture	SoSe	30 h (2 SWS)	60 h	(3)
Seminar	WP 44.2 Vertiefende Pflanzenwissenschaften – Seminar/Advanced Plant Sciences - seminar	SoSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex II
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Plant Sciences.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Plant Sciences.
Type of examination	Written exam and presentation
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Plant Sciences.

Language(s)	English
Additional information	None

Module: WP 45 Vertiefende Theorien der Pflanzenwissenschaften/Advanced theories in Plant Sciences

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 45.1 Vertiefende Theorien der Pflanzenwissenschaften 1 – Vorlesung/Advanced theories in Plant Sciences 1 - lecture	SoSe	30 h (2 SWS)	60 h	(3)
Lecture	WP 45.2 Vertiefende Theorien der Pflanzenwissenschaften 2 – Vorlesung/Advanced theories in Plant Sciences 2 - lecture	SoSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex II
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Plant Sciences.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Plant Sciences.
Type of examination	Written exam
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Plant Sciences.

Language(s)	English
Additional information	None

Module: WP 46 Vertiefende Methoden der Pflanzenwissenschaften/Advanced methods in Plant Sciences

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Seminar	WP 46.1 Vertiefende Methoden der Pflanzenwissenschaften – Seminar/Advanced methods in Plant Sciences - seminar	SoSe	30 h (2 SWS)	60 h	(3)
Practical course	WP 46.2 Vertiefende Methoden der Pflanzenwissenschaften – Übung/Advanced methods in Plant Sciences – practical course	SoSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 5 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex II
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Plant Sciences.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Plant Sciences.
Type of examination	Presentation and report
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Plant Sciences.

Language(s)	English
Additional information	None

Module: WP 47 Vertiefende Neurobiologie/Advanced Neurobiology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 47.1 Grundlagen der Neurowissenschaften 2 – Vorlesung/Fundamentals in Neuroscience 2 - Lecture	SoSe	60 h (4 SWS)	120 h	(6)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory course
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex II
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Type of examination	Written exam or oral examination
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Language(s)	English
Additional information	None

Module: WP 48 Vertiefende Theorien der Neurobiologie I/Advanced theories in Neurobiology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 48.1 Spezielle Methoden der systemischen, zellulären und molekularen Neurowissenschaften für Experten – Vorlesung/Special Methods in Systemic, Cellular and Molecular Neuroscience for Experts - Lecture	SoSe	30 h (2 SWS)	60 h	(3)
Lecture	WP 48.2 Maschinelles Lernen und Analyse neuraler Daten – Vorlesung/Machine Learning and Analysis of Neural Data - Lecture	SoSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex II
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Type of examination	Written exam
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory

	and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Language(s)	English
Additional information	None

Module: WP 49 Vertiefende Theorien der Neurobiologie II/ Advanced theories in Neurobiology II

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 49.1 Spezielle Methoden der systemischen, zellulären und molekularen Neurowissenschaften für Experten – Vorlesung/Special Methods in Systemic, Cellular and Molecular Neuroscience for Experts - Lecture	SoSe	30 h (2 SWS)	60 h	(3)
Lecture	WP 49.2 Mathematische Modelle neuraler Systeme und Kognitiver Funktionen – Vorlesung/Mathematical Models of Neural Systems and Cognitive Functions - Lecture	SoSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex II
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Type of examination	Written exam
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory

	and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Language(s)	English
Additional information	None

Module: WP 50 Vertiefende Theorien der Neurobiologie III/ Advanced theories in Neurobiology III

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 50.1 Maschinelles Lernen und Analyse neuraler Daten – Vorlesung/Machine Learning and Analysis of Neural Data - Lecture	SoSe	30 h (2 SWS)	60 h	(3)
Lecture	WP 50.2 Mathematische Modelle neuraler Systeme und Kognitiver Funktionen – Vorlesung/Mathematical Models of Neural Systems and Cognitive Functions - Lecture	SoSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex II
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Type of examination	Written exam
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.

Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Language(s)	English
Additional information	None

Module: WP 51 Vertiefende Methoden der Neurobiologie/Advanced methods in Neurobiology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Seminar	WP 51.1 Spezielle Methoden der systemischen, zellulären und molekularen Neurowissenschaften für Experten – Seminar/Special Methods in Systemic, Cellular and Molecular Neuroscience for Experts - Seminar	SoSe	30 h (2 SWS)	60 h	(3)
Practical course	WP 51.2 Maschinelles Lernen und Analyse neuraler Daten – Übung/Machine Learning and Analysis of Neural Data - Practical Course	SoSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 5 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex II
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Type of examination	Presentation and report
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory

	and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Language(s)	English
Additional information	None

Module: WP 52 Vertiefende Evolutionsbiologie, Ökologie und Systematik/Advanced Evolutionary Biology, Ecology and Systematics

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 52.1 Vertiefende Themen der Evolutionsbiologie, Ökologie und Systematik – Vorlesung/ Advanced topics in Evolutionary Biology, Ecology and Systematics - lecture	SoSe	30 h (2 SWS)	60 h	(3)
Seminar	WP 52.2 Aktuelle Publikationen zu vertiefenden Forschungsthemen der Evolutionsbiologie, Ökologie und Systematik – Seminar/Current publications on advanced research topics in Evolutionary Biology, Ecology and Systematics - seminar	SoSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex II
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Evolution, Ecology and Systematics.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Evolution, Ecology and Systematics.
Type of examination	Written exam and presentation
Type of assessment	The successful completion of the module will be graded.

Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Evolution, Ecology and Systematics.
Language(s)	English
Additional information	None

Module: WP 53 Vertiefende Theorien der Evolutionsbiologie, Ökologie und Systematik/Advanced theories in Evolutionary Biology, Ecology and Systematics

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 53.1 Vertiefende Konzepte der Evolutionsbiologie, Ökologie und Systematik – Vorlesung/Advanced concepts in Evolutionary Biology, Ecology and Systematics - lecture	SoSe	30 h (2 SWS)	60 h	(3)
Lecture	WP 53.2 Vertiefende Theorien der Evolutionsbiologie, Ökologie und Systematik – Vorlesung/Advanced theories in Evolutionary Biology, Ecology and Systematics - lecture	SoSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 4 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex II
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Evolution, Ecology and Systematics.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Evolution, Ecology and Systematics.
Type of examination	Written exam
Type of assessment	The successful completion of the module will be graded.

Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Evolution, Ecology and Systematics.
Language(s)	English
Additional information	None

Module: WP 54 Vertiefende Methoden der Evolutionsbiologie, Ökologie und Systematik/Advanced methods in Evolutionary Biology, Ecology and Systematics

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Seminar	WP 54.1 Aktuelle Publikationen zu vertiefenden Methoden der Evolutionsbiologie, Ökologie und Systematik – Seminar/Current publications on advanced methods in Evolutionary Biology, Ecology and Systematics - seminar	SoSe	30 h (2 SWS)	60 h	(3)
Practical course	WP 54.2 Vertiefende Methoden der Evolutionsbiologie, Ökologie und Systematik – Übung/Advanced methods in Evolutionary Biology, Ecology and Systematics – practical course	SoSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 5 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex II
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Evolution, Ecology and Systematics.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Evolution, Ecology and Systematics.
Type of examination	Presentation and report
Type of assessment	The successful completion of the module will be graded.

Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Evolution, Ecology and Systematics.
Language(s)	English
Additional information	None

Module: WP 55 Vertiefendes Forschungsmodul in der Genetik/Advanced research module in Genetics

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Practical course	WP 55.1 Vertiefendes Forschungspraktikum in der Genetik/Advanced research course in Genetics	SoSe	180 h (12 SWS)	120 h	(10)
Seminar	WP 55.2 Begleitendes Seminar Genetik/Accompanying seminar Genetics	SoSe	15 h (1 SWS)	45 h	(2)

For successful completion of the module, 12 ECTS credits have to be acquired. Class attendance averages about 13 contact hours. Including time for self-study, 360 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex III
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme. In the workgroup-seminar current project progress, scientific questions and applied lab protocols are discussed. The seminar further addresses questions related to experimental design, project schedules, experimental techniques and theoretical analysis. Students read the relevant literature, develop and discuss own scientific ideas and are expected to present their own research project.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme. Students will learn how to present and critically discuss scientific publications, which will further hone their scientific communication skills. During these discussions, students will be exposed to a variety of experimental

	procedures, which will further widen their knowledge in biological methods.
Type of examination	Presentation and report
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English
Additional information	None

Module: WP 56 Vertiefendes Forschungsmodul in der Humanbiologie/Advanced research module in Human Biology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Practical course	WP 56.1 Vertiefendes Forschungspraktikum in der Humanbiologie/Advanced research course in Human Biology	SoSe	180 h (12 SWS)	120 h	(10)
Seminar	WP 56.2 Begleitendes Seminar Humanbiologie/Accompanying seminar Human Biology	SoSe	15 h (1 SWS)	45 h	(2)

For successful completion of the module, 12 ECTS credits have to be acquired. Class attendance averages about 13 contact hours. Including time for self-study, 360 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex III
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme. In the workgroup-seminar current project progress, scientific questions and applied lab protocols are discussed. The seminar further addresses questions related to experimental design, project schedules, experimental techniques and theoretical analysis. Students read the relevant literature, develop and discuss own scientific ideas and are expected to present their own research project.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme. Students will learn how to present and critically discuss scientific publications, which will further hone their scientific communication skills. During these discussions,

	students will be exposed to a variety of experimental procedures, which will further widen their knowledge in biological methods.
Type of examination	Presentation and report
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English
Additional information	None

Module: WP 57 Vertiefendes Forschungsmodul in der Mikrobiologie/Advanced research module in Microbiology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Practical course	WP 57.1 Vertiefendes Forschungspraktikum in der Mikrobiologie/Advanced research course in Microbiology	SoSe	180 h (12 SWS)	120 h	(10)
Seminar	WP 57.2 Begleitendes Seminar Mikrobiologie/Accompanying seminar Microbiology	SoSe	15 h (1 SWS)	45 h	(2)

For successful completion of the module, 12 ECTS credits have to be acquired. Class attendance averages about 13 contact hours. Including time for self-study, 360 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex III
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme. In the workgroup-seminar current project progress, scientific questions and applied lab protocols are discussed. The seminar further addresses questions related to experimental design, project schedules, experimental techniques and theoretical analysis. Students read the relevant literature, develop and discuss own scientific ideas and are expected to present their own research project.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme. Students will learn how to present and critically discuss scientific publications, which will further hone their scientific communication skills. During these discussions, students will be exposed to a variety of experimental

	procedures, which will further widen their knowledge in biological methods.
Type of examination	Presentation and report
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English
Additional information	None

Module: WP 58 Vertiefendes Forschungsmodul in der Zellbiologie/Advanced research module in Cell Biology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Practical course	WP 58.1 Vertiefendes Forschungspraktikum in der Zellbiologie/Advanced research course in Cell Biology	SoSe	180 h (12 SWS)	120 h	(10)
Seminar	WP 58.2 Begleitendes Seminar Zellbiologie/Accompanying seminar Cell Biology	SoSe	15 h (1 SWS)	45 h	(2)

For successful completion of the module, 12 ECTS credits have to be acquired. Class attendance averages about 13 contact hours. Including time for self-study, 360 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex III
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme. In the workgroup-seminar current project progress, scientific questions and applied lab protocols are discussed. The seminar further addresses questions related to experimental design, project schedules, experimental techniques and theoretical analysis. Students read the relevant literature, develop and discuss own scientific ideas and are expected to present their own research project.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme. Students will learn how to present and critically discuss scientific publications, which will further hone their scientific communication skills. During these discussions, students will be exposed to a variety of experimental

	procedures, which will further widen their knowledge in biological methods.
Type of examination	Presentation and report
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English
Additional information	None

Module: WP 59 Vertiefendes Forschungsmodul in den Pflanzenwissenschaften/Advanced research module in Plant Sciences

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Practical course	WP 59.1 Vertiefendes Forschungspraktikum in den Pflanzenwissenschaften/ Advanced research course in Plant Sciences	SoSe	180 h (12 SWS)	120 h	(10)
Seminar	WP 59.2 Begleitendes Seminar Pflanzenwissenschaften/Accompanying seminar Plant Sciences	SoSe	15 h (1 SWS)	45 h	(2)

For successful completion of the module, 12 ECTS credits have to be acquired. Class attendance averages about 13 contact hours. Including time for self-study, 360 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex III
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Plant Sciences. In the workgroup-seminar current project progress, scientific questions and applied lab protocols are discussed. The seminar further addresses questions related to experimental design, project schedules, experimental techniques and theoretical analysis. Students read the relevant literature, develop and discuss own scientific ideas and are expected to present their own research project.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Plant Sciences. Students will learn how to present and critically discuss scientific publications, which will further hone their scientific communication skills. During these discussions,

	students will be exposed to a variety of experimental procedures, which will further widen their knowledge in biological methods.
Type of examination	Presentation and report
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Plant Sciences.
Language(s)	English
Additional information	None

Module: WP 60 Vertiefendes Forschungsmodul in der Neurobiologie/Advanced research module in Neurobiology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Practical course	WP 60.1 Vertiefendes Forschungspraktikum in der Neurobiologie/Advanced research course in Neurobiology	SoSe	180 h (12 SWS)	120 h	(10)
Seminar	WP 60.2 Forschungsseminar – Vertiefende Themen der Neurowissenschaften/Research Seminar - Advanced Topics in Neurosciences	SoSe	15 h (1 SWS)	45 h	(2)

For successful completion of the module, 12 ECTS credits have to be acquired. Class attendance averages about 13 contact hours. Including time for self-study, 360 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex III
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Neurosciences. In the workgroup-seminar current project progress, scientific questions and applied lab protocols are discussed. The seminar further addresses questions related to experimental design, project schedules, experimental techniques and theoretical analysis. Students read the relevant literature, develop and discuss own scientific ideas and are expected to present their own research project.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Neurosciences. Students will learn how to present and critically discuss scientific publications, which will further hone their scientific communication skills. During these discussions,

	students will be exposed to a variety of experimental procedures, which will further widen their knowledge in biological methods.
Type of examination	Presentation and report
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Language(s)	English
Additional information	None

Module: WP 61 Vertiefendes Forschungsmodul in Evolutionsbiologie, Ökologie und Systematik/Advanced research module in Evolutionary Biology, Ecology and Systematics

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Practical course	WP 61.1 Vertiefendes Forschungspraktikum in Evolutionsbiologie, Ökologie und Systematik/Advanced research course in Evolutionary Biology, Ecology and Systematics	SoSe	180 h (12 SWS)	120 h	(10)
Seminar	WP 61.2 Schlüsselqualifikationen 3: Seminar Präsentationsfähigkeiten Poster/Soft Skills 3: Seminar presentation skills	SoSe	30 h (2 SWS)	30 h	(2)

For successful completion of the module, 12 ECTS credits have to be acquired. Class attendance averages about 14 contact hours. Including time for self-study, 360 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex III
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Evolution, Ecology and Systematics. In the workgroup-seminar current project progress, scientific questions and applied lab protocols are discussed. The seminar further addresses questions related to experimental design, project schedules, experimental techniques and theoretical analysis. Students read the relevant literature, develop and discuss own scientific ideas and are expected to present their own research project.

Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Evolution, Ecology and Systematics. Students will learn how to present and critically discuss scientific publications, which will further hone their scientific communication skills. During these discussions, students will be exposed to a variety of experimental procedures, which will further widen their knowledge in biological methods.
Type of examination	Presentation and report
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Evolution, Ecology and Systematics.
Language(s)	English
Additional information	None

Module: WP 62 Vertiefende theoretische Themen in den Biowissenschaften/Advanced theoretical topics in Life Sciences

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 62.1 Vertiefende theoretische Themen in den Biowissenschaften – Vorlesung/ Advanced theoretical topics in Life Sciences - lecture	SoSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 3 ECTS credits have to be acquired. Class attendance averages about 2 contact hours. Including time for self-study, 90 hours have to be invested.

Module type	Compulsory elective module with mandatory course
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	With regard to the compulsory elective modules WP 62 – WP 69, two compulsory elective modules must be taken.
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Written exam
Type of assessment	The successful completion of the module will not be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English

Additional information	None

Module: WP 63 Vertiefende theoretische Konzepte in den Biowissenschaften/Advanced theoretical concepts in Life Sciences

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 63.1 Vertiefende theoretische Konzepte in den Biowissenschaften – Vorlesung/ Advanced theoretical concepts in Life Sciences - lecture	SoSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 3 ECTS credits have to be acquired. Class attendance averages about 2 contact hours. Including time for self-study, 90 hours have to be invested.

Module type	Compulsory elective module with mandatory course
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	With regard to the compulsory elective modules WP 62 – WP 69, two compulsory elective modules must be taken.
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Written exam
Type of assessment	The successful completion of the module will not be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.

Language(s)	English
Additional information	None

Module: WP 64 Vertiefende Forschungsthemen in den Biowissenschaften/Advanced research topics in Life Sciences

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Seminar	WP 64.1 Vertiefende Forschungsthemen in den Biowissenschaften – Seminar/ Advanced research topics in Life Sciences - seminar	SoSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 3 ECTS credits have to be acquired. Class attendance averages about 2 contact hours. Including time for self-study, 90 hours have to be invested.

Module type	Compulsory elective module with mandatory course
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	With regard to the compulsory elective modules WP 62 – WP 69, two compulsory elective modules must be taken.
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Presentation
Type of assessment	The successful completion of the module will not be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English

Additional information	None

Module: WP 65 Vertiefende Methoden der Biowissenschaften/ Advanced methods in Life Sciences

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Seminar	WP 65.1 Aktuelle Publikationen zu vertiefenden Methoden in den Biowissenschaften – Seminar/Current publications on advanced methods in Life Sciences - seminar	SoSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 3 ECTS credits have to be acquired. Class attendance averages about 2 contact hours. Including time for self-study, 90 hours have to be invested.

Module type	Compulsory elective module with mandatory course
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	With regard to the compulsory elective modules WP 62 – WP 69, two compulsory elective modules must be taken.
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Presentation
Type of assessment	The successful completion of the module will not be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.

Language(s)	English
Additional information	None

Module: WP 66 Vertiefende Labormethoden in den Biowissenschaften/Advanced lab methods in Life Sciences

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Practical course	WP 66.1 Vertiefende Labormethoden in den Biowissenschaften – Übung/ Advanced lab methods in Life Sciences – practical course	SoSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 3 ECTS credits have to be acquired. Class attendance averages about 3 contact hours. Including time for self-study, 90 hours have to be invested.

Module type	Compulsory elective module with mandatory course
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	With regard to the compulsory elective modules WP 62 – WP 69, two compulsory elective modules must be taken.
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Report
Type of assessment	The successful completion of the module will not be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English

Additional information	None

Module: WP 67 Vertiefende computergestützte Methoden in den Biowissenschaften/Advanced computational methods in Life Sciences

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Practical course	WP 67.1 Vertiefende computer-gestützte Methoden in den Biowissenschaften – Übung/ Advanced computational methods in Life Sciences – practical course	SoSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 3 ECTS credits have to be acquired. Class attendance averages about 3 contact hours. Including time for self-study, 90 hours have to be invested.

Module type	Compulsory elective module with mandatory course
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	With regard to the compulsory elective modules WP 62 – WP 69, two compulsory elective modules must be taken.
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Report
Type of assessment	The successful completion of the module will not be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.

Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English
Additional information	None

Module: WP 68 Betreuung von Studierenden II/Tutoring of students II

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Practical course	WP 68.1 Betreuung von Studierenden 2/ Tutoring of students 2	SoSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 3 ECTS credits have to be acquired. Class attendance averages about 3 contact hours. Including time for self-study, 90 hours have to be invested.

Module type	Compulsory elective module with mandatory course
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	With regard to the compulsory elective modules WP 62 – WP 69, two compulsory elective modules must be taken.
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	Tutoring of students: the students are tutoring other students in different courses. The courses could be on Bachelor or Master level. Requirement is sufficient knowledge in the specific field.
Learning outcomes	Besides the content of the specific course students gain knowledge about course preparation including administration, preparation of material for experiments, answering strategies of questions and how to handle requirements of different students. They learn about self organization, necessary preparation for the different contents and the necessary knowledge between understanding and teaching content to other students.
Type of examination	Presentation
Type of assessment	The successful completion of the module will not be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory

	and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Dean of studies, all teaching staff of the different courses, in which students are involved as tutors
Language(s)	English
Additional information	None

Module: WP 69 Berufsqualifikation II/Vocational course II

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Practical course	WP 69.1 Berufsqualifikation 2 – Übung/Vocational course 2 – practical course	SoSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 3 ECTS credits have to be acquired. Class attendance averages about 3 contact hours. Including time for self-study, 90 hours have to be invested.

Module type	Compulsory elective module with mandatory course
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	With regard to the compulsory elective modules WP 62 – WP 69, two compulsory elective modules must be taken.
Entry requirements	None
Semester	Recommended semester: 2
Duration	The completion of the module takes 1 semester.
Content	This module contains courses which equip students for their future career with necessary skills besides their biological knowledge. This could be courses e.g. about time management, self-organization, leadership, language and communication skills, entrepreneurship as well as internships in companies about marketing, human resources, management or administration.
Learning outcomes	At the end of the module each student will have a realistic perspective of the future work expectations regarding the soft skills. The objectives are to help students gain good self-positioning, self-reflection and self-organization, an understanding how to be a good communicator and listener with problem-solving skills in a modern work environment.
Type of examination	Presentation or report
Type of assessment	The successful completion of the module will not be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory

	and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Dean of studies, teaching staff of the different courses
Language(s)	English
Additional information	None

Module: WP 70 Spezielles Forschungsmodul in der Genetik/Special research module in Genetics

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 70.1 Spezielle Themen der Genetik – Vorlesung/Special topics in Genetics - lecture	WiSe	30 h (2 SWS)	60 h	(3)
Practical course	WP 70.2 Spezielle Themen der Genetik – Forschungsprojekt/Special topics in Genetics – research course	WiSe	180 h (12 SWS)	120 h	(10)
Seminar	WP 70.3 Seminar zum Forschungsprojekt spezielle Themen der Genetik/Seminar to the research course special topics in Genetics	WiSe	15 h (1 SWS)	45 h	(2)

For successful completion of the module, 15 ECTS credits have to be acquired. Class attendance averages about 15 contact hours. Including time for self-study, 450 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex IV
Entry requirements	None
Semester	Recommended semester: 3
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme. In the research seminar of the workgroup current project progress, scientific questions and applied lab protocols are discussed. The seminar further addresses questions related to experimental design, project schedules, experimental techniques and theoretical analysis. Students read the relevant literature, develop and discuss own scientific ideas and are expected to present their own research project.

Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme. Students will learn how to present and critically discuss scientific publications, which will further hone their scientific communication skills. During these discussions, students will be exposed to a variety of experimental procedures, which will further widen their knowledge in biological methods.
Type of examination	Report and oral examination
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English
Additional information	None

Module: WP 71 Spezielle Methoden der Genetik/Special methods in Genetics

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Seminar	WP 71.1 Spezielle Methoden der Genetik – Seminar/Special methods in Genetics - seminar	WiSe	30 h (2 SWS)	60 h	(3)
Practical course	WP 71.2 Spezielle Methoden der Genetik – Übung/Special methods in Genetics – practical course	WiSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 5 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex IV
Entry requirements	None
Semester	Recommended semester: 3
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Presentation and report
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English

Additional information	None

Module: WP 72 Spezielles Forschungsmodul in der Humanbiologie/Special research module in Human Biology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 72.1 Spezielle Themen der Humanbiologie – Vorlesung/Special topics in Human Biology - lecture	WiSe	30 h (2 SWS)	60 h	(3)
Practical course	WP 72.2 Spezielle Themen der Humanbiologie – Forschungsprojekt/Special topics in Human Biology – research course	WiSe	180 h (12 SWS)	120 h	(10)
Seminar	WP 72.3 Seminar zum Forschungsprojekt spezielle Themen der Humanbiologie/Seminar to the research course special topics in Human Biology	WiSe	15 h (1 SWS)	45 h	(2)

For successful completion of the module, 15 ECTS credits have to be acquired. Class attendance averages about 15 contact hours. Including time for self-study, 450 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex IV
Entry requirements	None
Semester	Recommended semester: 3
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme. In the research seminar of the workgroup current project progress, scientific questions and applied lab protocols are discussed. The seminar further addresses questions related to experimental design, project schedules, experimental techniques and theoretical analysis. Students read the relevant literature, develop and discuss own scientific ideas and are expected to present their own research project.

Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme. Students will learn how to present and critically discuss scientific publications, which will further hone their scientific communication skills. During these discussions, students will be exposed to a variety of experimental procedures, which will further widen their knowledge in biological methods.
Type of examination	Report and oral examination
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English
Additional information	None

Module: WP 73 Spezielle Methoden der Humanbiologie/Special methods in Human Biology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Seminar	WP 73.1 Spezielle Methoden der Humanbiologie – Seminar/ Special methods in Human Biology - seminar	WiSe	30 h (2 SWS)	60 h	(3)
Practical course	WP 73.2 Spezielle Methoden der Humanbiologie – Übung/ Special methods in Human Biology – practical course	WiSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 5 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex IV
Entry requirements	None
Semester	Recommended semester: 3
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Presentation and report
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.

Language(s)	English
Additional information	None

Module: WP 74 Spezielles Forschungsmodul in der Mikrobiologie/Special research module in Microbiology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 74.1 Spezielle Themen der Mikrobiologie – Vorlesung/Special topics in Microbiology - lecture	WiSe	30 h (2 SWS)	60 h	(3)
Practical course	WP 74.2 Spezielle Themen der Mikrobiologie – Forschungsprojekt/Special topics in Microbiology – research course	WiSe	180 h (12 SWS)	120 h	(10)
Seminar	WP 74.3 Seminar zum Forschungsprojekt spezielle Themen der Mikrobiologie/Seminar to the research course Special topics in Microbiology	WiSe	15 h (1 SWS)	45 h	(2)

For successful completion of the module, 15 ECTS credits have to be acquired. Class attendance averages about 15 contact hours. Including time for self-study, 450 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex IV
Entry requirements	None
Semester	Recommended semester: 3
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme. In the research seminar of the workgroup current project progress, scientific questions and applied lab protocols are discussed. The seminar further addresses questions related to experimental design, project schedules, experimental techniques and theoretical analysis. Students read the relevant literature, develop and discuss own scientific ideas and are expected to present their own research project.

Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme. Students will learn how to present and critically discuss scientific publications, which will further hone their scientific communication skills. During these discussions, students will be exposed to a variety of experimental procedures, which will further widen their knowledge in biological methods.
Type of examination	Report and oral examination
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English
Additional information	None

Module: WP 75 Spezielle Methoden der Mikrobiologie/Special methods in Microbiology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Seminar	WP 75.1 Spezielle Methoden der Mikrobiologie – Seminar/ Special methods in Microbiology - seminar	WiSe	30 h (2 SWS)	60 h	(3)
Practical course	WP 75.2 Spezielle Methoden der Mikrobiologie – Übung/ Special methods in Microbiology – practical course	WiSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 5 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex IV
Entry requirements	None
Semester	Recommended semester: 3
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Presentation and report
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.

Language(s)	English
Additional information	None

Module: WP 76 Spezielles Forschungsmodul in der Zellbiologie/Special research module in Cell Biology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 76.1 Spezielle Themen der Zellbiologie – Vorlesung/Special topics in Cell Biology - lecture	WiSe	30 h (2 SWS)	60 h	(3)
Practical course	WP 76.2 Spezielle Themen der Zellbiologie – Forschungsprojekt/Special topics in Cell Biology – research course	WiSe	180 h (12 SWS)	120 h	(10)
Seminar	WP 76.3 Seminar zum Forschungsprojekt spezielle Themen der Zellbiologie/Seminar to the research course Special topics in Cell Biology	WiSe	15 h (1 SWS)	45 h	(2)

For successful completion of the module, 15 ECTS credits have to be acquired. Class attendance averages about 15 contact hours. Including time for self-study, 450 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex IV
Entry requirements	None
Semester	Recommended semester: 3
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme. In the research seminar of the workgroup current project progress, scientific questions and applied lab protocols are discussed. The seminar further addresses questions related to experimental design, project schedules, experimental techniques and theoretical analysis. Students read the relevant literature, develop and discuss own scientific ideas and are expected to present their own research project.

Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme. Students will learn how to present and critically discuss scientific publications, which will further hone their scientific communication skills. During these discussions, students will be exposed to a variety of experimental procedures, which will further widen their knowledge in biological methods.
Type of examination	Report and oral examination
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English
Additional information	None

Module: WP 77 Spezielle Methoden der Zellbiologie/Special methods in Cell Biology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Seminar	WP 77.1 Spezielle Methoden der Zellbiologie – Seminar/ Special methods in Cell Biology - seminar	WiSe	30 h (2 SWS)	60 h	(3)
Practical course	WP 77.2 Spezielle Methoden der Zellbiologie – Übung/ Special methods in Cell Biology – practical course	WiSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 5 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex IV
Entry requirements	None
Semester	Recommended semester: 3
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Presentation and report
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.

Language(s)	English
Additional information	None

Module: WP 78 Spezielles Forschungsmodul in den Pflanzenwissenschaften/Special research module in Plant Sciences

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 78.1 Spezielle Themen der Pflanzenwissenschaften – Vorlesung/Special topics in Plant Sciences - lecture	WiSe	30 h (2 SWS)	60 h	(3)
Practical course	WP 78.2 Spezielle Themen der Pflanzenwissenschaften – Forschungsprojekt/Special topics in Plant Sciences – research course	WiSe	180 h (12 SWS)	120 h	(10)
Seminar	WP 78.3 Seminar zum Forschungsprojekt spezielle Themen der Pflanzenwissenschaften/Seminar to research course Special topics in Plant Sciences	WiSe	15 h (1 SWS)	45 h	(2)

For successful completion of the module, 15 ECTS credits have to be acquired. Class attendance averages about 15 contact hours. Including time for self-study, 450 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex IV
Entry requirements	None
Semester	Recommended semester: 3
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Plant Sciences. In the research seminar of the workgroup current project progress, scientific questions and applied lab protocols are discussed. The seminar further addresses questions related to experimental design, project schedules, experimental techniques and theoretical analysis. Students read the relevant literature, develop and discuss own

	scientific ideas and are expected to present their own research project.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Plant Sciences. Students will learn how to present and critically discuss scientific publications, which will further hone their scientific communication skills. During these discussions, students will be exposed to a variety of experimental procedures, which will further widen their knowledge in biological methods.
Type of examination	Report and oral examination exam
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Plant Sciences.
Language(s)	English
Additional information	None

Module: WP 79 Spezielle Methoden der Pflanzenwissenschaften/Special methods in Plant Sciences

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Seminar	WP 79.1 Spezielle Methoden der Pflanzenwissenschaften – Seminar/Special methods in Plant Sciences - seminar	WiSe	30 h (2 SWS)	60 h	(3)
Practical course	WP 79.2 Spezielle Methoden der Pflanzenwissenschaften – Übung/Special methods in Plant Sciences – practical course	WiSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 5 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex IV
Entry requirements	None
Semester	Recommended semester: 3
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Plant Sciences.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Plant Sciences.
Type of examination	Presentation and report
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Plant Sciences.

Language(s)	English
Additional information	None

Module: WP 80 Spezielles Forschungsmodul in der Neurobiologie/Special research module in Neurobiology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 80.1 Interdisziplinäres Training 3 – Vorlesung/Interdisciplinary Training 3 - Lecture	WiSe and SoSe	30 h (2 SWS)	60 h	(3)
Practical course	WP 80.2 Spezielle Themen der Neurobiologie – Forschungsprojekt/Special topics in Neurobiology – research course	WiSe	180 h (12 SWS)	120 h	(10)
Seminar	WP 80.3 Forschungsseminar – Spezielle Themen der Neurowissenschaften/Research Seminar - Special Topics in Neurosciences	WiSe	15 h (1 SWS)	45 h	(2)

For successful completion of the module, 15 ECTS credits have to be acquired. Class attendance averages about 15 contact hours. Including time for self-study, 450 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex IV
Entry requirements	None
Semester	Recommended semester: 3
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Neurosciences. In the research seminar of the workgroup current project progress, scientific questions and applied lab protocols are discussed. The seminar further addresses questions related to experimental design, project schedules, experimental techniques and theoretical analysis. Students read the relevant literature, develop and discuss own scientific ideas and are expected to present their own research project.

Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Neurosciences. Students will learn how to present and critically discuss scientific publications, which will further hone their scientific communication skills. During these discussions, students will be exposed to a variety of experimental procedures, which will further widen their knowledge in biological methods.
Type of examination	Report and oral examination
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Language(s)	English
Additional information	None

Module: WP 81 Spezielle Methoden der Neurobiologie/Special methods in Neurobiology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Seminar	WP 81.1 Interdisziplinäres Training 7 - Seminar/Interdisciplinary Training 7 - Seminar	WiSe and SoSe	30 h (2 SWS)	60 h	(3)
Practical course	WP 81.2 Interdisziplinäres Training 11 – Praktikum/Interdisciplinary Training 11 - Practical Course	WiSe and SoSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 5 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex IV
Entry requirements	None
Semester	Recommended semester: 3
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.
Type of examination	Presentation and report
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Neurosciences.

Language(s)	English
Additional information	None

Module: WP 82 Spezielles Forschungsmodul in Evolutionsbiologie, Ökologie und Systematik/Special research module in Evolutionary Biology, Ecology and Systematics

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 82.1 Spezielle Themen der Evolutionsbiologie, Ökologie und Systematik – Vorlesung/ Special topics in Evolutionary Biology, Ecology and Systematics - lecture	WiSe	30 h (2 SWS)	60 h	(3)
Practical course	WP 82.2 Spezielle Themen der Evolutionsbiologie, Ökologie und Systematik – Forschungsprojekt/Special topics in Evolutionary Biology, Ecology and Systematics – research course	WiSe	180 h (12 SWS)	120 h	(10)
Seminar	WP 82.3 Schlüsselqualifikationen 4: Seminar Planung von Forschungsprojekten/Soft Skills 4: Seminar design of research projects	WiSe	30 h (2 SWS)	30 h	(2)

For successful completion of the module, 15 ECTS credits have to be acquired. Class attendance averages about 16 contact hours. Including time for self-study, 450 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex IV
Entry requirements	None
Semester	Recommended semester: 3
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Evolution, Ecology and Systematics. In the research seminar of the workgroup current project progress, scientific questions and applied lab protocols are discussed. The seminar further addresses questions

	related to experimental design, project schedules, experimental techniques and theoretical analysis. Students read the relevant literature, develop and discuss own scientific ideas and are expected to present their own research project.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Evolution, Ecology and Systematics. Students will learn how to present and critically discuss scientific publications, which will further hone their scientific communication skills. During these discussions, students will be exposed to a variety of experimental procedures, which will further widen their knowledge in biological methods.
Type of examination	Report and oral examination
Type of assessment	The successful completion of the module will be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Evolution, Ecology and Systematics.
Language(s)	English
Additional information	None

Module: WP 83 Spezielle Methoden der Evolutionsbiologie, Ökologie und Systematik/Special methods in Evolutionary Biology, Ecology and Systematics

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Seminar	WP 83.1 Spezielle Methoden der Evolutionsbiologie, Ökologie und Systematik – Seminar/Special methods in Evolutionary Biology, Ecology and Systematics - seminar	WiSe	30 h (2 SWS)	60 h	(3)
Practical course	WP 83.2 Spezielle Labormethoden der Evolutionsbiologie, Ökologie und Systematik – Übung/ Special lab methods in Evolutionary Biology, Ecology and Systematics – practical course	WiSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 6 ECTS credits have to be acquired. Class attendance averages about 5 contact hours. Including time for self-study, 180 hours have to be invested.

Module type	Compulsory elective module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	See Annex IV
Entry requirements	None
Semester	Recommended semester: 3
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme Evolution, Ecology and Systematics.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme Evolution, Ecology and Systematics.
Type of examination	Presentation and report
Type of assessment	The successful completion of the module will be graded.

Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme Evolution, Ecology and Systematics.
Language(s)	English
Additional information	None

Module: WP 84 Spezielle Themen in den Biowissenschaften/Special topics in Life Sciences

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 84.1 Spezielle Themen in den Biowissenschaften – Vorlesung/ pecial topics in Life Sciences - lecture	WiSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 3 ECTS credits have to be acquired. Class attendance averages about 2 contact hours. Including time for self-study, 90 hours have to be invested.

Module type	Compulsory elective module with mandatory course
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	With regard to the compulsory elective modules WP 84 – WP 94, three modules must be taken.
Entry requirements	None
Semester	Recommended semester: 3
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Written exam
Type of assessment	The successful completion of the module will not be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English

Additional information	None

Module: WP 85 Spezielle Konzepte in den Biowissenschaften/Special concepts in Life Sciences

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 85.1 Spezielle Konzepte in den Biowissenschaften – Vorlesung/Special concepts in Life Sciences - lecture	WiSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 3 ECTS credits have to be acquired. Class attendance averages about 2 contact hours. Including time for self-study, 90 hours have to be invested.

Module type	Compulsory elective module with mandatory course
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	With regard to the compulsory elective modules WP 84 – WP 94, three modules must be taken.
Entry requirements	None
Semester	Recommended semester: 3
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Written exam
Type of assessment	The successful completion of the module will not be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English

Additional information	None

Module: WP 86 Spezielle Theorien in den Biowissenschaften/Special theories in Life Sciences

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Lecture	WP 86.1 Spezielle Theorien in den Biowissenschaften – Vorlesung/Special theories in Life Sciences - lecture	WiSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 3 ECTS credits have to be acquired. Class attendance averages about 2 contact hours. Including time for self-study, 90 hours have to be invested.

Module type	Compulsory elective module with mandatory course
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	With regard to the compulsory elective modules WP 84 – WP 94, three modules must be taken.
Entry requirements	None
Semester	Recommended semester: 3
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Written exam
Type of assessment	The successful completion of the module will not be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English

Additional information	None

Module: WP 87 Spezielle Forschungsthemen in den Biowissenschaften/Special research topics in Life Sciences

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Seminar	WP 87.1 Spezielle Forschungsthemen in den Biowissenschaften – Seminar/ Special research topics in Life Sciences - seminar	WiSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 3 ECTS credits have to be acquired. Class attendance averages about 2 contact hours. Including time for self-study, 90 hours have to be invested.

Module type	Compulsory elective module with mandatory course
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	With regard to the compulsory elective modules WP 84 – WP 94, three modules must be taken.
Entry requirements	None
Semester	Recommended semester: 3
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	presentation
Type of assessment	The successful completion of the module will not be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English

Additional information	None

Module: WP 88 Spezielle Methoden in den Biowissenschaften/ Special methods in Life Sciences

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Seminar	WP 88.1 Spezielle Methoden in den Biowissenschaften – Seminar/Special methods in Life Sciences - seminar	WiSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 3 ECTS credits have to be acquired. Class attendance averages about 2 contact hours. Including time for self-study, 90 hours have to be invested.

Module type	Compulsory elective module with mandatory course
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	With regard to the compulsory elective modules WP 84 – WP 94, three modules must be taken.
Entry requirements	None
Semester	Recommended semester: 3
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Presentation
Type of assessment	The successful completion of the module will not be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English

Additional information	None

Module: WP 89 Spezielle Auswertungsverfahren in den Biowissenschaften/Special analysis techniques in Life Sciences

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Seminar	WP 89.1 Spezielle Auswertungsverfahren in den Biowissenschaften – Seminar/ Special analysis techniques in Life Sciences - seminar	WiSe	30 h (2 SWS)	60 h	(3)

For successful completion of the module, 3 ECTS credits have to be acquired. Class attendance averages about 2 contact hours. Including time for self-study, 90 hours have to be invested.

Module type	Compulsory elective module with mandatory course
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	With regard to the compulsory elective modules WP 84 – WP 94, three modules must be taken.
Entry requirements	None
Semester	Recommended semester: 3
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Presentation
Type of assessment	The successful completion of the module will not be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English

Additional information	None

Module: WP 90 Spezielle Labormethoden in den Biowissenschaften/Special lab methods in Life Sciences

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Practical course	WP 90.1 Spezielle Labormethoden in den Biowissenschaften – Übung/ Special lab methods in Life Sciences – practical course	WiSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 3 ECTS credits have to be acquired. Class attendance averages about 3 contact hours. Including time for self-study, 90 hours have to be invested.

Module type	Compulsory elective module with mandatory course
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	With regard to the compulsory elective modules WP 84 – WP 94, three modules must be taken.
Entry requirements	None
Semester	Recommended semester: 3
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Report
Type of assessment	The successful completion of the module will not be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English

Additional information	None

Module: WP 91 Spezielle molekularbiologische Techniken in den Biowissenschaften/Special molecular biological techniques in Life Sciences

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Practical course	WP 91.1 Spezielle molekular-biologische Techniken in den Biowissenschaften – Übung/ Special molecular biological techniques in Life Sciences – practical course	WiSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 3 ECTS credits have to be acquired. Class attendance averages about 3 contact hours. Including time for self-study, 90 hours have to be invested.

Module type	Compulsory elective module with mandatory course
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	With regard to the compulsory elective modules WP 84 – WP 94, three modules must be taken.
Entry requirements	None
Semester	Recommended semester: 3
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Report
Type of assessment	The successful completion of the module will not be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.

Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English
Additional information	None

Module: WP 92 Spezielle computergestützte Methoden in den Biowissenschaften/Special computational methods in Life Sciences

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Practical course	WP 92.1 Spezielle computer-gestützte Methoden in den Biowissenschaften – Übung/ Special computational methods in Life Sciences – practical course	WiSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 3 ECTS credits have to be acquired. Class attendance averages about 3 contact hours. Including time for self-study, 90 hours have to be invested.

Module type	Compulsory elective module with mandatory course
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	With regard to the compulsory elective modules WP 84 – WP 94, three modules must be taken.
Entry requirements	None
Semester	Recommended semester: 3
Duration	The completion of the module takes 1 semester.
Content	Please refer to the elective course catalogue for the Master´s Programme.
Learning outcomes	Please refer to the elective course catalogue for the Master´s Programme.
Type of examination	Report
Type of assessment	The successful completion of the module will not be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.

Responsible contact	Please refer to the elective course catalogue for the Master´s Programme.
Language(s)	English
Additional information	None

Module: WP 93 Betreuung von Studierenden III/Tutoring of students III

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Practical course	WP 93.1 Betreuung von Studierenden 3/Tutoring of students 3	WiSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 3 ECTS credits have to be acquired. Class attendance averages about 3 contact hours. Including time for self-study, 90 hours have to be invested.

Module type	Compulsory elective module with mandatory course
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	With regard to the compulsory elective modules WP 84 – WP 94, three modules must be taken.
Entry requirements	None
Semester	Recommended semester: 3
Duration	The completion of the module takes 1 semester.
Content	Tutoring of students: the students are tutoring other students in different courses. The courses could be on Bachelor or Master level. Requirement is sufficient knowledge in the specific field.
Learning outcomes	Besides the content of the specific course students gain knowledge about course preparation including administration, preparation of material for experiments, answering strategies of questions and how to handle requirements of different students. They learn about self organization, necessary preparation for the different contents and the necessary knowledge between understanding and teaching content to other students.
Type of examination	Presentation
Type of assessment	The successful completion of the module will not be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory

	and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Dean of studies, all teaching staff of the different courses students are involved as tutors
Language(s)	English
Additional information	None

Module: WP 94 Berufsqualifikation III/Vocational course III

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Practical course	WP 94.1 Berufsqualifikation 3 – Übung/Vocational course 3 – practical course	WiSe	45 h (3 SWS)	45 h	(3)

For successful completion of the module, 3 ECTS credits have to be acquired. Class attendance averages about 3 contact hours. Including time for self-study, 90 hours have to be invested.

Module type	Compulsory elective module with mandatory course
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	With regard to the compulsory elective modules WP 84 – WP 94, three modules must be taken.
Entry requirements	None
Semester	Recommended semester: 3
Duration	The completion of the module takes 1 semester.
Content	This module contains courses which equip students for their future career with necessary skills besides their biological knowledge. This could be courses e.g. about time management, self-organization, leadership, language and communication skills, entrepreneurship as well as internships in companies about marketing, human resources, management or administration.
Learning outcomes	At the end of the module each student will have a realistic perspective of the future work expectations regarding the soft skills. The objectives are to help students gain good self-positioning, self-reflection and self-organization, an understanding how to be a good communicator and listener with problem-solving skills in a modern work environment.
Type of examination	Presentation or report
Type of assessment	The successful completion of the module will not be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory

	and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Dean of studies, teaching staff of the different courses
Language(s)	English
Additional information	None

Module: P 3 Vernetzung in der Molekular- und Zellbiologie/Interconnection in Molecular and Cellular Biology

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Colloquium	P 3.1 Molekular- und Zellbiologisches Kolloquium/Molecular and cell biological Colloquium	WiSe and SoSe	15 h (1 SWS)	30 h	(1,5)
Seminar	P 3.2 Molekular- und Zellbiologisches Forschungsseminar/Molecular and cell biological research seminar	WiSe and SoSe	15 h (1 SWS)	30 h	(1,5)

For successful completion of the module, 3 ECTS credits have to be acquired. Class attendance averages about 2 contact hours. Including time for self-study, 90 hours have to be invested.

Module type	Mandatory module with mandatory courses
Usability of the module in other Programmes	Master´s Programms: Evolution, Ecology and Systematics; Human Biology; Plant Sciences
Elective guidelines	None
Entry requirements	None
Semester	Recommended semester: 4
Duration	The completion of the module takes 1 semester.
Content	The students attend 20 scientific talks including scientific talks of invited guest speakers from outside the LMU, and the research-workgroup seminar of their master thesis supervisors.
Learning outcomes	Students are aware of current research topics and know researchers outside of the faculty and are aware of additional current research topics. Within the research seminar of their workgroup the participants gain holistic knowledge about the topic of their master's thesis. They are able to present their current work in the group meeting and discuss current research questions related to their thesis. They understand the conception of experiments, trouble shooting procedures and critical analysis and presentation of data.
Type of examination	Presentation

Type of assessment	The successful completion of the module will not be graded.
Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Qualified supervisor from the Faculty of Biology.
Language(s)	English
Additional information	None

Module: P 4 Abschlussmodul/Final module

Programme	Master's Programme: Molecular and Cellular Biology (Master of Science, M.Sc.)

Related module parts

Course type	Course (mandatory)	Rotation	Contact hours	Self-study hours	ECTS
Thesis	P 4.1 Masterarbeit/Master's thesis	WiSe and SoSe	-	780 h	(26)
Disputation	P 4.2 Disputation	WiSe and SoSe	-	30 h	(1)

For successful completion of the module, 27 ECTS credits have to be acquired. 810 hours have to be invested.

Module type	Mandatory module with mandatory courses
Usability of the module in other Programmes	None
Elective guidelines	None
Entry requirements	Successful completion of the modules P 1 and P 2, completed acquisition of 18 ECTS credits from the elective modules WP 1 – WP 31 and completed acquisition of 30 ECTS credits from the elective modules WP 32 – WP 94
Semester	Recommended semester: 4
Duration	The completion of the module takes 1 semester.
Content	The master's final module is composed of a master's thesis and oral defense. This module represents the climax of the master's program and requires independent experimental work under supervision of an instructor/advisor.
Learning outcomes	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.
Type of examination	Thesis and disputation
Type of assessment	The successful completion of the module will be graded.

Requirements for the gain of ECTS credits	ECTS credits will be granted when the module examination (or the examination of pertinent mandatory and potential elective compulsory module parts) has/have been completed successfully.
Responsible contact	Qualified supervisor from the Faculty of Biology.
Language(s)	English
Additional information	None

Annex I: Elective guidelines regarding the elective modules WP 1 – WP 23

Regarding the elective fields "Genetik", "Humanbiologie", "Mikrobiologie", "Zellbiologie", "Pflanzenwissenschaften", "Neurobiologie" and "Evolutionsbiologie, Ökologie und Systematik", exactly one elective field must be taken.

By choosing

1. the elective field "Genetik", the elective modules (WP 1 or WP 2) and WP 3
2. the elective field "Humanbiologie", the elective modules (WP 4 or WP 5) and WP 6
3. the elective field "Mikrobiologie", the elective modules (WP 7 or WP 8) and WP 9
4. the elective field "Zellbiologie", the elective modules (WP 10 or WP 11) and WP 12
5. the elective field "Pflanzenwissenschaften", the elective modules (WP 13 or WP 14) and WP 15
6. the elective field "Neurobiologie", the elective modules (WP 16 or WP 17 or WP 18 or WP 19) and WP 20
7. the elective field "Evolutionsbiologie, Ökologie und Systematik", the elective modules (WP 21 or WP 22) and WP 23

must be taken.

With regard to the elective fields "Pflanzenwissenschaften" (WP 13 – WP 15), "Neurobiologie" (WP 16 – WP 20), "Evolutionsbiologie, Ökologie und Systematik" (WP 21 – WP 23), "Vertiefende Pflanzenwissenschaften" (WP 44 – WP 46), "Vertiefende Neurobiologie" (WP 47 – WP 51), "Vertiefende Evolutionsbiologie, Ökologie und Systematik" (WP 52 – WP 54), "Forschungsschwerpunkt Pflanzenwissenschaften" (WP 78 and WP 79), "Forschungsschwerpunkt Neurobiologie" (WP 80 and WP 81) and "Forschungsschwerpunkt Evolutionsbiologie, Ökologie und Systematik" (WP 82 and WP 83) and to the elective modules WP 59 – WP 61, a student may take up to 24 ECTS credits worth of elective fields and modules.

Annex II: Elective guidelines regarding the elective modules WP 32 – WP 54

Regarding the elective fields "Vertiefende Genetik", "Vertiefende Humanbiologie", "Vertiefende Mikrobiologie", "Vertiefende Zellbiologie", "Vertiefende Pflanzenwissenschaften", "Vertiefende Neurobiologie" and "Vertiefende Evolutionsbiologie, Ökologie und Systematik", exactly one elective field must be taken.

By choosing

1. the elective field "Vertiefende Genetik", the elective modules (WP 32 or WP 33) and WP 34
2. the elective field "Vertiefende Humanbiologie", the elective modules (WP 35 or WP 36) and WP 37
3. the elective field "Vertiefende Mikrobiologie", the elective modules (WP 38 or WP 39) and WP 40
4. the elective field "Vertiefende Zellbiologie", the elective modules (WP 41 or WP 42) and WP 43
5. the elective field "Vertiefende Pflanzenwissenschaften", the elective modules (WP 44 or WP 45) and WP 46,
6. the elective field "Vertiefende Neurobiologie", the elective modules (WP 47 or WP 48 or WP 49 or WP 50) and WP 51
7. the elective field "Vertiefende Evolutionsbiologie, Ökologie und Systematik", the elective modules (WP 52 or WP 53) and WP 54

must be taken.

With regard to the elective fields "Pflanzenwissenschaften" (WP 13 – WP 15), "Neurobiologie" (WP 16 – WP 20), "Evolutionsbiologie, Ökologie und Systematik" (WP 21 – WP 23), "Vertiefende Pflanzenwissenschaften" (WP 44 – WP 46), "Vertiefende Neurobiologie" (WP 47 – WP 51), "Vertiefende Evolutionsbiologie, Ökologie und Systematik" (WP 52 – WP 54), "Forschungsschwerpunkt Pflanzenwissenschaften" (WP 78 and WP 79), "Forschungsschwerpunkt Neurobiologie" (WP 80 and WP 81) and "Forschungsschwerpunkt Evolutionsbiologie, Ökologie und Systematik" (WP 82 and WP 83) and to the elective modules WP 59 – WP 61, a student may take up to 24 ECTS credits worth of elective fields and modules.

Annex III: Elective guidelines regarding the elective modules WP 55 – WP 61

With regard to the elective modules WP 55 – WP 61, one elective module must be taken.

With regard to the elective fields "Pflanzenwissenschaften" (WP 13 – WP 15), "Neurobiologie" (WP 16 – WP 20), "Evolutionsbiologie, Ökologie und Systematik" (WP 21 – WP 23), "Vertiefende Pflanzenwissenschaften" (WP 44 – WP 46), "Vertiefende Neurobiologie" (WP 47 – WP 51), "Vertiefende Evolutionsbiologie, Ökologie und Systematik" (WP 52 – WP 54), "Forschungsschwerpunkt Pflanzenwissenschaften" (WP 78 and WP 79), "Forschungsschwerpunkt Neurobiologie" (WP 80 and WP 81) and "Forschungsschwerpunkt Evolutionsbiologie, Ökologie und Systematik" (WP 82 and WP 83) and to the elective modules WP 59 – WP 61, a student may take up to 24 ECTS credits worth of elective fields and modules.

Annex IV: Elective guidelines regarding the elective modules WP 70 – WP 83

Regarding the elective fields "Forschungsschwerpunkt Genetik", "Forschungsschwerpunkt Humanbiologie", "Forschungsschwerpunkt Mikrobiologie", "Forschungsschwerpunkt Zellbiologie", "Forschungsschwerpunkt Pflanzenwissenschaften", "Forschungsschwerpunkt Neurobiologie" and "Forschungsschwerpunkt Evolutionsbiologie, Ökologie und Systematik", exactly one elective field must be taken.

By choosing

1. the elective field "Forschungsschwerpunkt Genetik", the elective modules WP 70 and WP 71

2. the elective field "Forschungsschwerpunkt Humanbiologie", the elective modules WP 72 and WP 73

3. the elective field "Forschungsschwerpunkt Mikrobiologie", the elective modules WP 74 and WP 75

4. the elective field "Forschungsschwerpunkt Zellbiologie", the elective modules WP 76 and WP 77

5. the elective field "Forschungsschwerpunkt Pflanzenwissenschaften", the elective modules WP 78 and WP 79

6. the elective field "Forschungsschwerpunkt Neurobiologie", the elective modules WP 80 and WP 81

7. the elective field "Forschungsschwerpunkt Evolutionsbiologie, Ökologie und Systematik", the elective modules WP 82 and WP 83

must be taken.

With regard to the elective fields "Pflanzenwissenschaften" (WP 13 – WP 15), "Neurobiologie" (WP 16 – WP 20), "Evolutionsbiologie, Ökologie und Systematik" (WP 21 – WP 23), "Vertiefende Pflanzenwissenschaften" (WP 44 – WP 46), "Vertiefende Neurobiologie" (WP 47 – WP 51), "Vertiefende Evolutionsbiologie, Ökologie und Systematik" (WP 52 – WP 54), "Forschungsschwerpunkt Pflanzenwissenschaften" (WP 78 and WP 79), "Forschungsschwerpunkt Neurobiologie" (WP 80 and WP 81) and "Forschungsschwerpunkt Evolutionsbiologie, Ökologie und Systematik" (WP 82 and WP 83) and to the elective modules WP 59 – WP 61, a student may take up to 24 ECTS credits worth of elective fields and modules.