Julius-Maximilians-
UNIVERSITÄT
WÜRZBURG

Subdivided Module Catalogue

for the Subject

FOKUS Life Sciences

as a Master's with 1 major

with the degree "Master of Science"

(120 ECTS credits)

Examination regulations version: 2015
Responsible: Faculty of Biology

Learning Outcomes

German contents and learning outcome available but not translated yet.
Das Masterstudium FOKUS Life Sciences ist ein internationaler Studiengang in englischer Sprache und ermöglicht eine internationale, forschungsorientierte Ausbildung in den Lebenswissenschaften. Vermittelt werden theoretische und praktische Kompetenzen im Gebiet Life Sciences, um in der Lage zu sein, wissenschaftliche Fragestellungen aus den Gebieten der Lebenswissenschaften bearbeiten zu können. Die Studierenden erlangen die Kompetenz, komplexe wissenschaftliche Fragestellungen zu verstehen und zu formulieren. Daneben erwerben sie die Fähigkeit, die Relevanz wissenschaftlicher Fragestellungen zu erkennen und experimentelle Lösungsansätze zu Fragestellungen aus dem Bereich der Lebenswissenschaften eigenständig zu planen und umzusetzen. Des Weiteren wird von den Studierenden die Fähigkeit erlangt, Ergebnisse der Experimente zu interpretieren und in einem wissenschaftlichen Kontext zu gewichten und einzuordnen. Die flexible Gestaltung des Studiengangs eröffnet besonders qualifizierten Studierenden die Möglichkeit, über einen „Fast track" frühzeitig mit einer Promotion zu beginnen, die von einem Strukturierten Ausbildungsprogramm begleitet wird und so parallel zur Promotion den Abschluss Master of Science ermöglicht. Näheres ist in der Promotionsordnung geregelt." In den in den Modulbeschreibungen erläuterten Lernergebnissen erlernen die Studierenden zudem die im Leitbild der Universität, den Qualitäts- und Qualifikationszielen der Fakultät für Biologie formulierten Elemente zur Entwicklung ihrer Persönlichkeit, und sie sie haben sich wissenschaftliches Denken und Arbeiten als fachliche Experten auf der ihnen entsprechenden Niveaustufe 7 des Hochschulqualifikationsrahmens angeeignet, haben die Regeln Guter Wissenschaftlicher Praxis verinnerlicht und wenden sie auch in fachfremden Bereichen an und können als fachliche Experten zielgruppenspezifisch fachkundig fundierte komplexere Zusammenhänge verständlich darstellen. Sie wissen um ihre gesellschaftspolitische Verantwortung als wissenschaftlich gebildete Akademiker der Life Sciences auf Masterebene und können fachlich begründete Bewertungen einer breiteren Öffentlichkeit vermitteln. Hinsichtlich neuer Erkenntnisse im Fach sind sie sensibilisiert hinsichtlich der Bewertung der aus dem Erkenntnisgewinn ableitbaren technischen Anwendbarkeit. Die Absolventinnen und Absolventen der Life Sciences haben gelernt, in ihrem organisatorischen Umfeld bürokratischen Ausuferungen oder politischen Absurditäten mit Humor zu begegnen, sie standhaft zu ertragen, oder Wege zu suchen, diese zu umgehen oder zu vermeiden (den Kriterien des Science Hero Preises der Konferenz Biologischer Fachbereiche (KBF.bio) folgend).

Abbreviations used

Course types: **E** = field trip, **K** = colloquium, **O** = conversatorium, **P** = placement/lab course, **R** = project, **S** = seminar, **T** = tutorial, **Ü** = exercise, **V** = lecture

Term: **SS** = summer semester, **WS** = winter semester

Methods of grading: **NUM** = numerical grade, **B/NB** = (not) successfully completed

Regulations: **(L)ASPO** = general academic and examination regulations (for teaching-degree programmes), **FSB** = subject-specific provisions, **SFB** = list of modules

Other: **A** = thesis, **LV** = course(s), **PL** = assessment(s), **TN** = participants, **VL** = prerequisite(s)

Conventions

Unless otherwise stated, courses and assessments will be held in German, assessments will be offered every semester and modules are not creditable for bonus.

Notes

Should there be the option to choose between several methods of assessment, the lecturer will agree with the module coordinator on the method of assessment to be used in the current semester by two weeks after the start of the course at the latest and will communicate this in the customary manner.

Should the module comprise more than one graded assessment, all assessments will be equally weighted, unless otherwise stated below.

Should the assessment comprise several individual assessments, successful completion of the module will require successful completion of all individual assessments.

In accordance with

the general regulations governing the degree subject described in this module catalogue:

ASPO2015

associated official publications (FSB (subject-specific provisions)/SFB (list of modules)):

13-Jul-2015 (2015-25)

04-Apr-2019 (2019-30)

This module handbook seeks to render, as accurately as possible, the data that is of statutory relevance according to the examination regulations of the degree subject. However, only the FSB (subject-specific provisions) and SFB (list of modules) in their officially published versions shall be legally binding. In the case of doubt, the provisions on, in particular, module assessments specified in the FSB/SFB shall prevail.

The subject is divided into

Abbreviation	Module title	ECTS credits	Method of grading	page
Compulsory Courses (30 ECTS credits)				
07-MLS1-152-m01	Methods in Life Sciences	10	NUM	17
07-MLS2-152-m01	Topics and Concepts in Life Sciences	10	NUM	18
07-MLS3-152-m01	Research Concepts in Life Sciences	10	NUM	19
Compulsory Electives (60 ECTS credits)				
Module Group - Group General Elective Modules				
07-MS1-152-m01	Neurobiology, Behavioural Physiology and Animal Ecology	10	NUM	130
07-MS1NB-152-m01	Neurogenetics of Behaviour	10	NUM	133
07-MECB-152-m01	Endogenous Clocks B	5	B/NB	15
07-MS1CB-152-m01	Endogenous Clocks	10	NUM	131
07-MENMNDB-152-m01	Neuromodulation and Neuronal Development B	5	B/NB	16
07-MS1NMND-152-m01	Neuromodulation and Neuronal Development	10	NUM	136
07-MS1NEC-152-m01	Developmental Neurobiology and Chronobiology	10	NUM	134
07-MS1ES-152-m01	Experimental Sociobiology	10	NUM	132
07-MS2B-152-m01	Molecular Biology B	7	B/NB	141
07-MS2-152-m01	Molecular Biology	10	NUM	140
07-MLSPM-152-m01	Pathogenicity of Microorganisms	5	NUM	80
07-MSPAR-171-m01	Molecular Parasitology	10	NUM	162
07-MSPARB-182-m01	Molecular Parasitology B	3	B/NB	163
07-MLSINF-152-m01	Infection Biology	5	NUM	45
07-MS3TSY-152-m01	Topics in Systems Biology	10	NUM	159
07-MS2TBI-152-m01	Topics in Bioinformatics	10	NUM	146
07-MS31POEK-152-m01	Plant Ecology	10	NUM	149
07-MTÖ2B-152-m01	Animal Ecology and Tropical Biology 2 B	5	B/NB	165
07-MS1TÖ2-152-m01	Animal Ecology and Tropical Biology 2	10	NUM	137
07-MS3BBB-152-m01	Biophysics and Biochemistry B	5	B/NB	151
07-MS3BB-152-m01	Biophysics and Biochemistry	10	NUM	150
07-MS2ZE2-152-m01	Cell and Developmental Biology Master 2	10	NUM	147
07-MZE2-B-152-m01	Cell and Developmental Biology Master 2 B	3	B/NB	166
07-MS1NF1-152-m01	Neurobiology F1	10	NUM	135
07-MS2BTB-152-m01	Biophysics and Molecular Biotechnology B	5	NUM	143
07-MS2BT-152-m01	Biophysics and Molecular Biotechnology	10	NUM	142
07-MS1VF1-152-m01	Behavioural Physiology and Sociobiology F1	10	NUM	139
07-MS2ZEF1-152-m01	Cell and Developmental Biology F1	10	NUM	148
07-MSPARF1-171-m01	Molecular Parasitology F1	10	NUM	164
07-MS2MF1-152-m01	Microbiology F1	10	NUM	145
07-MS3SYF1-152-m01	Systems Biology F1	10	NUM	158
07-MS3PBMF1-152-m01	Pharmaceutical Biology and Metabolomics F1	10	NUM	156
07-MS3COBF1-152-m01	Computational Biology F1	10	NUM	154
07-MSF1-152-m01	Molecular Biology F1	10	NUM	161
07-MS3PPEF1-152-m01	Physiological Plant Ecology F1	10	NUM	157

07-MS3MCPE-F1-152-m01	Molecular and Chemical Plant Ecology F1	10	NUM	155
07-MS1TÖF1-152-m01	Animal Ecology F1	10	NUM	138
07-MS2BTF1-152-m01	Biophysics and Molecular Biotechnology F1	10	NUM	144
07-MS3BPF1-152-m01	Biophysics of Plant Membrane Proteins F1	10	NUM	152
07-MS3BSBF1-152-m01	Biochemistry and Structural Biology F1	10	NUM	153
07-MSCC-152-m01	Biochemistry, Physiology and Genetics of Mammalian Cell Culture	5	B/NB	160
07-TUM-MOL-152-m01	Molecular Tumor Biology	5	NUM	168
07-TUM-CLIN-152-m01	Clinical Tumor Biology	5	NUM	167
03-MLSMN-152-m01	Molecular Neurobiology	5	B/NB	13
03-MLSCRY-152-m01	Macromolecular Crystallography	5	B/NB	11
03-MLSCMED-152-m01	Clinical Medicine	5	B/NB	9
03-MSMT-152-m01	Molecular Techniques	3	B/NB	14
03-MLSCN-152-m01	Clinical Neurobiology	3	B/NB	10
03-MLSMAC-152-m01	Biological Macromolecules	3	B/NB	12
07-MLSL1-152-m01	Special Subject Lecture 1 (actual lectures to be specified)	10	B/NB	46
07-MLSL1N-152-m01	Special Subject Lecture 1N (actual lectures to be specified)	10	NUM	47
07-MLSL2-152-m01	Special Subject Lecture 2 (actual lectures to be specified)	10	B/NB	48
07-MLSL2N-152-m01	Special Subject Lecture 2N (actual lectures to be specified)	10	NUM	49
07-MLSL3-152-m01	Special Subject Lecture 3 (actual lectures to be specified)	5	B/NB	50
07-MLSL3N-152-m01	Special Subject Lecture 3N (actual lectures to be specified)	5	NUM	51
07-MLSL4-152-m01	Special Subject Lecture 4 (actual lectures to be specified)	5	B/NB	52
07-MLSL4N-152-m01	Special Subject Lecture 4N (actual lectures to be specified)	5	NUM	53
07-MLSL5-152-m01	Special Subject Lecture 5 (actual lectures to be specified)	3	B/NB	54
07-MLSL5N-152-m01	Special Subject Lecture 5N (actual lectures to be specified)	3	NUM	55
07-MLSL6-152-m01	Special Subject Lecture 6 (actual lectures to be specified)	3	B/NB	56
07-MLSL6N-152-m01	Special Subject Lecture 6N (actual lectures to be specified)	3	NUM	57
07-MLSL7N-152-m01	Special Subject Lecture 7N (actual lectures to be specified)	10	NUM	58
07-MLSL8N-152-m01	Special Subject Lecture 8N (actual lectures to be specified)	10	NUM	59
07-MLSM3-152-m01	Congress Participation 3 (Poster)	3	B/NB	60
07-MLSM4-152-m01	Congress Participation 4 (Poster) 2	3	B/NB	61
07-MLSMT3-152-m01	Congress Participation 3 (Talk) 1	5	B/NB	62
07-MLSMT4-152-m01	Congress Participation 4 (Talk) 2	5	B/NB	63
07-MLSEP1-152-m01	Internship 1	10	B/NB	21
07-MLSEP2-152-m01	Internship 2	10	B/NB	22
07-MLSEP3N-152-m01	Internship 3	10	NUM	23
07-MLSEP4N-152-m01	Internship 4	10	NUM	24
07-MLSEX1-152-m01	Excursion 1	5	B/NB	25
07-MLSEX2-152-m01	Excursion 2	10	B/NB	26
07-MLSEX3N-152-m01	Excursion 3	5	NUM	27
07-MLSEX4N-152-m01	Excursion 4	10	NUM	28
07-MLSTP1-152-m01	Special Training Program GSLS 1	5	B/NB	109
07-MLSTP2-152-m01	Special Training Program GSLS 2	5	B/NB	110
07-MLSTP3-152-m01	Special Training Program GSLS 3	5	B/NB	111
07-MLSRR1-152-m01	Responsible Conduct of Research 1	2	B/NB	105

07-MLSTU1-152-m01	Tutorial 1	3	B/NB	112
07-MLSTU2-152-m01	Tutorial 2	5	B/NB	113
07-MLSRR2-152-m01	Responsible Conduct of Research 2	4	B/NB	106
07-MLSRR3-152-m01	Responsible Conduct of Research 3	6	B/NB	107
Module Group - GSLS-Section Neurosciences				
07-MLSRG-NS1-152-m01	Research Group Seminar Neurosciences 1	5	B/NB	95
07-MLSRG-NS2N-152-m01	Research Group Seminar Neurosciences 2N	5	NUM	96
07-MLSRG-NS3-152-m01	Research Group Seminar Neurosciences 3	3	B/NB	97
07-MLSRG-NS4N-152-m01	Research Group Seminar Neurosciences 4N	3	NUM	98
07-MLSGP-NS1-152-m01	Graduate Program Seminar Neurosciences 1	5	B/NB	41
07-MLSGP-NS2N-152-m01	Graduate Program Seminar Neurosciences 2N	5	NUM	42
07-MLSGP-NS3-152-m01	Graduate Program Seminar Neurosciences 3	3	B/NB	43
07-MLSGP-NS4N-152-m01	Graduate Program Seminar Neurosciences 4N	3	NUM	44
07-MLSWS-NS1-152-m01	Workshop Neurosciences 1	5	B/NB	126
07-MLSWS-NS2N-152-m01	Workshop Neurosciences 2N	5	NUM	127
07-MLSWS-NS3-152-m01	Workshop Neurosciences 3	3	B/NB	128
07-MLSWS-NS4-152-m01	Workshop Neurosciences 4	3	NUM	129
07-MLSRNS1-152-m01	Retreat Neurosciences 1	5	B/NB	103
07-MLSRNS2N-152-m01	Retreat Neurosciences 2N	5	NUM	104
07-MLSPC-NS1-152-m01	Neuroscience Lab 1	10	B/NB	76
07-MLSPC-NS2-152-m01	Neuroscience Lab 2	10	B/NB	77
07-MLSPC-NS3-152-m01	Neuroscience Lab 3	10	NUM	78
07-MLSPC-NS4-152-m01	Neuroscience Lab 4	10	NUM	79
Module Group - GSLS-Section Infection And Immunity				
07-MLSRGII1-152-m01	Research Group Seminar Infection and Immunity 1	5	B/NB	91
07-MLSRGII2N-152-m01	Research Group Seminar Infection and Immunity 2N	5	NUM	92
07-MLSRGII3-152-m01	Research Group Seminar Infection and Immunity 3	3	B/NB	93
07-MLSRGII4N-152-m01	Research Group Seminar Infection and Immunity 4N	3	NUM	94
07-MLSGP-II1-152-m01	Graduate Program Seminar Infection and Immunity 1	5	B/NB	37
07-MLSGP-II2N-152-m01	Graduate Program Seminar Infection and Immunity 2N	5	NUM	38
07-MLSGP-II3-152-m01	Graduate Program Seminar Infection and Immunity 3	3	B/NB	39
07-MLSGP-II4N-152-m01	Graduate Program Seminar Infection and Immunity 4N	3	NUM	40
07-MLSWII1-152-m01	Workshop Infection and Immunity 1	5	B/NB	114
07-MLSWII2N-152-m01	Workshop Infection and Immunity 2N	5	NUM	115
07-MLSWII3-152-m01	Workshop Infection and Immunity 3	3	B/NB	116
07-MLSWII4-152-m01	Workshop Infection and Immunity 4	3	NUM	117
07-MLSRII1-152-m01	Retreat Infection and Immunity 1	5	B/NB	101
07-MLSRII2N-152-m01	Retreat Infection and Immunity 2N	5	NUM	102

07-MLSPC-II1-152-m01	Infection and Immunity Lab 1	10	B/NB	72
07-MLSPC-II2-152-m01	Infection and Immunity Lab 2	10	B/NB	73
07-MLSPC-II3-152-m01	Infection and Immunity Lab 3	10	NUM	74
07-MLSPC-II4-152-m01	Infection and Immunity Lab 4	10	NUM	75
Module Group - GSLS-Section Integrative Biology				
07-MLSRGIB1-152-m01	Research Group Seminar Integrative Biology 1	5	B/NB	87
07-MLSRGIB2N-152-m01	Research Group Seminar Integrative Biology 2N	5	NUM	88
07-MLSRGIB3-152-m01	Research Group Seminar Integrative Biology 3	3	B/NB	89
07-MLSRGIB4N-152-m01	Research Group Seminar Integrative Biology 4N	3	NUM	90
07-MLSGPIB1-152-m01	Graduate Program Seminar Integrative Biology 1	5	B/NB	33
07-MLSGPIB2N-152-m01	Graduate Program Seminar Integrative Biology 2	5	NUM	34
07-MLSGPIB3-152-m01	Graduate Program Seminar Integrative Biology 3	3	B/NB	35
07-MLSGPIB4N-152-m01	Graduate Program Seminar Integrative Biology 4N	3	NUM	36
07-MLSWS-IB1-152-m01	Workshop Integrative Biology 1	5	B/NB	122
07-MLSWS-IB2N-152-m01	Workshop Integrative Biology 2N	5	NUM	123
07-MLSWS-IB3-152-m01	Workshop Integrative Biology 3	3	B/NB	124
07-MLSWS-IB4-152-m01	Workshop Integrative Biology 4	3	NUM	125
07-MLSRIB1-152-m01	Retreat Integrative Biology 1	5	B/NB	99
07-MLSRIB2N-152-m01	Retreat Integrative Biology2N	5	NUM	100
07-MLSPC-IB1-152-m01	Integrative Biology Lab 1	10	B/NB	68
07-MLSPC-IB2-152-m01	Integrative Biology Lab 2	10	B/NB	69
07-MLSPC-IB3-152-m01	Integrative Biology Lab 3	10	NUM	70
07-MLSPC-IB4-152-m01	Integrative Biology Lab 4	10	NUM	71
Module Group - GSLS-Section Biomedicine				
07-MLSRGBM1-152-m01	Research Group Seminar Biomedicine 1	5	B/NB	83
07-MLSRGB-M2N-152-m01	Research Group Seminar Biomedicine 2N	5	NUM	84
07-MLSRGBM3-152-m01	Research Group Seminar Biomedicine 3	3	B/NB	85
07-MLSRGB-M4N-152-m01	Research Group Seminar Biomedicine 4N	3	NUM	86
07-MLSGP-BM1-152-m01	Graduate Program Seminar Biomedicine 1	5	B/NB	29
07-MLSGP-BM2N-152-m01	Graduate Program Seminar Biomedicine 2N	5	NUM	30
07-MLSGP-BM3-152-m01	Graduate Program Seminar Biomedicine 3	3	B/NB	31
07-MLSGP-BM4N-152-m01	Graduate Program Seminar Biomedicine 4N	3	NUM	32
07-MLSWS-BM1-152-m01	Workshop Biomedicine 1	5	B/NB	118
07-MLSWS-BM2N-152-m01	Workshop Biomedicine 2N	5	NUM	119
07-MLSWS-BM3-152-m01	Workshop Biomedicine 3	3	B/NB	120

07-MLSWS-BM4-152-m01	Workshop Biomedicine 4	3	NUM	121
07-MLSRBM1-152-m01	Retreat Biomedicine 1	5	B/NB	81
07-MLSRBM2N-152-m01	Retreat Biomedicine 2N	5	NUM	82
07-MLSPC-BM1-152-m01	Biomedicine Lab 1	10	B/NB	64
07-MLSPC-BM2-152-m01	Biomedicine Lab 2	10	B/NB	65
07-MLSPC-BM3-152-m01	Biomedicine Lab 3	10	NUM	66
07-MLSPC-BM4-152-m01	Biomedicine Lab 4	10	NUM	67
Thesis (30 ECTS credits)				
07-MLST-152-m01	Masterthesis Life Sciences	25	NUM	108
07-MLSAK-152-m01	Oral Examination Life Sciences	5	NUM	20

Module title			Abbreviation
Clinical Medicine			03-MLSCMED-152-m01
Module coordinator		**Module offered by**	
Dean of the Faculty of Biology		Faculty of Medicine	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Lecture series focused on the interplay between unmet medical needs and basic research. Diseases are described from the viewpoint of the clinician, followed by : 1.) a discussion of novel strategies to combat the disease and 2.) current challenges for basic and translational research. Topics vary every semester.

Intended learning outcomes

Students gain an awareness of current challenges for basic and translational research, the clinical application of basic research as well as the development of novel strategies in disease therapy.

Courses (type, number of weekly contact hours, language — if other than German)

V (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Clinical Neurobiology			03-MLSCN-152-m01
Module coordinator		**Module offered by**	
Dean of the Faculty of Biology		Faculty of Medicine	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Introduction to the anatomy, morphology, cell biology and biophysics of the brain and the sensory and motor systems as the foundation for the understanding of relevant diseases.

Intended learning outcomes

Students can relate structure-function aspects of neurons and their sensory and effector cells to relevant diseases and are thus able to formulate new hypotheses. Students are prepared for independent research in the field of clinical neurobiology.

Courses (type, number of weekly contact hours, language — if other than German)

V (3)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Macromolecular Crystallography			03-MLSCRY-152-m01
Module coordinator		**Module offered by**	
Dean of the Faculty of Biology		Faculty of Medicine	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

The principles of structure determination of biological macromolecules by modern crystallography methods will be taught in theory and through application.

Intended learning outcomes

Students are able to determine the structures of biological macromolecules by employing crystallographic techniques.

Courses (type, number of weekly contact hours, language — if other than German)

V (3)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Biological Macromolecules			03-MLSMAC-152-m01
Module coordinator		**Module offered by**	
Dean of the Faculty of Biology		Faculty of Medicine	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

The module will introduce students to the foundations of macromolecular architectures as well as frequently applied biophysical methods such as crystallography. The knowledge acquired will serve as a basis for the discussion of the structure and function of selected biological macromolecules.

Intended learning outcomes

Students can understand general structure-function relationships of biological macromolecules and can develop solution strategies for problems in structural biology, including the competence to use in silico approaches.

Courses (type, number of weekly contact hours, language — if other than German)

V (3)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Molecular Neurobiology			03-MLSMN-152-m01
Module coordinator		**Module offered by**	
Dean of the Faculty of Biology		Faculty of Medicine	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Current original research papers and seminal background publications from the field of molecular neurobiology are presented and discussed in depth.

Intended learning outcomes

Students are ab to critically analyze original research publications, present the main findings, and put them in the context of the current ongoing research in the field.

Courses (type, number of weekly contact hours, language — if other than German)

V (3)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Molecular Techniques			03-MSMT-152-m01
Module coordinator		**Module offered by**	
degree programme coordinator Biologie (Biology)		Faculty of Medicine	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Introduction to new and cutting edge molecular techniques as well as methods for scientific investigation.

Intended learning outcomes

Students are able to apply molecular techniques and methods as well as to integrate these into experimental strategies and experimental set-ups to answer scientific questions.

Courses (type, number of weekly contact hours, language — if other than German)

S (3)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (15 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Endogenous Clocks B			07-MECB-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Neurobiology and Genetics		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Introduction into endogenous clocks of unicellular organisms, fungi, plants and animals, with a focus on the neuronal organisation of the clock in the brain of mammals and insects. The biological functions of endogenous clocks and the underlying mechanisms will be discussed on the molecular, cellular and organismic levels. It will be explained how clocks adjust to a 24h day with variable photoperiods. Applied aspects regarding e. g. shift work or jetlag will also be discussed.

Intended learning outcomes

The students learn fundamental principles underlying chronobiology/endogenous clocks and obtain an insight into current research in the field.

Courses (type, number of weekly contact hours, language — if other than German)

V (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Neuromodulation and Neuronal Development B			07-MENMNDB-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Neurobiology and Genetics		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Neuromodulation: cellular and molecular biology of neuromodulators and their receptors, modulation of synaptic transmission and membrane potential, theoretical and functional aspects of neuromodulation, model systems used to study modulation of neuronal circuits. Fundamental principles of molecular developmental neurobiology. Focus is on the establishment of the neuroectoderm, pattern generation and regional specification, neuronal precursors, neuronal growth, differentiation of neurons, axonal pathfinding, neuronal connectivity.

Intended learning outcomes

The students learn fundamental principles underlying neuromodulation and neuronal development and obtain an insight into current research in the field.

Courses (type, number of weekly contact hours, language — if other than German)

V (3)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Methods in Life Sciences			07-MLS1-152-m01
Module coordinator		**Module offered by**	
degree programme coordinator Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Versioned molecular techniques, lipid research methods, microscopic methods, immunohistochemistry, mouse models and gene-knockout approaches, protein and molecular biology techniques, PCR, advanced protein biochemistry, methods in bioinformatics and computational biology.

Intended learning outcomes

Students are able to review and expand their knowledge of standard molecular techniques and are able to choose methods and techniques to design experiments in a specific research area.

Courses (type, number of weekly contact hours, language — if other than German)

V (3)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Topics and Concepts in Life Sciences			07-MLS2-152-m01
Module coordinator		**Module offered by**	
degree programme coordinator Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

A broad variety of topics and concepts from the areas of neuroscience, infection and immunity, integrative biology, and biomedicine including for example: protein characterisation, DNA repair, Drosophila, computational biology, and neurocircuits.

Intended learning outcomes

Students have an overview of the current research topics in the Graduate School of Life Sciences and are able to explain their significance and scientific background.

Courses (type, number of weekly contact hours, language — if other than German)

V (3)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Research Concepts in Life Sciences			07-MLS3-152-m01
Module coordinator		**Module offered by**	
degree programme coordinator Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Students are introduced to research concepts in the life sciences including for example: biophysical approaches to protein structure, transcription and growth control, genetics, signalling cascades and receptor pharmacology, structural biology, neuronal differentiation and microbiology. Topics may vary according to current research areas in the GSLS.

Intended learning outcomes

Students are able to recognise the research concepts and their applications in various fields of life sciences currently present in the various section of the GSLS such as neuroscience, infection and immunity, integrative biology and biomedicine and are able to design experiments.

Courses (type, number of weekly contact hours, language — if other than German)

Ü (7) + S (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Oral Examination Life Sciences			07-MLSAK-152-m01
Module coordinator		**Module offered by**	
chairperson of examination committee Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	07-MLST	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Investigation of a current scientific topic, using modern methods and techniques. Documentation of the results in a written thesis as well as oral examination.

Intended learning outcomes

Students are able to independently plan and execute a scientific research project. They are able to collect, present and interpret raw data according to international standards of good scientific conduct. They are able to summarise their data in a written thesis, adhering to scientific rules and standards. Students are able to critically discuss and defend their experiment plan, results and interpretations thereof and are able to put their own research in the context of current publications in their field. They have acquired a broad expertise both in their field of study and in related fields.

Courses (type, number of weekly contact hours, language — if other than German)

K (0)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

presentation of Master's thesis (30 minutes) and discussion (15 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Internship 1			07-MLSEP1-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	Please consult with course advisory service in advance.	

Contents

Research experience abroad in agencies, institutes or industry. Topics will vary according to the individual place selected. The practical course has to have a duration of no less than 5 weeks.

Intended learning outcomes

Students are familiar with the structures of agencies, research institutes and industry and have gained practical experience.

Courses (type, number of weekly contact hours, language — if other than German)

P (8)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Internship 2			07-MLSEP2-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	Please consult with course advisory service in advance.	

Contents

Research experience abroad in agencies, institutes or industry. Topics will vary according to the individual place selected. The practical course has to have a duration of no less than 5 weeks.

Intended learning outcomes

Students are familiar with the structures of agencies, research institutes and industry and have gained practical experience.

Courses (type, number of weekly contact hours, language — if other than German)

P (8)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Internship 3			07-MLSEP3N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	Please consult with course advisory service in advance.	

Contents

Research experience abroad in agencies, institutes or industry. Topics will vary according to the individual place selected. The practical course has to have a duration of no less than 5 weeks.

Intended learning outcomes

Students are familiar with the structures of agencies, research institutes and industry and have gained practical experience.

Courses (type, number of weekly contact hours, language — if other than German)

P (8)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Internship 4			07-MLSEP4N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	Please consult with course advisory service in advance.	

Contents

Research experience abroad in agencies, institutes or industry. Topics will vary according to the individual place selected. The practical course has to have a duration of no less than 5 weeks.

Intended learning outcomes

Students are familiar with the structures of agencies, research institutes and industry and have gained practical experience.

Courses (type, number of weekly contact hours, language — if other than German)

P (8)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Excursion 1			07-MLSEX1-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	Please consult with course advisory service in advance.	

Contents

Topic of the field trip will vary according to the company or institute visited and may include field work in the area of integrative biology. The field trip should have a duration of 2-5 days.

Intended learning outcomes

This module will provide students with an opportunity to forge links with industry and potential employers and/ or to learn how to collect data in the field.

Courses (type, number of weekly contact hours, language — if other than German)

E (8)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Excursion 2			07-MLSEX2-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	Please consult with course advisory service in advance.	

Contents

Topic of the field trip will vary according to the company or institute visited and may include field work in the area of integrative biology. The field trip should have a duration of 2-5 days.

Intended learning outcomes

This module will provide students with an opportunity to forge links with industry and potential employers and/ or to learn how to collect data in the field.

Courses (type, number of weekly contact hours, language — if other than German)

E (8)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Excursion 3			07-MLSEX3N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	Please consult with course advisory service in advance.	

Contents

Topic of the field trip will vary according to the company or institute visited and may include field work in the area of integrative biology. The field trip should have a duration of 2-5 days.

Intended learning outcomes

This module will provide students with an opportunity to forge links with industry and potential employers and/ or to learn how to collect data in the field.

Courses (type, number of weekly contact hours, language — if other than German)

E (8)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Excursion 4			07-MLSEX4N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	Please consult with course advisory service in advance.	

Contents

Topic of the field trip will vary according to the company or institute visited and may include field work in the area of integrative biology. The field trip should have a duration of 2-5 days.

Intended learning outcomes

This module will provide students with an opportunity to forge links with industry and potential employers and/ or to learn how to collect data in the field.

Courses (type, number of weekly contact hours, language — if other than German)

E (8)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Graduate Program Seminar Biomedicine 1			07-MLSGP-BM1-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Invited guest speakers present and discuss cutting edge research including novel/current methods as well as fundamental research with relevance to the current programme/topics of the research group.

Intended learning outcomes

Students have gained an overview of cutting edge research in their field and have developed an understanding of new and current methods.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Graduate Program Seminar Biomedicine 2N			07-MLSGP-BM2N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Invited guest speakers present and discuss cutting edge research including novel/current methods as well as fundamental research with relevance to the current programme/topics of the research group.

Intended learning outcomes

Students have gained an overview of cutting edge research in their field and have developed an understanding of new and current methods.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Graduate Program Seminar Biomedicine 3			07-MLSGP-BM3-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Invited guest speakers present and discuss cutting edge research including novel/current methods as well as fundamental research with relevance to the current programme/topics of the research group.

Intended learning outcomes

Students have gained an overview of cutting edge research in their field and have developed an understanding of new and current methods.

Courses (type, number of weekly contact hours, language — if other than German)

S (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Graduate Program Seminar Biomedicine 4N			07-MLSGP-BM4N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Invited guest speakers present and discuss cutting edge research including novel/current methods as well as fundamental research with relevance to the current programme/topics of the research group.

Intended learning outcomes

Students have gained an overview of cutting edge research in their field and have developed an understanding of new and current methods.

Courses (type, number of weekly contact hours, language — if other than German)

S (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Graduate Program Seminar Integrative Biology 1			07-MLSGPIB1-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Invited guest speakers present and discuss cutting edge research including novel/current methods as well as fundamental research with relevance to the current programme/topics of the research group.

Intended learning outcomes

Students have gained an overview of cutting edge research in their field and have developed an understanding of new and current methods.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Graduate Program Seminar Integrative Biology 2			07-MLSGPIB2N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Invited guest speakers present and discuss cutting edge research including novel/current methods as well as fundamental research with relevance to the current programme/topics of the research group.

Intended learning outcomes

Students have gained an overview of cutting edge research in their field and have developed an understanding of new and current methods.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Graduate Program Seminar Integrative Biology 3			07-MLSGPIB3-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Invited guest speakers present and discuss cutting edge research including novel/current methods as well as fundamental research with relevance to the current programme/topics of the research group.

Intended learning outcomes

Students have gained an overview of cutting edge research in their field and have developed an understanding of new and current methods.

Courses (type, number of weekly contact hours, language — if other than German)

S (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Graduate Program Seminar Integrative Biology 4N			07-MLSGPIB4N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Invited guest speakers present and discuss cutting edge research including novel/current methods as well as fundamental research with relevance to the current programme/topics of the research group.

Intended learning outcomes

Students have gained an overview of cutting edge research in their field and have developed an understanding of new and current methods.

Courses (type, number of weekly contact hours, language — if other than German)

S (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Graduate Program Seminar Infection and Immunity 1			07-MLSGP-II1-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Invited guest speakers present and discuss cutting edge research including novel/current methods as well as fundamental research with relevance to the current programme/topics of the research group.

Intended learning outcomes

Students have gained an overview of cutting edge research in their field and have developed an understanding of new and current methods.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Graduate Program Seminar Infection and Immunity 2N			07-MLSGP-II2N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Invited guest speakers present and discuss cutting edge research including novel/current methods as well as fundamental research with relevance to the current programme/topics of the research group.

Intended learning outcomes

Students have gained an overview of cutting edge research in their field and have developed an understanding of new and current methods.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Graduate Program Seminar Infection and Immunity 3			07-MLSGP-II3-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Invited guest speakers present and discuss cutting edge research including novel/current methods as well as fundamental research with relevance to the current programme/topics of the research group.

Intended learning outcomes

Students have gained an overview of cutting edge research in their field and have developed an understanding of new and current methods.

Courses (type, number of weekly contact hours, language — if other than German)

S (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Graduate Program Seminar Infection and Immunity 4N			07-MLSGP-II4N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Invited guest speakers present and discuss cutting edge research including novel/current methods as well as fundamental research with relevance to the current programme/topics of the research group.

Intended learning outcomes

Students have gained an overview of cutting edge research in their field and have developed an understanding of new and current methods.

Courses (type, number of weekly contact hours, language — if other than German)

S (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Graduate Program Seminar Neurosciences 1			07-MLSGP-NS1-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Invited guest speakers present and discuss cutting edge research including novel/current methods as well as fundamental research with relevance to the current programme/topics of the research group.

Intended learning outcomes

Students acquire an overview of cutting edge research in their field as well as an understanding of new and current methods.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Graduate Program Seminar Neurosciences 2N			07-MLSGP-NS2N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Invited guest speakers present and discuss cutting edge research including novel/current methods as well as fundamental research with relevance to the current programme/topics of the research group.

Intended learning outcomes

Students acquire an overview of cutting edge research in their field as well as an understanding of new and current methods.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Graduate Program Seminar Neurosciences 3			07-MLSGP-NS3-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Invited guest speakers present and discuss cutting edge research including novel/current methods as well as fundamental research with relevance to the current programme/topics of the research group.

Intended learning outcomes

Students acquire an overview of cutting edge research in their field as well as an understanding of new and current methods.

Courses (type, number of weekly contact hours, language — if other than German)

S (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Graduate Program Seminar Neurosciences 4N			07-MLSGP-NS4N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Invited guest speakers present and discuss cutting edge research including novel/current methods as well as fundamental research with relevance to the current programme/topics of the research group.

Intended learning outcomes

Students acquire an overview of cutting edge research in their field as well as an understanding of new and current methods.

Courses (type, number of weekly contact hours, language — if other than German)

S (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Infection Biology			07-MLSINF-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Microbiology		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Fundamentals of molecular microbiology and infection biology, mechanisms of adherence and invasion, bacterial pathogenicity factors, regulation of virulence, mechanisms of host defence and pathogen interference, current methods in infection biology.

Intended learning outcomes

The students are able to understand fundamental theories of molecular microbiology and infection biology, emergence of infectious diseases.

Courses (type, number of weekly contact hours, language — if other than German)

V (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Special Subject Lecture 1 (actual lectures to be specified)			07-MLSL1-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
	graduate	Please consult with course advisory service in advance.	

Contents

Cutting edge topics in the life sciences. Content varies each semester.

Intended learning outcomes

Students gain an overview of current topics in the life sciences.

Courses (type, number of weekly contact hours, language — if other than German)

V (5)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			**Abbreviation**
Special Subject Lecture 1N (actual lectures to be specified)			07-MLSL1N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
	graduate	Please consult with course advisory service in advance.	

Contents

Cutting edge topics in the life sciences. Content varies each semester.

Intended learning outcomes

Students gain an overview of current topics in the life sciences.

Courses (type, number of weekly contact hours, language — if other than German)

V (5)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Special Subject Lecture 2 (actual lectures to be specified)			07-MLSL2-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
	graduate	Please consult with course advisory service in advance.	

Contents

Presentation and discussion of cutting edge literature in the field of life sciences.

Intended learning outcomes

Students are able to understand, present and critically discuss cutting edge literature in the field of life sciences.

Courses (type, number of weekly contact hours, language — if other than German)

V (5)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			**Abbreviation**
Special Subject Lecture 2N (actual lectures to be specified)			07-MLSL2N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
	graduate	Please consult with course advisory service in advance.	

Contents

Presentation and discussion of cutting edge literature in the field of life sciences.

Intended learning outcomes

Students are able to understand, present and critically discuss cutting edge literature in the field of life sciences.

Courses (type, number of weekly contact hours, language — if other than German)

V (5)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			**Abbreviation**
Special Subject Lecture 3 (actual lectures to be specified)			07-MLSL3-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
	graduate	Please consult with course advisory service in advance.	

Contents

Current topics in the field of life sciences, content varies each semester.

Intended learning outcomes

Students gain an overview of topics in the field of life sciences.

Courses (type, number of weekly contact hours, language — if other than German)

V (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			**Abbreviation**
Special Subject Lecture 3N (actual lectures to be specified)			07-MLSL3N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
	graduate	Please consult with course advisory service in advance.	

Contents

Current topics in the field of life sciences, content varies each semester.

Intended learning outcomes

Students gain an overview of topics in the field of life sciences.

Courses (type, number of weekly contact hours, language — if other than German)

V (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Special Subject Lecture 4 (actual lectures to be specified)			07-MLSL4-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
	graduate	Please consult with course advisory service in advance.	

Contents

Cutting edge literature in the field of life sciences.

Intended learning outcomes

Students are able to understand, present and critically discuss cutting edge literature in the field of life sciences.

Courses (type, number of weekly contact hours, language — if other than German)

V (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Special Subject Lecture 4N (actual lectures to be specified)			07-MLSL4N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
	graduate	Please consult with course advisory service in advance.	

Contents

Cutting edge literature in the field of life sciences.

Intended learning outcomes

Students are able to understand, present and critically discuss cutting edge literature in the field of life sciences.

Courses (type, number of weekly contact hours, language — if other than German)

V (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			**Abbreviation**
Special Subject Lecture 5 (actual lectures to be specified)			07-MLSL5-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	Please consult with course advisory service in advance.	

Contents

Current topics in the field of life sciences.

Intended learning outcomes

Students gain an overview of current topics in the life sciences.

Courses (type, number of weekly contact hours, language — if other than German)

V (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			**Abbreviation**
Special Subject Lecture 5N (actual lectures to be specified)			07-MLSL5N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	Please consult with course advisory service in advance.	

Contents

Current topics in the field of life sciences.

Intended learning outcomes

Students gain an overview of current topics in the life sciences.

Courses (type, number of weekly contact hours, language — if other than German)

V (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Special Subject Lecture 6 (actual lectures to be specified)			07-MLSL6-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	Please consult with course advisory service in advance.	

Contents

Current topics in the field of life sciences.

Intended learning outcomes

Students gain an overview of current topics in the life sciences.

Courses (type, number of weekly contact hours, language — if other than German)

V (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			**Abbreviation**
Special Subject Lecture 6N (actual lectures to be specified)			07-MLSL6N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	Please consult with course advisory service in advance.	

Contents

Cutting edge topics in the life sciences. Content varies each semester.

Intended learning outcomes

Students are able to understand, present and critically discuss cutting edge literature in the field of life sciences.

Courses (type, number of weekly contact hours, language — if other than German)

V (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			**Abbreviation**
Special Subject Lecture 7N (actual lectures to be specified)			07-MLSL7N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
	graduate	Please consult with course advisory service in advance.	

Contents

Cutting edge topics in the life sciences. Content varies each semester.

Intended learning outcomes

Students are able to understand, present and critically discuss cutting edge literature in the field of life sciences.

Courses (type, number of weekly contact hours, language — if other than German)

V (3)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Special Subject Lecture 8N (actual lectures to be specified)			07-MLSL8N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
	graduate	Please consult with course advisory service in advance.	

Contents

Cutting edge topics in the life sciences. Content varies each semester.

Intended learning outcomes

Students are able to understand, present and critically discuss cutting edge literature in the field of life sciences.

Courses (type, number of weekly contact hours, language — if other than German)

V (3)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Congress Participation 3 (Poster)			07-MLSM3-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	Please consult with course advisory service in advance.	

Contents

Design and presentation of a poster describing research project results.

Intended learning outcomes

Poster design, oral presentation of research project results/abstract thereof, ability to answer specific questions regarding experiment design and interpretation of results.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

f) poster in accordance with conference specifications
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Congress Participation 4 (Poster) 2			07-MLSM4-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	Please consult with course advisory service in advance.	

Contents

Design and presentation of a poster describing research project results.

Intended learning outcomes

Poster design, oral presentation of research project results/abstract thereof, ability to answer specific questions regarding experiment design and interpretation of results.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

f) poster in accordance with conference specifications
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Congress Participation 3 (Talk) 1			07-MLSMT3-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	Please consult with course advisory service in advance.	

Contents

Design and presentation of a talk describing research project results.

Intended learning outcomes

Conceptualisation of a scientific talk, preparation of a ppt presentation/individual slides, design of figures to present current data, oral presentation of research project results/abstract thereof, ability to answer specific questions regarding experiment design and interpretation of results.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Congress Participation 4 (Talk) 2			07-MLSMT4-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	Please consult with course advisory service in advance.	

Contents

Design and presentation of a talk describing research project results.

Intended learning outcomes

Conceptualisation of a scientific talk, preparation of a ppt presentation/individual slides, design of figures to present current data, oral presentation of research project results/abstract thereof, ability to answer specific questions regarding experiment design and interpretation of results.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Biomedicine Lab 1			07-MLSPC-BM1-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Students spend five weeks working on a small, well-defined scientific lab project.

Intended learning outcomes

Students have reinforced previously acquired lab skills, acquired new lab techniques, and learned how to apply theoretical knowledge in the lab. Students have gained expertise in the analysis of raw data and their presentation.

Courses (type, number of weekly contact hours, language — if other than German)

P (8)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (approx. 10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Biomedicine Lab 2			07-MLSPC-BM2-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Students spend five weeks working on a small, well-defined scientific lab project.

Intended learning outcomes

Students have reinforced previously acquired lab skills, acquired new lab techniques, and learned how to apply theoretical knowledge in the lab. Students have gained expertise in the analysis of raw data and their presentation.

Courses (type, number of weekly contact hours, language — if other than German)

P (8)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (approx. 10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Biomedicine Lab 3			07-MLSPC-BM3-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Students spend five weeks working on a small, well-defined scientific lab project.

Intended learning outcomes

Students have reinforced previously acquired lab skills, acquired new lab techniques, and learned how to apply theoretical knowledge in the lab. Students have gained expertise in the analysis of raw data and their presentation.

Courses (type, number of weekly contact hours, language — if other than German)

P (8)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (approx. 10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Biomedicine Lab 4			07-MLSPC-BM4-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Students spend five weeks working on a small, well-defined scientific lab project.

Intended learning outcomes

Students have reinforced previously acquired lab skills, acquired new lab techniques, and learned how to apply theoretical knowledge in the lab. Students have gained expertise in the analysis of raw data and their presentation.

Courses (type, number of weekly contact hours, language — if other than German)

P (8)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (approx. 10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Integrative Biology Lab 1			07-MLSPC-IB1-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Students spend five weeks working on a small, well-defined scientific lab or field project.

Intended learning outcomes

Students have reinforced previously acquired lab skills, acquired new lab techniques, and learned how to apply theoretical knowledge in the lab. Students have gained expertise in the analysis of raw data and their presentation.

Courses (type, number of weekly contact hours, language — if other than German)

P (8)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Integrative Biology Lab 2			07-MLSPC-IB2-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Students spend five weeks working on a small, well-defined scientific lab or field project.

Intended learning outcomes

Students have reinforced previously acquired lab skills, acquired new lab techniques, and learned how to apply theoretical knowledge in the lab. Students have gained expertise in the analysis of raw data and their presentation.

Courses (type, number of weekly contact hours, language — if other than German)

P (8)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Integrative Biology Lab 3			07-MLSPC-IB3-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Students spend five weeks working on a small, well-defined scientific lab or field project.

Intended learning outcomes

Students have reinforced previously acquired lab skills, acquired new lab techniques, and learned how to apply theoretical knowledge in the lab. Students have gained expertise in the analysis of raw data and their presentation.

Courses (type, number of weekly contact hours, language — if other than German)

P (8)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Integrative Biology Lab 4			07-MLSPC-IB4-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Students spend five weeks working on a small, well-defined scientific lab or field project.

Intended learning outcomes

Students have reinforced previously acquired lab skills, acquired new lab techniques, and learned how to apply theoretical knowledge in the lab. Students have gained expertise in the analysis of raw data and their presentation.

Courses (type, number of weekly contact hours, language — if other than German)

P (8)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Infection and Immunity Lab 1			07-MLSPC-II1-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Students spend five weeks working on a small, well-defined scientific lab project.

Intended learning outcomes

Students have reinforced previously acquired lab skills, acquired new lab techniques, and learned how to apply theoretical knowledge in the lab. Students have gained expertise in the analysis of raw data and their presentation.

Courses (type, number of weekly contact hours, language — if other than German)

P (8)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Infection and Immunity Lab 2			07-MLSPC-II2-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Students spend five weeks working on a small, well-defined scientific lab project.

Intended learning outcomes

Students have reinforced previously acquired lab skills, acquired new lab techniques, and learned how to apply theoretical knowledge in the lab. Students have gained expertise in the analysis of raw data and their presentation.

Courses (type, number of weekly contact hours, language — if other than German)

P (8)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Infection and Immunity Lab 3			07-MLSPC-II3-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Students spend five weeks working on a small, well-defined scientific lab project.

Intended learning outcomes

Students have reinforced previously acquired lab skills, acquired new lab techniques, and learned how to apply theoretical knowledge in the lab. Students have gained expertise in the analysis of raw data and their presentation.

Courses (type, number of weekly contact hours, language — if other than German)

P (8)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Infection and Immunity Lab 4			07-MLSPC-II4-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Students spend five weeks working on a small, well-defined scientific lab project.

Intended learning outcomes

Students have reinforced previously acquired lab skills, acquired new lab techniques, and learned how to apply theoretical knowledge in the lab. Students have gained expertise in the analysis of raw data and their presentation.

Courses (type, number of weekly contact hours, language — if other than German)

P (8)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Neuroscience Lab 1			07-MLSPC-NS1-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Students spend five weeks working on a small, well-defined scientific lab project.

Intended learning outcomes

Students have reinforced previously acquired lab skills, acquired new lab techniques, and learned how to apply theoretical knowledge in the lab. Students have gained expertise in the analysis of raw data and their presentation.

Courses (type, number of weekly contact hours, language — if other than German)

P (8)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Neuroscience Lab 2			07-MLSPC-NS2-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Students spend five weeks working on a small, well-defined scientific lab project.

Intended learning outcomes

Students have reinforced previously acquired lab skills, acquired new lab techniques, and learned how to apply theoretical knowledge in the lab. Students have gained expertise in the analysis of raw data and their presentation.

Courses (type, number of weekly contact hours, language — if other than German)

P (8)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Neuroscience Lab 3			07-MLSPC-NS3-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Students spend five weeks working on a small, well-defined scientific lab project.

Intended learning outcomes

Students have reinforced previously acquired lab skills, acquired new lab techniques, and learned how to apply theoretical knowledge in the lab. Students have gained expertise in the analysis of raw data and their presentation.

Courses (type, number of weekly contact hours, language — if other than German)

P (8)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Neuroscience Lab 4			07-MLSPC-NS4-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Students spend five weeks working on a small, well-defined scientific lab project.

Intended learning outcomes

Students have reinforced previously acquired lab skills, acquired new lab techniques, and learned how to apply theoretical knowledge in the lab. Students have gained expertise in the analysis of raw data and their presentation.

Courses (type, number of weekly contact hours, language — if other than German)

P (8)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Pathogenicity of Microorganisms			07-MLSPM-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Microbiology		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Fundamental principles of the mode of action of microbial pathogenicity factors will be presented using selected prokaryotic and eukaryotic pathogens as model organisms. In addition, current research methods in infection biology will be presented.

Intended learning outcomes

Students have gained fundamental knowledge in infection biology and pathogenicity research and the mechanisms behind infectious diseases.

Courses (type, number of weekly contact hours, language — if other than German)

V (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Retreat Biomedicine 1			07-MLSRBM1-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Presentation of current research project results in the form of a poster and/or talk. Critical evaluation of results and their discussion in the research community. Discussion and evaluation of interim progress reports with supervisors/examination committee and troubleshooting.

Intended learning outcomes

Poster design skills, (oral) presentation skills, ability to critically discuss results taking into consideration current literature in the field, troubleshooting skills, evaluation of interim progress reports.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Retreat Biomedicine 2N			07-MLSRBM2N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Presentation of current research project results in the form of a poster and/or talk. Critical evaluation of results and their discussion in the research community. Discussion and evaluation of interim progress reports with supervisors/examination committee and troubleshooting.

Intended learning outcomes

Poster design skills, (oral) presentation skills, ability to critically discuss results taking into consideration current literature in the field, troubleshooting skills, evaluation of interim progress reports.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Research Group Seminar Biomedicine 1			07-MLSRGBM1-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Current progress in the research group: presentation and discussion of the results of all research group members, exchange of experiences, troubleshooting tips.

Intended learning outcomes

Students have developed problem solving skills, presentation skills, scientific discussion skills as well as troubleshooting skills and are able to plan experiments.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Research Group Seminar Biomedicine 2N			07-MLSRGBM2N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Current progress in the research group: presentation and discussion of the results of all research group members, exchange of experiences, troubleshooting tips.

Intended learning outcomes

Students have developed problem solving skills, presentation skills, scientific discussion skills as well as troubleshooting skills and are able to plan experiments.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Research Group Seminar Biomedicine 3			07-MLSRGBM3-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Current progress in the research group: presentation and discussion of the results of all research group members, exchange of experiences, troubleshooting tips.

Intended learning outcomes

Students have developed problem solving skills, presentation skills, scientific discussion skills as well as troubleshooting skills and are able to plan experiments.

Courses (type, number of weekly contact hours, language — if other than German)

S (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Research Group Seminar Biomedicine 4N			07-MLSRGBM4N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Current progress in the research group: presentation and discussion of the results of all research group members, exchange of experiences, troubleshooting tips.

Intended learning outcomes

Students have developed problem solving skills, presentation skills, scientific discussion skills as well as troubleshooting skills and are able to plan experiments.

Courses (type, number of weekly contact hours, language — if other than German)

S (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Research Group Seminar Integrative Biology 1			07-MLSRGIB1-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Current progress in the research group: presentation and discussion of the results of all research group members, exchange of experiences, troubleshooting tips.

Intended learning outcomes

Students have developed problem solving skills, presentation skills, scientific discussion skills as well as troubleshooting skills and are able to plan experiments.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Research Group Seminar Integrative Biology 2N			07-MLSRGIB2N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Current progress in the research group: presentation and discussion of the results of all research group members, exchange of experiences, troubleshooting tips.

Intended learning outcomes

Students have developed problem solving skills, presentation skills, scientific discussion skills as well as troubleshooting skills and are able to plan experiments.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Research Group Seminar Integrative Biology 3			07-MLSRGIB3-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Current progress in the research group: presentation and discussion of the results of all research group members, exchange of experiences, troubleshooting tips.

Intended learning outcomes

Students have developed problem solving skills, presentation skills, scientific discussion skills as well as troubleshooting skills and are able to plan experiments.

Courses (type, number of weekly contact hours, language — if other than German)

S (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Research Group Seminar Integrative Biology 4N			07-MLSRGIB4N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Current progress in the research group: presentation and discussion of the results of all research group members, exchange of experiences, troubleshooting tips.

Intended learning outcomes

Students have developed problem solving skills, presentation skills, scientific discussion skills as well as troubleshooting skills and are able to plan experiments.

Courses (type, number of weekly contact hours, language — if other than German)

S (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Research Group Seminar Infection and Immunity 1			07-MLSRGII1-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Current progress in the research group: presentation and discussion of the results of all research group members, exchange of experiences, troubleshooting tips.

Intended learning outcomes

Students have developed problem solving skills, presentation skills, scientific discussion skills and experimental planning as well as troubleshooting skills.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Research Group Seminar Infection and Immunity 2N			07-MLSRGII2N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Current progress in the research group: presentation and discussion of the results of all research group members, exchange of experiences, troubleshooting tips.

Intended learning outcomes

Students have developed problem solving skills, presentation skills, scientific discussion skills and experimental planning as well as troubleshooting skills.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Research Group Seminar Infection and Immunity 3			07-MLSRGII3-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Current progress in the research group: presentation and discussion of the results of all research group members, exchange of experiences, troubleshooting tips.

Intended learning outcomes

Students have developed problem solving skills, presentation skills, scientific discussion skills and experimental planning as well as troubleshooting skills.

Courses (type, number of weekly contact hours, language — if other than German)

S (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Research Group Seminar Infection and Immunity 4N			07-MLSRGII4N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Current progress in the research group: presentation and discussion of the results of all research group members, exchange of experiences, troubleshooting tips.

Intended learning outcomes

Students have developed problem solving skills, presentation skills, scientific discussion skills and experimental planning as well as troubleshooting skills.

Courses (type, number of weekly contact hours, language — if other than German)

S (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Research Group Seminar Neurosciences 1			07-MLSRG-NS1-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Current progress in the research group: presentation and discussion of the results of all research group members, exchange of experiences, troubleshooting tips.

Intended learning outcomes

Students have developed problem solving skills, presentation skills, scientific discussion skills as well as troubleshooting skills and are able to plan experiments.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Research Group Seminar Neurosciences 2N			07-MLSRG-NS2N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Presentation and discussion of cutting edge literature.

Intended learning outcomes

Overview of cutting edge literature in the field of neuroscience, ability to critically read, present and discuss the content of publications.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Research Group Seminar Neurosciences 3			07-MLSRG-NS3-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Presentation and discussion of cutting edge literature.

Intended learning outcomes

Overview of cutting edge literature in the field of neuroscience, ability to critically read, present and discuss the content of publications.

Courses (type, number of weekly contact hours, language — if other than German)

S (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Research Group Seminar Neurosciences 4N			07-MLSRG-NS4N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Presentation and discussion of cutting edge literature.

Intended learning outcomes

Overview of cutting edge literature in the field of neuroscience, ability to critically read, present and discuss the content of publications.

Courses (type, number of weekly contact hours, language — if other than German)

S (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Retreat Integrative Biology 1			07-MLSRIB1-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Presentation of current research project results in the form of a poster and/or talk. Critical evaluation of results and their discussion in the research community. Discussion and evaluation of interim progress reports with supervisors/examination committee and troubleshooting.

Intended learning outcomes

Poster design skills, (oral) presentation skills, ability to critically discuss results taking into consideration current literature in the field, troubleshooting skills, evaluation of interim progress reports.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Retreat Integrative Biology2N			07-MLSRIB2N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Presentation of current research project results in the form of a poster and/or talk. Critical evaluation of results and their discussion in the research community. Discussion and evaluation of interim progress reports with supervisors/examination committee and troubleshooting.

Intended learning outcomes

Poster design skills, (oral) presentation skills, ability to critically discuss results taking into consideration current literature in the field, troubleshooting skills, evaluation of interim progress reports.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Retreat Infection and Immunity 1			07-MLSRII1-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Presentation of current research project results in the form of a poster and/or talk. Critical evaluation of results and their discussion in the research community. Discussion and evaluation of interim progress reports with supervisors/examination committee and troubleshooting.

Intended learning outcomes

Poster design skills, (oral) presentation skills, ability to critically discuss results taking into consideration current literature in the field, troubleshooting skills, evaluation of interim progress reports.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Retreat Infection and Immunity 2N			07-MLSRII2N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Presentation of current research project results in the form of a poster and/or talk. Critical evaluation of results and their discussion in the research community. Discussion and evaluation of interim progress reports with supervisors/examination committee and troubleshooting.

Intended learning outcomes

Poster design skills, (oral) presentation skills, ability to critically discuss results taking into consideration current literature in the field, troubleshooting skills, evaluation of interim progress reports.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Retreat Neurosciences 1			07-MLSRNS1-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Presentation of current research project results in the form of a poster and/or talk. Critical evaluation of results and their discussion in the research community. Discussion and evaluation of interim progress reports with supervisors/examination committee and troubleshooting.

Intended learning outcomes

Poster design skills, (oral) presentation skills, ability to critically discuss results taking into consideration current literature in the field, troubleshooting skills, evaluation of interim progress reports.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Retreat Neurosciences 2N			07-MLSRNS2N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Presentation of current research project results in the form of a poster and/or talk. Critical evaluation of results and their discussion in the research community. Discussion and evaluation of interim progress reports with supervisors/examination committee and troubleshooting.

Intended learning outcomes

Poster design skills, (oral) presentation skills, ability to critically discuss results taking into consideration current literature in the field, troubleshooting skills, evaluation of interim progress reports.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

e) presentation with or without slides (20 to 45 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Responsible Conduct of Research 1			07-MLSRR1-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
2	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Responsible and ethical conduct of research, content and importance of compliance with international regulations to this end, information on national and international authorities regulating rules of conduct of research, biosafety and risks.

Intended learning outcomes

Students meet the academic requirements/possess the knowledge and skills required of a biosafety officer. They have developed an awareness of critical elements in quality management and quality control in research labs. Students know national and international authorities that are responsible for the regulation and control of good scientific conduct and ethical questions involving, in particular, genetically modified organisms. Students understand crucial elements of responsible and ethical conduct of research as well as the consequences of a violation of these rules.

Courses (type, number of weekly contact hours, language — if other than German)

S (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

60 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Responsible Conduct of Research 2			07-MLSRR2-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
4	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	Please consult with course advisory service in advance.	

Contents

Quality management and quality control in research labs. Application of the rules of good scientific practice to a.) scientific publication - definition of plagiarism and related violations - b.) evaluation, presentation, and interpretation of raw data and c.) planning of experiments and scientific controls.

Intended learning outcomes

Students meet the academic requirements/possess the knowledge and skills required of a biosafety officer. They have developed an awareness of critical elements in quality management and quality control in research labs. Students know national and international authorities that are responsible for the regulation and control of good scientific conduct and ethical questions involving, in particular, genetically modified organisms. Students understand crucial elements of responsible and ethical conduct of research as well as the consequences of a violation of these rules.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

120 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Responsible Conduct of Research 3			07-MLSRR3-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
6	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	Please consult with course advisory service in advance.	

Contents

Quality management and quality control in research labs. Application of the rules of good scientific practice to a.) scientific publication - definition of plagiarism and related violations - b.) evaluation, presentation, and interpretation of raw data and c.) planning of experiments and scientific controls.

Intended learning outcomes

Students meet the academic requirements/possess the knowledge and skills required of a biosafety officer. They have developed an awareness of critical elements in quality management and quality control in research labs. Students know national and international authorities that are responsible for the regulation and control of good scientific conduct and ethical questions involving, in particular, genetically modified organisms. Students understand crucial elements of responsible and ethical conduct of research as well as the consequences of a violation of these rules.

Courses (type, number of weekly contact hours, language — if other than German)

S (3)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

180 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Masterthesis Life Sciences			07-MLST-152-m01
Module coordinator		**Module offered by**	
chairperson of examination committee Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
25	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Investigation of a current scientific topic, using modern methods and techniques. Documentation of the results in a written thesis as well as oral examination.

Intended learning outcomes

Students are able to independently plan and execute a scientific research project. They are able to collect, present and interpret raw data according to international standards of good scientific conduct. They are able to summarise their data in a written thesis, adhering to scientific rules and standards. Students are able to critically discuss and defend their experiment plan, results and interpretations thereof and are able to put their own research in the context of current publications in their field. They have acquired a broad expertise both in their field of study and in related fields.

Courses (type, number of weekly contact hours, language — if other than German)

No courses assigned to module
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written thesis (50 to 100 pages)
Language of assessment: English

Allocation of places

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Additional information

Time to complete: 6 months

Workload

750 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Special Training Program GSLS 1			07-MLSTP1-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	Please consult with course advisory service in advance.	

Contents

Transferable skills tutorial: scientific writing and (oral) presentation skills.

Intended learning outcomes

The students possess scientific writing and (oral) presentation skills.

Courses (type, number of weekly contact hours, language — if other than German)

T (3)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Special Training Program GSLS 2			07-MLSTP2-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	Please consult with course advisory service in advance.	

Contents

Transferable skills tutorial: patent law.

Intended learning outcomes

Students have developed an understanding of the fundamental principles of patent law.

Courses (type, number of weekly contact hours, language — if other than German)

T (3)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Special Training Program GSLS 3			07-MLSTP3-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	Please consult with course advisory service in advance.	

Contents

Transferable skills tutorial: business etiquette, team building and negotiation skills or intercultural communication.

Intended learning outcomes

Students have acquired skills in the area of business etiquette, team building and negotiation or intercultural communication.

Courses (type, number of weekly contact hours, language — if other than German)

T (3)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Tutorial 1			07-MLSTU1-152-m01
Module coordinator		**Module offered by**	
degree programme coordinator Master Life Sciences		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	Please consult with course advisory service in advance.	

Contents

Students work as tutors (expenditure of time: approximately 90 working hours). They support teaching activities in the degree programmes and are involved in the organisation and planning of lectures, seminars and lab courses.

Intended learning outcomes

The tutors are able to communicate complex topics. They are able to lead students or groups. They know how to organise and plan (important elements of) their projects and of the projects of the students they mentor.

Courses (type, number of weekly contact hours, language — if other than German)

T (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Tutorial 2			07-MLSTU2-152-m01
Module coordinator		**Module offered by**	
degree programme coordinator Master Life Sciences		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	Please consult with course advisory service in advance.	

Contents

Students work as tutors (expenditure of time: approximately 150 working hours). They support teaching activities in the degree programmes and are involved in the organisation and planning of lectures, seminars and lab courses.

Intended learning outcomes

The tutors are able to communicate complex topics. They are able to lead students or groups. They know how to organise and plan (important elements of) their projects and of the projects of the students they mentor.

Courses (type, number of weekly contact hours, language — if other than German)

T (3)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

Consult Academic Advisor

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Workshop Infection and Immunity 1			07-MLSWII1-152-m01
Module coordinator		**Module offered by**	
degree programme coordinator Master Life Sciences		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Discussion of current methods and techniques required in lab projects.

Intended learning outcomes

Students will have acquired proficiency in those methods and techniques that are required in their lab projects.

Courses (type, number of weekly contact hours, language — if other than German)

W (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Workshop Infection and Immunity 2N			07-MLSWII2N-152-m01
Module coordinator		**Module offered by**	
degree programme coordinator Master Life Sciences		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Discussion of current methods and techniques required in lab projects.

Intended learning outcomes

Students will have acquired proficiency in those methods and techniques that are required in their lab projects.

Courses (type, number of weekly contact hours, language — if other than German)

W (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Workshop Infection and Immunity 3			07-MLSWII3-152-m01
Module coordinator		**Module offered by**	
degree programme coordinator Master Life Sciences		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Discussion of current methods and techniques required in lab projects.

Intended learning outcomes

Students will have acquired proficiency in those methods and techniques that are required in their lab projects.

Courses (type, number of weekly contact hours, language — if other than German)

W (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Workshop Infection and Immunity 4			07-MLSWII4-152-m01
Module coordinator		**Module offered by**	
degree programme coordinator Master Life Sciences		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Discussion of current methods and techniques required in lab projects.

Intended learning outcomes

Students will have acquired proficiency in those methods and techniques that are required in their lab projects.

Courses (type, number of weekly contact hours, language — if other than German)

W (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Workshop Biomedicine 1			07-MLSWS-BM1-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Discussion of current methods and techniques required in lab projects.

Intended learning outcomes

Students have acquired proficiency in those methods and techniques that are required in their lab or field projects.

Courses (type, number of weekly contact hours, language — if other than German)

W (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Workshop Biomedicine 2N			07-MLSWS-BM2N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Discussion of current methods and techniques required in lab projects.

Intended learning outcomes

Students have acquired proficiency in those methods and techniques that are required in their lab or field projects.

Courses (type, number of weekly contact hours, language — if other than German)

W (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Workshop Biomedicine 3			07-MLSWS-BM3-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Discussion of current methods and techniques required in lab projects.

Intended learning outcomes

Students have acquired proficiency in those methods and techniques that are required in their lab or field projects.

Courses (type, number of weekly contact hours, language — if other than German)

W (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (approx. 10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Workshop Biomedicine 4			07-MLSWS-BM4-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Discussion of current methods and techniques required in lab projects.

Intended learning outcomes

Students have acquired proficiency in those methods and techniques that are required in their lab or field projects.

Courses (type, number of weekly contact hours, language — if other than German)

W (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (approx. 10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Workshop Integrative Biology 1			07-MLSWS-IB1-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Discussion of current methods and techniques required in lab projects or in the field during field trips.

Intended learning outcomes

Students have acquired proficiency in those methods and techniques that are required in their lab or field projects.

Courses (type, number of weekly contact hours, language — if other than German)

W (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Workshop Integrative Biology 2N			07-MLSWS-IB2N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Discussion of current methods and techniques required in lab projects or in the field during field trips.

Intended learning outcomes

Students have acquired proficiency in those methods and techniques that are required in their lab or field projects.

Courses (type, number of weekly contact hours, language — if other than German)

W (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Workshop Integrative Biology 3			07-MLSWS-IB3-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Discussion of current methods and techniques required in lab projects or in the field during field trips.

Intended learning outcomes

Students have acquired proficiency in those methods and techniques that are required in their lab or field projects.

Courses (type, number of weekly contact hours, language — if other than German)

W (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Workshop Integrative Biology 4			07-MLSWS-IB4-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Discussion of current methods and techniques required in lab projects or in the field during field trips.

Intended learning outcomes

Students have acquired proficiency in those methods and techniques that are required in their lab or field projects.

Courses (type, number of weekly contact hours, language — if other than German)

W (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Workshop Neurosciences 1			07-MLSWS-NS1-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Discussion of current methods and techniques required in lab projects. Insights into and training in novel methods.

Intended learning outcomes

Students acquire proficiency in those methods and techniques that are required in their lab projects.

Courses (type, number of weekly contact hours, language — if other than German)

W (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (approx. 10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Workshop Neurosciences 2N			07-MLSWS-NS2N-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Discussion of current methods and techniques required in lab projects. Insights into and training in novel methods.

Intended learning outcomes

Students acquire proficiency in those methods and techniques that are required in their lab projects.

Courses (type, number of weekly contact hours, language — if other than German)

W (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Workshop Neurosciences 3			07-MLSWS-NS3-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Discussion of current methods and techniques required in lab projects. Insights into and training in novel methods.

Intended learning outcomes

Students acquire proficiency in those methods and techniques that are required in their lab projects.

Courses (type, number of weekly contact hours, language — if other than German)

W (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Workshop Neurosciences 4			07-MLSWS-NS4-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Discussion of current methods and techniques required in lab projects. Insights into and training in novel methods.

Intended learning outcomes

Students acquire proficiency in those methods and techniques that are required in their lab projects.

Courses (type, number of weekly contact hours, language — if other than German)

W (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (10 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Neurobiology, Behavioural Physiology and Animal Ecology			07-MS1-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Timing matters: Temporal organisation in the animal kingdom. Timing plays an important role in all living systems. Animals make use of endogenous clocks to predict and adapt to daily or seasonal changes in environmental parameters. To be at the right place at the right time is of great fitness relevance if -for example- a mating partner or enough food has to be found. Many mutualistic, antagonistic or social interactions can only take place if animals are at the same place at the same time and in the appropriate developmental stage. The lecture gives an introduction to the mechanisms underlying the temporal organisation in the animal kingdom. Adopting an integrative approach, the lecture goes from timing mechanisms on the neuronal level to individual behaviour and then to interactions in social groups, populations or partners in complex and variable ecosystems.

Intended learning outcomes

Students get to know the advantages of an integrative approach when analysing complex biological systems. They learn to relate and integrate different fields within biology. In the seminar, students practise the discussion of research findings.

Courses (type, number of weekly contact hours, language — if other than German)

V (3)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Endogenous Clocks			07-MS1CB-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Neurobiology and Genetics		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Introduction into endogenous clocks of unicellular organisms, fungi, plants and animals, with a focus on the neuronal organisation of the clock in the brain of mammals and insects. The biological functions of endogenous clocks and the underlying mechanisms will be discussed on the molecular, cellular and organismic levels. It will be explained how clocks adjust to a 24h day with variable photoperiods. Applied aspects regarding e. g. shift work or jetlag will also be discussed.

Intended learning outcomes

The students learn fundamental principles underlying chronobiology/endogenous clocks and obtain an insight into current research in the field. In the seminar, they practise their presentation skills and the discussion of research findings in English.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + S (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Experimental Sociobiology			07-MS1ES-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Behavioral Physiology and Sociobiology		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

The lecture covers the diversity and the development of social behaviour as well as the behavioural physiology and mechanisms of neurobiology that are the basis of the organisation of social groups. A special focus is on current research in the Faculty. With the help of selected publications, the seminar will discuss and explore in more detail the topics covered in the lecture.

Intended learning outcomes

Students understand the value of an integrative approach when looking at complex correlations in behavioural biology. Students are able to recognise and interpret relationships between various aspects of sociobiology. They are able to formulate scientific questions in the context of sociobiology and are able to discuss cutting edge literature in depth.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + S (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (15 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Neurogenetics of Behaviour			07-MS1NB-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Neurobiology and Genetics		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

To understand how the brain controls behaviour is at the heart of neuroscience. Both brain and behaviour can be overwhelmingly complex and plastic, yet neurogenetic methods are powerful tools to dissect the principles of how the brain controls behaviour. The lecture and seminar will give a state-of-the art view on current and important topics of behavioural neurobiology (incl. e. g. sleep, control of appetite and feeding, social behaviour, mating, mirror neurons, molecular mechanisms of auditory-guided behaviour, neurogenetic techniques) focusing on genetic model systems such as the fruit fly Drosophila, the mouse, and the nematode C. elegans.

Intended learning outcomes

In the lecture, students acquire theoretical and methodological insights into current topics in the field of neurogenetics in general and the neurogenetics of behaviour. In the seminar, students practise presenting and discussing research findings in English.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + S (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Developmental Neurobiology and Chronobiology			07-MS1NEC-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Neurobiology and Genetics		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Lecture and seminar *Endogenous Clocks*: Students acquire an overview of endogenous clocks in unicellular organisms, fungi, plants, and animals with a focus on the neuronal organisation of the endogenous clock in the brain of mammals and insects. Students learn about the biological purpose of endogenous clocks, their function on a molecular, cellular, and organismic level, as well as their adaptation to 24 hour days with varying hours of daylight. Related aspects of jetlag and shift-work are discussed. Lecture *Neuronal Development*: Fundamentals of neuronal development on the molecular level. Main focus is the establishment of the neuroectoderm, pattern formation, regional subdivision, neuronal progenitor cells, cell growth, differentiation of neurons, axonal navigation, and neuronal circuitry.

Intended learning outcomes

Students acquire a fundamental knowledge and understanding of endogenous clocks and neuronal development and gain an insight into current research. Students also learn to independently work on reading assignments and to research specific questions that arise in their reading. Results of the students' independent study are critically discussed in the seminar.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + S (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Neurobiology F1			07-MS1NF1-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Neurobiology and Genetics		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

A current topic in the field of neurobiology will be investigated. The practical course will be offered in different specialisations: molecular, clinical, cellular, developmental or behavioural neurobiology or in neurogenetics. In addition to a literature search, a variety of neurobiological methods (for example: electrophysiology, immunohistochemistry, molecular biological techniques, clinical and neurogenetic techniques) and different model systems are offered. The experimental results will be documented and presented in the form of a scientific talk, a publication or a seminar paper.

Intended learning outcomes

The participants are able to conduct scientific research within the field of neurobiology. They have acquired the knowledge and skills (e. g. basic and advanced knowledge, special knowledge, advanced methodological background, general and specific methods) to carry out and document neurobiological experiments according to best practice.

Courses (type, number of weekly contact hours, language — if other than German)

P (14) + S (1)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (15 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Neuromodulation and Neuronal Development			07-MS1NMND-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Neurobiology and Genetics		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Neuromodulation: cellular and molecular biology of neuromodulators and their receptors, modulation of synaptic transmission and membrane potential, theoretical and functional aspects of neuromodulation, model systems used to study modulation of neuronal circuits. Fundamental principles of molecular developmental neurobiology. Focus is on the establishment of the neuroectoderm, pattern generation and regional specification, neuronal precursors, neuronal growth, differentiation of neurons, axonal pathfinding, neuronal connectivity.

Intended learning outcomes

The students learn fundamental principles underlying neuromodulation and neuronal development and obtain an insight into current research in the field. In the seminar, students practise presenting and discussing research findings in English.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + S (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Animal Ecology and Tropical Biology 2			07-MS1TÖ2-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Animal Ecology and Tropical Biology		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

This module provides the fundamentals of the biology of tropical habitats and tropical communities. A special focus is on the global significance of tropical systems (ecosystem goods and ecosystem services), but the biological features of these highly diverse biomes are also highlighted.

Intended learning outcomes

The students will acquire deep knowledge of ecological theories and up-to-date research issues in the field of animal ecology of the tropics. They will be qualified to interpret scientific work and apply the knowledge they have acquired to the solution of current environmental risks.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + S (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Animal Ecology F1			07-MS1TÖF1-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Animal Ecology and Tropical Biology		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

This module consists of several exercises and a seminar series over the course of the entire semester. The exercises can be chosen from the following electives: 1. Wild and honeybee ecology (over the course of the semester): fundamentals and techniques of beekeeping, resource utilisation, behaviour experiments, pollinator diversity and plant-pollinator-interactions. 2. Ecology and taxonomy of insects (block, 2 weeks): observation and recording in the habitat, identification and characteristics of different arthropod groups, field experiments. 3. Ecological modelling (block, 2 weeks): current methods of ecological processes modelling, simulation models, the students' own modelling project on current issues in ecology. 4. Agroecology (block, 1 week): insect communities in agroecosystems, biological pest control in landscape context, evaluation of agri-environment schemes. 5. Forest ecology (block, 1 week): arthropod communities in forest ecosystems, methods of detection, influence of management on diversity patterns and functional groups. 6. Tropical ecology (block): small projects ecological or nature conservation-related issues to be implemented in a tropical ecosystem in East Africa. In the seminar, recent scientific publications on the topics covered in the modules listed above will be presented and discussed.

Intended learning outcomes

Students will have expanded their knowledge on ecological theories and current research issues in animal ecology. They will be able to design, perform, statistically analyse and interpret scientific research. They will be familiar with animal ecological methods and possible sources of error in data interpretation. They will have deepened their knowledge of the biology and ecology of important functional taxa of arthropods. Students will have acquired the knowledge and skills necessary to perform scientific activities in the context of an F2 practical course or a Master's thesis.

Courses (type, number of weekly contact hours, language — if other than German)

P (14) + S (1)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (15 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Behavioural Physiology and Sociobiology F1			07-MS1VF1-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Behavioral Physiology and Sociobiology		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Students will be integrated into one of the research groups at the Chair and will independently work on one of the current topics in the field of behavioural physiology and sociobiology. They will gain an insight into the latest physiological, neurobiological and behavioural methods. The results obtained will be graphically and statistically analysed, summarised in a scientific report and presented in a talk. Please contact the research groups at the Chair for available topics and opportunities.

Intended learning outcomes

The students are able to independently perform scientific experiments in the field of behavioural physiology and sociobiology. In addition, they are able to process and document the results obtained and to present them to a scientific audience.

Courses (type, number of weekly contact hours, language — if other than German)

P (14) + S (1)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (15 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Molecular Biology			07-MS2-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Molecular biology of the eukaryotic and prokaryotic cell. The lecture is a joint activity of the Chairs of Cell- and Developmental Biology, Microbiology, Biophysics and Bioinformatics and deals with concepts of modern molecular biology from the point of view of these different disciplines. Participants are recommended to read the textbook "Essential Cell Biology". The section on cell biology (app. a quarter of the lecture) mainly discusses the eukaryotic cell and intends to elucidate the vast diversity in structure and function of molecules, organelles and cells in addition to fundamental principles of modern molecular cell biology. The bioinformatics section (app. a quarter of the lecture) contains a large amount of examples for applications which allow the investigation of the molecular biology of a cell with bioinformatic tools. We closely adhere to the contents of the book "Essential Cell Biology" and present many clear and useful examples for the application of our tools when working on the topics of the other three Chairs. Our vision: bioinformatics essentially is molecular biology based on computing technology (time consuming "wet" experiments can be planned more easily and thus bioinformatics saves precious time). The microbiological section (app. a quarter of the lecture) deals with fundamental molecular aspects of prokaryotic cells. Key aspects include the organisation of the bacterial genome, the transcription and translation machinery, mechanisms of regulation of gene expression, transport of small molecules and macromolecules, cell division and differentiation, bacterial motility and chemotaxis, signal transduction and bacterial communication mechanisms. Recommended reading: (a) Allgemeine Mikrobiologie (Fuchs) and (b) Biology of Microorganisms (Brock).

Intended learning outcomes

Master level knowledge about the molecular biology of the eukaryotic and prokaryotic cell.

Courses (type, number of weekly contact hours, language — if other than German)

V (3)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Molecular Biology B			07-MS2B-152-m01
Module coordinator		**Module offered by**	
Dean of Studies Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
7	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Molecular biology of the eukaryotic and prokaryotic cell. The lecture is a joint activity of the Chairs of Cell- and Developmental Biology, Microbiology, Biophysics and Bioinformatics and deals with concepts of modern molecular biology from the point of view of these different disciplines. Participants are recommended to read the textbook "Essential Cell Biology". The section on cell biology (app. a quarter of the lecture) mainly discusses the eukaryotic cell and intends to elucidate the vast diversity in structure and function of molecules, organelles and cells in addition to fundamental principles of modern molecular cell biology. The bioinformatics section (app. a quarter of the lecture) contains a large amount of examples for applications which allow the investigation of the molecular biology of a cell with bioinformatic tools. We closely adhere to the contents of the book "Essential Cell Biology" and present many clear and useful examples for the application of our tools when working on the topics of the other three Chairs. Our vision: bioinformatics essentially is molecular biology based on computing technology (time consuming "wet" experiments can be planned more easily and thus bioinformatics saves precious time). The microbiological section (app. a quarter of the lecture) deals with fundamental molecular aspects of prokaryotic cells. Key aspects include the organisation of the bacterial genome, the transcription and translation machinery, mechanisms of regulation of gene expression, transport of small molecules and macromolecules, cell division and differentiation, bacterial motility and chemotaxis, signal transduction and bacterial communication mechanisms. Recommended reading: (a) Allgemeine Mikrobiologie (Fuchs) and (b) Biology of Microorganisms (Brock).

Intended learning outcomes

Master level knowledge about the molecular biology of the eukaryotic and prokaryotic cell.

Courses (type, number of weekly contact hours, language — if other than German)

V (3)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

210 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Biophysics and Molecular Biotechnology			07-MS2BT-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Biotechnology and Biophysics		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

This lecture provides a broad overview of biophysical techniques and their applications. The first part of the lecture discusses fundamental aspects of thermodynamics, kinetics and molecular interactions. The course then moves on to discuss biophysical methods that facilitate the investigation of individual cells down to the level of single molecules. Focus is on electromanipulation and dielectric spectroscopy of cells, biomembranes, electrophysiology, ion channels, protein folding, single-molecule fluorescence methods and high-resolution as well as dynamic microscopy.

Intended learning outcomes

Students will have acquired a knowledge of fundamental biophysical methods and their applications that will enable them to independently review relevant literature. In addition, they will have become acquainted with - or, where necessary, will be able to independently acquaint themselves with - biophysical mechanisms.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + S (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Biophysics and Molecular Biotechnology B			07-MS2BTB-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Biotechnology and Biophysics		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

This lecture provides a broad overview of biophysical techniques and their applications. The first part of the lecture discusses fundamental aspects of thermodynamics, kinetics and molecular interactions. The course then moves on to discuss biophysical methods that facilitate the investigation of individual cells down to the level of single molecules. Focus is on electromanipulation and dielectric spectroscopy of cells, electrokinetic techniques, biomembranes, electrophysiology, ion channels, protein folding, single-molecule fluorescence methods and high-resolution as well as dynamic microscopy.

Intended learning outcomes

Students will have acquired a knowledge of fundamental biophysical methods and their applications that will enable them to independently review relevant literature. In addition, they will have become acquainted with - or, where necessary, will be able to independently acquaint themselves with - biophysical mechanisms.

Courses (type, number of weekly contact hours, language — if other than German)

V (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Biophysics and Molecular Biotechnology F1			07-MS2BTF1-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Biotechnology and Biophysics		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

This practical course provides students with an insight into different biotechnological and biophysical topics and methods. Under expert guidance, students will perform selected experiments on the following topics: cellular and molecular biotechnology, nano and microsystems biotechnology, biomaterials and biosensors, high-resolution fluorescence microscopy, fluorescence spectroscopy, analysis and electromanipulation of cells.

Intended learning outcomes

Students will have acquired a knowledge of fundamental biotechnological and biophysical methods and their applications that will enable them to independently review relevant literature. In addition, they will have become acquainted with - or, where necessary, will be able to independently acquaint themselves with - biophysical mechanisms. Students will have acquired practical experience performing experiments, using a variety of scientific tools. In the seminar, students will have acquired detailed theoretical knowledge on these experiments and will have delivered a short presentation (15 minutes) on one of the experiments they performed.

Courses (type, number of weekly contact hours, language — if other than German)

P (14) + S (1)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (15 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Microbiology F1			07-MS2MF1-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Microbiology		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Participants will work independently on a current research project dealing with microbial pathogens and their interactions with the host. Participants will employ a variety of state-of-the-art methods within the fields of molecular biology, microbiology, cellular biology, and immunology as well as data analysis and literature research techniques. Results will be documented and discussed in a seminar paper or an oral presentation.

Intended learning outcomes

Participants will acquire the skills to experimentally address scientific questions in molecular biology and infection biology, properly document experimental results and adhere to the standards of good scientific practice.

Courses (type, number of weekly contact hours, language — if other than German)

P (14) + S (1)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (15 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

The internship must be completed full-time within a period of 5 to 6 weeks.

Workload

300 h

Teaching cycle

Teaching cycle: Ongoing, after consultation with the supervisor and registration for both winter and summer semesters.

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Topics in Bioinformatics			07-MS2TBI-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Bioinformatics		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Advances and current results of bioinformatics are explained and discussed, this includes results from genome and sequence analysis, protein domains and protein families, large-scale data analysis (e. g. next generation sequences, proteomics data), analysis of different functional RNAs (e. g. miRNAs, lncRNAs).

Intended learning outcomes

Students are able to understand recent results in bioinformatics and discuss their implications. They have developed an advanced knowledge about typical techniques, scientific objectives and scientific questions.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + S (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Cell and Developmental Biology Master 2			07-MS2ZE2-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Cell Biology and Developmental Biology		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

The module consists of the lecture *Signale und Differenzierung* (Signals and Differentiation) and the seminar *Entwicklungsbiologie - Meilensteine und Perspektiven* (*Milestones and Perspectives of Developmental Biology*). The lecture *Signals and Differentiation* does not attempt to impart pure textbook knowledge. Instead, historically important as well as particularly interesting and important trend-setting topics in developmental biology are presented. The topics range from classical developmental subjects such as tissue regeneration and morphogenetic cell migration to molecular stem cell biology, epigenetic plasticity, origins of multicellularity and development within changing environments. In the seminar *Milestones and Perspectives of Developmental Biology*, classic ground-breaking publications in the field of developmental biology are discussed from an unusual point of view.

Intended learning outcomes

Participants possess a knowledge of the theoretical and molecular biological principles underlying developmental biology and are able to put this into the broader context of cell and developmental biology research.

Courses (type, number of weekly contact hours, language — if other than German)

V (1) + S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Cell and Developmental Biology F1			07-MS2ZEF1-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Cell Biology and Developmental Biology		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

This 5 week full-time practical course provides an introduction to modern cell and developmental biology-related methods with a focus on bio-imaging techniques. A broad variety of model organisms is covered and the participants are encouraged to independently design and perform their own experiments. Participants use their acquired technological skills to analyse important basic biological processes. Large parts of this practical course are devoted to small projects, which should provide sustained insights into current research activities of the Chair. Interactions with Master's students, doctoral researchers and post-docs prepare participants for a working in a team-based environment.

Intended learning outcomes

The participants are able to approach complex scientific questions in the fields of cell and developmental biology and to independently implement acquired methodological tools to answer these questions. They are able to perform and document cell and developmental biology-related experiments, adhering to a generally accepted code of scientific practice.

Courses (type, number of weekly contact hours, language — if other than German)

P (14) + S (1)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (15 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Plant Ecology			07-MS31POEK-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Ecophysiology and Vegetation Ecology		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

The lecture will deal with the ecological and environmental constraints under which plants grow and develop (biogeography, biodiversity) and with the interactions of plants with abiotic and biotic environmental factors (e. g. plant-insect, plant-fungus interactions). The evolutionary adaptations on the physiological and organismic level will be emphasised in particular (stress and defence reactions, carnivory, plant protection). Corresponding experimental approaches will be illustrated. Based on selected examples from current research, the seminar will address the topics covered in the lecture in more detail. It will be complemented by topic-related guided tours in the Botanical Garden of the University of Würzburg.

Intended learning outcomes

Participants are able to identify and interpret ecological and ecophysiological interrelations and to discuss them in the context of the current state of knowledge in these fields.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + S (1)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Biophysics and Biochemistry			07-MS3BB-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Plant Physiology and Biophysics		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

The module imparts theoretical and methodological knowledge of plant membrane transport, structural biology and biochemistry which is illustrated with specific examples from current research. Depending on the number of participants and their interests, practical demonstrations of methods that are currently used give students an opportunity to experience the practical aspects of biophysical and biochemical research.

Intended learning outcomes

Students are able to use methods dealing with soluble proteins or membrane proteins in the fields of biophysics, structural biology and biochemistry. They are able to interpret the data and to discuss the results within the context of current knowledge.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + S (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Biophysics and Biochemistry B			07-MS3BBB-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Plant Physiology and Biophysics		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

The module imparts theoretical and methodological knowledge of plant membrane transport, structural biology and biochemistry which is illustrated with specific examples from current research. Depending on the number of participants and their interests, practical demonstrations of methods that are currently used give students an opportunity to experience the practical aspects of biophysical and biochemical research.

Intended learning outcomes

Students are able to use methods dealing with soluble proteins or membrane proteins in the fields of biophysics, structural biology and biochemistry. They are able to interpret the data and to discuss the results within the context of current knowledge.

Courses (type, number of weekly contact hours, language — if other than German)

V (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Biophysics of Plant Membrane Proteins F1			07-MS3BPF1-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Plant Physiology and Biophysics		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

The module provides an in-depth insight into biophysical strategies and methods which are used for the functional characterisation of plant membrane proteins. The students will be integrated into research projects on current topics in molecular plant membrane biology.

Intended learning outcomes

The students have knowledge of general biophysical strategies and methods with a focus on plant membrane proteins, they are able to independently work on related scientific issues and to document the results obtained.

Courses (type, number of weekly contact hours, language — if other than German)

P (14) + S (1)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (15 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Biochemistry and Structural Biology F1			07-MS3BSBF1-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Plant Physiology and Biophysics		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

The module provides an in-depth insight into strategies and methods in protein biochemistry and structural biology. The students will be integrated into research projects on current topics in biochemistry and structural biology.

Intended learning outcomes

The students have knowledge about general strategies and methods of protein biochemistry and structural biology with a focus on membrane proteins. They are able to perform and organise their scientific laboratory work independently and document the results obtained.

Courses (type, number of weekly contact hours, language — if other than German)

P (14) + S (1)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (15 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Computational Biology F1			07-MS3COBF1-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Bioinformatics		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Detailed insight into methods in bioinformatics; depending on the topic selected, fields covered include: genomics (sequence-, domain analysis and annotation), omics data analysis (NGS, transcriptomics, metabolomics, proteomics), topological and structural analysis of biological interactions including statistical methods, phylogenetic analysis, protein structure analysis. Results are documented in the form of a presentation, a publication or a term paper.

Intended learning outcomes

Students have gained knowledge on experimental setups and methods used in the field of bioinformatics. They are able to design experiments, collect data and interpret them statistically, adhering to the principles of good scientific practice.

Courses (type, number of weekly contact hours, language — if other than German)

P (14) + S (1)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (15 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Molecular and Chemical Plant Ecology F1			07-MS3MCPEF1-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Plant Physiology and Biophysics		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Under the guidance of an experienced scientist, students will work on a current research topic from the field of molecular and chemical plant ecology. Particular emphasis will be placed on the molecular and chemical bases of the interactions between plants and abiotic and biotic environmental factors (e. g. cuticular barrier properties, plant-insect, and plant-fungus interactions). Working concepts and complex experiments will be designed, and the results will be documented and presented in the form of presentations, publications or logs. The participants will be involved in ongoing projects and will deepen their knowledge on applying special methods, in molecular biology in particular but also in chemical analysis.

Intended learning outcomes

The participants are able to perform scientific experiments in the field of molecular and chemical plant ecology and to apply appropriate methods. They are also able to address and document questions in the field of molecular biology/chemical ecology, adhering to the rules of good scientific practice.

Courses (type, number of weekly contact hours, language — if other than German)

P (14) + S (1)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (15 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Pharmaceutical Biology and Metabolomics F1			07-MS3PBMF1-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Pharmaceutical Biology		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

All organisms are able to reprogram their metabolism in response to various endogenous or exogenous perturbations. Reprogramming of metabolism is often correlated to phenotypic changes e. g. in disease development, physiology or behaviour. At the Chair of Pharmaceutical Biology, we apply metabolomics for gene function- or stress response analysis. Students can choose a topic from the variety of ongoing projects. Depending on the scientific question addressed by the research team at the Chair, the methodological approach involves techniques in the field of metabolomics/bioanalytics and/or molecular biology. In this module, students will be trained to use quantitative metabolite analysis methods (chromatography, mass spectrometry) and apply advanced molecular biology techniques. Depending on the project, different model organisms are studied. Prior knowledge in metabolite analysis or mass spectrometry is not required. Current scientific questions in the life sciences form the basis to impart scientific concepts and to train students in the laboratory. The module involves the experimental design, realisation and critical evaluation of scientific experiments as well as the documentation and presentation of the progress. More information is available on request or can be found at http://www.pbio.biozentrum.uni-wuerzburg.de/.

Intended learning outcomes

Students will be trained in using specific molecular biology methods and/or metabolomics approaches to address scientific questions, in the documentation of experimental procedures and results, and in the interpretation of data.

Courses (type, number of weekly contact hours, language — if other than German)

P (14) + S (1)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (15 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Physiological Plant Ecology F1			07-MS3PPEF1-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Plant Physiology and Biophysics		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Under the guidance of an experienced scientist, students will work on a current research topic from the field of ecology/ecophysiology. Particular emphasis will be placed on the physiological bases of the interactions between plants and abiotic and biotic environmental factors (e. g. water relations, stress, biogeography). Working concepts and complex experiments will be designed, and the results will be documented and presented in the form of a presentation, a publication or a log. The participants will be involved in ongoing projects and will deepen their knowledge on applying special methods, in ecophysiology in particular but also in chemical analysis.

Intended learning outcomes

The participants are able to perform scientific experiments in the field of physiological plant ecology and to apply appropriate methods. They are also able to address and document questions in the field of ecology/ecophysiology, adhering to the rules of good scientific practice.

Courses (type, number of weekly contact hours, language — if other than German)

P (14) + S (1)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (15 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Systems Biology F1			07-MS3SYF1-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Bioinformatics		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

The practical course will provide students with advanced insights into a field of systems biology and will, in particular, make students proficient in a dynamical method in systems biology (areas that may be selected include protein structure analysis and protein folding, genome analysis and evolution; dynamic network analysis, the dynamics of protein-protein interactions, modelling cellular regulation; modelling metabolism, statistical modelling).

Intended learning outcomes

Students have gained knowledge on experimental setups and methods used in the field of systems biology. They are able to design scientific research, to collect data and to interpret them statistically, adhering to the principles of good scientific practice.

Courses (type, number of weekly contact hours, language — if other than German)

P (14) + S (1)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (15 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Topics in Systems Biology			07-MS3TSY-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Bioinformatics		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Advances and current results of computational systems biology are explained and discussed, this includes results from functional genomics, dynamics of the transcriptome, of metabolism and metabolic networks as well as regulatory networks.

Intended learning outcomes

Understand recent results in systems biology. Discuss their implications. Have an advanced (Master) level knowledge of typical technologies and research questions of systems biology.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + S (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Biochemistry, Physiology and Genetics of Mammalian Cell Culture			07-MSCC-152-m01
Module coordinator		**Module offered by**	
degree programme coordinator Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Introduction to cell culture, cell culture lab equipment, cellular biochemistry and cell structures, cell proliferation, generation of in vitro cell models and their applications, cell culture formats, fundamental cell analytical technologies.

Intended learning outcomes

Students are able to understand the biochemistry, physiology and genetics of mammalian cell culture, and are able to use these techniques.

Courses (type, number of weekly contact hours, language — if other than German)

S (3)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (15 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Molecular Biology F1			07-MSF1-152-m01
Module coordinator		**Module offered by**	
degree programme coordinator Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Practical course on a topic in molecular biology. Students spend five weeks working on a small, well-defined scientific lab project and learn how to present their data. They learn to discuss their data in a seminar. The students learn to apply defined experimental procedures and methods, to independently address scientific questions and to document their experimental work in an appropriate manner.

Intended learning outcomes

Students have reinforced previously acquired lab skills, acquired new molecular lab techniques and learned how to transfer theoretical knowledge into experiments. Students have gained expertise in the analysis of raw data, their interpretation and their presentation.

Courses (type, number of weekly contact hours, language — if other than German)

P (14) + S (1)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (15 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Molecular Parasitology			07-MSPAR-171-m01
Module coordinator		**Module offered by**	
holder of the Chair of Cell Biology and Developmental Biology		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

The lecture *Molecular Parasitology* discusses molecular and genetic aspects of parasitic diseases in humans and animals. Special emphasis is on neglected tropical diseases.

Intended learning outcomes

Participants possess a knowledge of the theoretical principles underlying parasitology and are able to put this into the broader context of molecular cell biology research.

Courses (type, number of weekly contact hours, language — if other than German)

V (1) + S (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Molecular Parasitology B			07-MSPARB-182-m01
Module coordinator		**Module offered by**	
holder of the Chair of Cell Biology and Developmental Biology		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

The lecture *Molecular Parasitology* discusses molecular and genetic aspects of parasitic diseases in humans and animals. Special emphasis is on neglected tropical diseases.

Intended learning outcomes

Participants possess a knowledge of the theoretical principles underlying parasitology and are able to put this into the broader context of molecular cell biology research.

Courses (type, number of weekly contact hours, language — if other than German)

V (1)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes)
Students will be informed about the type and length of assessment at the beginning of the course.
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Molecular Parasitology F1			07-MSPARF1-171-m01
Module coordinator			**Module offered by**
holder of the Chair of Cell Biology and Developmental Biology			Faculty of Biology
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

This 5-week full-time practical course provides an introduction to modern methods and concepts in molecular parasitology. It introduces participants to a variety of parasites and encourages them to design and perform experiments of their own. Participants use the skills they have developed to analyse important biomedical processes.

Intended learning outcomes

The participants are able to perform scientific experiments in the field of molecular parasitology and to apply appropriate methods. They are able to address and document fundamental scientific questions, adhering to the rules of good scientific practice.

Courses (type, number of weekly contact hours, language — if other than German)

P (14) + S (1)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
b) log (15 to 30 pages) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or
e) presentation (20 to 45 minutes)
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Animal Ecology and Tropical Biology 2 B			07-MTÖ2B-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Animal Ecology and Tropical Biology		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

This module provides the fundamentals of the biology of tropical habitats and tropical communities. A special focus is on the global significance of tropical systems (ecosystem goods and ecosystem services), but the biological features of these highly diverse biomes are also highlighted.

Intended learning outcomes

The students will acquire deep knowledge of ecological theories and up-to-date research issues in the field of tropical ecology. They will be qualified to interpret scientific work and apply the knowledge they have acquired to the solution of current environmental risks.

Courses (type, number of weekly contact hours, language — if other than German)

V (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Cell and Developmental Biology Master 2 B			07-MZE2-B-152-m01
Module coordinator		**Module offered by**	
holder of the Chair of Cell Biology and Developmental Biology		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

The lecture *Signale und Differenzierung* (*Signals and Differentiation*) does not attempt to impart pure textbook knowledge. Instead, historically important as well as particularly interesting and important trend-setting topics in developmental biology are presented. The topics range from classical developmental subjects such as tissue regeneration and morphogenetic cell migration to molecular stem cell biology, epigenetic plasticity, origins of multicellularity and development within changing environments.

Intended learning outcomes

Participants possess a knowledge of the theoretical and molecular biological principles underlying developmental biology and are able to put this into the broader context of cell and developmental biology research.

Courses (type, number of weekly contact hours, language — if other than German)

V (1)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

90 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Clinical Tumor Biology			07-TUM-CLIN-152-m01
Module coordinator		**Module offered by**	
degree programme coordinator Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

In the lecture series *Klinische Tumorbiologie* (*Clinical Tumour Biology*), current clinical aspects will be addressed. Several tumour types will be discussed (such as tumours of the skin, lung, intestine, breast, blood). Additional topics: diagnostics and pathology, different treatments and therapies and clinical trials.

Intended learning outcomes

Knowledge of the similarities and differences of various tumour types. Understanding of requirements, possibilities and limitations of clinical medicine.

Courses (type, number of weekly contact hours, language — if other than German)

V (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module title			Abbreviation
Molecular Tumor Biology			07-TUM-MOL-152-m01
Module coordinator		**Module offered by**	
degree programme coordinator Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

The lecture *Molekulare Tumorbiologie* (*Molecular Tumour Biology*) discusses molecular characteristics of tumours and relevant biological processes (such as signal transduction, cell growth, cell proliferation, metabolism), tumour-specific modifications and current molecular biological methods in tumour research.

Intended learning outcomes

Understanding of current topics and challenges in tumour research, understanding of the methods which could be used address these challenges.

Courses (type, number of weekly contact hours, language — if other than German)

V (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (30 to 60 minutes, including multiple choice questions) or
c) oral examination of one candidate each (30 to 60 minutes) or
d) oral examination in groups of up to 3 candidates (30 to 60 minutes)
Students will be informed about the method, length and scope of the assessment prior to the course.
Language of assessment: German and/or English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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