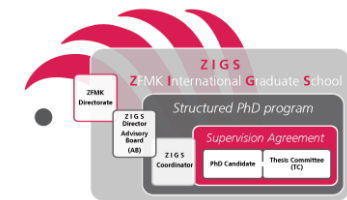
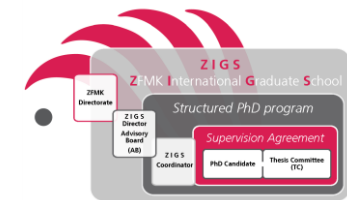


Curriculum and course program of Z I G S



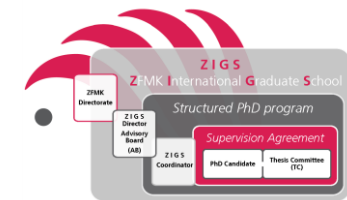
Obligatory topics need confirmation letter of successful participation in Z I G S or comparable course program	Module number	Responsible	Length of course (days if not stated other, circa)	Participati on latest in year	Internal remarks
Obligatory courses (in total maximum 14 days)					
Introduction to epistemology and ethics in science	ZGS-O1	Wolfgang Wägele	3 x 90 min	1	
Principles of Systematics, Taxonomy and Nomenclature	ZGS-O2	Dirk Ahrens	2	1	
General introduction in cladistics - morphology	ZGS-O3	Wolfgang Wägele	1	2	
General introduction to molecular phylogenetic systematics	ZGS-O4	Christoph Mayer, Bernhard Misof	2	2	
Overview Imaging morphology	ZGS-O5	Benjamin Wipfler	1/2	2	
Scientific collecting, field logistics, data management	ZGS-O6	Matthias Geiger	1	1	
Presentation for scientific and public audience	ZGS-O7	Eva Bärmann, Sabine Heine	1	1	
Scientific writing	ZGS-O8	Heike Wägele, Fabian Herder	2	1	<i>Better outsourced in the beginning, e.g., www.science-craft.com</i>
Writing a scientific grant application	ZGS-O9	Heike Wägele	2	2	<i>Better outsourced in the beginning, e.g., www.science-craft.com</i>
Monday Colloquium	ZGS-O10		45 min	1-3	<i>At least 15 per year</i>
Talk within the Monday Colloquium	ZGS-O11	supervisor	30 min	2	
Biological Colloquium at university of Bonn	ZGS-O12		45 min	1-3	<i>At least 10 per year</i>
Participation in students' retreat and presentation of a talk	ZGS-O13	Supervisor/coordinator?	2	1-3	<i>(at least one time)</i>

Curriculum and course program of Z I G S



Facultative courses	Module number	Responsible	Duration (in days)	Remarks
A Computational skills				
HPC@ZFMK and introduction to Linux Obligatory	ZGS-FA1	Alex Donath	2	
B Collection related methods				
Collection and Extraction of Soil Arthropods Wesener	ZGS-FB1	Thomas Wesener	2	
Preserving samples for molecular and morphological work	ZGS-FB2	Jonas Astrin, Benjamin Wipfler	½	
Morphological Data Bases (MorphDBase)	ZGS-FB	Peter Grobe		
Datenbanken (e.g., Diversity Workbench)	ZGS-FB	Peter Grobe		
C Research and methods Morphology				
Basics in histology	ZGS-FC1	Heike Wägele	2	
Geometric morphometrics	ZGS-FC2	Eva Bärmann	2	
MicroCT scanning	ZGS-FC3	Benjamin Wipfler	1	
3D reconstruction	ZGS-FC4	Benjamin Wipfler	2	
Phylogenetic tree reconstruction programs (morphological), PAUP, TNT	ZGS-FC5	Ximo Mengual Marianne Espeland, Heike Wägele	2	
Introduction in ecomorphology	ZGS-FC6	Till Töpfer	1/2	
D Research and methods Molecular				
Programs and databases relevant to start molecular work	ZGS-FD1	Lars Podsiadlowski, Matthias Geiger	1	
Metabarcoding (Theory and practical applications)	ZGS-FD2	Sarah Bourlat	2	
BLAST – searching for sequences in data bases	ZGS-FD3	Alex Donath, Christoph Mayer	1	
Alignment programs	ZGS-FD4	Patrick Kück	2	
Alignment evaluation programs in molecular analyses	ZGS-FD5	Patrick Kück	2	
Measure of phylogenetic support	ZGS-FD6	Bernhard Misof, Christoph Mayer	1	
Genetree based phylogenetic methods (multispecies	ZGS-FD7	Christoph Mayer,	2	

Curriculum and course program of Z I G S



coalescent methods)		Marianne Espeland		
Species delimitation tests	ZGS-FD8	Marianne Espeland, Lars Podsiadlowski	2	
Analysis and visualisation of data from population genetics/genomics approaches	ZGS-FD9	Lars Podsiadlowski, Dirk Ahrens	2	
Evolutionary models, maximum likelihood and model selection	ZGS-FD10	Christoph Mayer, Bernhard Misof	2	
Evolutionary models and distance methods used for phylogenetic tree reconstruction	ZGS-FD11	Christoph Mayer	2	
E Species, habitat and evolution modelling related methods				
Phylogenetic comparative methods	ZGS-FE1	Ralph Peters	2	
Introduction into Geographic Information System GIS	ZGS-FE2	Dennis Rödder	5	
Introduction to scientific programming in R	ZGS-FE3	Dennis Rödder	5	
F Further communication skills				
Working with reference databases (Endnote, etc.)	ZGS-FF1	Björn Quast	1	
Using libraries and retrieving information from online platforms	ZGS-FF2	Katharina Schmidt- loske, Jonas Astrin, Mareike Kruppa	1	
Offenes Trainings- und Coachingprogramm	ZGS-FF			https://www.gleichstellung.uni-bonn.de/de/foerderung/offenes-trainings-und-coachingprogramm
Kursprogramm Promotion plus	ZGS-FF		1 to several	https://www.uni-bonn.de/forschung/promotion/fuer-promovierende/qualifizierung/kurse-18
Participation on the Leibniz PhD Network	ZGS-FF		1 to several	https://www.leibniz-gemeinschaft.de/karriere/wissenschaftlicher-nachwuchs/leibniz-phd-network/
Participation in Doctoral workshops of the Leibniz Association	ZGS-FF		1 to several	https://www.leibniz-gemeinschaft.de/transfer/service/doktoranden-workshops/