Developmental, Neural, and Behavioral Biology

MSc/PhD Program

in Göttingen, Germany

- Cell Biology
- Developmental Mechanisms
- Molecular Neurobiology
- Systems Neurosciences
- Behavioral Ecology
- Animal Cognition

Deadline for your application is May 15th
Start of the program is October 1st
www.biologie.uni-goettingen.de/msc_dnb

GEORG-AUGUST-UNIVERSITÄT GÖTTINGEN

Master „Developmental, Neural, and Behavioral Biology“

module	number	structure and options	C/module	C total
core modules	**3**	**lecture + seminar + methods course** choice of 10 different modules	**12**	**36**
profile module	**1**	**additional core module DNB** **core module MLS** **research internship** **interdisciplinary courses***	**12**	**12**
key competence modules		**course offer 'ZESS'** **course offer 'DNB, MLS or BEEC'** **interdisciplinary courses***	**2-6**	**12**
advanced modules	**2**	**7-9 weeks lab course**	**12**	**30**
	1	**scientific project management**	**6**	
	common examination of advanced modules			
Master thesis (26 weeks)				**30**

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Core Modules – Fachmodule

core modules (12 C)

5 week block courses

Developmental and Cell Biology			Neurobiology		Behavioral Biology			Bioinformatics	
M.Bio.303	**M.Bio.321**	**M.Bio.322**	**M.Bio.304**	**M.Bio.305**	**M.Bio.306**	**M.Bio.307**	**M.Bio.308**	**M.Bio.310**	**M.Bio.323**
Cell Biology	***Current developmental biology***	***Frontiers in neural development***	***Neuro-biology 1***	***Neuro-biology 2***	***Introduction to behavioral biology***	***Behavioral biology***	***Social behavior and communi-cation***	***Systems biology***	***Introduction to Bayesian Statistics and Information Theory***
lecture + seminar + methods course	lecture + seminar + methods course	lecture + seminar + methods course	lecture + methods course	lecture + methods course	lecture + seminar + methods course	lecture + seminar + methods course	lecture + seminar + methods course	lecture + seminar + practical training	lecture + seminar + practical training
winter term	**winter term**	**summer term**	**winter term**	**summer term**	**winter term**	**summer term**	**summer term**	**summer term**	**winter term**

Block structure
Modules within semesters

	Block 1	Block 2	Block 3
winter term	M.Bio.303: Cellbiology	M.Bio.304: Neurobiology 1	M.Bio.306: Introduction to behavioral biology
	M.Bio.323: Introduction to Bayesian Statistics		M.Bio.321: Current Developmental biology

	Block 1	Block 2	Block 3
summer term	M.Bio.305: Neurobiology 2	M.Bio.322: Frontiers in Neural Development	M.Bio. 307: Behavioral biology
		M.Bio.308: Social behavior and communication	
	**M.Bio.310: Systems biology		

** The practical part can be organized individually with advisor, continuous lecture and seminar

Bioinformatics	Developmental and Cell Biology	Neurobiology	Behavioral Biology

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Profile Module – Profilmodul

Key Skills – Kompetenzmodule

24 Credits to use freely – Freie Entfaltung

Key Skills – Kompetenzmodule

key competence modules: single components of core modules
(combination with associated core module is not possible)

M.Bio.343	M.Bio.363	M.Bio.392	M.Bio.393	M.Bio.394	M.Bio.395	M.Bio.344	M.Bio.346	M.Bio.366	M.Bio.347	M.Bio.340
Cell biology		***Current Developmental biology***		***Frontiers in Neural Development***		***Neuro-biology 1***	***Introduction to behavioral biology***		***Behavioral biology***	***Systems biology***
lecture + seminar	lecture	lecture + seminar	lecture	lecture + seminar	lecture	lecture	lecture + seminar	lecture	lecture + seminar	lecture + tutorial
6 C	**3 C**	**6 C**	**3 C**	**6 C**	**3 C**	**3 C**	**6 C**	**3 C**	**6 C**	**3 C**
winter term		**winter term**		**summer term**		**winter term**	**winter term**		**summer term**	

further key competence modules

M.Bio.350	M.Bio.356	M.Bio.357	M.Bio.371	M.Bio.372	M.Bio.373	M.Bio.376	M.Bio.374	M.Bio.001	M.CoBi.506	
From vision to action	***Motor systems***		***Neurological and psychiatric diseases***	***Matlab in Biopsychology and Neuroscience***	***Visual Psychophysics - From Theory to Experiment***	***Laboratory animal course***	***Computational modelling and human cooperative behavior***	***M.Bio.001: Statistics for Biology using R***	***Linux and Python for biologists***	**and more (MLS, nat-sciences, cross-faculty, ZESS)**
lecture	lecture + seminar	lecture	seminar (block course)	lecture + tutorial	lecture + computer-training	e-Learning unit	seminar + computer-training (weekend course)	lecture + tutorial	computer-training	
3 C	**6 C**	**3 C**	**2 C**	**3 C**	**3 C**	**2 C**	**3 C**	**6 C**	**5 C**	
winter term	**summer term**		**summer term**	**summer term**	**summer term**	**winter term & summer term**	**winter term**	**winter term**	**winter term**	

Profile Module – Profilmodul

Key Skills – Kompetenzmodule

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	common examination of advanced modules			
Master thesis (26 weeks)				**30**

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Advanced Modules – Vertiefungsmodule

advanced modules (12 C)
individual courses for each student: time frame has to be arranged with advisor

Developmental and Cellbiology					Neurobiology			Behavioral Biology		Bioinformatics
M.Bio.381	**M.Bio.382**	**M.Bio.383**	**M.Bio.319**	**M.Bio.380**	**M.Bio.314**	**M.Bio.315**	**M.Bio.316**	**M.Bio.317**	**M.Bio.318**	**M.Bio.320**
Current Developmental Biology	***Frontiers of Developmental Biology***	***Developmental Cell Biology***	***Human Genetics***	***Cellular & Molecular Immunology***	***Cellular Neurobiology***	***Molecular Neurobiology***	***Systemic Neurobiology***	***Population and behavioral biology***	***Social behavior, communi-cation and cognition***	***Bioinformatics***
lab course 9 weeks	lab course 9 weeks	lab course 9 weeks	lab course 9 weeks	lab course 7 weeks	lab course 7 weeks	lab course 7 weeks	lab course 7 weeks	lab course 7 weeks	lab course 7 weeks	lab course 9 weeks

Modules required for specialization

main focus		modules	remarks
Cell and Developmental biology	**Core modules**	**M.Bio.321**: Current Developmental biology	obligatory module
		M.Bio.322: Frontiers in Neurodevelopment	one module obligatory, other recommended
		M.Bio.303: Cell biology	
	Advanced modules	**M.Bio.381**: Current developmental biology	Two out of these modules are obligatory
		M.Bio.382: Fontiers of developmental biology	
		M.Bio.383: Cell biology	
		M.Bio.319: Human genetics	
		M.Bio.380: Cellular and molecular immunology	
	Master thesis	in department of one of the two selected advanced modules	
Neurobiology	**Core modules**	**M.Bio.304**: Neurobiology 1	both modules are obligatory
		M.Bio.305: Neurobiology 2	
	Advanced modules	**M.Bio.314**: Cellular Neurobiology	Two out of these modules are obligatory
		M.Bio.315: Molecular Neurobiology	
		M.Bio.316: Systemic Neurobiology	
		M.Bio.318: Social behavior, communication and cognition	
	Master thesis	in department of one of the two selected advanced modules	
Behavioral biology	**Core modules**	**M.Bio.306**: Introduction to behavioral biology	obligatory module
		M.Bio.307: Behavioral biology	one module obligatory, other recommended
		M.Bio.308: Social behavior and communication	
	Advanced modules	**M.Bio.316**: Systemic Neurobiology	Two out of these modules are obligatory
		M.Bio.317: Population and behavioral biology	
		M.Bio.318: Social behavior, communication and cognition	
	Master thesis	in department of one of the two selected advanced modules	

Core Modules – Fachmodule

„From the Cell to Cognition“

core modules (12 C)

5 week block courses

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Faculty

Johann-Friedrich-Blumenbach-Institute for Zoology and Anthropology

Cellular Neurobiology
Prof. Martin Göpfert
Prof. Ralf Heinrich

Molecular Neurobiology of Behaviour
Prof. Andre Fiala

Multiscale Biology
Prof. Dr. Jan Huisken

Evolutionary Developmental Genetics
Prof. Gregor Bucher

Developmental Biology
PD Dr. Gerd Vorbrüggen
Prof. Ernst A. Wimmer

Sociobiology & Anthropology
Prof. Peter Kappeler

Behavioural Ecology
Prof. Julia Ostner

Data-driven Analysis of Biological Networks
Prof. Michael Wibral

Faculty

Affective Neuroscience and Psychophysiology
Prof. Annekathrin Schacht

Georg-Elias-Müller Institut für Psychologie

Cognitive Ecology
Prof. Julia Fischer
Cognitive Neurosciences
Prof. Stefan Treue
Prof. Alexander Gail
Neurobiology of Primates
Prof. Hansjörg Scherberger
Stem Cell Biology
Prof. Rüdiger Behr

German Primate Center, DPZ

Faculty

Molecular Oncology
Prof. Matthias Dobbelstein
Human Genetics
Prof. Bernd Wollnik, Prof. Heidi Hahn
Neuro- and Sensory Physiology,
Prof. Silvio Rizzoli
Otolaryngology – InnerEarLab
Prof. Tobias Moser
Cellular and Molecular Immunology
Prof. Jürgen Wienands
Medical Bioinformatics
Prof. Tim Beissbarth

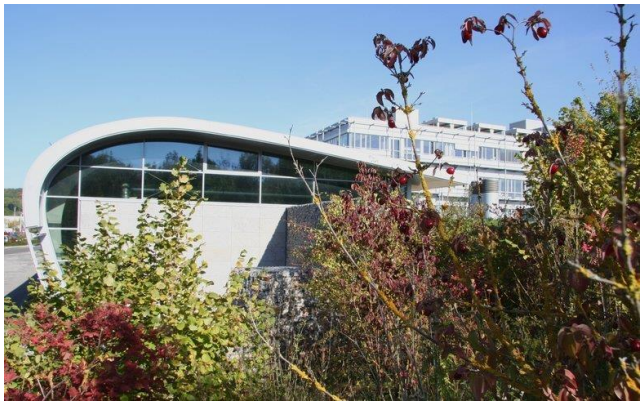
UNIVERSITÄTSMEDIZIN GÖTTINGEN : UMG

University Medical Center

Faculty

Theoretical Neurophysics
Prof. Fred Wolf

MPI for Dynamics and Self Organisation and
Campus Institute for Dynamics of Biological Networks



Molecular Neurobiology
Prof. Nils Brose
Neurogenetics
Prof. Klaus Armin Nave

MPI for Multidisciplinary Sciences
(formerly Experimental Medicine)

Faculty

Biophysics
Dr. Dieter Klopfenstein
Computational Neurosciences
Prof. Florian Wörgötter

III Physical Institute

Cellular Logistics
Prof. Dirk Görlich
Nuclear Architecture
Dr. Volker Cordes
Meiosis
Dr. Melina Schuh
Tissue Dynamics and Regeneration
Dr. Jochen Rink

MPI for Multidisciplinary Sciences (formerly Biophysical Chemistry)

Faculty

Applied Bioinformatics
Prof. Jan de Vries

Institute of Microbiology and Genetics

Epigenetics and Systems Medicine in Neurodegenerative Diseases,
Dr. André Fischer

DZNE German Center for Neurodegenerative Diseases

Olfactory Memory
Dr. Thomas Frank
Synaptic Physiology and Plasticity
Dr. Brett Carter
Neural Circuits and Cognition
Dr. Caspar M. Schwiedrzik

European Neuroscience Institute Göttingen

Continuing Ph.D. programs

GAUSS

Georg-August-University-School of Science

Faculty Ph.D. program, Faculty of Biology and Psychology

Behaviour and Cognition

GGNB
Göttingen Graduate Center
for Neurosciences, Biophysics and Molecular Biosciences

GGNB

International Max Planck Research Schools
Physics of Biological and Complex Systems
Genome Science

PhD Programs of the Göttingen Center for Molecular Biosciences (GZMB)
Biomolecules: Structure - Function - Dynamics
Microbiology and Biochemistry
Molecular Biology of Cells
Genes and Development
} **Cells and Organisms: From Genes to Evolution**

PhD Programs of the DFG Research Center Molecular Physiology of the Brain (CMPB)
Molecular Physiology of the Brain (in the future **Neurosciences)**

PhD Program of the Bernstein Center for Computational Neuroscience (BCCN)
Theoretical and Computational Neuroscience

PhD Program of the Medical School
Sensory and Motor Neuroscience

PhD Program of the Center for Systems Neuroscience
Systems Neuroscience

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