

# Module Catalogue

for the Subject

## **Translational Neuroscience**

with the degree "Zusatzstudium"

(90 ECTS credits)

Examination regulations version: 2022 Responsible: Faculty of Medicine

JMU Würzburg • generated 30-Mär-2024 • exam. reg. data record ZS|h36|-|-|H|2022



## Contents

The subject is divided into	3
Abbreviations used, Conventions, Notes, In accordance with	4
Compulsory Courses (Major)	5
Methods in Neurosciences	6
Clinical Neurobiology 1	7
Clinical Neurobiology 2: Trend-setting and current findings in neurobiology	9
Neurology/ Neurosurgery 1	11
Neurology/ Neurosurgery 2	13
Psychiatric Neurosciences	15
Current findings in psychiatric neurosciences	16
Biopsychology 1	17
Biopsychology 2	18
Advanced lab rotation 1	19
Biostatistics	20
Compulsory Electives (Minor)	21
Module Group General Compulsory Electives	22
Pain	23
Neuroinflammation	24
Ion channels	25
Functional Neuroimaging	27
Developmental Neuroimaging	28
Regeneration in the nervous system	29
Developmental Neuropsychiatry Cellular Neurobiology	30
Experimental Psychiatry	31 32
Developmental cognitive Neuroscience	32 34
RNA-Metabolismus/ RNA metabolism	54 36
Electrophysiology in human and animals	38
Optical methods for visualization and manipulation of neural circuits- from synapses to behavior	39
Project design	41
Project Development	42
Ask the expert 1	43
Ask the expert 2	44
Advanced Subject Lecture 1 (actual lectures to be specified)	45
Advanced Subject Lecture 2 (actual lectures to be specified)	46
Advanced Subject Lecture 3 (actual lectures to be specified)	47
Meeting Participation 1 (Poster)	48
Meeting Participation 1 (Talk)	49
Advanced Training Program GSLS 1 Advanced Training Program GSLS 2	50
Tutorial 1	51
Tutorial 2	52 53
Module Group Compulsory Electives Lab Courses	
	54
Advanced lab rotation 2 Advanced lab rotation 3	55
External Lab Rotation 1	56
Advanced Practical Course Neuroscience Lab 1	57 58
	ىر



## The subject is divided into

section / sub-section	ECTS credits	starting page
Compulsory Courses (Major)	55	5
Compulsory Electives (Minor)	35	21
Module Group General Compulsory Electives		22
Module Group Compulsory Electives Lab Courses		54



## Abbreviations used

Course types:  $\mathbf{E}$  = field trip,  $\mathbf{K}$  = colloquium,  $\mathbf{O}$  = conversatorium,  $\mathbf{P}$  = placement/lab course,  $\mathbf{R}$  = project,  $\mathbf{S}$  = seminar,  $\mathbf{T}$  = tutorial,  $\ddot{\mathbf{U}}$  = exercise,  $\mathbf{V}$  = 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:

#### SPO+ASPO2015

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

#### 22-Dec-2021 (2021-90)

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.





## Compulsory Courses (Major)

(55 ECTS credits)

Module title					Abbreviation
Methods in Neurosciences					03-TN-MNS-152-m01
Module	coord	inator		Module offered by	
progran	nme co	ordinator		Faculty of Medicine	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	graduate			
Conten	ts				
proache biodisti	es, prot ributior	tein and molecular biolog n of imaging biomarkers,	gy techniques, PCR, a pain behaviour, gait	dvanced protein bio analysis, biostatisti	odels and gene-knockout ap- ochemistry, imaging techniques, cs of psychiatric genetic studies, enesis, neural stem cells.
Intende	ed learn	ning outcomes			
		ble to review and expand techniques to design e			techniques and are able to choo- f neurosciences.
Courses	<b>5</b> (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V (o) +	P (2)				
module is a) writte didate e	creditab en exar each (3	<sup>le for bonus)</sup> nination (30 to 60 minuto o to 60 minutes) or d) or	es, including multiple	e choice questions) (	or c) oral examination of one can- dates (approx. 30 to 60 minutes)
		tion (20 to 45 minutes)			
Allocati	ion of p	olaces			
		ormation			
Additio	nat info				
Worklo	ad				
150 h					
Teachir	ng cycl	9			
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
Module appears in					
Master's degree (1 major) Translational Neuroscience (2015) Master's degree (1 major) Translational Neuroscience (2017) Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2022) Master's degree (1 major) Translational Neuroscience (2022) Supplementary course Translational Neuroscience (2022)					

Module title				Abbreviation		
Clinical Neurobiology 1			03-TN-NB1-152-m01			
Module	e coord	inator		Module offered by		
Institut	e of Cli	nical Neurobiology		Faculty of Medicine		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
5	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
Students will get a theoretical introduction and amplification of topics in clinical neurobiology. The following to- pics will be discussed: introduction to neurons and glia, ion channels and membrane potential, ion channelopa- thies, synapses, transmitter release, NMJ, myasthenia gravis, cerebellum, basal ganglia, ataxia and Morbus Par- kinson, somatosensory system, touch, pain, schizophrenia and autism spectrum disorders, disorders of cogniti- on, muscle and muscle diseases, anatomy and function of the motor system, spinal reflexes, motoneuron disea- ses, hippocampus, learning and memory, anterograde amnesia, visual agnosia, cortex and the limbic system, emotions, disorders of conscious and unconscious mental processes, attention, smell and taste and hearing , sleep, EEG, epilepsy, vision and diseases of the visual system. The accompanied literature seminars are based on fundamental and current literature on lecture-relevant topics to discuss experimental and methodological ap- proaches and with this promoting translational thinking. Using student presentations of current research results, the earned knowledge in neurobiology is recessed <b>Intended learning outcomes</b> Students who successfully completed this module are able to remind and understand the current theoretical concepts in neurobiology. Furthermore, students are able to classify clinical aspects of neurobiology with the fo- cus to disease mechanisms at molecular, cellular, and physiological levels. Based on current experimental data evaluation, students are able to critical read and evaluate current publications in neurobiology as well as extract						
		mation from recent pub		man)		
V (2)	- (7)					
		<b>Sessment</b> (type, scope, lang le for bonus)	uage — if other than German, e	examination offered — if no	t every semester, informati	on on whether
		mination (30 to 60 minu 30 to 60 minutes) or d)	- ,	-		
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
150 h						
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
-						
Module						
Master' Supple	's degr mentai	ee (1 major) Translation ee (1 major) Translation y course Translational ee (1 major) Translation	al Neuroscience (2017) Nedicine (2018)			
Suppl. cour	rse Transla	ational Neuroscience (2022)	-	generated 30-Mär-2024 • exa udium Translational Neuroso	-	page 7 / 58



Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2018) Master's degree (1 major) Translational Neuroscience (2022) Supplementary course Translational Neuroscience (2022)

Modul	e title				Abbreviation
Clinical Neurobiology 2: Trend-setting and current findings in neurobiology					03-TN-NB2-152-m01
Module coordinator				Module offered by	
Institut	te of Cli	inical Neurobiology		Faculty of Medicine	
ECTS	Meth	od of grading	Only after succ. com	pl. of module(s)	
5	(not)	successfully completed			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conter	nts	·			
pics wi thies, s kinson on, mu ses, hi emotio sleep, on fun- proach the ear Intend Studer concep cus to	Il be di synapse , soma iscle an ppocan ons, dis EEG, ep dament ies and rned kn ed lear nts who ots in nu disease	scussed: introduction to es, transmitter release, l tosensory system, touch ad muscle diseases, and npus, learning and merr orders of conscious and bilepsy, vision and disea tal and current literature with this promoting tran owledge in neurobiolog <b>ning outcomes</b> successfully completed eurobiology. Furthermore e mechanisms at molect	o neurons and glia, ior NMJ, myasthenia gravi n, pain, schizophrenia tomy and function of t nory, anterograde amn l unconscious mental ases of the visual syste on lecture-relevant to nslational thinking. Us y is recessed.	channels and mem s, cerebellum, basal and autism spectrum he motor system, sp esia, visual agnosia, processes, attention em. The accompanie pics to discuss expec- ing student present to remind and unde o classify clinical asp iological levels. Bas	Il neurobiology. The following to- brane potential, ion channelopa- l ganglia, ataxia and Morbus Par- m disorders, disorders of cogniti- binal reflexes, motoneuron disea- , cortex and the limbic system, , smell and taste and hearing , ed literature seminars are based erimental and methodological ap ations of current research results rstand the current theoretical bects of neurobiology with the fo- sed on current experimental data in neurobiology as well as extract
relevar	nt infor	mation from recent publ	ications.		
S (2)					
		S <b>essment</b> (type, scope, langu ole for bonus)	uage — if other than German, o	examination offered — if no	ot every semester, information on whether
e) pres	entatio	n (20 to 45 minutes)			
	tion of				
Additio	onal inf	ormation			
Worklo	ad				
150 h					
Teachi	ng cvcl	e			
	- /				
Referre	ed to in	LPOI (examination regulatio	ns for teaching-degree progra	mmes)	
	_				
Modul	e appea	ars in			
Master Master Master Supple	s degr s degr s degr s degr ementa	ee (1 major) Translation ee (1 major) Translation ee (1 major) Translation ry course Translational N ee (1 major) Translation	al Neuroscience (2017) al Neuroscience (2018) Neuroscience (2018)	)	
	-	ational Neuroscience (2022)		y generated 30-Mär-2024 ● ex	
Suppi, сон				generated 30-Mar-2024 • Px	am. reg. da- page 9 / 58





Supplementary course Translational Neuroscience (2022)

Module title					Abbreviation	
Neurology/ Neurosurgery 1			03-TN-NN1-152-m01	1		
Module coordinator				Module offered by		
Depart	ment o	f Neurology, Departme	nt of Neurosurgery	Faculty of Medicine		
ECTS	Metho	od of grading	Only after succ. cor	npl. of module(s)		
5	nume	rical grade				
Duratio	on	Module level	Other prerequisites	5		
1 seme	ster	graduate				
Conten	ts					
Students will get a theoretical introduction and scientific background from the following topics: antibody-me- diated CNS diseases – experimental analysis of auto-antibody function; Lessons on nociceptor function learned from pain genetics; Translational approaches in stroke medicine; Subarachnoid hemorrhage - pathophysiology and translational therapy approaches; Pathophysiology of brain trauma: experimental brain trauma models and their analysis; Neurophysiology of hearing in tumor and trauma; The molecular basis of glioma-biology; Neuro- plasticity after CNS damage by brain tumors; Connectomics in neurology; understanding neuronal networks for treatment of tremor syndromes; stem cell based models of movement disorders; basics of electrophysiology in experimental and clinical practice; the molecular basis of myopathies. The accompanied journal clubs are based on fundamental and current literature on lecture-relevant topics to discuss experimental and methodological ap- proaches and with this promoting translational thinking. Students will give presentations and thereby earn and transfer knowledge. <b>Intended learning outcomes</b> Students who successfully completed this module will have acquired insights into the current molecular and cellular pathophysiology of diseases prevalent in neurology and neurosurgery. They will understand basic me- chanisms of disease in the motor and sensory system and of higher functions. They will understand about brain trauma and brain tumor biology. They will have gained theoretical knowledge about animal models for neuro- logical and neurosurgical diseases and will be introduced into behavioral, neurophysiological, morphological and molecular biological analysis methods. They will have learnt how to raise appropriate bed-to-bench research questions and how to devise study plans. They will learn how to read scientific publications critically and how to extract the relevant data bringing them forward in their own project. In addition, they will have learnt how to re- cord and analy						
	<b>S</b> (type, r	number of weekly contact hour	s, language — if other than Ge	rman)		
		sessment (type, scope, lang	guage — if other than German,	examination offered — if no	t every semester, informat	ion on whether
a) writt	en exa	mination (30 to 60 min	utes, including multipl oral examination in gro			
Allocat	ion of p	olaces				
Additional information						
Workload						
150 h						
Teaching cycle						
Referre	<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)					
Module	e appea	ars in				
Suppl. cou	rse Transla	ational Neuroscience (2022)	-	• generated 30-Mär-2024 • ex studium Translational Neuroso	-	page 11 / 58



Master's degree (1 major) Translational Neuroscience (2015) Master's degree (1 major) Translational Neuroscience (2017) Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2022) Master's degree (1 major) Translational Neuroscience (2022) Supplementary course Translational Neuroscience (2022)

Module title					Abbreviation	
Neurology/ Neurosurgery 2				03-TN-NN2-152-m0	1	
Module	e coord	inator		Module offered by		
Depart	ment o	f Neurology, Departmen	t of Neurosurgery	Faculty of Medicine		
ECTS	Metho	od of grading	Only after succ. cor	npl. of module(s)		
5	(not) s	successfully completed				
Duratio	on	Module level	Other prerequisites	5		
1 seme	ster	graduate				
Conten	Its					
Students will get a theoretical introduction and scientific background from the following topics: antibody-me- diated CNS diseases – experimental analysis of auto-antibody function; Lessons on nociceptor function learned from pain genetics; Translational approaches in stroke medicine; Subarachnoid hemorrhage - pathophysiology and translational therapy approaches; Pathophysiology of brain trauma: experimental brain trauma models and their analysis; Neurophysiology of hearing in tumor and trauma; The molecular basis of glioma-biology; Neuro- plasticity after CNS damage by brain tumors; Connectomics in neurology; understanding neuronal networks for treatment of tremor syndromes; stem cell based models of movement disorders; basics of electrophysiology in experimental and current literature on lecture-relevant topics to discuss experimental and methodological ap- proaches and with this promoting translational thinking. Students will give presentations and thereby earn and transfer knowledge. <b>Intended learning outcomes</b> Students who successfully completed this module will have acquired insights into the current molecular and cellular pathophysiology of diseases prevalent in neurology and neurosurgery. They will understand basic me- chanisms of disease in the motor and sensory system and of higher functions. They will understand about brain trauma and brain tumor biology. They will have gained theoretical knowledge about animal models for neuro- logical and neurosurgical diseases and will be introduced into behavioral, neurophysiological, morphological and molecular biological analysis methods. They will have learnt how to raise appropriate bed-to-bench research questions and how to devise study plans. They will have learnt how to read scientific publications critically and how to extract the relevant data bringing them forward in their own project. In addition, they will have learnt how to re-						
Course	<b>S</b> (type, r	number of weekly contact hours	, language — if other than Ge	rman)		
S (2)						
		<b>sessment</b> (type, scope, langu le for bonus)	age — if other than German,	examination offered — if no	t every semester, informati	ion on whether
e) pres	entatio	n (20 to 45 minutes)				
Allocat	ion of <sub>l</sub>	olaces				
Additio	onal inf	ormation				
	-					
Workload						
150 h						
Teaching cycle						
Referre	ed to in	LPO I (examination regulatio	ns for teaching-degree progra	ammes)		
Module appears in						
Master	's degr	ee (1 major) Translation	al Neuroscience (2015	5)		
Suppl. cou	rse Transla	ational Neuroscience (2022)	-	• generated 30-Mär-2024 • ex studium Translational Neuroso	_	page 13 / 58



Master's degree (1 major) Translational Neuroscience (2017) Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2022) Master's degree (1 major) Translational Neuroscience (2022) Supplementary course Translational Neuroscience (2022)

Module title				Abbreviation			
Psychiatric Neurosciences			03-TN-PSYT1-152-m	01			
Module coordinator Module offered by				Module offered by			
	University Hospital, Department of Psychiatry, Psychoso- matics and Psychotherapy						
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)			
5	numer	rical grade					
Duratio	n	Module level	Other prerequisites	;			
1 semes	ster	graduate					
Content	ts						
Basic knowledge about the characteristics of various psychiatric disorders, the proposed neurobiological basis (e.g. gene by environment interaction) as well as the treatment approaches: Anxiety disorders, somatoform disorders, social interaction disorders, psychotic disorders, attention deficit hyperactivity disorder, substance use disorders, neurodegenerative disorders. Basic knowledge about the genetic and neural mechanisms associated with psychiatric disorders such as gene by environment interaction, anatomical, cellular/neuronal plasticity of selected brain regions, e.g. hippocampus and amygdala and brain regions and neurotransmitter systems involved in the processing of emotions. Basic knowledge about state-of-the-art research methods in the field such as the analysis of gene variants and their association with various psychiatric disorders and behavioral traits, ani-							
		r psychiatric disorders, <b>hing outcomes</b>	<u> </u>				
Students who successfully completed this module will have gained an overview of the characteristics of diverse psychiatric disorders. They will have acquired insights into the neurobiological basis of the etiopathogenesis of these disorders (e. g. which neurotransmitter systems and brain regions are involved), how they are treated and into current concepts and experimental approaches studying these psychiatric disorders. Courses (type, number of weekly contact hours, language – if other than German) V (2) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether							
a) writte	en exar	le for bonus) nination (30 to 60 minu					
		o to 60 minutes) or d) (	oral examination in gro	oups of up to 3 candi	dates (approx. 30 to	60 minutes)	
Allocati	on of p	olaces					
Additio	nal info	ormation					
Worklo	ad						
150 h		-					
Teachin	ig cycle	8					
Deferre	d 4 a 1 a			``````````````````````````````````````			
Referred to in LPO I (examination regulations for teaching-degree programmes)							
Module	20002	rs in					
			al Neuroscience (2015	)			
Master's degree (1 major) Translational Neuroscience (2015) Master's degree (1 major) Translational Neuroscience (2017) Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2018) Master's degree (1 major) Translational Neuroscience (2022) Supplementary course Translational Neuroscience (2022)							
Suppl. cour	se Transla	ational Neuroscience (2022)		generated 30-Mär-2024 • exa tudium Translational Neurosc		page 15 / 58	

Module title					Abbreviation
Current findings in psychiatric neurosciences			ciences		03-TN-PSYT2-152-m01
Module	e coord	inator		Module offered by	<u>I</u>
		spital, Department of Psy ychotherapy	chiatry, Psychoso-	Faculty of Medicine	2
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
5	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites	i	
1 seme	ster	graduate			
Conten	ts				
		seminar is based on func ing our present knowled			pics to document the experi-
Intende	ed lear	ning outcomes			
		acquire a theoretical und entific results in the field			biology work and will learn how
Course	<b>S</b> (type, r	number of weekly contact hours, l	anguage — if other than Ge	rman)	
S (2)					
		<b>Sessment</b> (type, scope, langua ile for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether
e) pres	entatio	n (20 to 45 minutes)			
Allocat	ion of	olaces			
Additio	nal inf	ormation			
Worklo	ad				
150 h					
Teachi	ng cycl	e			
Referre	d to in	LPOI (examination regulation	s for teaching-degree progra	ammes)	
Module	e appea	ars in			
Master Master Supple	's degr 's degr menta	ee (1 major) Translationa ee (1 major) Translationa ee (1 major) Translationa ry course Translational No	l Neuroscience (2017 l Neuroscience (2018 euroscience (2018)	) ))	
	-	ee (1 major) Translationa ry course Translational No		2)	

Module title	Abbreviation					
Biopsychology 1			06-TN-BPSY1-152-m	01		
Module coordinator		Module offered by				
holder of the Chair of Psychology I		Institute of Psychol	ogy			
ECTS Method of grading C	Only after succ. com	pl. of module(s)				
5 numerical grade						
Duration Module level C	Other prerequisites					
1 semester graduate						
Contents						
Students will get a theoretical introduction cience. The following topics will be discu- assessments, eye-tracking, autonomic p- gnetic resonance imaging), emotion and trol, clinical aspects (e.g., anxiety disord fundamental and current literature on lead proaches and with this promoting transla- the acquired knowledge in biopsycholog	ussed: introduction osychophysiology, el I motivation, learnin ders, depression, ad cture-relevant topics ational thinking. Usi	to biopsychological ectroencephalograp g and memory, atter diction). The accomp s to discuss experim	research methods (b bhy, structural and funtion, perception, co panying seminars are ental and methodolo	oehavioral unctional ma- gnitive con- e based on ogical ap-		
Intended learning outcomes	591510005000					
Students who successfully completed this module are able to remind and understand the current theoretical concepts in biopsychology and cognitive neuroscience. Furthermore, students are able to describe and interpret biopsychological data and they can select appropriate non-invasive techniques to address specific psychological cal research questions. They are familiar with general psychological concepts and know about their biological basis. Based on this knowledge, students are able to critical read and evaluate current publications in biopsychology and cognitive neuroscience and can extract relevant information from recent publications.						
<b>Courses</b> (type, number of weekly contact hours, lan	nguage — if other than Gerr	man)				
V (2)						
Method of assessment (type, scope, language module is creditable for bonus)	e — if other than German, e	xamination offered — if no	t every semester, informati	on on whether		
a) written examination (30 to 60 minutes didate each (30 to 60 minutes) or d) oral	<b>e</b> 1	•	-			
Allocation of places						
Additional information						
Workload						
150 h						
Teaching cycle						
<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)						
Module appears in						
Master's degree (1 major) Translational Neuroscience (2015) Master's degree (1 major) Translational Neuroscience (2017) Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2018) Master's degree (1 major) Translational Neuroscience (2022) Supplementary course Translational Neuroscience (2022)						
Suppl. course Translational Neuroscience (2022)		generated 30-Mär-2024 • exa udium Translational Neurosc		page 17 / 58		

Module title				Abbreviation		
Biopsychology 2			06-TN-BPSY2-152-m	101		
Module	e coord	inator		Module offered by		
holder	of the (	Chair of Psychology I		Institute of Psychol	ogy	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
5		successfully completed		, ,,		
Duratio		Module level	Other prerequisites			
1 seme		graduate				
		Sidudite				
ContentsStudents will get a theoretical introduction and amplification of topics in biopsychology and cognitive neuros- cience. The following topics will be discussed: introduction to biopsychological research methods (behavioral assessments, eye-tracking, autonomic psychophysiology, electroencephalography, structural and functional ma- gnetic resonance imaging), emotion and motivation, learning and memory, attention, perception, cognitive con- trol, clinical aspects (e.g., anxiety disorders, depression, addiction). The accompanying seminars are based on fundamental and current literature on lecture-relevant topics to discuss experimental and methodological ap- proaches and with this promoting translational thinking. Using student presentations of current research results, the acquired knowledge in biopsychology is recessed.Intended learning outcomesStudents who successfully completed this module are able to remind and understand the current theoretical concepts in biopsychology and cognitive neuroscience. Furthermore, students are able to describe and interpret biopsychological data and they can select appropriate non-invasive techniques to address specific psychologi- cal research questions. They are familiar with general psychological concepts and know about their biological basis. Based on this knowledge, students are able to critical read and evaluate current publications in biopsy- chology and cognitive neuroscience and can extract relevant information from recent publications.						
Course	<b>S</b> (type, r	number of weekly contact hour	s, language — if other than Ger	rman)		
S (2)						
			guage — if other than German,	examination offered — if no	t every semester, informati	ion on whether
		le for bonus)				
		n (20 to 45 minutes)				
Allocat	ion of	olaces				
Additio	onal inf	ormation				
Worklo	ad					
150 h						
Teachi	ng cycl	e				
<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)						
Module appears in						
Master's degree (1 major) Translational Neuroscience (2015)						
Master's degree (1 major) Translational Neuroscience (2015) Master's degree (1 major) Translational Neuroscience (2017) Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2022) Supplementary course Translational Neuroscience (2022)						
			X			
Suppl. cou	rse Transl	ational Neuroscience (2022)	_	generated 30-Mär-2024 • ex tudium Translational Neuroso	-	page 18 / 58

Module title			Abbreviation		
Advanced lab rotation 1				03-TN-LR1-152-m01	
Module	coord	inator		Module offered by	
prograr	nme co	oordinator		Faculty of Medicine	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate	Please consult with	course advisory serv	vice in advance.
Conten	ts				
Studen	ts get a	an intense training in at le	east two different me	thods from different	fields of neurosciences.
Intende	ed leari	ning outcomes			
					iques and learned how to apply and presentation of raw data.
Course	<b>S</b> (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
P (2)					
		<b>essment</b> (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
a) log (a	approx	. 10 to 30 pages) or b) ora	al examination in grou	ups of up to 3 candic	dates (approx. 30 to 60 minutes)
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
150 h					
Teachir	ıg cycl	e			
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
Module appears in					
Master	s degr	ee (1 major) Translational	Neuroscience (2015)		
	-	ee (1 major) Translational			
	Master's degree (1 major) Translational Neuroscience (2018)				
		y course Translational Ne		<b>`</b>	
	-	ee (1 major) Translational		)	
Supplementary course Translational Neuroscience (2022)					

Module	title				Abbreviation	
Biostat	istics				06-TN-BS-222-m01	
Module	coord	inator		Module offered by		
holder	of the C	Chair of Psychology I		Institute of Psychol	ogy	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
5	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 semes	ster	graduate				
Conten	ts					
Students who successfully completed this module will have acquired knowledge of and expertise in probabili- ty theory, frequentist statistics in a linear model framework. Topics covered will be: What is statistics, what are data, Intro to R, data wrangling, data visualization, probability, sampling, hypothesis testing, t-tests, ANOVA, re- gression, (generalized) linear (mixed) model, reproducible research, advanced (bio-)statistical methods. In ad- dition, students will learn the statistical programming language R. At the end of the seminar, they will be able to wrangle and visualize data, carry out different statistical analyses, and write a report in R and RMarkdown.						
		ning outcomes				
Students who completed this module will have acquired important research skills: They will be able to indepen- dently develop a data analysis plan and generate a report using R. Specifically, they will know and remember dif- ferent types of analysis, will be able to interpret results of these analysis, and implement the analysis in R. In ad- dition, they will be able to identify which analysis is suitable for a given data set, differentiate between analyses, and critically evaluate the results. Furthermore, they will gain methods competence by learning how to program using the statistical programming language R. Using RMarkdown, they will be able to generate a reproducible re- port. The students will have gained increased social- and self-competencies by cooperating on the class report and increased self-efficacy in the application of statistical analysis.						
		umber of weekly contact hours, la		·		
V + Ü (2	2)					
		essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
		-60 Min., auch Multiple C der d) mündliche Gruppe			er c) mündliche Einzelprüfung er e) Referat (20-45 Min.)	
Allocati	ion of p	olaces				
Additio	nal info	ormation				
Worklo	ad					
150 h						
Teachir	ng cycl	9				
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)		
		•				
Module			Neuroesianas (			
	-	ee (1 major) Translational v course Translational Ne		J		
	entur	Supplementary course Translational Neuroscience (2022)				





## **Compulsory Electives (Minor)**

(35 ECTS credits)





## Module Group General Compulsory Electives

(ECTS credits)

Module title Abbreviation						
Pain					03-TN-P-152-m01	
Module				Module offered by		
Univers Care	ity Hos	pital, Department of Ar	naesthesia and Critical	Faculty of Medicine		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
5	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 semes	ster	graduate				
Content	ts					
pain me pain pa jor prim and lim A focus quent li discuss dicine. multime Intende In this of therapy ing pair student	Students will receive a theoretical introduction and consolidation in topics of pain processing as well as clinical pain medicine. Contents include an introduction to nociceptors and their activation via specific ion channels, the pain pathway with its synapses, and the descending pathways. Clinically, the classification of pain and the major primary and secondary pain syndromes are discussed. Pain research will be reflected with the possibilities and limitations of preclinical animal models on the one hand and measurement of pain in patients on the other. A focus will also be on the translation of results from research for the clinic and drug development. The subsequent literature seminar will be based on fundamental and current literature on topics relevant to the lecture to discuss clinical studies, experiments and new methods and thereby promote translational thinking in pain medicine. Presentations of current research results and the connection to the clinic (examination of patients) and multimodal interdisciplinary therapy will be used to deepen the learned knowledge in pain medicine. Intended learning outcomes In this course, students will learn about the (patho-) physiology of pain, neuroanatomical structures and pain therapy including interdisciplinary multimodal pain therapy. These include molecular mechanism of pain, studying pain in animals and humans and drug development. How to evaluate studies in "pain" is worked-out by the students in a specific article/topic chosen by the student and presented within in a talk during the course.					
		essment (type, scope, lang le for bonus)	uage — if other than German, o	examination offered — if no	t every semester, informati	on on whether
		n (20 to 45 minutes)				
Allocati						
Additio	nal info	ormation				
Worklo	ad					
150 h						
Teachin	ng cycl	9				
Referre	d to in	LPO I (examination regulation	ons for teaching-degree progra	mmes)		
Module						
Master' Master' Supplei Master'	Master's degree (1 major) Translational Neuroscience (2015) Master's degree (1 major) Translational Neuroscience (2017) Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2018) Master's degree (1 major) Translational Neuroscience (2022) Supplementary course Translational Neuroscience (2022)					
Suppl. cour	se Transla	tional Neuroscience (2022)		generated 30-Mär-2024 • exa tudium Translational Neurosc		page 23 / 58

Module	Module title					
Neuroin	ıflamm	ation			03-TN-NI-172-m01	
Module	coordi	inator		Module offered by		
•		Neurology, Section of stitute of Virology and	Developmental Neuro- Immunobiology	Faculty of Medicine		
ECTS	Metho	d of grading	Only after succ. compl. of module(s)			
5	numer	rical grade				
Duratio	- n	Module level	Other prerequisites			
1 semes	ster	graduate	 			
Content		3.444440				
Introduction to neural cells and structures relevant for neuroinflammation (glial cells, myelin, myelin molecu- les, synapses, nodes of Ranvier), components of the innate immune system I: macrophages and microglial cells, components of the innate immune system II: dendritic cells, NK cells, granulocytes; antigen presentation; lym- phatic organs, components of the adaptive immune system: lymphocytes and antigen recognition, the phenome- non of tolerance and autoimmunity, experimental models for neuroinflammation (EAE, cuprizone, EAN); the BBB, clinics, pathogenesis and therapy of multiple sclerosis, role of inflammation in primarily neurological/neurode- generative disorders (Alzheimer's disease; inherited neuropathies).						
Intende	d learn	ing outcomes				
Students who successfully completed this module will have acquired solid insights into fundamental and disea- se-relevant aspects of neuroimmunology and neuroinflammation. They will have learned to critically read scienti- fic publications and will have been trained in the ability to extract relevant information from the original scientific literature.						
Courses	<b>5</b> (type, n	umber of weekly contact hours	s, language — if other than Ger	man)		
V (o) + 9	S (o)					
		<b>essment</b> (type, scope, lang le for bonus)	uage — if other than German, e	examination offered — if no	t every semester, informati	on on whether
didate e or e) pre	each (3 esentat		utes, including multiple oral examination in gro	•	-	
Allocati	ion of p	laces				
Additio	nal info	ormation				
Workloa	ad					
150 h						
Teachin	ng cycle	2				
		•				
Poforro	d to in		ons for teaching-degree progra			
Kelelle				mmes)		
		va in				
Module Mastor			al Neuroscience (2017)	1		
	-	-	al Neuroscience (2017) al Neuroscience (2018)			
	-	y course Translational		,		
		•	al Neuroscience (2022	)		
	-	y course Translational				
			· · · · ·			
Suppl. cours	se Transla	tional Neuroscience (2022)	_	generated 30-Mär-2024 • exa cudium Translational Neurosc	-	page 24 / 58

Module	e title			Abbreviation			
lon cha	annels			-	03-TN-IC-152-m01		
Module	e coord	inator		Module offered by			
Institut	e of Cli	inical Neurobiology		Faculty of Medicine			
ECTS	Meth	od of grading	Only after succ. con	Only after succ. compl. of module(s)			
5	nume	rical grade					
Duratio	on	Module level	Other prerequisites				
1 seme	ster	graduate					
Conten	Its						
Students will get a theoretical introduction and amplification of topics in ion channel physiology. The following topics will be discussed: physiological properties of membranes, structure-function relationships of ligand-ga- ted and voltage-gated ion channels and their subfamilies, regulation and pharmacology of ion channels, anato- mical expression profiles, developmental regulation, evolution of ion channels, sensory systems, ion channelo- pathies. The accompanied literature seminars are based on current publications of ion channel structures and physiological aspects to discuss experimental and methodological approaches and with this promoting transla- tional thinking. Using student presentations of current research results, the earned knowledge on ion channels is recessed. The practical session will include whole cell recordings at the electrophysiological setup using trans- fected cells and primary neurons. Using various neurotransmitters and blocking agents, students will apply their learned knowledge of ion channel physiology and observe the consequences at the functional level.							
Intende	ed lear	ning outcomes					
in a bo channe jected o ty of ele read, re <b>Course</b> V (o) +	Students who successfully completed this module are able to remind and understand the physiological proper- ties of various ion channel families and their importance for brain physiology. The students are able to classify in a bottom-up approach to put the molecular findings into the context of pathomechanisms in various kinds of channelopathies. They will be trained in recording techniques to study ion channel properties on transfected/in- jected cell lines as well as primary neurons. With this experience, students are able to evaluate the applicabili- ty of electrophysiological recording techniques for various ion channels. Additionally, they are able to critically read, reflect, and present scientific reports in the field of channel physiology. <b>Courses</b> (type, number of weekly contact hours, language – if other than German) V (o) + S (o) + P (2) <b>Method of assessment</b> (type, scope, language – if other than German, examination offered – if not every semester, information on whether						
didate	each (3	-	utes, including multipl oral examination in gro	-			
Allocat	ion of	places					
Additio	onal inf	ormation					
Worklo	ad						
150 h							
Teachi	ng cycl	e					
Referre	ed to in	LPO I (examination regulat	ons for teaching-degree progra	ammes)			
Module	e appea	ars in					
			nal Neuroscience (2015 nal Neuroscience (2017				
Suppl. cou	rse Transl	ational Neuroscience (2022)		generated 30-Mär-2024 • ex tudium Translational Neurose	-	page 25 / 58	



Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2018) Master's degree (1 major) Translational Neuroscience (2022) Supplementary course Translational Neuroscience (2022)

Module	title				Abbreviation
Functio	nal Ne	uroimaging			03-TN-FI-152-m01
Module	e coord	inator		Module offered by	
Univers	ity Hos	pital, Department of Nuc	lear Medicine	Faculty of Medicine	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
diolabe cepts o CT, SPE tures in	Content: target identification for functional and molecular neuroimaging, basic concepts of radiochemistry, ra- diolabelling of surrogate markers for PET and SPECT, basic concepts of magnetic resonance imaging, basic con- cepts of positron emission tomography, single photon emission computed tomography and hybrid devices (PET/ CT, SPECT/CT), anatomic and functional structures of the brain in small animals, anatomic and functional struc- tures in humans and patients with neurodegenerative disorders and dementia, multimodality multiparametric imaging of brain tumours using MR, PET and SPECT.				
Intende	ed leari	ning outcomes			
ches in ction ar robiolo ned hov	Students who successfully completed this module will have acquired insights into current experimental approa- ches in neurobiology. They will have been introduced to preparations and recording techniques to study the fun- ction and pathomechanisms of neural model systems. The students will have examined clinical aspects of neu- robiology with a focus on the molecular, cellular and physiological mechanisms. Additionally, they will have lear- ned how to document their own data that they collected during lab courses. In addition, the students will have learned to critically reflect their data in the context of the experimental methods used.				
Course	<b>S</b> (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V (o) +	S (2)				
		<b>essment</b> (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether
or c) or	al exan		e each (30 to 60 minu	ites) or d) oral exami	or b) log (approx. 10 to 30 pages) ination in groups of up to 3 candi-
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
150 h					
Teachir	ıg cycl	e			
Referre	d to in	LPOI (examination regulation	s for teaching-degree progra	mmes)	
Module					
Master	Master's degree (1 major) Translational Neuroscience (2015) Master's degree (1 major) Translational Neuroscience (2017) Master's degree (1 major) Translational Neuroscience (2018)				
	-	y course Translational Ne			
	-	ee (1 major) Translational		)	
Supple	mentar	y course Translational Ne	euroscience (2022)		

Module title					Abbreviation	
Develop	omenta	Il Neuroimaging			03-TN-DI-172-m01	
Module	coord	inator		Module offered by		
		pital, Department of Cl ychosomatics and Psyc		Faculty of Medicine		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
5	nume	rical grade				
Duratio		Module level	Other prerequisites			
1 semes	ster	graduate				
Conten	ts	5	1			
Students will get an introduction to basic physics of MRI, in particular the functional MRI signal (so called BOLD response). Different fMRI designs, block vs. event, will be introduced. Students will learn to critically evaluate such design differences. The basic steps for preprocessing fMRI data will be introduced and practiced. Using example data of a block and event design, there will be an introduction and practice session on how to implement a statistical model of task-based fMRI data. Students will give presentation on the topics based on state-of-the-art textbooks and research articles or implement analysis code. The course requires the students to use Statistical Parametric Mapping software in Matlab. Previous experience in Matlab is not required but beneficial.						
Intende	d learn	ning outcomes				
Students who successfully completed this module will have acquired insights into the basics principles of func- tional and structural MRI data collection as well as how to perform data preprocessing and principles of statisti- cal analysis. Behavioral data from an experiment conducted during functional MRI will be analyzed and imple- mented into the statistical analysis of brain activation of controls and patients. As an outlook, we will touch on opportunities of informing such analysis by computational modeling.						
Courses	<b>5</b> (type, n	umber of weekly contact hour	s, language — if other than Ge	rman)		
S (o) + l	Ü (o)					
		s <b>essment</b> (type, scope, lang le for bonus)	uage — if other than German,	examination offered — if no	t every semester, informati	on on whether
or c) ora dates (a	al exam approx	nination (30 to 60 min nination of one candida . 30 to 60 minutes) or e ssessment: English	ite each (30 to 60 mini	utes) or d) oral exami		
Allocati	-					
Additio	nal info	ormation				
Worklo	ad					
150 h						
Teachin	g cycl	9				
	<u> </u>					
Referre	d to in	LPO I (examination regulation	ons for teaching-degree progra	ammes)		
Module	appea	in in				
		ee (1 major) Translatior	al Neuroscience (2017	)		
	-	ee (1 major) Translatior				
		y course Translational		、		
	Master's degree (1 major) Translational Neuroscience (2022)					
		y course Translational				
Suppl. cour	se iransla	ational Neuroscience (2022)	-	generated 30-Mär-2024 • exa tudium Translational Neurosc	-	page 28 / 58

Module title				Abbreviation		
Regene	Regeneration in the nervous system					
Module	coord	inator		Module offered by		
Departr biology		Neurology, Section of	Developmental Neuro-	Faculty of Medicine		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
5	numei	rical grade				
Duratio	n	Module level	Other prerequisites			
1 semes	ster	graduate				
Content	ts					
Cellular elements of the PN I: origin, development, structure, myelin formation, Cellular elements of the PN II: le- sion, regeneration and surgical reconstitution, physiology and pathophysiology, Diseases I: inflammatory (GBS, CIDP, myasthenia; clinic and therapy), Diseases II: diabetes; iatrogenic (e. g. vincristine; clinic and therapy), Di- seases III: inherited NPs (including models and attempts for treatment approaches). The literature seminar is ba- sed on fundamental literature on lecture-relevant topics to document the experiments underlying our present knowledge in peripheral nerve research.						
Intende	d learr	ning outcomes				
Students who successfully completed this module will have acquired insights into cellular elements of the pe- ripheral nerve, physiology and pathophysiology. The students will have examined clinical aspects of diseases with the involvement of peripheral nerves with a focus on the molecular mechanisms and therapeutical options. Additionally, they will have learned how to evaluate and present data in oral form. In addition, the students will have learned to critically read scientific publications in the field of peripheral nerve diseases and will have been trained in the ability to extract relevant information from the original literature.						
Courses	<b>5</b> (type, n	umber of weekly contact hours	, language — if other than Ger	man)		
V (o) + 9	S (o)					
		e <b>essment</b> (type, scope, lang le for bonus)	uage — if other than German, o	examination offered — if no	t every semester, information	on on whether
or c) ora dates (a	al exam approx.	nination (30 to 60 minu nination of one candida . 30 to 60 minutes) or e ssessment: English	te each (30 to 60 minu	ites) or d) oral exami		
Allocati	-					
Additio	nal info	ormation				
Workloa	ad					
150 h						
Teachin	ig cycle	9				
Referre	d to in	LPO I (examination regulation	ns for teaching-degree progra	mmes)		
Module	appea	irs in				
		ee (1 major) Translation	al Neuroscience (2017)			
Master'	s degre	ee (1 major) Translation	al Neuroscience (2018			
		y course Translational I		、		
	Master's degree (1 major) Translational Neuroscience (2022) Supplementary course Translational Neuroscience (2022)					
		tional Neuroscience (2022)		generated 30-Mär-2024 • exa	am rag da	nage 20 / 59
Տաբբե օսև։				udium Translational Neurosc	*	page 29 / 58

Module title					Abbreviation	
Develop	omenta	Il Neuropsychiatry			03-TN-DNP-172-mo	1
Module	coord	inator		Module offered by	Module offered by	
		pital, Department of Ch ychosomatics and Psyc		Faculty of Medicine		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
5	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 semes	ster	graduate				
Content	ts					
Students will get an introduction to the main conditions in child and adolescent psychiatry as well as to state- of-the-art neuroscientific models of etiology and pathophysiology. There will be a focus on ADHD, anxiety disor- ders, autism spectrum disorder, substance use disorder, eating disorders as well as conduct problems. Whene- ver possibility, clinical interviews with patient from our department will be presented to the class. Research ap- proaches in child and adolescent psychiatry will be introduced to the students including clinical trials, functional neuroimaging and transcranial sonography. Students will learn to critically evaluate the role of these techniques. Students will give presentation on the topics based on state-of-the-art textbooks and research articles.						
		ning outcomes				
Students who successfully completed this module will have acquired insights into neurodevelopmental aspects of child and adolescent psychiatric disorders including clinical symptoms, diagnostic criteria, etiology, pathophysiology and research approaches on ADHD, anxiety disorders, autism spectrum disorder, substance use disorder, eating disorders as well as oppositional defiant and conduct problems. Developmental aspects of neuropsychopharmacology are further discussed and the clinical use will be critically evaluated.						
Courses	<b>5</b> (type, n	umber of weekly contact hours	s, language — if other than Ger	rman)		
V (o) + 9	S (o)					
		essment (type, scope, lang le for bonus)	uage — if other than German,	examination offered — if no	t every semester, informati	on on whether
or c) ora dates (a	al exan approx	nination (30 to 60 minu nination of one candida . 30 to 60 minutes) or e ssessment: English	ite each (30 to 60 mini	ites) or d) oral exami		
Allocati	on of p	olaces				
Additio	nal info	ormation				
Workloa	ad					
150 h						
Teachin	ig cycl	e				
Referre	d to in	LPO I (examination regulation	ons for teaching-degree progra	mmes)		
Module	appea	irs in				
	-	ee (1 major) Translation				
	-	ee (1 major) Translation y course Translational		)		
		ee (1 major) Translation		)		
	-	y course Translational		·		
Suppl. cours	se Transla	ational Neuroscience (2022)	_	generated 30-Mär-2024 • exa tudium Translational Neurosc	-	page 30 / 58

Module title	Module title				
Cellular Neu	robiology			03-TN-CN-152-m01	
Module coor	dinator		Module offered by		
Institute of C	linical Neurobiology		Faculty of Medicine		
ECTS Met	nod of grading	Only after succ. con	npl. of module(s)		
5 num	erical grade				
Duration	Module level	Other prerequisites			
1 semester	graduate				
Contents	*				
Students will get a theoretical introduction and amplification of topics in cellular neurobiology. The following to- pics will be discussed: structure, function, and molecular functional components of the peripheral nerves of the nervous system including its neuronal and non-neuronal cells as well as the neuromuscular endplate, motor be- havioral tests in mouse models for motoneuron diseases; functional and morphological analysis of motoneurons and motor endplates, anatomical, cellular/neuronal plasticity at selected brain structures, e.g. hippocampus and cerebellum, molecular and cellular pathomechanisms of neuromotor disorders, optogenetic approaches and their use to understand circuit biology, immunohistochemistry /immunfluorescence in hippocampal/cerebellar slices, confocal microscopy, primary neuron preparations of dorsal root ganglia and hippocampal neurons, mou- se perfusion, whole cell patch clamp recordings to determine ion channel properties. <b>Intended learning outcomes</b> Students who successfully completed this module are able to understand and dispose current experimental ap- proaches in neurobiology. They are trained in preparations and recording techniques to study the function and pathomechanisms of neural model systems. The students are able to evaluate clinical aspects of neurobiology with a focus on the molecular, cellular and physiological mechanisms. Additionally, they are able to document, evaluate, and classify their own data that were collected during the lab course. Furthermore, the students can critically reflect their data in the context of the experimental methods used.					
	number of weekly contact hour	s, language — if other than Ge	rman)		
V (0) + P (2)					
module is credita	<b>ssessment</b> (type, scope, lang ble for bonus)	guage — if other than German,	examination offered — if no	ot every semester, informati	on on whether
Log (approx.	10 to 30 pages)				
Allocation of	places				
Additional in	formation				
Workload					
150 h					
Teaching cy	le				
Referred to i	<b>n LPO I</b> (examination regulat	ons for teaching-degree progra	ammes)		
Module appe	ars in				
		nal Neuroscience (2015	)		
Master's deg Supplement Master's deg	Master's degree (1 major) Translational Neuroscience (2015) Master's degree (1 major) Translational Neuroscience (2017) Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2018) Master's degree (1 major) Translational Neuroscience (2022) Supplementary course Translational Neuroscience (2022)				
Suppl. course Tran	slational Neuroscience (2022)		generated 30-Mär-2024 • ex tudium Translational Neurose	•	page 31 / 58

Module	Module title				Abbreviation	
Experin	nental	Psychiatry			03-TN-EP-152-m01	
Module	e coord	inator		Module offered by		
		spital, Department of Psy ychotherapy, Molecular		Faculty of Medicine		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
5	nume	rical grade				
Duratio	n	Module level	Other prerequisites	5		
1 seme	ster	graduate				
Conten	ts					
Brain regions and neurotransmitter systems involved in neuronal networks involved in experiencing anxiety and fear, attentional networks, learning and memory, and their importance for emotionality in humans, analysis of gene variants and their association with various psychiatric disorders and behavioural traits; animal models for psychiatric disorders, gene x environment interaction; neuroadaptive mechanisms as a result of stress exposure during different periods of lifetime; resilience, epistatic load hypothesis, mis match hypothesis, anatomical, cellular/neuronal plasticity at selected brain regions, e. g. hippocampus and amygdala; adult neurogenesis; immunohistochemistry/immunofluorescence using forebrain slices; neuronal reconstructions using the Neurolucida software.						
Intende	ed lear	ning outcomes				
rimenta treatme gene ex ly, they lab cou	Students who successfully completed this module will have acquired insights into current concepts and expe- rimental approaches in psychiatry and especially in the neurobiological basis of the etiopathogenesis and the treatment of psychiatric disorders. They will have been trained in molecular biology methods, e. g. genotyping, gene expression analysis and in various methods studying structural neuronal plasticity of the brain. Additional- ly, they will have learned how to evaluate and present data in oral and written form that was collected during the lab course. In addition, the students will have learned to critically read scientific publications in the field of neu- robiology/neuropsychiatry.					
Course	<b>S</b> (type, r	number of weekly contact hours,	language — if other than Ge	rman)		
V (o) +	P (2)					
		<b>sessment</b> (type, scope, langu le for bonus)	age — if other than German,	examination offered — if no	t every semester, informati	ion on whether
or c) or	al exan	mination (30 to 60 minu nination of one candidat . 30 to 60 minutes) or e)	e each (30 to 60 mini	utes) or d) oral exami		
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad		_			
150 h			_			
Teachi	ng cycl	e				
Referre	d to in	LPO I (examination regulation	ns for teaching-degree progra	ammes)		
Module				、 、		
Master	's degr	ee (1 major) Translationa ee (1 major) Translationa ee (1 major) Translationa	al Neuroscience (2017	)		
		ational Neuroscience (2022)	JMU Würzburg •	generated 30-Mär-2024 • ex	-	page 32 / 58





Supplementary course Translational Neuroscience (2018) Master's degree (1 major) Translational Neuroscience (2022) Supplementary course Translational Neuroscience (2022)

Module	Module title				Abbreviation	
Develo	pmenta	al cognitive Neuroscienco	9		03-TN-DCN-152-m0	1
Module	e coord	inator		Module offered by		
		spital, Department of Chil ychosomatics and Psych		Faculty of Medicine		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
5	nume	rical grade				
Duratio	tion Module level Other prerequisites					
1 seme	ster	graduate				
Conten	ts					
Students will get an introduction to the key cognitive, behavioral and brain developmental steps. There will be strong focus on how the computational lens of reinforcement learning models, tightly linked to monoamine transmission and dopamine in particular, can useful to investigate research questions in developmental neuroscience. It will be discussed how developmental neuroscience can be a useful tool to investigate the development of psychiatric conditions, in particular ADHD and substance use problems. The methods focus will be on behavioral experiments, neuroimaging, in particular task-based fMRI, and computational modelling. Students will learn to critically evaluate the role of these techniques. Students will give presentation on the topics based on state-of-the-art research articles.						
normal gnition sed via neurop ty / dep of reinf	and al and m behav sychiat oressio orceme	successfully completed tered cognition and moti otivation such as working ioral and neuroscientific tric disorders such as atte n. The influences of main ent learning, will be discu	vation as well as brai g memory, reinforcen studies. Abnormal de ention-deficit / hyper n monoaminergic neu issed.	n development. Dev nent learning and em evelopment will be e activity disorder, au romodulators, in pa	elopmental changes notion processing wi xplained in the cont tism, substance use	of basic co- ll be addres- ext of the and anxie-
		umber of weekly contact hours, l	anguage — if other than Ge	rman)		
	d of ass	U (2) Sessment (type, scope, langua ele for bonus)	ge — if other than German,	examination offered — if no	ot every semester, informati	ion on whether
or c) or	al exan	mination (30 to 60 minut nination of one candidate . 30 to 60 minutes) or e)	e each (30 to 60 minu	ites) or d) oral exami		
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
150 h						
Teachir	ıg cycl	e				
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	mmes)		
Module		<b>ers in</b> ee (1 major) Translationa	Nouroscience (2015	)		
	-	ee (1 major) Translationa ee (1 major) Translationa	-			
	-	ee (1 major) Translationa				
Suppl. cour	se Transla	ational Neuroscience (2022)		generated 30-Mär-2024 • ex	-	page 34 / 58





Supplementary course Translational Neuroscience (2018) Master's degree (1 major) Translational Neuroscience (2022) Supplementary course Translational Neuroscience (2022)

Module	Module title					
RNA-M	etaboli	smus/ RNA metabolisn	1		03-TN-RM-172-m01	
Module	e coord	inator		Module offered by		
Institut	e of Cli	nical Neurobiology	-	Faculty of Medicine		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
5	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites	i		
1 seme	ster	graduate				
Conten	ts					
neurod vestiga the bac jointly o gulatio	Each week a high-impact paper from the current literature that describes RNA-based mechanisms contributing to neurodegeneration is jointly analyzed in depth. Emphasis is placed on understanding of novel approaches for investigating RNA. The course organizer will give a short introduction at the beginning of each seminar describing the background for the paper to be discussed. Afterwards, students individually describe the original data and jointly discuss their relevance. Individual topics include: RNA expression, function and localization; RNA dysregulation in neurodegenerative diseases; high-throughput sequencing methods for transcriptome analysis; properties and functions of RNA-binding proteins.					
Intende	ed learı	ning outcomes				
After successful completion of this module, students will have gained a deeper understanding of current RNA- based research in the area of neurodegeneration. This outcome is achieved by a weekly in-depth analysis of a current article in this field. Students will become familiar with many techniques applied in RNA research and will learn how to critically interpret the results in the context of neurodegenerative diseases. By doing so, students will be able to evaluate methodological advances in RNA research and obtain a deeper understanding of the pa- thomechanisms underlying neurodegeneration. Through discussion and active participation, students will im- prove their communication and analysis skills.						
Course	<b>Courses</b> (type, number of weekly contact hours, language — if other than German)					
S (o)						
		s <b>essment</b> (type, scope, lang le for bonus)	uage — if other than German,	examination offered — if no	t every semester, informat	ion on whether
or c) or dates (a	al exan approx	nination (30 to 60 minu nination of one candida . 30 to 60 minutes) or e ssessment: English	te each (30 to 60 minu	utes) or d) oral exami		
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
150 h						
Teachi	ng cycl	e				
Referre	d to in	LPOI (examination regulation	ons for teaching-degree progra	ummes)		
Module	e appea	rs in				
Master Master Supple Master	Module appears in Master's degree (1 major) Translational Neuroscience (2017) Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2018) Master's degree (1 major) Translational Neuroscience (2022)					
Suppl. cour	rse Transla	ational Neuroscience (2022)		generated 30-Mär-2024 • exa tudium Translational Neurosc	-	page 36 / 58

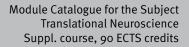




Supplementary course Translational Neuroscience (2022)

Module title				Abbreviation			
Electrophysiology in human and animals				06-TN-EPHY-182-m01			
Module o	coordin	nator		Module offered by			
Departm	ent of N	Neurology, Department	of Neurosurgery	Faculty of Medicine			
ECTS I	Method	d of grading	Only after succ. com	pl. of module(s)			
5 (	(not) su	accessfully completed					
Duration	n [/	Module level	Other prerequisites				
1 semest	ter g	graduate					
Contents							
animal m ral analy which pla	nodels, vsis of e lays a cl	, this module will allow t electrophysiological sigr	to apply analysis to th nals but also on a frec s well as higher-level	nese different types quency based analys cognitive functions.	brain recording in human and of data. It will focus on tempo- sis, i.e. oscillatory brain activity, . Different electrophysiological s and data type.		
Intended	d learni	ing outcomes					
techniqu experien module v rent kind spikes to	This module will give a detailed theoretical and practical insight into different electrophysiological recording techniques and the resulting data obtained in human and animal brain recordings. Through hands-on analysis experience with such data, namely multi-electrode recordings, ECoG recordings and EEG/ MEG recordings, the module will allow students to learn analysis techniques and understand the information content of these different kinds of electrophysiological data. The recording and analysis methods introduced can build a bridge from spikes to the local field, from human to the animal model, from invasive to non-invasive approaches and will therefore stimulate translational thinking.						
Courses	(type, nu	mber of weekly contact hours, la	anguage — if other than Ger	man)			
S (2)							
Method module is c			ge — if other than German, e	examination offered — if no	t every semester, information on whether		
oral exar (30 to 60	minatio o minut	on of one candidate each	n (30 to 60 minutes) (	or d) oral examinatio	or b) log (10 to 30 pages) or c) on in groups of up to 3 candidates o specific congress requirements		
Allocatio	on of pl	aces					
Addition	al infor	rmation					
Workloa	Workload						
150 h							
Teaching cycle							
Referred to in LPO I (examination regulations for teaching-degree programmes)							
Module appears in							
	-	e (1 major) Translational course Translational Ne		)			
		e (1 major) Translational		)			
Supplem	nentary	course Translational Ne	euroscience (2022)				

Module title					Abbreviation	
	Optical methods for visualization and manipulation of neural circuits- from03-TNOM-191-m01synapses to behavior03-TNOM-191-m01					
Module	coordi	nator		Module offered by		
Institute	e of Cli	nical Neurobiology		Faculty of Medicine		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
5	(not) s	uccessfully completed				
Duratio	n [	Module level	Other prerequisites			
1 semes	ster	graduate				
Content	s					
cience. field, ph fluoresc ji (Imag vectors, of circui	Main to nase co cent mo eJ), ima MMLV it neuro	opics are: Physics of ligh ontrast, fluorescence mic olecules and dyes, image aging of calcium ions, gen /-based vectors, AAV, rab oscience, optogenetics, v	t, building of a stand roscopy, confocal mi processing, prepara netically encoded cal ies virus, new develo	ard microscope, objectoscopy, resolution tion of images for puction cium indicators (GCa opments in image an	biology and systems neuros- ectives, numeric aperture, bright , contrast, Airy disc patterns, ublication, Software: GIMP and Fi- amp), viral techniques, lentiviral alysis, deep learning, principles	
		ning outcomes				
image a ter unde rosciene rescenc student are used compet le to eva approac to allow expert a present	Students who successfully completed this module will have acquired distinct knowledge about light & fluore- scence microscopy, in vivo calcium imaging and optogenetic methods in neuroscientific research. Processes of image acquisition, image preparation and image analysis will be introduced. Thus, students will be able to bet- ter understand, design and evaluate experiments based on microscopy and modern optical methods in the neu- rosciences. In short lab visits, the students will learn about principle components of microscopes (e.g. epifluo- rescence, confocal). The students will learn how these components are used to get better microscopy data. The students will see how molecular tools (e.g. viral vectors) and modern methods (optogenetics, chemogenetics) are used to better understand the anatomy and function of neurons and neural networks. They will acquire the competence to better understand these kind of experiments, to analyse and evaluate them. They will also be ab- le to evaluate methods of systems neuroscience and will be able to theoretically design representative technical approaches. Short student presentations ( $3 - 4$ min) will mediate specific presentation competence with the aim to allow presentation of complex microscopy methods in a focused and understandable way for a heterogeneous expert audience. The overall aim is that students will be able to understand, question, evaluate, recapituale and present light microscopy approaches in neurobiology and system neuroscience.					
	<b>5</b> (type, n	umber of weekly contact hours, la	anguage — if other than Ger	man)		
module is	creditab	le for bonus)	-		t every semester, information on whether ice) or b) Protocol (10-30 pages)	
or c) Inc	lividua				p to three students (30-60 Minu-	
Allocati	on of p	laces				
Additional information						
Workloa	ad					
150 h						
Teachin	g cycle	2				



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

## Module appears in

Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2018) Master's degree (1 major) Translational Neuroscience (2022) Supplementary course Translational Neuroscience (2022)

Module title				Abbreviation		
Project design					03-TN-PDES-182-m01	
Module	coord	inator		Module offered by		
Institut	e of Cli	nical Neurobiology		Faculty of Medicine		
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)		
5	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 semes	ster	graduate				
Conten	ts					
pics wil statistic	ll be di cs, scie	scussed: Official Regulati	ions, Planing of a scie d citing literature. Us	entific project, Data   ing student former la	Naster Thesis. The following to- production, Data evaluation, ab rotations a "dummy"-Ma-	
Intende	ed learr	ning outcomes				
prepari plannin are able	ng and Ig scier e to crit	writing a Master Thesis. htific projects and of scie	Furthermore, student ntific writing. Based o	ts are able to classify on current experimer	rstand important aspects of a / important aspects in terms of ntal data evaluation, students ll as extract relevant information	
Courses	<b>S</b> (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
S (2)						
		<b>essment</b> (type, scope, langua, le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
oral exa (30 to 6	aminati 50 minu	ion of one candidate eacl	h (30 to 60 minutes)	or d) oral examinatio	or b) log (10 to 30 pages) or c) on in groups of up to 3 candidates o specific congress requirements	
Allocati	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
150 h	150 h					
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
	Module appears in					
	-	ee (1 major) Translational		)		
		y course Translational Ne ee (1 major) Translational		)		
	-	y course Translational Ne				

Project Development       og_3TN-PDEV-182-mo1         Module corrective of Clinical Neurobiology       Faculty of Medicine         Institute of Clinical Neurobiology       Faculty of Medicine         ECTS       Method of grading       Only after succ. comp L of module(s)         5       Institute of Clinical Neurobiology       Other prerequisites         1 semister       graduate          Contents       Students will get a theoretical introduction and amplification of how to write a scientific Grant application. The following topics will be discussed. Planing of a scientific project, Data production, Data evaluation, scientific writing, reading literature. Using student former lab rotations a "dummy"-Grant Application is written, by each student and learned content is recessed.         Intended learning outcomes       Students who successfully completed this module are able to remind and understand important aspects of how to invent a scientific project. Bata dayalcation. The fubre of each student and evaluation, scientific project. Bata dayalcation.         Students who successfully completed this module are able to remind and understand important aspects of how to invent a scientific project. Bata dayalcation.         Students who successfully completed this module are able to remind and understand important aspects of how to invent as extract relevant inform recent publications.         Students who successfully content tours, language – if other than German         S (2)         Method of assessment English         Additional For one candi	Module title				Abbreviation		
Institute of Clinical Neurobiology 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  Students will get a theoretical introduction and amplification of how to write a scientific Grant application. The following topics will be discussed: Planing of a scientific project, Data production, Data evaluation, , scientific writing, reading literature. Using student former lab rotations a "dummy"-Grant Application is written, by each students will get a theoretical introduction and amplification. Furthermore, students are able to content is recessed. Intended learning outcomes Students would successfully completed this module are able to remind and understand important aspects of how to invent a scientific project and how to write a grand application. Furthermore, students are able to classify im- portant aspects in terms of preparing, planning and structuring a scientific project. Based on current knowledge and experimental data evaluation, students are able to critical read and evaluate current publications in neuro- biology as well as extract relevant information from recent publications. Courses (type, number of weekly contact hours, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) a) written examination (30 to 60 minutes) or d) oral examination in groups of up to 3 candidate (30 to 60 minutes) or e) presentation (20 to 45 minutes) or d) poster according to specific congress requirements Language of assessment: English Allocation of places	Project Development					03-TN-PDEV-182-m01	
ECTS       Method of grading       Only after succ. compl. of module(s)         5       (not) successfully completed          Duration       Module level       Other prerequisites         1 semester       graduate          Contents           Students will get a theoretical introduction and amplification of how to write a scientific Grant application. The following topics will be discussed: Planing of a scientific project, Data production, Data evaluation, scientific virting, reading literature. Using student former lab rotations a "dummy"-Grant Application is written, by each student and learned content is recessed.         Intended learning outcomes          Students who successfully completed this module are able to critical read and evaluate current publications in neurobiology as well as extract relevant information from recent publications.         Courses (type, number of weekly contact hours, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)         a) written examination (30 to 60 minutes, including multiple choice questions) or b) log (to to 30 pages) or c) oral examination in presentation (20 to 45 minutes) or f) poster according to specific congress requirements Language of assessment: English         Allocation of places              Method of assessment: English          Allocation of places	Module	coord	inator		Module offered by		
5     (not) successfully completed        Duration     Module level     Other prerequisites       1 semester     graduate        Contents         Students will get a theoretical introduction and amplification of how to write a scientific Grant application. The following topics will be discussed: Planing of a scientific project, Data production, Data evaluation, scientific writing, reading literature. Using student former lab rotations a "dummy"-Grant Application is written, by each student and learned content is recessed.       Intended learning outcomes        Students who successfully completed this module are able to remind and understand important aspects of how to invent a scientific project and how to write a grand application. Furthermore, students are able to classify important aspects in terms of preparing, planning and structuring a scientific project. Based on current knowledge and experimental data evaluation, students are able to critical read and evaluate current publications in neurobiology as well as extract relevant information from recent publications.       Courses (type, number of weekly contact hours, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)       a) written examination (30 to 60 minutes, including multiple choice questions) or b) log (10 to 30 pages) or c) or al examination of not candidate each (30 to 60 minutes) or f) poster according to specific congress requirements Language of assessment: English       Allocation of places        Image: Sign Information        Teaching cycle <td>Institut</td> <td>e of Cli</td> <td>nical Neurobiology</td> <td></td> <td>Faculty of Medicine</td> <td></td>	Institut	e of Cli	nical Neurobiology		Faculty of Medicine		
Duration         Module level         Other prerequisites           1 semester         graduate	ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
1 semester       graduate          Contents       Students will get a theoretical introduction and amplification of how to write a scientific Grant application. The following topics will be discussed: Planing of a scientific project, Data production, Data evaluation, , scientific writing, reading literature. Using student former lab rotations a "dummy"-Grant Application is written, by each student and learned content is recessed.         Intended learning outcomes       Students who successfully completed this module are able to remind and understand important aspects of how to invent a scientific project. Based on current knowledge and experimental data evaluation, students are able to critical read and evaluate current publications in neurobiology as well as extract relevant information from recent publications.         Courses (type, number of weekly contact hours, language – if other than German)       S (2)         Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)         a) written examination (so to 6 om inutes, including multiple choice questions) or b) log (to to 3 o pages) or c) or cal examination of one candidate each (so to 6 o minutes) or d) oral examination in groups of up to 3 candidates (so to 6 ominutes) or e) presentation (so to 45 minutes) or f) poster according to specific congress requirements Language of assessment: English         Allocation of places           -          Referred to in LPO1 (examination stor teaching-degree programmes)          -         Module appear	5	(not) s	successfully completed				
Contents Students will get a theoretical introduction and amplification of how to write a scientific Grant application. The following topics will be discussed: Planing of a scientific project, Data production, Data evaluation, , scientific writing, reading literature. Using student former lab rotations a "dummy"-Grant Application is written, by each student and learned content is recessed. Intended learning outcomes Students who successfully completed this module are able to remind and understand important aspects of how to invent a scientific project, Based on current knowledge and experimental data evaluation, students are able to critical read and evaluate current publications in neuro- biology as well as extract relevant information from recent publications. Courses (type, number of weekly contact hours, language – if other than German) S (2) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) a) written examination (so to 6 on minutes, including multiple choice questions) or b) log (to to 30 pages) or c) oral examination of one candidate each (so to 6 o minutes) or d) oral examination in groups of up to 3 candidates (so to 6 on inutes) or e) presentation (20 to 45 minutes) or f) poster according to specific congress requirements Language of assessment: English Allocation of places	Duratio	n	Module level	Other prerequisites			
Students will get a theoretical introduction and amplification of how to write a scientific Grant application. The following topics will be discussed: Planing of a scientific project, Data production, Data evaluation, , scientific writing, reading literature. Using student former lab rotations a "dummy"-Grant Application is written, by each student and learned content is recessed. Intended learning outcomes Students who successfully completed this module are able to remind and understand important aspects of how to invent a scientific project. Based on current knowledge and experimental data evaluation, students are able to critical read and evaluate current publications in neurobiology as well as extract relevant information from recent publications. Courses (type, number of weekly contact hours, language – if other than German) S (2) Method of assessment (type, scope, language – if other than German, examination offered – if not every senseter, information on whether module is creditable for 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 0) oral examination in groups of up to 3 candidates (30 to 60 minutes) or f) poster according to specific congress requirements Language of assessment: English Allocation of places	1 semes	ster	graduate				
following topics will be discussed: Planing of a scientific project, Data production, Data evaluation, , scientific writing, reading literature. Using student former lab rotations a "dummy"-Grant Application is written, by each student and learned content is recessed. Intended learning outcomes Student and learned content is recessed. Intended learning outcomes Students who successfully completed this module are able to remind and understand important aspects of how to invent a scientific project. Based on current knowledge and experimental data evaluation, students are able to critical read and evaluate current publications in neurobiology as well as extract relevant information from recent publications. Courses (type, number of weekly contact hours, language – if other than German) S (2) Method of assessment (type, scope, language – if other than German, examination offered – if not every senseter, information on whether module is creditable for 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 d) oral examination in groups of up to 3 candidates (30 to 60 minutes) or f) poster according to specific congress requirements Language of assessment: English Allocation of places	Conten	ts					
Students who successfully completed this module are able to remind and understand important aspects of how to invent a scientific project and how to write a grand application. Furthermore, students are able to classify important aspects in terms of preparing, planning and structuring a scientific project. Based on current knowledge and experimental data evaluation, students are able to critical read and evaluate current publications in neuro- biology as well as extract relevant information from recent publications. <b>Courses</b> (type, number of weekly contact hours, language – if other than German) S (2) <b>Method of assessment</b> (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for 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 f) poster according to specific congress requirements Language of assessment: English <b>Allocation of places</b>  <b>Additional information</b>  <b>Workload</b> 150 h <b>Teaching cycle</b>  <b>Module appears in</b> Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2028)	followir writing,	ng topio readin	cs will be discussed: Plar g literature. Using stude	ning of a scientific pro nt former lab rotation	oject, Data productio	n, Data evaluation, , scientific	
to invent a scientific project and how to write a grand application. Furthermore, students are able to classify important aspects in terms of preparing, planning and structuring a scientific project. Based on current knowledge and experimental data evaluation, students are able to critical read and evaluate current publications in neurobiology as well as extract relevant information from recent publications. Courses (type, number of weekly contact hours, language – if other than German) S (2) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for 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 d) poster according to specific congress requirements Language of assessment: English Allocation of places	Intende	ed learn	ning outcomes				
S (2) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for 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) or f) poster according to specific congress requirements Language of assessment: English Allocation of places Additional information Workload 150 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2022)	to inver portant and exp	nt a sci aspect perimer	entific project and how to ts in terms of preparing, j ntal data evaluation, stud	o write a grand applic olanning and structur lents are able to critio	ation. Furthermore, s ing a scientific proje cal read and evaluat	students are able to classify im- ct. Based on current knowledge	
Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for 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) or f) poster according to specific congress requirements Language of assessment: English         Allocation of places           Additional information             Morkload          150 h          Referred to in LPO I (examination regulations for teaching-degree programmes)           Module appears in         Master's degree (1 major) Translational Neuroscience (2018)       Supplementary course Translational Neuroscience (2018)	Course	<b>5</b> (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
module is creditable for 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) or f) poster according to specific congress requirements Language of assessment: English Allocation of places Additional information Workload 150 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2022)	S (2)						
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) or f) poster according to specific congress requirements Language of assessment: English Allocation of places  Additional information  Workload 150 h Teaching cycle  Referred to in LPO I (examination regulations for teaching-degree programmes)  Module appears in Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2022)				ge — if other than German, e	examination offered — if no	t every semester, information on whether	
Additional information Workload 150 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2022)	oral exa (30 to 6	aminati o minu	on of one candidate each utes) or e) presentation (2	h (30 to 60 minutes) (	or d) oral examinatio	on in groups of up to 3 candidates	
Workload 150 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2022)	Allocati	ion of p	olaces				
Workload 150 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2022)							
150 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2018) Master's degree (1 major) Translational Neuroscience (2022)	Additio	nal inf	ormation				
150 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2018) Master's degree (1 major) Translational Neuroscience (2022)							
Teaching cycle            Referred to in LPO I (examination regulations for teaching-degree programmes)            Module appears in         Master's degree (1 major) Translational Neuroscience (2018)         Supplementary course Translational Neuroscience (2018)         Master's degree (1 major) Translational Neuroscience (2018)         Master's degree (1 major) Translational Neuroscience (2022)	Worklo	ad					
Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2018) Master's degree (1 major) Translational Neuroscience (2022)	150 h	150 h					
Module appears in Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2018) Master's degree (1 major) Translational Neuroscience (2022)	Teaching cycle						
Module appears in Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2018) Master's degree (1 major) Translational Neuroscience (2022)							
Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2018) Master's degree (1 major) Translational Neuroscience (2022)	Referred to in LPO I (examination regulations for teaching-degree programmes)						
Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2018) Master's degree (1 major) Translational Neuroscience (2022)							
Supplementary course Translational Neuroscience (2018) Master's degree (1 major) Translational Neuroscience (2022)	-	Module appears in					
Master's degree (1 major) Translational Neuroscience (2022)		-			)		
-			-		)		
		-			,		

Module title					Abbreviation
Ask the expert 1					03-TN-EXP1-182-m01
Module	e coord	inator		Module offered by	
prograr	nme sp	beaker		Faculty of Medicine	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
Cutting	edge t	opics in neurosciences, o	content varies each s	emester.	
Intende	ed lear	ning outcomes			
		a deeper insight into the ychology, psychiatry, neu			guest lecturers are selected in the ecompulsory subjects).
Course	<b>S</b> (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)	
S (2)					
		<b>sessment</b> (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether
oral exa (30 to 6	aminat 60 mini	ion of one candidate eacl	h (30 to 60 minutes)	or d) oral examinatio	or b) log (10 to 30 pages) or c) on in groups of up to 3 candidates o specific congress requirements
Allocat	_				
Additio	nal inf	ormation			
Worklo	ad				
150 h					
Teachir	ıg cycl	е			
<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)					
Module appears in					
Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2018) Master's degree (1 major) Translational Neuroscience (2022) Supplementary course Translational Neuroscience (2022)					

Module title					Abbreviation
Ask the expert 2					03-EXP2-182-m01
Module	e coord	inator		Module offered by	
prograr	nme sp	beaker	_	Faculty of Medicine	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
Cutting	edge t	opics in neurosciences, o	content varies each s	emester.	
Intende	ed lear	ning outcomes			
		a deeper insight into the ychology, psychiatry, neu			guest lecturers are selected in the compulsory subjects).
Course	<b>S</b> (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)	
S (2)					
		<b>sessment</b> (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
oral exa (30 to 6	aminat 60 minu	ion of one candidate eacl	h (30 to 60 minutes)	or d) oral examinatio	or b) log (10 to 30 pages) or c) on in groups of up to 3 candidates o specific congress requirements
Allocat	_				
Additio	nal inf	ormation			
Worklo	ad				
150 h					
Teachi	ıg cycl	e			
<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)					
Module appears in					
	Master's degree (1 major) Translational Neuroscience (2018)				
		y course Translational Ne		)	
	-	ee (1 major) Translational y course Translational Ne		)	
Juppie	mental	y course mansiational We			

Module component         programm         ECTS       Module         10       (n         Duration       (n         Duration       (n         1-2 semestration       (n         1-2 semestration       (n         Contents       (n         Students g       (n         Courses       (n         V (4)       (n         Method of module is creation       (n) written (n)	d Subject Lecture 1 (actual lec	tures to be specified)	)	03-TN-ASL-152-m01		
programm         ECTS       Ma         10       (n         Duration       I         1-2 semes       Contents         Contents       Cutting ed         Intended I       Students g         Courses (ty)       V (4)         Method of module is creation of the second sec	oordinator					
ECTS       Mail         10       (n.         Duration       1-2 semest         1-2 semest       Contents         Cutting ed       Intended I         Students g       Courses (ty)         V (4)       Method of         module is creation       a) written	ooramator		Module offered by	, ,		
10 (n Duration 1-2 semes: Contents Cutting ed Intended I Students g Courses (ty V (4) Method of module is created a) written of	ne coordinator		Faculty of Medicin	e		
Duration 1-2 semes Contents Cutting ed Intended I Students g Courses (ty V (4) Method of module is created a) written of	Aethod of grading	Only after succ. con	npl. of module(s)			
1-2 semes Contents Cutting ed Intended l Students g Courses (ty V (4) Method of module is created a) written of	not) successfully completed					
Contents Cutting ed Intended I Students & Courses (ty V (4) Method of module is created a) written of	Module level	Other prerequisites				
Cutting ed Intended L Students <u>g</u> Courses (ty V (4) Method of module is created a) written of	ster graduate	Please consult with	course advisory ser	vice in advance.		
Intended l Students g Courses (ty V (4) Method of module is created a) written of		·				
Students g Courses (ty V (4) Method of module is created a) written of	dge topics in neurosciences, o	content varies each s	emester.			
Courses (ty V (4) Method of module is created a) written of	learning outcomes					
V (4) Method of module is created a) written	gain an overview of current to	pics in neuroscience	s.			
Method of module is created a) written	type, number of weekly contact hours, l	anguage — if other than Ger	rman)			
module is created a) written						
	editable for bonus) 1 examination (30 to 60 minut	es, including multiple	e choice questions)	or c) oral examination of one can idates (approx. 30 to 60 minutes)		
Allocation	n of places					
Additional	al information					
Workload						
300 h						
Teaching	cycle					
Referred t	to in LPO I (examination regulation:	s for teaching-degree progra	mmes)			
Module appears in						
Master's degree (1 major) Translational Neuroscience (2015)						
Master's degree (1 major) Translational Neuroscience (2018)						
	ontany course Translational N	Supplementary course Translational Neuroscience (2018) Master's degree (1 major) Translational Neuroscience (2022)				
Suppleme	-		)			

Module	title				Abbreviation
Advanced Subject Lecture 2 (actual lectures to be specified)03-TN-ASL-2-152-m01					03-TN-ASL-2-152-m01
Module	coord	inator		Module offered by	,
progran	nme co	ordinator		Faculty of Medicine	9
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)	
5	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1-2 sem	lester	graduate	Please consult with	course advisory ser	vice in advance.
Conten	ts				
Cutting	edge t	opics in neurosciences, o	content varies each s	emester.	
		ning outcomes			
		an overview of current to	pics in neuroscience	s.	
		umber of weekly contact hours, l	· ·		
V (2)				-	
		<b>essment</b> (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if n	ot every semester, information on whether
			· •	•	or c) oral examination of one can idates (approx. 30 to 60 minutes)
Allocati	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
150 h					
Teachir	ng cycl	e			
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	mmes)	
Module	appea	irs in			
Master's degree (1 major) Translational Neuroscience (2015)					
	Master's degree (1 major) Translational Neuroscience (2017)				
Master's degree (1 major) Translational Neuroscience (2018)					
	Supplementary course Translational Neuroscience (2018)				
	-	ee (1 major) Translationa		)	
Supple	mentai	y course Translational No	euroscience (2022)		

Module	Module title Abbreviation					
Advance	Advanced Subject Lecture 3 (actual lectures to be specified)       03-TN-ASL-3-152-mo1					
Module	coord	inator		Module offered by	I	
progran	nme co	ordinator		Faculty of Medicine	2	
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)		
5	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1-2 sem	ester	graduate	Please consult with	course advisory ser	vice in advance.	
Content	ts					
Cutting	edge t	opics in neurosciences, o	content varies each s	emester.		
		ning outcomes				
Student	ts gain	an overview of current to	pics in neuroscience	·S.		
	-	number of weekly contact hours, l	· ·			
V (2)						
		<b>sessment</b> (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if n	ot every semester, information on whether	
				•	or c) oral examination of one can idates (approx. 30 to 60 minutes)	
Allocati	ion of p	olaces				
Additio	nal inf	ormation				
Workloa	ad					
150 h						
Teachin	ıg cycl	e				
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	mmes)		
Module appears in						
Master's degree (1 major) Translational Neuroscience (2015)						
Master's degree (1 major) Translational Neuroscience (2017)						
Master's degree (1 major) Translational Neuroscience (2018)						
	Supplementary course Translational Neuroscience (2018) Master's degree (1 major) Translational Neuroscience (2022)					
	-	ee (1 major) Translationa Y course Translational Ne		)		
Supple	mentd	y course manstational No				

Module title					Abbreviation
Meeting Participation 1 (Poster)					03-TN-MP-1-152-m01
Module	e coord	inator		Module offered by	
program	nme co	oordinator		Faculty of Medicine	
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)	
5	(not) s	successfully completed			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
Design	and pr	esentation of a poster wi	th description of the	research results of a	project.
Intende	ed lear	ning outcomes			
		and oral presentation of ect with a special regard t			ic questions in the context of the of data.
Course	<b>S</b> (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)	
S (2)					
		<b>sessment</b> (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
poster	in acco	rdance with conference s	specifications		
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
150 h					
Teachi	ng cycl	e			
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
Module appears in					
Master's degree (1 major) Translational Neuroscience (2015) Master's degree (1 major) Translational Neuroscience (2017) Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2018) Master's degree (1 major) Translational Neuroscience (2022) Supplementary course Translational Neuroscience (2022)					

Module title				Abbreviation	
Meeting Participation 1 (Talk)				03-TN-MT-1-152-m01	
Module	e coord	inator		Module offered by	
program	nme co	oordinator	_	Faculty of Medicine	
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)	
10	(not) s	successfully completed			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
Design	and pr	esentation of a talk with	description of the res	earch results of a pr	oject.
Intende	ed lear	ning outcomes			
	-	nd oral presentation of sc ect with a special regard t			questions in the context of the of data.
Course	<b>S</b> (type, r	umber of weekly contact hours, l	anguage — if other than Ger	man)	
S (4)					
		<b>essment</b> (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
e) pres	entatio	n (20 to 45 minutes)			
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
300 h					
Teachi	ng cycl	e			
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
Module appears in					
Master's degree (1 major) Translational Neuroscience (2015) Master's degree (1 major) Translational Neuroscience (2017) Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2018) Master's degree (1 major) Translational Neuroscience (2022) Supplementary course Translational Neuroscience (2022)					

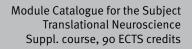
Module title				Abbreviation	
Advanced Training Program GSLS 1				03-TN-ATP-1-152-m01	
Module	e coord	inator		Module offered by	
prograr	nme co	ordinator	_	Faculty of Medicine	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
Transfe	rable s	kills tutorials: scientific v	vriting and presentati	ion skills.	
Intende	ed learı	ning outcomes			
Studen	ts have	e developed fundamental	scientific writing and	d presentation skills	
Course	<b>S</b> (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
T (2)					
module is a) writte or c) ora	en exar al exar	le for bonus) mination (30 to 60 minut	es, including multiple e each (30 to 60 minu	e choice questions) ( ites) or d) oral exami	or b) log (approx. 10 to 30 pages) ination in groups of up to 3 candi-
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
150 h					
Teachir	ıg cycl	е			
Referre	d to in	LPOI (examination regulations	s for teaching-degree progra	mmes)	
Module appears in					
Master's degree (1 major) Translational Neuroscience (2015) Master's degree (1 major) Translational Neuroscience (2017) Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2022) Master's degree (1 major) Translational Neuroscience (2022) Supplementary course Translational Neuroscience (2022)					

Module title					Abbreviation
Advanced Training Program GSLS 2 03-TN-ATP-2-152-m01					03-TN-ATP-2-152-m01
Module coordinator				Module offered by	
prograr	nme co	ordinator		Faculty of Medicine	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
Transfe	rable s	kills tutorials: patent law	, validation of enorm	ous amounts of ima	ging data using special software.
Intende	ed leari	ning outcomes			
Studen	ts are f	amiliar with the fundame	ental principles of pat	ent law and special	software.
Course	<b>S</b> (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
T (2)					
module is	creditab	le for bonus)			ot every semester, information on whether
or c) or	al exan		e each (30 to 60 minu	ites) or d) oral exami	or b) log (approx. 10 to 30 pages) ination in groups of up to 3 candi-
Allocat	<u> </u>	-			
Additio	nal inf	ormation			
Worklo	ad				
150 h					
Teachir	ng cycl	e			
<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)					
Module appears in					
Master Master Supple Master	Master's degree (1 major) Translational Neuroscience (2015) Master's degree (1 major) Translational Neuroscience (2017) Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2018) Master's degree (1 major) Translational Neuroscience (2022) Supplementary course Translational Neuroscience (2022)				

Module title				Abbreviation		
Tutorial 1					03-TN-TU-1-152-m01	
Module coordinator				Module offered by		
programme coordinator				Faculty of Medicine		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
3	3 (not) successfully completed					
Duratio	n	Module level	Other prerequisites	) ther prerequisites		
1 semes	ster	graduate				
Conten	ts					
		as tutors. They support t actical courses.	eaching and are invo	olved in the organisa	tion and planning of lectures, se-	
Intende	ed leari	ning outcomes				
		rn how to convey comple to organise and plan the			a group of students. In addition, to students.	
Courses	<b>S</b> (type, n	umber of weekly contact hours, la	anguage — if other than Ger	man)		
T (1)						
		<b>essment</b> (type, scope, languag le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
or c) ora	al exan		each (30 to 60 minu	tes) or d) oral exami	or b) log (approx. 10 to 30 pages) nation in groups of up to 3 candi-	
Allocati	<u> </u>	-		- ·		
Additio	nal inf	ormation				
Worklo	ad					
90 h						
Teachir	ng cycl	e				
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
Master's degree (1 major) Translational Neuroscience (2015)						
	Master's degree (1 major) Translational Neuroscience (2017)					
Master's degree (1 major) Translational Neuroscience (2018)						
	Supplementary course Translational Neuroscience (2018)					
	Master's degree (1 major) Translational Neuroscience (2022)					
Supplementary course Translational Neuroscience (2022)						

Module title					Abbreviation	
Tutorial 2				03-TN-TU-2-152-m01		
Module coordinator				Module offered by		
progran	nme co	oordinator		Faculty of Medicine		
ECTS	TS Method of grading Only after succ. compl. of module(s)					
5	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites	5		
1 semes	ster	graduate				
Content	ts					
		as tutors. They support tactical courses.	teaching and are invo	olved in the organisa	tion and planning of lectures, se-	
Intende	ed learr	ning outcomes				
		rn how to convey comple to organise and plan the		<i>,</i> ,	a group of students. In addition, to students.	
Courses	<b>5</b> (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
T (2)						
		s <b>essment</b> (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
or c) ora	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)					
Allocati	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
150 h						
Teachin	ng cycl	e				
<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)						
Module appears in						
Master's degree (1 major) Translational Neuroscience (2015)						
Master's degree (1 major) Translational Neuroscience (2017)						
Master's degree (1 major) Translational Neuroscience (2018)						
Supplementary course Translational Neuroscience (2018) Master's degree (1 major) Translational Neuroscience (2022)						
	Supplementary course Translational Neuroscience (2022)					
		-	. ,			





## Module Group Compulsory Electives Lab Courses

(ECTS credits)

Module title				Abbreviation		
Advanced lab rotation 2 03-TN-LR2-152-m01					03-TN-LR2-152-m01	
Module coordinator				Module offered by		
progran	nme co	ordinator		Faculty of Medicine		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites	Other prerequisites		
1 seme	ster	graduate	Please consult with	course advisory serv	vice in advance.	
Conten	ts					
Studen	ts sper	nd 4 weeks working unde	r supervision on a sm	all, well-defined sci	entific lab project.	
Intende	ed leari	ning outcomes				
					iques and learned how to apply and presentation of raw data.	
Course	<b>S</b> (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
P (4)						
		<b>essment</b> (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
	a) log (approx. 10 to 30 pages) or b) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes) or c) presentation (20 to 45 minutes)					
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
300 h						
Teachir	ng cycl	e				
<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)						
Module appears in						
Master' Master' Supple Master'	Master's degree (1 major) Translational Neuroscience (2015) Master's degree (1 major) Translational Neuroscience (2017) Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2018) Master's degree (1 major) Translational Neuroscience (2022) Supplementary course Translational Neuroscience (2022)					

Module title					Abbreviation	
Advanced lab rotation 3					03-TN-LR3-152-m01	
Module coordinator				Module offered by		
prograr	nme co	oordinator		Faculty of Medicine		
ECTS	Metho	od of grading	Only after succ. com	Only after succ. compl. of module(s)		
10	nume	rical grade				
Duration Module level		Module level	Other prerequisites			
1 seme	ster	graduate	Please consult with	course advisory serv	vice in advance.	
Conten	ts					
Studen	ts sper	nd 6 weeks independentl	y working on their ow	n small, well-define	d scientific lab project.	
Intende	ed leari	ning outcomes				
					iques and learned how to apply and presentation of raw data.	
Course	<b>S</b> (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
P (4)						
		<b>essment</b> (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
		. 10 to 30 pages) or b) ora tion (20 to 45 minutes)	al examination in gro	ups of up to 3 candio	dates (approx. 30 to 60 minutes)	
Allocation of places						
Additio	nal inf	ormation				
Worklo	ad					
300 h						
Teachir	ng cycl	е				
<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)						
Module appears in						
Master' Master' Supple Master'	Master's degree (1 major) Translational Neuroscience (2015) Master's degree (1 major) Translational Neuroscience (2017) Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2018) Master's degree (1 major) Translational Neuroscience (2022) Supplementary course Translational Neuroscience (2022)					

Module title				Abbreviation			
External Lab Rotation 1					03-TN-EL-1-152-m01		
Module coordinator				Module offered by			
programme coordinator				Faculty of Medicine			
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)			
10	(not) s	successfully completed					
Duratio	n	Module level	Other prerequisites				
1 semes	ster	graduate					
Conten	ts						
		erience abroad in agencie placement.	es, institutes or indus	try. Topics will vary a	according to the individual place		
Intende	ed learı	ning outcomes					
		amiliar with the structure eer in science.	es of institutes and th	e industry abroad ar	nd acquire abilities that qualify		
Courses	<b>S</b> (type, n	number of weekly contact hours, l	anguage — if other than Ger	man)			
P (4)							
Method	l of ass	<b>Sessment</b> (type, scope, langua	ge — if other than German, e	examination offered — if no	t every semester, information on whether		
module is	creditab	le for bonus)					
					or b) log (approx. 10 to 30 pages)		
		1 ination of one candidate . 30 to 60 minutes) or e			ination in groups of up to 3 candi-		
Allocati	<u> </u>	-		<u>j (() () () () () () () () () () () () ()</u>			
Additio	nal inf	ormation					
Worklo	ad						
300 h							
Teachir	ng cycl	e					
<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)							
Module appears in							
Master's degree (1 major) Translational Neuroscience (2015)							
Master's degree (1 major) Translational Neuroscience (2017)							
Master's degree (1 major) Translational Neuroscience (2018)							
	Supplementary course Translational Neuroscience (2018)						
	Master's degree (1 major) Translational Neuroscience (2022)						
Supplementary course Translational Neuroscience (2022)							

Module title					Abbreviation	
Advanc	Advanced Practical Course Neuroscience Lab 1 03-TN-AL-1-152-mo1					
Module coordinator				Module offered by		
program	nme co	oordinator		Faculty of Medicine		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
10	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
Studen	ts inde	pendently work on a well	-defined scientific la	b project.		
		ning outcomes				
theoret sentatio	ical kn ons ab		ents have gained exp	ertise in writing lab ı	iques and learned how to apply reports and know how to give pre-	
P (4)	<b>5</b> (type, r	number of weekly contact hours, i	anguage — If other than Ger	man)		
module is a) writte or c) ora	Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for 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)					
	•					
Additio	nal inf	ormation				
Worklo	ad					
300 h						
-	Teaching cycle					
<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)						
Module appears in						
Master's degree (1 major) Translational Neuroscience (2015) Master's degree (1 major) Translational Neuroscience (2017) Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2018) Master's degree (1 major) Translational Neuroscience (2022)						
Supplementary course Translational Neuroscience (2022)						