

Study Plan MEES for PO 2018

(as at 09.07.2018)

valid from WS 2018/19

In the first year of study, compulsory modules (C-Module) with a total of 30 credits must be taken by all students. The remaining 30 credit points can be covered by various elective modules (E-modules) and can be combined according to your interests. The required elective modules can be taken in the first, second or third semester. Recommendations for the organization of the occupation are given by the study plan.

1. year	
	Compulsory module (Σ30 CP)
	C1 - Basics in Evolutionary Research (5 CP) C2 - Ecology and Diversity (5 CP) C3 - Species Identification (10 CP) C4 - Experimental Design and Analysis of Biological Data (5 CP) C5 - Excursion EES (5 CP)
	Required elective module (Σ30 CP)
	E1 - Comparative Evolutionary Developmental Biology (10 CP) E2 - Evolution of Insects (5 CP) E3 - Morphology (5 CP) E4 - Human History (10 CP) E5 - Paleobiology of Vertebrates (10 CP) E6 - History of Evolutionary Biology (5 CP) E7 - Collections in Biodiversity Research (5 CP) E8 - Plant Microevolution and Population Genetics (5 CP) E9 - Plant Phylogeny / Phylogenetics (5 CP) E10 - Evolution and Diversity of Cryptogams (5 CP) E11 - Applied Vegetation Ecology (5 CP) E12 - Crop Plants (5 CP) E13 - Functional Biodiversity Research (5 CP) E14 - Project Module Habitat Description and Nature Conservation (5 CP) E15 - Ecological Concepts 1: Current Fields of Ecological Research (5 CP) E16 - Ecological Concepts 2: History of Ecological Ideas (5 CP) E17 - Evolutionary and Population Genetics (5 CP) E18 - Behavioural Ecology (5 CP) E19 - Theoretical Ecology (5 CP) E20 - Ecological Networks (5 CP) E21 - Biodiversity Metastudies (5 CP) E22 - Biodiversity Science-Policy interface (5 CP) E23 - Molecular and Chemical Interaction Ecology (5 CP) E24 - Microbial Ecology (5 CP) E25 - Science Communication (5 CP)
2. year	
	Thesis module (Σ60 CP)
	T1 – Project Module MEES (30 CP) T2 – Master Thesis MEES (30 CP)

Explanation: The following overview refers to CP.

Module	C/E	Semester				CP
		1	2	3	4	
Compulsory module						
C1 – Basics in Evolutionary Research	C	2	3			5
C2 - Ecology and Diversity	C	5				5
C3 - Species Identification	C		10			10
C4 - Experimental Design and Analysis of Biological Data	C	5				5
C5 - Excursion	C		5	5*		5
Required elective module						
Required elective modules	E	18	12	18**		30
Thesis module						
T1 - Project Module MEES	C		30***	30		30
T2 - Master Thesis MEES	C				30	30
CP per semester		30	30	30	30	∑ 120

* Depending on the destination, the excursion will take place in the summer or winter semester.

** Required elective modules in the first semester can also be attended in the third semester (and vice versa).

*** The project module can already be started in the summer semester of the first year of study, if the fieldwork of the Master thesis is limited by a specific season.

Module	C/E	Semester				CP
		1	2	3	4	
List of required elective module						
E1 - Comparative Evolutionary Developmental Biology	E	8	2			10
E2 - Evolution of Insects	E		3	2 or 5		5
E3 - Morphology	E		5			5
E4 - Human History	E	7	3			10
E5 - Paleobiology of Vertebrates	E		2	8		10
E6 - History of Evolutionary Biology	E	3	2			5
E7 - Collections in Biodiversity Research	E			5		5
E8 - Plant Microevolution and Population Genetics	E		5			5
E9 - Plant Phylogeny / Phylogenetics	E		3	2		5
E10 - Evolution and Diversity of Cryptogams	E	5				5
E11 - Applied Vegetation Ecology	E		3	2		5
E12 - Crop Plants	E	2	3			5
E13 - Functional Biodiversity Research	E	2	3			5
E14 - Project Module Habitat Description and Nature Conservation	E		5			5

Module	C/E	Semester				CP
		1	2	3	4	
List of required elective module						
E15 - Ecological Concepts 1: Current Fields of Ecological Research	E	5				5
E16 - Ecological Concepts 2: History of Ecological Ideas	E		5			5
E17 - Evolutionary and Population Genetics	E	5				5
E18 - Behavioural Ecology	E		5			5
E19 - Theoretical Ecology	E	5				5
E20 - Ecological Networks	E			5		5
E21 - Biodiversity Metastudies	E		5			5
E22 - Biodiversity Science-Policy interface	E	5				5
E23 - Molecular and Chemical Interaction Ecology	E	5				5
E24 - Microbial Ecology	E	2	3			5
E25 - Science Communication	E		3	2		5

Wildcard modules

Upon application to the Office for Student Affairs and Examinations and in consultation with one or more lectures (then in function as module coordinator), it is possible to compile up to two wildcard modules with five credit points each from individual courses according to one's own wishes. The form of the module examination must also be specified in consultation with the module coordinator. Any individual course can be chosen from the list below, the unattended modules of the Masters in Evolution, Ecology and Systematics or any other (preferably biological or geoscientific) degree program.

Interdisciplinary modules

Modules from other study programmes will be accepted upon application to the Office for Student Affairs and Examinations and in consultation with one or more lectures of the Masters in Evolution, Ecology and Systematics, in particular if they strengthen the interdisciplinary character of the degree program. Examples can be found in the list below, but modules from all other (preferably biological or geoscientific) degree programs are also possible.

International mobility / mobility window

Stays abroad as part of the Masters Evolution, Ecology and Systematics are possible and desirable. The support for students wishing to go abroad is provided by the International Office of the FSU and is possible, inter alia, through the Erasmus programme, or the networking programme among Coimbra universities. In addition, support can also be provided by individual study guidance.

In order to facilitate the recognition of academic achievements, an Learning Agreement on the program should be concluded with the responsible university lecturer for the degree program before the start of the stay abroad. This agreement will be deposited with the Office for Student Affairs and Examinations. The responsible university lecturer and the Office for Student Affairs and Examinations provide advice of the possibilities of a study-related stay abroad.

Preamble: This document serves as an overview of the courses of all modules included in the study programme MEES. The names indicate the persons responsible for the individual courses, these may differ from the teaching persons. The teaching persons can be found in the course catalogue.

Compulsory Modules

MEES001: C1 - Basics in Evolutionary Research (Mc: Fischer)			WS/SS	SWS
L	Evolutionary ecology	Halle	WS	1
S	Theory of evolution (50%)	Fischer	WS	1
S	Evolutionary Biology (50%)	Fischer, Halle, Hellwig	SS	2
Seminar contributions (50% each)				5 CP

MEES002: C2 - Ecology and Diversity (Mc: Küsel)			WS/SS	SWS
L	Ecology and diversity of habitats (40%)	Bernhardt-Römermann, Hellwig, Römermann	WS	2
L	Ecology and diversity of populations (30%)	Ebeling, Schielzeth	WS	1
S	From molecular diversity to ecosystem services (30%)	Bonn, Brose, Küsel, van Dam	WS	1
Joint written examination for the lectures (70%), project work for the seminar (30%)				5 CP

MEES003: C3 - Species Identification (Mc: Pohl)			WS/SS	SWS
E	Advanced determination exercises on plants (50%)	Arndt	SS	3
E	Advanced determination exercises on animals (50%)	Pohl	SS	3
P	Field practice on species knowledge (proof of performance)	Arndt, Bernhardt-Römermann, Ebeling, Hentschel, Pohl	SS	2
Herbarium (30%); taxonomic description (30%); Attestation (40%); proof of performance for the practical work				10 CP

MEES004: C4 - Experimental Design and Analysis of Biological Data (Mc: Bernhardt-Römermann)			WS/SS	SWS
L	Experimental design and implementation	Halle	WS	1
E	Statistical analysis of biological data (100%)	Bernhardt-Römermann, Rall, Römermann	WS	3 (Block)
Analyses of data in the form of a commented R-script for the exercise (100%)				5 CP

MEES005: C5 - Excursion EES (Mc: Head of excursion)			WS/SS	SWS
P	Excursion	Head of excursion	SS/WS	4 (Block)
Protocol and/or presentation for the excursion (100%)				5 CP

Required Elective Modules

MEES006: E1 - Comparative Evolutionary Developmental Biology (Mc: Olsson)			WS/SS	SWS
L	Molecular developmental biology (30%)	Baniahmad, Englert, Olsson	WS	2
L	Gene regulatory networks (30%)	Theißen	WS	1
S	Comparative and evolutionary developmental biology (40%)	Baniahmad, Englert, Olsson	WS	2
P	Research practical developmental biology (proof of performance)	Olsson	SS	2
Joint written final examination for the lectures (60%), seminar contribution (40%), proof of performance for the practical work				10 CP

MEES007: E2 - Evolution of Insects (Mc: Beutel)			WS/SS	SWS
L	Phylogeny and evolution of insects (70%)	Beutel, Pohl	WS	1
S	Current aspects of entomology (30%)**	Beutel, Pohl	WS	2
S	Forensic entomology (30%)**	Beutel	SS	2
Seminar contribution (30%), oral final examination for the lecture (70%)				5 CP

** There is a choice between the two seminars.

MEES008: E3 - Morphology (Mc: Schmidt)			WS/SS	SWS
E	Morphology: questions, methods, application (100%)	Pohl, Bernhardt-Römermann, Schmidt	SS	4
Poster, oral presentation or essay (100%)				5 CP

MEES009: E4 - Human History (Mc: Fischer)			WS/SS	SWS
L	Emergence of the anatomically modern human	Fischer, Krause, Stößel	WS	2
S	Current topics of emergence of the anatomically modern human (proof of performance)	Krause, Stößel	WS	2
E	Physical anthropology	Fischer, Stößel	SS	3
Written final examination for the overall module (100%); proof of performance for the seminar				10 CP

MEES010: E5 - Paleobiology of Vertebrates (Mc: Fischer)			WS/SS	SWS
L	The biology of the Quaternary	Kahlke	WS	2
P	The biology of the Quaternary	Kahlke, Maul	WS	2
E	The evolutionary origin of vertebrates	Schoch	WS	2
E	The evolutionary origin of the amniotes	Schoch	SS	2
Written final examination for the overall module (100%)				10 CP

MEES011: E6 – History of Evolutionary Biology (Mc: Fischer)			WS/SS	SWS
S	Discovery of evolution (50%)	Olsson	WS	2
S	Classic of evolutionary biology (50%)	Fischer	SS	2
Seminar contributions (50% each)				5 CP

MEES012: E7 - Collections in Biodiversity Research (Mc: Schmidt)			WS/SS	SWS
L	Collect and curate biological objects	Arndt, Hentschel, Müller H, Schmidt	WS	1
E	Practical aspects of contemporary collection activity	Arndt, Hentschel, Müller H, Schmidt	WS	2
EX	Collections in practice	Hentschel, Müller H, Schmidt	WS	1
Written final examination for the overall module (100%)				5 CP

MEES013: E8 - Plant Microevolution and Population Genetics (Mc: Hellwig)			WS/SS	SWS
L	Microevolution	Hellwig	SS	1
E	Microevolution research on plants (100%)	Arndt, Hellwig	SS	3
Protocol for the exercise (100%)				5 CP

MEES014: E9 - Plant Phylogeny / Phylogenetics (Mc: Hellwig)			WS/SS	SWS
L	Palaeobotany	Hellwig, Kienast	WS	1
L	Phylogeny and evolution of plants	Hellwig	WS	1
E	Phylogenetics	Hellwig	SS	2
Oral final examination for the overall module (100%)				5 CP

MEES015: E10 - Evolution and Diversity of Cryptogams (Mc: Hellwig)			WS/SS	SWS
L	Evolution and diversity of cryptogams	Hellwig, Hentschel	WS	1
P	Morphology, anatomy, and biology of cryptogams (100%)	Hentschel	WS	3
Attestation (100%)				5 CP

MEES016: E11 - Applied Vegetation Ecology (Mc: Römermann)			WS/SS	SWS
S	Functional ecology (proof of performance)	Römermann	WS	1
E	Field course on vegetation ecology (100%)	Bernhardt-Römermann	SS	3
Report on the field exercises (100%); proof of performance for the seminar				5 CP

MEES017: E12 - Crop Plants (Mc: Hellwig)			WS/SS	SWS
L	Diversity of crop plants (30%)	Hellwig	WS	2
P	Production and processing of crop plants (70%)	Arndt, Hellwig	SS	2
Oral examination for the lecture (30%); final presentation for the practical work (70%)				5 CP

MEES018: E13 - Functional Biodiversity Research (Mc: Römermann)			WS/SS	SWS
S	Experimental biodiversity research (proof of performance)	Römermann	WS	1
E	Project planning and implementation in functional biodiversity Research (100%)	Römermann	SS	3 (Block)
Poster (100%); proof of performance for the seminar				5 CP

MEES019: E14 - Project Module Habitat Description and Nature Conservation (Mc: Hellwig)			WS/SS	SWS
P	Project module nature conservation and habitat description (100%)	Arndt, Bernhardt-Römermann, Bonn, Hellwig, Hentschel, Müller H, Pohl, Römermann, Schmidt, weitere EES Dozenten	SS	4
Working out of a nature guide in group work (100%)				5 CP

MEES020: E15 - Ecological Concepts 1: Current Fields of Ecological Research (Mc: Halle)			WS/SS	SWS
L	Current ecological research at the FSU Jena	Halle	WS	2
S	Open questions of general ecology (100%)	Halle	WS	2
Seminar contribution (100%)				5 CP

MEES021: E16 - Ecological Concepts 2: History of Ecological Ideas (Mc: Halle)			WS/SS	SWS
S	History of ecology (50%)	Halle	SS	2
S	Influential publications in ecology (50%)	Schielzeth	SS	2
Seminar contributions (50% each)				5 CP

MEES022: E17 - Evolutionary and Population Genetics (Mc: Schielzeth)			WS/SS	SWS
L	Evolutionary and population genetics (100%)	Schielzeth	WS	2
E	Population genetics analysis (proof of performance)	Schielzeth	WS	2
Written Examination for the lecture (100%); proof of performance for the exercise				5 CP

MEES023: E18 - Behavioural Ecology (Mc: Halle)			WS/SS	SWS
L	Behavioural ecology	Halle	SS 1	1
S	Thesis behavioral ecology (20%)	Halle	SS 2	1
E	Models in game theory (80%)	Halle	SS	2 (Block)
Thesis (80%); short presentation for the seminar (20%)				5 CP

MEES024: E19 - Theoretical Ecology (Mc: Brose)			WS/SS	SWS
L	Theoretical ecology	Brose, Rall	WS	2
E	Computer simulation of ecological processes (100%)	Brose, Rall	WS	2 (Block)
Paper to be written at home for the exercise (100%)				5 CP

MEES025: E20 - Ecological Networks (Mc: Brose)			WS/SS	SWS
E	Ecological networks (100%)	Brose	WS	4 (Block)
Paper to be written at home for the exercise (100%)				5 CP

MEES026: E21 - Biodiversity Metastudies* (Mc: Brose)			WS/SS	SWS
L	Biodiversity metastudies	Brose	SS	1 (Block)
E	Biodiversity metastudies (100%)	Brose	SS	3 (Block)
Paper to be written at home for the exercise (100%)				5 CP

* The module is offered every second year

MEES027: E22 - Biodiversity Science-Policy interface (Mc: Bonn)			WS/SS	SWS
L	Biodiversity science-policy interface	Bonn	WS	1 (Block)
S	Biodiversity science-policy interface (30%)	Bonn	WS	1 (Block)
EX	Biodiversity science-policy interface (70%)	Bonn	WS	1 (Block)
Paper to be written at home for the exercise (70%); seminar contribution (30%)				5 CP

MEES028: E23 - Molecular and Chemical Interaction Ecology (Mc: van Dam)			WS/SS	SWS
L	Molecular and chemical interaction ecology: concepts and research methods	van Dam	WS	1 (Block)
S	Molecular and chemical interaction ecology: current research (100%)	van Dam	WS	2
EX	Excursion to the German Center for Integrative Biodiversity Research (iDiv) in Leipzig (proof of performance)	van Dam	WS	1 day (Block)
Seminar contribution (100%); proof of performance for the excursion				5 CP

MEES029: E24 - Microbial Ecology (Mc: Küsel)			WS/SS	SWS
L	Microbial ecology (50%)	Küsel	WS	1
S	Methods microbial diversity and function (50%)	Küsel	SS	2
P	Microbial functions in ecosystems	Küsel	SS	1 (Block)
Written examination (50%), oral and written contributions to seminar and practical work (50%)				5 CP

MEES030: E25 - Science Communication (Mc: Schielzeth)			WS/SS	SWS
S	Scientific writing (50%)	Schielzeth	WS	2
S	Scientific communication culture (50%)	Schielzeth	SS	2
Seminar contribution (50%); paper to be written at home (50%)				5 CP

Thesis Modules

MEES031: T1 - Project Module MEES (Mc: Adviser)			WS/SS	SWS
P	Practical course MEES (100%)	Bernhardt-Römermann, Beutel, Bonn, Brose, Fischer, Halle, Hellwig, Küsel, Olsson, Pohl, Römermann, Schielzeth, Schmidt, van Dam	SS/WS	
S	Colloquium MEES (proof of performance)	Fischer, Halle, Hellwig, Römermann, Schielzeth	SS/WS	
Oral final examination (100%); proof of performance for the seminar				30 CP

MEES032: T2 - Master Thesis MEES (Mc: Adviser)			WS/SS	SWS
P	Master Thesis MEES (100%)	Bernhardt-Römermann, Beutel, Bonn, Brose, Fischer, Halle, Hellwig, Küsel, Olsson, Pohl, Römermann, Schielzeth, Schmidt, van Dam	WS/SS	
Master Thesis MEES (100%)				30 CP

Optional courses

(no assignment to a module, these can be used as part of wildcard modules)

			WS/SS	SWS
L	Human Ecology	Jetschke	WS	2
Written examination				

			WS/SS	SWS
E	Advanced Statistics 1: Non-linear models	Rall, Rosenbaum	SS	2 (Block)
Course is offered alternating with <i>advanced statistics 2</i> every second year Analysis of a dataset (annotated R-Script)				

			WS/SS	SWS
E	Advanced Statistics 2: Introduction to Bayesian Statistics	Rall, Rosenbaum	SS	2 (Block)
Course is offered alternating with <i>advanced statistics 1</i> every second year Analysis of a dataset (annotated R-Script)				

			WS/SS	SWS
L	Climate and environmental change (GEOG 431)	Zech	WS	2
Written examination				

Stable isotopes			WS/SS	SWS
L	Stable isotopes (100%)	Gleixner	WS	2
P	Stable isotopes (proof of performance)	Gleixner	SS	2 (Block)
Oral examination for the overall module (100%)				5 CP

FELASA B (Mc: Fischer)			WS/SS	SWS
L	Laboratory animal science/bioethics	Bischoff	SS	2
P	Felasa B-course**		SS	1 (Block)
Written examination for the lecture; proof of performance for the practicum				5 CP

** Students who want to work experimentally on vertebrates during their studies can take the module FELASA B (Experimental planning in zoology, animal welfare - prerequisite for all work with laboratory animals) after approval by the module coordinator.

Interdisciplinary modules

(Examples, others possible on request)

GEOG 232 Introduction to Soil Science			WS/SS	SWS
L	Soil science (100%)	Michalzik	WS	2
E	Soil science	Michalzik	WS	1
Written examination for the lecture (100%)				5 CP

GEOG 112 Introduction to Applied Remote Sensing			WS/SS	SWS
L	Remote sensing (100%)	Schmullius	WS	2
E	Remote sensing	Schmullius	WS	2
Written examination for the lecture (100%)				5 CP

GEOG 111 Introduction to Geoinformatics			WS/SS	SWS
L	Geoinformatics (50%)	Münchow	WS	2
E	Geoinformatics (50%)	Münchow	WS	2
Portfolio (50%) consisting of max. three grade-relevant performances, written examination (50%)				5 CP