

Excerpt from the module catalogue (winter semester)

Department of Biology
(February 2018)

EBERHARD KARLS
UNIVERSITÄT
TÜBINGEN



Dear exchange students,

This is an excerpt from the module catalogue as of February, 2018. Modules, contents, as well as times can change. Modules found in this excerpt are not necessarily offered in in the semester of your exchange. Hence, the purpose of this document is to provide an overview of the modules *generally* offered. For a list of modules that are offered in the semester of your exchange, alongside with the necessary module information, please consult the module catalogue on the University of Tübingen campus portal (<https://campus.verwaltung.uni-tuebingen.de>).

The course number provides information whether a module is available for Bachelor or Master students. Generally speaking, numbers starting with a 3xxx are available for Bachelor students (1st to 3rd year); numbers starting with a 4xxxx are available for Master students (4th to 5th year). Exceptions may apply.

Block courses: The semester is divided into 4 to 5 time slots (4 weeks each). In summer, the first slot is named S1, the second S2, etc., in winter W1, W2, etc. The entire course content from one block (including exams) will be conducted in 4 weeks.

Regular courses: will take place weekly throughout the semester at the time specified in the catalogue. Regular courses are named "Schiene".

Usually, you will be able to combine one to three regular courses with block courses. You cannot combine two blocks from the same time-slot (e.g. two S1 blocks) for they will most probably coincide.

We are looking forward to your stay!

Department of Biology
Eberhard Karls Universität Tübingen

Advanced Animal Evolutionary Ecology I (3116)

Basic Information	
Type of Course	Block seminar
Course Number	3116
Credits	6 CP (ECTS)
Semester	WS 17/18
Frequency	
Hyperlink	http://www.evoeco.uni-tuebingen.de
Language	English
Notes	This course is only offered according to prior arrangement with the module coordinator. See notes below.

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes

Contents	
Instructors	Michiels, Nico K. , o. Prof. , Dr. rer. nat. (responsible)
Prerequisites	
Course Description	<p>This 6 CP (ECTS) module is available to 3rd year Bachelor students to combine multiple small courses or seminars that by themselves cannot be accepted as individual modules within the current BSc Biology system. These small courses must in total comply to the requirements for 6 credit points.</p> <p>Generally, we can accept courses offered (i) within the Animal Evolutionary Ecology group, (ii) within the Institute for Evolution and Ecology or the Evolution and Ecology Forum Tübingen, (iii) within the university of Tübingen, or (iv) from other national or international universities. Courses should generally be marked, and connected to an explicit work load expressed in credit points (ECTS). Moreover, it is required that the courses show connections to the research or teaching that is usually offered within our group.</p> <p>Hence, if interested in combining several small courses into our Advanced module, please contact any of the indicated supervisors well in time.</p>
Methods of Assessment	
Notes	
Literature	
Target Audience	BSc Biology, Teaching Degree Biology

Advanced Animal Evolutionary Ecology II (4064)

Basic Information	
Type of Course	Block seminar
Course Number	4064
Credits	6 CP (ECTS)
Semester	WS 17/18
Frequency	
Hyperlink	http://www.evoeco.uni-tuebingen.de
Language	English
Notes	This course is only offered according to prior arrangement with the module coordinator. See notes below.

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes

Contents	
Instructors	Michiels, Nico K. , o. Prof. , Dr. rer. nat. (responsible)
Prerequisites	
Course Description	<p>This 6 CP (ECTS) module is available to Master students in Evolution & Ecology to combine multiple small courses or seminars that by themselves cannot be accepted as individual modules within the current MSc system. These small courses must in total comply to the requirements for 6 credit points.</p> <p>Generally, we can accept courses offered (i) within the Animal Evolutionary Ecology group, (ii) within the Institute for Evolution and Ecology or the Evolution and Ecology Forum Tübingen, (iii) within the university of Tübingen, or (iv) from other national or international universities. Courses should generally be marked, and connected to an explicit work load expressed in credit points (ECTS). Moreover, it is required that the courses show connections to the research or teaching that is usually offered within our group.</p> <p>Hence, if interested in combining several small courses into our Advanced module, please contact any of the indicated supervisors well in time.</p>
Methods of Assessment	
Notes	
Literature	
Target Audience	MSc – Evolution and Ecology

Advanced Plant Ecology II (4062)

Basic Information	
Type of Course	Block seminar
Course Number	4062
Credits	6 CP (ECTS)
Semester	SS 2018
Frequency	
Hyperlink	
Language	English
Notes	

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes

Contents	
Instructors	Tielbörger, Katja , Prof. , Dr. rer. nat. (responsible)
Prerequisites	
Course Description	<p>This module offers the opportunity to combine several courses, the combined amount of earned credit points should equal 6 ECTS.</p> <p>Only courses with earned credit points (ECTS) can be included. These can be courses (or parts of larger courses) of this group or department, of the EvE (Evolution and Ecology Forum Tübingen), or of other faculties and universities in Germany or abroad. All combinations of course forms are allowed (e.g., lecture, seminar, practical, excursion).</p> <p>As an important prerequisite, all courses that are proposed to be included in this module have to match the general themes of the research and teaching currently done at the Plant Ecology group.</p> <p>The choice and combination of these courses has to be appointed in advance (!) in agreement with a lecturer of the group of Plant Ecology.</p>
Methods of Assessment	
Notes	
Literature	
Target Audience	MSc Biology / Major Evolution and Ecology

Advanced Seminar II: Principles of Innate and Adaptive Immunology (Schiene – M) (4207)

Basic Information	
Type of Course	Seminar
Course Number	4207
Credits	3 CP (ECTS)
Semester	WS 17/18
Frequency	Every 2 nd semester.
Hyperlink	
Language	English
Notes	

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes
Monday	4:00 – 6:00pm	weekly	16.10.2017 – 05.02.2018	Verfügungsgeb. Morgenstelle – seminar room 2.034/2.033	

Contents	
Instructors	Weber, Alexander , o. Prof. , Ph.D.
Prerequisites	
Course Description	
Methods of Assessment	
Notes	The seminar “Principles of Innate and Adaptive Immunity” is a joint cooperation between the Department of Immunology and the Department of Dermatology.
Literature	Janeway’s “Immunobiology”
Target Audience	

Current Topics in Developmental Genetics (Schiene – M) (4016)

Basic Information	
Type of Course	Seminar
Course Number	4016
Credits	6 CP (ECTS)
Semester	WS 17/18
Frequency	
Hyperlink	
Language	English
Notes	

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes
Monday	11:15am – 1:00pm	Weekly	16.10.2017 – 05.02.2018	ZMBP AdM 32 – seminar room ZMBP 4U09	
Wednesday	1:00 – 5:00pm	Singular event	31.01.2018	ZMBP AdM 32 – seminar room ZMBP 4U09	
Thursday	09:00am – 1:00pm	Singular event	01.02.2018	ZMBP AdM 32 – seminar room ZMBP 4U09	

Contents	
Instructors	Jürgens, Gerd , o. Prof. , Dr. rer. nat. (responsible)
Prerequisites	BSc.
Course Description	Introduction to current research topics in molecular cell biology.
Methods of Assessment	Practical (30%), Seminar (70%)
Notes	This module includes a lecture, seminar AND 21h of practical. Dates according to agreements.
Literature	t.b.a.
Target Audience	

Analysing Publications: Literature Seminar of Molecular Cell Biology (Schiene – F) (4114)

Basic Information	
Type of Course	Seminar
Course Number	4114
Credits	3 CP (ECTS)
Semester	WS 17/18
Frequency	Every semester.
Hyperlink	
Language	English
Notes	Journal Club

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes
Friday	12:30 – 2:00pm	Weekly	20.10.2017 – 30.03.2018	Verfügungsgebäude Morgenstelle – seminar room 2.034	
Friday	12:30 – 2:00pm	Weekly	20.10.2017 – 30.03.2018	Verfügungsgebäude Morgenstelle – seminar room 2.033	

Contents	
Instructors	Nordheim, Alfred , o. Prof. , Dr. rer. nat. (responsible) Proikas-Cezanne, Tassula , apl. Prof. , Dr. rer. nat.
Prerequisites	Basic knowledge of molecular cell biology.
Course Description	Understanding and communicating the content of a primary research publication.
Methods of Assessment	No grade. Regular participation, PPT-presentation of a recent publication.
Notes	Department of Molecular Biology
Literature	Recent and relevant literature will be announced. General Lit.: Lodish et al., 2013, Molecular Cell Biology, 7th edition, Freeman & Company, New York.
Target Audience	MSc “Molecular Cell Biology & Immunology”

General Genetics (4020)

Basic Information	
Type of Course	Practical
Course Number	4020
Credits	12 CP (ECTS)
Semester	WS 17/18
Frequency	
Hyperlink	
Language	English
Notes	

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes
Monday	12:15 – 1:00pm	Singular event	16.10.2017	ZMBP AdM 32 – Besprecher 2 ZMBP 6R01	Preliminary discussion, set dates

Contents	
Instructors	Zentgraf, Ulrike , apl. Prof. , Dr. rer. nat.
Prerequisites	
Course Description	<p>Elective module in the Master's degree offered by the ZMBP, open to students from their second semester onwards.</p> <p>This module offers an enhancement of the molecular methods encountered in the mandatory practical module. It will provide further insight to a recent research project by the Department of General Genetics. During the four weeks of full-time practical students will conduct their own small project within a bigger research project. This may serves as preliminary work for a master thesis.</p>
Methods of Assessment	Laboratory work, poster presentation. Graded.
Notes	
Literature	Relevant literature will be announce via email prior to the course.
Target Audience	MSc; semesters 2-4.

Colour Vision across Species (Schiene – F) (4084)

Basic Information	
Type of Course	Seminar
Course Number	4084
Credits	3 CP (ECTS)
Semester	WS 17/18
Frequency	Every 2 nd semester.
Hyperlink	http://www.annettewerner.com/index.html
Language	English
Notes	

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes
Friday	2:00 – 4:00pm	Every 2 nd week	20.10.2017 – 09.02.2018	E-Bau [Bio] AdM 28 – seminar room E7A23	

Contents	
Instructors	Werner, Annette , Dr. rer. nat. (responsible)
Prerequisites	
Course Description	Colour is an important aspect of vision since it provides reliably information for the fast detection and identification of objects (e.g. food), for communication, and signaling. Colour vision is therefore found not only in humans but in all classes of vertebrates and invertebrates. This seminar will introduce you to the basics of colour research and the evolution of colour vision across the different species.
Methods of Assessment	
Notes	
Literature	
Target Audience	For students interested in the field of biology, neuroscience, bioinformatics and medicine

Concepts of Molecular Cell Biology (Schiene – F) (4039)

Basic Information	
Type of Course	Lecture
Course Number	4039
Credits	6 CP (ECTS)
Semester	WS 17/18
Frequency	
Hyperlink	
Language	English
Notes	

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes
Friday	10:15 – 11:30am	Singular event	20.10.2017	Verfügungsgeb. Morgenstelle - Seminarraum 2.034	Preliminary meeting
Friday	08:30 – 10:00am	weekly.	27.10.2017 - 09.02.2018	Verfügungsgeb. Morgenstelle - Seminarraum 2.034/2.033	Lecture
Friday	10:15 – 11:45am	weekly.	03.11.2017 - 09.02.2018	Verfügungsgeb. Morgenstelle - Seminarraum 2.034/2.033	Seminar
Thursday	08:30 – 11:30am	Singular event	15.02.2018	Hörsaalzentrum Morgenstelle - Hörsaal N05	

Contents	
Instructors	Nordheim, Alfred , o. Prof. , Dr. rer. nat. (responsible)
Prerequisites	Participation in the MSc. programme “Molecular Cell Biology and Immunology”
Course Description	This module addresses selected problems in cell biology, which are necessary for the understating of eukaryotic cells. The accompanying seminar will deepen the knowledge of the topics covered in the lecture. Students will present current publications in molecular cell biology.
Methods of Assessment	Exam (lecture), seminar presentation (graded).
Notes	
Literature	
Target Audience	

Current Topics in Proteome Research (Schiene – F) (4156)

Basic Information	
Type of Course	Seminar
Course Number	4156
Credits	3 CP (ECTS)
Semester	WS 17/18
Frequency	
Hyperlink	
Language	English
Notes	

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes
Friday	9:00 – 11:00am	Weekly	20.10.2017 – 09.02.2018	Verfügungsgebäude Morgenstelle – seminar room 1.034	

Contents	
Instructors	Macek, Boris , Prof. , Dr. rer. nat. (responsible)
Prerequisites	
Course Description	<p>Proteomics investigates global qualitative and quantitative changes of protein expression in cells, tissues or whole organisms and represents one of the youngest fields of molecular biology and medicine. Aim of this course is to acquaint the participants with current, high-impact research literature from the field of proteome research and biology. The participants will take turns with active researchers from the field (PCT group members) and will have to present and discuss a research paper from one of the fields: proteogenomics, phosphoproteomics, global analysis of signal transduction, key technology developments, sample preparation and enrichment protocols, microbial proteomics.</p>
Methods of Assessment	Oral presentation; not-graded certificate.
Notes	Attendance is compulsory.
Literature	
Target Audience	The target audience are M.Sc. students (NOT those from Cell Biology/Immunology) and Ph.D. students.

Field Trip: Marine Biodiversity – Indonesia (3136)

Basic Information	
Type of Course	Block seminar
Course Number	3136
Credits	
Semester	WS 17/18
Frequency	Every 2 nd semester.
Hyperlink	http://www.evoeco.uni-tuebingen.de/
Language	English
Notes	Consists of seminar, field trip (13/03 – 01/04/2018) and follow up practical.

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes

Contents	
Instructors	Michiels, Nico K. , o. Prof. , Dr. rer. nat. (responsible)
Prerequisites	<p>Ideally, you have already successfully finished the module „Marine Biology” (or “Reef Ecology”) AND at least one other marine biological course (e.g. Tropical Marine Ecology).</p> <p>You must be an experienced diver with at least 20 or more dives. We shall prefer participants with at least ** CMAS or PADI Rescue Diver or VDST Silver and will interview you about your diving qualifications.</p> <p>A valid medical confirmation that you are fit to dive (dive medical, Tauchtauglichkeitsbescheinigung) as well as a dive insurance (VDST, DAN, Aquamed, ...). Also check your regular health and travel insurance(s) well in advanced.</p> <p>You need a valid passport, but no visum.</p>
Course Description	<p>This course is for advanced students in marine biology with sufficient SCUBA diving experience only. The course takes place at Bangka Island, N Sulawesi, Indonesia at the Coral Eye field station (www.coral-eye.com). The course will focus on exploring different marine habitats such as reef tops and crests, mangroves, lagoons, hot vents as well as identifying reef fish and coral diversity. Much of the work will involve diving or snorkeling and identifying, photographing and observing fishes and corals in the field. This trip is particularly recommended for people who have attended a course in the Red Sea (e.g. Tropical Marine Ecology) as this will give you a good background in species diversity. Bangka Island is a reef biodiversity hotspot in the “coral</p>

	<p>triangle". The number of coral and fish species is among the highest in the world and truly very impressive.</p> <p>Bangka Island is close to the equator, which implies hot and humid weather. It is likely that we have a thunderstorm every day. Living conditions are safe, but primitive (poor electricity supply, no air conditioning). The station is well-equipped and organized for medical emergencies and has high international diving standards (PADI). Some tropical diseases are around (malaria, dengue). We shall provide all participants with information concerning prophylactic medication etc. It is important to make sure you are in good physical condition.</p> <p>The programme will consist mainly of work directly on or in the vicinity of the island. Included are trips to the mangroves, the Tangkoko National Park and a boat trip to another island. It is also planned to go and visit a nearby village to experience local living conditions and habits.</p> <p>Learning objectives:</p> <ul style="list-style-type: none"> - Get to know different tropical marine environments: reef top, crest and slope, walls, mangroves, lagoons, hot vents, current-swept pinnacles. - Acquire skills in Fish ID, Coral ID, documenting fluorescence, underwater photography, UW census, reef ecology methods, etc.
Methods of Assessment	<ul style="list-style-type: none"> - Active cooperation (on site) - Seminar presentations (on site) - Report (after return to Germany)
Notes	<p>Dates, registration and information: Prof. Nico Michiels nico.michiels@uni-tuebingen.de</p>
Literature	
Target Audience	<p>Advanced students in biology or geo-ecology (BSc, LA, MSc)</p>

Integrative Neurobiology: Behavior and Cognition (Schiene – T) (4205)

Basic Information	
Type of Course	Lecture
Course Number	4205
Credits	3 CP (ECTS)
Semester	WS 17/18
Frequency	Every 2 nd semester.
Hyperlink	
Language	English
Notes	

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes
Tuesday	2:00 – 4:00pm	Weekly	17.10.2017 – 06.02.2018	E-Bau [Bio] AdM 28 – Lecture Hall N28	Exam A: 06.02.2018
Wednesday	10:00am – 12:00pm	Singular event	28.03.2018		Exam B: lecture hall N10

Contents	
Instructors	Mallot, Hanspeter , o. Prof. , Dr. rer. nat. (responsible)
Prerequisites	
Course Description	The lecture is part of the “Theorie-Modul: Einführung in die Neurobiologie” (No 4205) in the course of MSc-Neurobiology. It replaces the lecture “Introduction to Cognitive Neuroscience” that was offered in the summer semester and which can continue to be used in the BSc Biology course of studies as well as respective modules 3162 und 3163 for other courses.
Methods of Assessment	
Notes	
Literature	
Target Audience	

Integrative Neurobiology: Cellular and Molecular (Schiene – W)

Basic Information	
Type of Course	Lecture
Course Number	
Credits	3 CP (ECTS)
Semester	WS 17/18
Frequency	Every semester.
Hyperlink	
Language	English
Notes	

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes
Wednesday	3:00 – 5:00pm	Weekly	18.10.2017 – 07.02.2018	E-Bau [Bio] AdM 28, lecture hall N12	

Contents	
Instructors	Benda, Jan , Prof. , Dr. rer. nat. (responsible)
Prerequisites	
Course Description	Fundamental topics of cellular and molecular neurobiology are introduced in this lecture. A special focus is on ionic currents, equilibrium potentials, time-scales and filter properties.
Methods of Assessment	
Notes	
Literature	
Target Audience	

Introduction to Computational Neuroscience / Seminar (Schiene – M/F) (3028)

Basic Information	
Type of Course	Seminar
Course Number	3028
Credits	6 CP (ECTS)
Semester	WS 17/18
Frequency	Every 2 nd semester.
Hyperlink	http://www.cog.uni-tuebingen.de/ <i>Graduate Training Centre of Neuroscience</i> http://www.uni-tuebingen.de/neuroschool/
Language	English
Notes	

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes
Friday	2:00 – 4:00pm	Weekly	20.10.2017 – 09.02.2018	E-Bau [Bio] AdM 28 – lecture hall N12	Seminar A, choose one of the two groups.
Monday	4:00 – 6:00pm	Weekly	23.20.2017 – 05.02.2018	Hörsaalzentrum Morgenstelle – Seminar room 7E02	Seminar B, choose one of the two groups.

Contents	
Instructors	Mallot, Hanspeter , o. Prof. , Dr. rer. nat. (responsible)
Prerequisites	
Course Description	<p>The course will provide an overview over the field of computational neuroscience focusing on four topics: (i) biophysics of excitable membranes: Hodgkin-Huxley theory of the action potential and cable theory of passive conduction, (ii) receptive fields including linear systems and Fourier theory, (iii) neural networks and basics of statistical learning theory, and (iv) neural coding.</p> <p>The focus of the course is on central neuroscience mechanisms; mathematical formalizations are presented on a medium level that should be accessible with high school or introductory BSc level knowledge of mathematics.</p> <p>In the seminar, classical papers will be discussed that extend the material of the lecture course. In each seminar session, a team of two to three students will (a) present a paper, (b) give a tutorial on a related issue in neural</p>

	<p>computation and (c) prepare a handout for the class. All students are required to read each weeks' paper in advance of the seminar.</p> <p><u>Please note that for the lecture you have to register separately!</u></p>
Methods of Assessment	<p>In total, 6 credit points can be earned by fulfillment of the following requirements:</p> <ul style="list-style-type: none"> - Written exam at end of term (graded) - Presentation and handout at seminar (one session in teams of two or three, not graded) - Weekly reading and seminar attendance (not graded) <p>If the respective program allows 3 CP modules, this can be earned by attending the lecture and sitting the written exam.</p>
Notes	<p>Please register for one of the two seminar groups.</p> <p><u>Please note that for the lecture you have to register separately!</u></p>
Literature	<ul style="list-style-type: none"> - H. A. Mallot: Computational Neuroscience. A First Course. Springer 2013 - <i>This recently published book is based on handouts of earlier versions of this course and covers the entire lecture course. Older versions entitled "Introduction to Computational Neuroscience" are available in the internet, but are not further updated.</i> - P. Dayan and L. F. Abbott: Theoretical Neuroscience. Computational and Mathematical Modeling of Neural Systems. Cambridge MA: The MIT Press 2001 - E. T. Rolls, G. Deco: Computational Neuroscience of Vision. Oxford: Oxford University Press 2002
Target Audience	<p>The course is listed for the following programs (program names in German)</p> <ul style="list-style-type: none"> • Biology Bachelor, 3rd year • Biology Master <p>Students from other programs are welcome.</p>

Lab Methods in Microbiological Research (4124)

Basic Information	
Type of Course	Practical
Course Number	4124
Credits	6 CP (ECTS)
Semester	WS 17/18
Frequency	Every 2 nd semester.
Hyperlink	
Language	English and German
Notes	Time and place in agreement with the instructor.

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes

Contents	
Instructors	Wohlleben, Wolfgang , o. Prof. , Dr. rer. nat. (responsible)
Prerequisites	Basics in biology, chemistry and biochemistry. Participation in the Module "Microbiology"
Course Description	<p>Module Content</p> <ul style="list-style-type: none"> - Investigation of microbial physiology - Quantification of microbial activities - Active participation in a current research project and to the colloquium of the department <p>Learning objectives:</p> <ul style="list-style-type: none"> - Learn microbial and genetic lab techniques - The students should be able to follow and interpret microbial activities quantitatively - Knowledge about different microbial metabolic pathways - Knowledge about current topics in microbiology/molecular biology - The students should be able to understand and present research questions, hypotheses, experimental approaches and methods, results from their experiments and the data evaluation and interpretation
Methods of Assessment	Successful participation in lab course; lab course protocol, final oral presentation
Notes	
Literature	<ul style="list-style-type: none"> - Fuchs, G., Allgemeine Mikrobiologie (Thieme) - Lengeler, J.W., Drew, G., Schlegel, H. (1999) Biology of the Prokaryotes (Thieme) - Brock Mikrobiologie (Pearson Studium)
Target Audience	

Lecture “Advanced Immunology” (Schiene – Th) (4002)

Basic Information	
Type of Course	Lecture
Course Number	4002
Credits	3 CP (ECTS)
Semester	WS 17/18
Frequency	
Hyperlink	
Language	English
Notes	

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes
Thursday	5:15 – 6:00pm	Weekly	19.10.2017 – 08.02.2018	Verfügungsgebäude Morgenstelle – seminar room 2.033/2.034	

Contents	
Instructors	Rammensee, Hans-Georg , o. Prof. , Dr. rer. nat. (responsible)
Prerequisites	Finished BSc. Degree.
Course Description	
Methods of Assessment	Exam on last day of lectures. (graded)
Notes	<p>Preliminary meeting on the 1st Monday of the semester. See homepage Immunology.</p> <p>Please visit the preliminary introduction to the courses in immunology, details are given above and on our home page.</p>
Literature	Janeway’s Immunobiology, (Murphy, Travers, Walport), Garland Science, New York, 2008, 2012
Target Audience	The lecture “Advanced Immunology” is intended for Master students of biology, bioinformatics, biochemistry and molecular medicine. It is also of interest for students of medicine.

Modern Methods of Flow Cytometry (W1)

Basic Information	
Type of Course	Block seminar (4 weeks)
Course Number	
Credits	6 CP (ECTS)
Semester	WS 17/18
Frequency	Every semester
Hyperlink	
Language	English
Notes	

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes
Monday	11:00am – 1:00pm	Singular event	23.10.2017	ZMBP AdM 32 - Besprecher 3 ZMBP 6N01	Preparatory meeting
	09:00 – 11:00am	Block	24.10. - 26.10.2017		Lecture
	11:00am – 1:00pm	Block	24.10. - 26.10.2017		Lab practical
	09:00 – 11:00am	Block	30.10. - 02.11.2017		Lecture
	11:00am – 1:00pm	Block	30.10. - 02.11.2017		Lab practical
	09:00 – 11:00am	Block	06.11. - 09.11.2017		Lecture
	11:00am – 1:00pm	Block	06.11. - 09.11.2017		Lab practical
	09:00 – 11:00am	Block	13.11. - 16.11.2017		Lecture
	11:00am – 1:00pm	Block	13.11. - 16.11.2017		Lab practical

Contents	
Instructors	Berendzen, Kenneth , Dr. (responsible)
Prerequisites	
Course Description	<p>Introduction to Flow Cytometry.</p> <p>The following topics will be covered in the course of the semester:</p> <ul style="list-style-type: none"> - Set-up and methodology of FACS and Flow Cytometry - Typical application of FACS and Flow Cytometry - Identification of DNA quantity in order to analyze cell cycles and endoreduplication - Dye spillover and compensation - Sorting (FACS) - Independent evaluation of own collected data

Methods of Assessment	Presentation of results, protocols/reports, poster.
Notes	<p>Course takes place 4 days a week and consists of a lecture (9:00 – 11:00am) and a lab practical (11:00am – 1:00pm).</p> <p>Preparatory meeting on Fri, 20.04.2018, room 6R01, AdM 32. Exact dates for the block seminar will be set on this date.</p> <p>If you have any questions, please contact Mr. Kenneth Berendzen (kenneth.berendzen@zmbp.uni-tuebingen.de)</p>
Literature	
Target Audience	MSc. 1. – 3. semester

Fundamentals of Microbiology (W1) (4154)

Basic Information	
Type of Course	Lecture (block)
Course Number	4154
Credits	6 CP (ECTS)
Semester	WS 17/18
Frequency	Every 2 nd semester.
Hyperlink	
Language	English
Notes	

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes
Monday	10:00am – 12:00pm	Weekly	23.10. – 06.11.2017	E-Bau [Bio] AdM 28, lecture hall N12	
Tuesday	10:00am – 12:00pm	Weekly	24.10. – 07.11.2017	E-Bau [Bio] AdM 28, lecture hall N12	
Wednesday	10:00am – 12:00pm	Weekly	25.10. – 08.11.2017	E-Bau [Bio] AdM 28, lecture hall N12	
Thursday	10:00am – 12:00pm	Weekly	26.10. – 09.11.2017	E-Bau [Bio] AdM 28, lecture hall N12	
Wednesday	10:00am – 12:00pm	Weekly	18.10.2017	E-Bau [Bio] AdM 28, lecture hall N12	

Contents	
Instructors	Forchhammer, Karl , Prof. , Dr. rer. nat. (responsible)
Prerequisites	
Course Description	This module will cover the basic principles in microbiology with the help of a relevant textbook. The basics include topics such as the structure of the bacterial cell wall, metabolism and biodiversity, and aspects of applied microbiology. Lectures will provide an overview of the relevant chapters. Students will deepen their knowledge of the main chapters in private study time and will test their knowledge in an accompanying online-tutorial.
Methods of Assessment	Exam.
Notes	
Literature	
Target Audience	MSc. in Biology and other related fields.

Molecular Drosophila Genetics (W1) (4193)

Basic Information	
Type of Course	Block seminar
Course Number	4193
Credits	6 CP (ECTS)
Semester	WS 17/18
Frequency	Every 2 nd semester.
Hyperlink	
Language	English
Notes	

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes
Monday	11:00am – 12:00pm	Singular event	16.10.2017	Verfügungsgeb. Morgenstelle - Seminarraum 1.034	
Monday	3:00 – 4:00pm	Singular event	16.10.2017	Verfügungsgeb. Morgenstelle - Seminarraum 1.034	
Tuesday	3:00 – 4:00pm	Singular event	17.10.2017	Verfügungsgeb. Morgenstelle - Seminarraum 1.034	
Wednesday	11:00am – 12:00pm	Singular event	18.10.2017	Verfügungsgeb. Morgenstelle - Seminarraum 1.034	
Wednesday	3:00 – 4:00pm	Singular event	18.10.2017	Verfügungsgeb. Morgenstelle - Seminarraum 1.034	
-	09:00 – 11:00am	Block	16.10. - 10.11.2017	Verfügungsgeb. Morgenstelle - Seminarraum 1.034	
-	1:00 – 3:00pm	Block	16.10. - 10.11.2017	Verfügungsgeb. Morgenstelle - Seminarraum 1.034	

Contents	
Instructors	Hülsmann, Sven , Dr. rer. nat. (responsible)
Prerequisites	BSc.
Course Description	<p>This course introduces a large variety of genetic tools that scientist use to address cell biological question using <i>Drosophila</i> as a model system.</p> <p>In lectures, seminars and exercises, students work through the molecular mechanisms, the genetics and the applications of several genetic tools.</p> <p>In practical classes, students gain experiences in generating</p>

	<p>genetic tools and applying some of the techniques.</p> <p>The discussed methods include</p> <ul style="list-style-type: none"> • Mutagenesis: CRISPR, mobile DNA elements, gene traps, EMS • Genomic engineering, genomic rescue constructs • Overexpression systems: Gal4 system, Q system, lexA system & their derivatives • RNAi-mediated down regulation of gene products • Clonal analysis: FRT clones, MARCM clones, germ line clones, FRT cassettes • Optogenetics <p>The selection of practically applied techniques depends mainly on the current focus of the lab; specific interests of students can be considered.</p> <p>The focus of the practical classes will be on</p> <ul style="list-style-type: none"> • CRISPR/Cas (mainly) • FRT-mediated overexpression / RNAi • Gene expression assays <p>The will be a preparatory meeting on October the 16th, at 9:15 in room 1.034 (IFIZ). !!! Date & location changed !!!</p> <p>Learning objectives:</p> <p>Students will be able to understand the molecular basis of several genetic tools and associated techniques in <i>Drosophila</i> and know the underlying genetics.</p> <p>They also recognise the workflow and workload in generating and applying these tools.</p> <p>This comprehension will empower students to critically evaluate the design of these tools and techniques for specific scientific questions in developmental cell biology and related areas of research.</p>
Methods of Assessment	
Notes	
Literature	Literature will be given at the preparatory meeting and during the course.
Target Audience	Students with an interest in Developmental Genetics and Cell Biology

Yeast Cell Biology and Imaging (W3) (4203)

Basic Information	
Type of Course	Lecture/seminar
Course Number	4203
Credits	6 CP (ECTS)
Semester	WS 17/18
Frequency	Every 2 nd semester.
Hyperlink	
Language	English
Notes	

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes
Monday	09:00am – 12:00pm	Weekly	11.12.2017 – 19.01.2018	Verfügungsgebäude Morgenstelle – Seminar room 1.033	
	09:00am – 5:00pm	Block	11.12.2017 – 19.01.2018		

Contents	
Instructors	Ewald, Jennifer , Jun.-Prof. , Ph.D. (responsible)
Prerequisites	
Course Description	<p>This course will be comprised of lab work and literature seminars to learn about yeast as a model in cell biology. We will work on small projects related to current research topics in the lab using yeast genetics and live cell imaging including computational and statistical analysis.</p> <p>Please bring a laptop if possible.</p> <p>Learning objectives:</p> <ul style="list-style-type: none"> - Understanding yeast as a model in cell biology research - Basic and advanced methods in yeast genetics - Basics of fluorescence microscopy and live cell imaging - Basic computational image analysis
Methods of Assessment	Grading will be based on a seminar presentation and a protocol of the course work. For other accreditation please contact your course coordinator before registering.
Notes	
Literature	
Target Audience	Master or advanced Bachelor students in Biology or related fields with interest in yeast cell biology and microscopy.

Advanced Biometry (W2) (4008)

Basic Information	
Type of Course	Block seminar (4 weeks)
Course Number	4008
Credits	6 CP (ECTS)
Semester	WS 17/18
Frequency	
Hyperlink	
Language	English
Notes	

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes
Monday	1:00 – 2:00pm	Singular event	13.11.2017	Bio Hörsaalgebäude AdM 3 - Hörsaal N10	
Monday	9:00am – 5:00pm	weekly.	13.11. - 27.11.2017	Bio Hörsaalgebäude AdM 3 - Praktikum/CIP-Pool 152	
Tuesday	9:00am – 1:00pm	weekly	14.11. - 28.11.2017	Bio Hörsaalgebäude AdM 3 - Hörsaal N11	
Tuesday	9:00am – 5:00pm	weekly	14.11. - 28.11.2017	Bio Hörsaalgebäude AdM 3 - Praktikum/CIP-Pool 152	
Wednesday	9:00am – 1:00pm	weekly	15.11. - 29.11.2017	Bio Hörsaalgebäude AdM 3 - Hörsaal N11	
Wednesday	9:00am – 5:00pm	weekly	15.11. - 29.11.2017	Bio Hörsaalgebäude AdM 3 - Praktikum/CIP-Pool 152	
Thursday	9:00am – 1:00pm	weekly	16.11. - 30.11.2017	Bio Hörsaalgebäude AdM 3 - Hörsaal N11	
Thursday	9:00am – 5:00pm	weekly	16.11. - 30.11.2017	Bio Hörsaalgebäude AdM 3 - Praktikum/CIP-Pool 152	
Monday	9:00am – 5:00pm	Singular event	04.12.2017	Bio Hörsaalgebäude AdM 3 - Praktikum/CIP-Pool 152	
Tuesday	9:00am – 5:00pm	Singular event	05.12.2017	Bio Hörsaalgebäude AdM 3 - Praktikum/CIP-Pool 152	
Wednesday	9:00am – 5:00pm	Singular event	06.12.2017	Bio Hörsaalgebäude AdM 3 - Praktikum/CIP-Pool 152	

Contents	
Instructors	Ruppert, Jan , Dr. rer. nat. (responsible)
Prerequisites	
Course Description	This course introduces to state-of-the art methods in the

	<p>statistical analysis of data deriving from biological experiments and observations. It will also touch upon aspects of experimental design. The aim of the course is to provide a toolbox of statistics and thus enable students in Evolution and Ecology and other subjects to decide independently which methods are the most appropriate to use for a particular dataset and how to practically apply some of them. The course is composed of lectures introducing the theoretical background and plenty of coursework for getting hands-on experience with the methods.</p>
Methods of Assessment	Grade will be calculated from the results of the exercises.
Notes	<p>The course language will be English, but approx. 50% can be taught in German upon request.</p> <p>Please read your student e-mail (name@student.uni-tuebingen.de).</p>
Literature	
Target Audience	

Conservation Biology (W2) (3102)

Basic Information	
Type of Course	Block seminar (4 weeks)
Course Number	3102
Credits	6 CP (ECTS)
Semester	WS 17/18
Frequency	
Hyperlink	
Language	English
Notes	

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes
Monday	09:00am – 5:00pm	Weekly	13.11. – 04.12.2017		
Tuesday	09:00am – 5:00pm	Weekly	14.11. – 05.12.2017		
Wednesday	09:00am – 5:00pm	Weekly	15.11. – 06.12.2017		
Thursday	09:00am – 5:00pm	Weekly	16.11. – 07.12.2017		

Contents	
Instructors	Thomassen, Hendrik , Ph.D. (responsible)
Prerequisites	
Course Description	<p>The course will introduce the concepts and strategies important in addressing biological conservation and sustainable management of natural and managed ecosystems. The main course elements and objectives are: 1) to provide a basic understanding of the ecological, evolutionary, and genetic principles necessary to understand biological diversity, 2) to describe and evaluate the threats to natural habitats, and 3) to explore integrative approaches for addressing solutions to the conservation of biodiversity. Ecological concepts and recent research results are discussed in a sociopolitical, economic, and policy context.</p> <p>Learning objectives:</p> <ol style="list-style-type: none"> 1) An understanding of the concepts and challenges in the conservation of biodiversity. 2) Skills necessary to evaluate threats to biodiversity. 3) Skills in the fields of conservation planning and decision making, and those necessary to develop new ideas in these fields.

	<ul style="list-style-type: none"> 4) Critically read research papers and evaluate their scientific merit. 5) To participate in scientific discussions. 6) To present scientific research, including general presentation skills. 7) Scientific writing.
Methods of Assessment	The evaluation will be based upon participation in discussions, presentations, readings, written reports, and the final exam.
Notes	
Literature	
Target Audience	MSc Biology, BSc Biology, Geoecology

Global Change Ecology (W2) (3173)

Basic Information	
Type of Course	Block seminar (4 weeks)
Course Number	3173
Credits	6 CP (ECTS)
Semester	WS 17/18
Frequency	Every 2 nd semester.
Hyperlink	
Language	English
Notes	

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes
Monday	9:00am – 12:00pm	weekly.	13.11. - 04.12.2017	Bio Hörsaalgebäude AdM 3 - Besprechungsraum 36	
Tuesday	9:00am – 12:00pm	weekly	14.11. - 05.12.2017	Bio Hörsaalgebäude AdM 3 - Besprechungsraum 36	
Wednesday	9:00am – 12:00pm	weekly	15.11. - 06.12.2017	Bio Hörsaalgebäude AdM 3 - Besprechungsraum 36	
Thursday	9:00am – 12:00pm	Singular event	16.11.2017		
Thursday	9:00am – 12:00pm	weekly	16.11. - 07.12.2017		

Contents	
Instructors	Parepa, Madalin , Dr. sc. nat. (responsible)
Prerequisites	
Course Description	<p>This course is about the ecological and evolutionary impact of global environmental change: about different kinds of observations (e.g. phenological changes, range shifts, extinctions, evolutionary changes), different ways of making predictions through models or experiments. We also examine interactions between different drivers of global change, and we discuss some of the ways how humans attempt to fix ecological problems caused by global change. Students thus learn about some fundamental ecological questions, but also about the methods and some of the most controversial debates in current global change research.</p> <p>The course is a mix of seminars given by the students, a couple of input lectures from the course teachers, and different kinds of group teaching activities.</p>

	The course language is English.
Methods of Assessment	<p>Receiving 6 CP and grading is based on:</p> <ul style="list-style-type: none"> • Regular attendance • Regular reading of the course literature • Active participation in discussion and group activities • At least one seminar presentation
Notes	
Literature	
Target Audience	<p>Biology Bachelor, 3rd year Biology Master, Ecology & Evolution Geoökologie Master</p>

Molecular and Cellular Proteomics (W2) (3037)

Basic Information	
Type of Course	Block seminar (4 weeks)
Course Number	3037
Credits	6 CP (ECTS)
Semester	WS 17/18
Frequency	
Hyperlink	http://www.pct.uni-tuebingen.de/
Language	English
Notes	

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes
Monday	09:00 - 11:00am	weekly.	13.11. - 27.11.2017	Verfügungsgeb. Morgenstelle - Seminarraum 1.034	Lecture / Seminar
Tuesday	09:00 - 11:00am	weekly	14.11. - 28.11.2017	Verfügungsgeb. Morgenstelle - Seminarraum 1.034	Lecture / Seminar
Wednesday	09:00 - 11:00am	weekly	15.11. - 22.11.2017	Verfügungsgeb. Morgenstelle - Seminarraum 1.034	Lecture
Thursday	09:00 - 11:00am	weekly	16.11. - 23.11.2017	Verfügungsgeb. Morgenstelle - Seminarraum 1.034	Lecture
Monday	11:00am - 12:00pm	Singular event	13.11.2017	Verfügungsgeb. Morgenstelle - Seminarraum 1.034	Introduction to seminar
Wednesday	11:00am - 12:00pm	Singular event	15.11.2017	Verfügungsgeb. Morgenstelle - Seminarraum 1.034	Practical Course Introduction
Monday	12:00 – 5:00pm	weekly	20.11. - 27.11.2017		Practical Course Group 1
Tuesday	12:00 – 5:00pm	weekly	21.11. - 28.11.2017		Practical Course Group 2
Wednesday	12:00 – 5:00pm	Singular event	22.11.2017		Practical Course Group 1
Thursday	12:00 – 5:00pm	Singular event	23.11.2017		Practical Course Group 2
Monday	11:00am - 12:00pm	Singular event	27.11.2017	Verfügungsgeb. Morgenstelle - Seminarraum 1.034	Seminar all groups

Thursday	11:00am - 12:00pm	Singular event	28.11.2017	Verfügungsgeb. Morgenstelle - Seminarraum 1.034	Seminar all groups
Wednesday	09:00am - 5:00pm	Singular event	29.11.2017	E-Bau [Bio] AdM 28 - Computerraum N13 / E3H07	Data Analysis
Thursday	09:00 - 11:00am	Singular event	07.12.2017	Verfügungsgeb. Morgenstelle - Seminarraum 2.033	Written Exam in room 2.033/2.034
Thursday	09:00 - 11:00am	Singular event	07.12.2017	Verfügungsgeb. Morgenstelle - Seminarraum 2.034	Written Exam in room 2.033/34
Wednesday	1:00 – 2:30pm	Singular event	29.11.2017	Verfügungsgeb. Morgenstelle - Seminarraum 2.034	
Wednesday	1:00 – 2:30pm	Singular event	29.11.2017	Verfügungsgeb. Morgenstelle - Seminarraum 2.033	Talk Prof. Bettina Warscheid

Contents	
Instructors	Macek, Boris , Prof. , Dr. rer. nat. (responsible)
Prerequisites	
Course Description	<p>Proteomics investigates global qualitative und quantitative changes of protein expression in cells, tissues or whole organisms and represents one of the youngest fields of molecular biology and medicine.</p> <p>Lecture: The aim of this course is to introduce the student to the basic principles of proteomics and most common methods currently used in global analysis of proteins.</p> <p>Practical Course: Students will get a hands-on experience in sample preparation for mass spectrometry; work on the state-of-the-art equipment for proteome analysis: nanoliquid chromatography (HPLC) coupled to a mass spectrometer, and will be introduced to basic bioinformatics analysis of proteomics data.</p> <p>Seminar: Seminars will cover and discuss the key literature from the field of proteomics which will include both the historical milestone articles and the current research. Topics will correlate to those covered by the lecture courses.</p>
Methods of Assessment	<p>6 Credits for biologists</p> <ul style="list-style-type: none"> • Seminar - Presentation • Practical Course - Report • Lecture - Written Exam
Notes	
Literature	
Target Audience	Bachelor - 3rd years students: Biology, Biochemistry, Bioinformatics

Regulatory Mechanisms in Gene Expression (W2) (3043)

Basic Information	
Type of Course	Block seminar (4 weeks)
Course Number	3043
Credits	6 CP (ECTS)
Semester	WS 17/18
Frequency	Every 2 nd semester.
Hyperlink	
Language	English
Notes	

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes
Monday	09:15 - 12:00	Singular event	13.11.2017	ZMBP AdM 32 - Besprecher 3 ZMBP 6N01	
-	09:15 - 11:00	Block	14.11. - 16.11.2017		
-	09:15 - 10:00	Block	20.11. - 23.11.2017		
-	10:15 - 18:00	Block	20.11. - 23.11.2017		
-	09:15 - 10:00	Block	27.11. - 30.11.2017		
-	10:15 - 18:00	Block	27.11. - 30.11.2017		
-	09:00 - 18:00	Block	04.12. - 06.12.2017		
Wednesday	10:15 - 16:00	Singular event	06.12.2017	ZMBP AdM 32 - Besprecher 3 ZMBP 6N01	

Contents	
Instructors	Chaban, Christina , Dr. rer. nat. (responsible)
Prerequisites	Module "Molekularbiologie II / Teil Pflanzenphysiologie"
Course Description	<p>Even though the genome contains information to produce thousands of protein and RNA-molecules, only a specific part is active at a specific time. This module introduces students to methods of solving problems regarding the regulation of gene expression in response to intra- and extracellular signals.</p> <p>The lecture is interactive and is concerned primarily with current topics of gene regulation control in plants in connection with signal perception, signal transmission, and signal response. Methods and techniques used in cell biology, molecular biology and biotechnology will be</p>

	<p>covered likewise. Knowledge of the latter will be deepened in the accompanying methodological seminars. Participants will presents selected methods to each other.</p> <p>The practical part focuses on the acquisition of cell biological, molecular and biotechnological methods.</p> <p>The module will finish with a literature seminar. Students will introduce and discuss current research topics from the field mentioned above.</p>
Methods of Assessment	Active participation in lecture, seminar, practical (attendance compulsory),
Notes	Lecture/seminar on Tuesdays in room 6R01.
Literature	
Target Audience	

Macroevolutionary and Microevolutionary Analysis (W3) (4007)

Basic Information	
Type of Course	Block seminar
Course Number	4007
Credits	6 CP (ECTS)
Semester	WS 17/18
Frequency	
Hyperlink	
Language	English
Notes	

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes
Monday	09:00am – 4:00pm	weekly	11.12.2017 - 08.01.2018	E-Bau [Bio] AdM 28 - Praktikum E4A20	
Monday	09:00am – 4:00pm	Singular event	15.01.2018	Bio Hörsaalgebäude AdM 3 - Praktikum/CIP- Pool 152	
Tuesday	09:00am – 4:00pm	weekly	12.12. - 19.12.2017	E-Bau [Bio] AdM 28 - Praktikum E4A20	
Tuesday	09:00am – 4:00pm	weekly	09.01. - 16.01.2018	Bio Hörsaalgebäude AdM 3 - Praktikum/CIP- Pool 152	
Wednesday	09:00am – 4:00pm	weekly	13.12. - 20.12.2017	E-Bau [Bio] AdM 28 - Praktikum E4A20	
Wednesday	09:00am – 4:00pm	Singular event	10.01.2018 - 10.01.2018	Bio Hörsaalgebäude AdM 3 - Praktikum/CIP- Pool 152	
Thursday	09:00am – 4:00pm	weekly	14.12. - 21.12.2017	E-Bau [Bio] AdM 28 - Praktikum E4A20	
Thursday	09:00am – 4:00pm	Singular event	11.01.2018	Bio Hörsaalgebäude AdM 3 - Praktikum/CIP- Pool 152	
Thursday	10:00am – 12:00pm	Singular event	18.01.2018	E-Bau [Bio] AdM 28 - Praktikum E4A20	exam

Contents	
Instructors	Foerster, Katharina , Prof. , Dr. rer. nat. (responsible)
Prerequisites	None.
Course Description	<p>1) Macroevolution: This is an introduction to phylogenetic inference from morphological and molecular data. It deals with basic principles such as maximum parsimony, genetic distances and probabilistic methods.</p> <p>2) Microevolution: This part introduces to the basics of</p>

	<p>population genetics and quantitative genetics. It deals with population and individual genetic variation, the causes of allele frequency changes, selection, heritability, and adaptation.</p> <p>Learning objectives:</p> <p>independent problem solving, application of specific computer software</p>
Methods of Assessment	regular participation, independent solution of practical problems, written exam.
Notes	<p>The lecture is held every day 9-12 am, the practical 13-16 pm.</p> <p>Questions about the course: sekretariat.zoologie@uni-tuebingen.de</p>
Literature	
Target Audience	MSc Biology / Biology Diplom, BSc Biology

Synthetic Biology (W3) (4135)

Basic Information	
Type of Course	Block seminar
Course Number	4135
Credits	6 CP (ECTS)
Semester	WS 17/18
Frequency	
Hyperlink	
Language	English
Notes	

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes
Monday	09:00am – 12:00pm	weekly	08.01. - 15.01.2018	ZMBP AdM 32 - Besprecher 3 ZMBP 6N01	
Monday	1:00 – 5:00pm	weekly	08.01. - 15.01.2018		
Tuesday	9:00 – 10:30am	weekly	09.01. - 16.01.2018	ZMBP AdM 32 - Besprecher 2 ZMBP 6R01	
Tuesday	10:30am – 5:00pm	weekly	09.01. - 16.01.2018		
Wednesday	5:15 – 6:15pm	Singular event	20.12.2017	ZMBP AdM 32 - Besprecher 3 ZMBP 6N01	
Wednesday	9:00 – 10:30am	weekly	10.01. - 17.01.2018	ZMBP AdM 32 - Besprecher 3 ZMBP 6N01	
Wednesday	10:30am – 5:00pm	weekly	10.01. - 17.01.2018		
Thursday	09:00 – 10:30am	Singular event	11.01.2018	ZMBP AdM 32 - Besprecher 3 ZMBP 6N01	
Thursday	10:30am – 5:00pm	Singular event	11.01.2018		
Thursday	09:00am – 4:00pm	Singular event	18.01.2018	ZMBP AdM 32 - Besprecher 3 ZMBP 6N01	
Thursday	4:00 – 6:00pm	Singular event	18.01.2018	ZMBP AdM 32 - Besprecher 3 ZMBP 6N01	exam

Contents	
Instructors	Lahaye, Thomas , o. Prof. , Dr. rer. nat. (responsible)
Prerequisites	
Course Description	This module give an introduction into methods used in

	<p>synthetic biology. Topics of our course will be the generation and use of so-called designer TALEs (Transcription Activator-Like Effectors; dTALEs) and TAL nucleases in in vitro and in planta assays. We will demonstrate their function as transcriptional activators and tools for genome engineering, respectively. Moreover, we will introduce to you the CLC Main Workbench software, an important tool for in silico cloning and sequence analyses.</p>
Methods of Assessment	Exam (not graded)
Notes	Preliminary meeting and topic allocation end of November/beginning of December.
Literature	
Target Audience	MSc. Biology (1 st – 3 rd semester)

Visual Ecology (W3) 4118)

Basic Information	
Type of Course	Block seminar
Course Number	4118
Credits	6 CP (ECTS)
Semester	WS 17/18
Frequency	Every 4 th semester.
Hyperlink	http://www.evoeco.uni-tuebingen.de/
Language	English
Notes	

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes
Monday	09:00am – 4:00pm	weekly	11.12.2017 - 15.01.2018	E-Bau [Bio] AdM 28 - Praktikum E5A20	
Tuesday	09:00am – 4:00pm	weekly	12.12.2017 - 16.01.2018	E-Bau [Bio] AdM 28 - Praktikum E5A20	
Wednesday	09:00am – 4:00pm	weekly	13.12.2017 - 17.01.2018	E-Bau [Bio] AdM 28 - Praktikum E5A20	
Thursday	09:00am – 4:00pm	weekly	14.12.2017 - 11.01.2018	E-Bau [Bio] AdM 28 - Praktikum E5A20	
Thursday	09:00am – 12:00pm	Singular event	18.01.2018	E-Bau [Bio] AdM 28 - Praktikum E5A20	Exam in E 5A20

Contents	
Instructors	Bitton, Pierre-Paul , Ph.D. (responsible)
Prerequisites	Background in basic zoology is mandatory. A background in ecology, evolution, neurobiology or physics is advantageous.
Course Description	<p>The goal of this course is to provide a good background in the evolution of animal visual systems in complex light environments, the role of vision in communication, how animal colouration coevolves with the light environment and more. The focus will be on terrestrial as well as aquatic (marine) systems, with an emphasis on vertebrates.</p> <p>This is a new course which is part of a larger programme in visual ecology. Complementary courses will be developed in the future - in cooperation with other groups in evolutionary ecology and neurobiology.</p> <p>The course will be taught by Dr. Pierre-Paul Bitton, an Canadian scientist with a background in bird visual ecology.</p> <p>The 2-hour lecture will be based on the books listed unter "literature". The 2-hour practical part will offer hands-on experience in spectrophotometry, eye anatomy, eye</p>

	diversity, types pigments, structural colours, as well as discussion of current literature and the design of experiments in this field.
Methods of Assessment	Based on the written exam and the performance in the practical part of the course <ul style="list-style-type: none"> • Written exam on the lecture at the end of the semester • Oral presentation on experimental design, written reports, weekly task sheets
Notes	Questions to nico.michiels@uni-tuebingen.de
Literature	Johnsen (2012) The Optics of Life. Princeton University Press Land & Nilsson (2012) Animal Eyes. Oxford Animal Biology Series. OUP, 2nd Edition
Target Audience	This course is intended for advanced undergraduates (3rd-Year Bachelor) and Master students. PhD students are also welcome to attend.

Cell Differentiation (W4) (4140)

Basic Information	
Type of Course	Block Seminar (4 weeks)
Course Number	4140
Credits	6 CP (ECTS)
Semester	SS 2018
Frequency	Every semester
Hyperlink	
Language	English
Notes	First meeting 23.01.2018, 9:00am. Verfügungsgebäude, AdM15, room 2.016

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes
	9:00am – 5:00pm	Block	22.01. – 15.02.2018		

Contents	
Instructors	Moussian, Bernard , PD , Dr. rer. nat. habil. (responsible)
Prerequisites	
Course Description	Students will study different mechanisms of cellular differentiation with the help of the model organism <i>Drosophila melanogaster</i> . Topics will be considered with regard to their publication history. It is important to recognize and formulate the research questions, to understand and evaluate the data on which it is based, and to draw conclusions from these findings. Students will report about their improvements on a daily basis (300words).
Methods of Assessment	Short daily reports and final report. (graded)
Notes	
Literature	
Target Audience	

Biostatistics I (Schiene – T/W/Th) (3010)

Basic Information	
Type of Course	Block seminar
Course Number	3010
Credits	6 CP (ECTS)
Semester	WS 17/18
Frequency	
Hyperlink	http://www.evoeco.uni-tuebingen.de
Language	English
Notes	

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes
Wednesday	08:00 - 09:00am	weekly	18.10.2017 - 07.02.2018	E-Bau [Bio] AdM 28 - Praktikum E5A20	
Thursday	08:00 - 09:00am	weekly	19.10.2017 - 01.02.2018	E-Bau [Bio] AdM 28 - Praktikum E5A20	
Tuesday	5:00 – 7:00pm	weekly	24.10.2017 - 06.02.2018	E-Bau [Bio] AdM 28 - Praktikum E5A20	Rehersal: parallel group 1
Thursday	08:00 - 10:00am	Singular event	07.12.2017	Hörsaalzentrum Morgenstelle - Seminarraum 7E02	exam 1, 08:00 - 10:00
Thursday	08:00 - 10:00am	Singular event	08.02.2018	Hörsaalzentrum Morgenstelle - Seminarraum 7E02	exam 2; 08:00 - 10:00

Contents	
Instructors	Michiels, Nico K. , o. Prof. , Dr. rer. nat. (responsible)
Prerequisites	Participants will need a laptop with the latest version of the freeware “R”, optimally accompanied by the interface “RStudio”
Course Description	<p>The content of this module (taught in English) is identical to the W4 block module “ Biostatistik I” (<i>taught in German</i>); Both courses are targeted at BSc and MSc students of Biology, Geocology and other Life Sciences, but the English version more explicitly invites first year MSc students who wish to better prepare for the obligatory Advanced Biometry course (then to be attended in the second year MSc).</p> <p>How do I optimally collect, organise, and analyse biological and ecological datasets? Which problems and pitfalls occur when preparing data for statistical analysis? How to identify the appropriate statistical test for my current dataset? How</p>

	<p>to interpret and report statistical output? Using the open source software R, this course offers an applied introduction to Biostatistics with applications to all quantitative fields of Biology and Ecology.</p> <p>This course is composed of (i) two introductory lectures (1h each) on Wednesday and Thursday, (ii), individual computer tasks where participants apply the acquired knowledge to real statistical datasets, and (iii) a 2h rehearsal seminar of each week's tasks on Tuesday.</p>
Methods of Assessment	Written exam.
Notes	Highly recommended for MSc students who don't yet feel comfortable with the application of standard statistical tests.
Literature	<p>Mc Killup S. (2011): Statistics explained. Cambridge University Press</p> <p>Quinn G. P., Keough M.J. (2003): Experimental Design and Data Analysis for Biologists. Cambridge Univ. Press.</p> <p>Dytham C. (2010) Choosing and using Statistics: A Biologist's Guide. 3rd edition. Wiley.</p>
Target Audience	MSc 1st year, BSc 3rd year. Students in Biology, Geocology, Medicine, Biochemistry, ...

Behavioural Ecology I (Schiene – M/F) (4052)

Basic Information	
Type of Course	Lecture
Course Number	4052
Credits	6 CP (ECTS)
Semester	WS 17/18
Frequency	
Hyperlink	
Language	English
Notes	

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes
Monday	5:00 – 6:00pm	Weekly	23.10.2017 – 05.02.2018	E-Bau [Bio] AdM 28 – Praktikum E4A20	
Friday	10:00am – 12:00pm	Weekly	20.10.2017 – 09.02.2018	E-Bau [Bio] AdM 28 – Praktikum E4A20	

Contents	
Instructors	Foerster, Katharina , Prof. , Dr. rer. nat. (responsible)
Prerequisites	
Course Description	<p>The lecture offers a broad introduction to the main topics in behavioural ecology. The participants will deepen their knowledge on selected topics in the seminar. Each participant will prepare an essay (review) and an oral presentation.</p> <p>Learning objectives:</p> <p>literature search, preparation of a scientific review, oral presentation of scientific content, leading a scientific discussion</p>
Methods of Assessment	regular participation, essay, oral presentation
Notes	for Information about the course contact katharina.foerster@uni-tuebingen.de
Literature	
Target Audience	BSc. / MSc. Biology

Essentials in Evolutionary Biology (Schiene – W/F) (4009)

Basic Information	
Type of Course	Block seminar
Course Number	4009
Credits	6 CP (ECTS)
Semester	WS 17/18
Frequency	
Hyperlink	
Language	English
Notes	

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes
Wednesday	5:00 – 7:00pm	Weekly	18.10.2017 – 07.02.2018	EvE Seminar in AdM3, N10; Hilgendorf Lecture in Hölderlinstr. 12, lecture hall S320	
Friday	08:00 – 10:00am	Weekly	20.10.2017 – 09.02.2018	E-Bau [Bio] AdM 28 – Praktikum E5A20	
Friday	08:00 – 10:00am	Singular event	02.02.2018	E-Bau [Bio] AdM 28 – Praktikum E5A20	exam

Contents	
Instructors	Michiels, Nico K. , o. Prof. , Dr. rer. nat. (responsible)
Prerequisites	
Course Description	<p>>>>>> IMPORTANT: <<<<<<<<</p> <p>FIRST SEMINAR: 18 OCTOBER at 5 pm Room N10 (Auf der Morgenstelle 3)</p> <p>FIRST LECTURE: 20 OCTOBER at 8 am Room E5A20 (Auf der Morgenstelle 28)</p> <p>Contact nico.michiels@uni-tuebingen.de for more information (in case you have not yet registered here in Campus).</p> <p>What is evolution? Although being simple in its essence, evolution has wide-ranging consequences across biology. Dealing with this is the purpose of this module.</p> <p>The seminar part (Wednesdays 1700-1900, room and schedule will be announced during first session) provides</p>

	<p>talks given by selected speakers from Tübingen or elsewhere, including top-scientists from abroad. Students are expected to attend at least 10 of these presentations and submit an abstract, which will be edited and marked.</p> <p>The lecture (Fridays 0800-1000, room E5A20, E-building Biology, 5rd floor) introduces essentials of modern evolutionary biology, with an emphasis on short-term processes (selection, adaptation, development) as well as long-term processes (speciation, extinction, phylogeny).</p> <p>This module is compulsory for MSc students in Evolution and Ecology.</p>
Methods of Assessment	<p>Evaluation is based on</p> <ul style="list-style-type: none"> • presence in the lecture and the seminar • abstracts of the seminar part • final written exam based on the material presented during the lecture
Notes	
Literature	<p>C. T. Bergstrom and L. A. Dugatkin (2012) Evolution. W. W. Norton & Co. (1st Edition)</p>
Target Audience	<p>This class is primarily aimed at students in the Master of Science in Evolution and Ecology. It is, however, also a good module for any other student in Biology (Bachelor or Master) and Geosciences (particularly Geo-Ecology, Palaeontology and Archaeology).</p>

Scientific Writing Skills (Schiene – M/T) (3074)

Basic Information	
Type of Course	Block seminar
Course Number	3074
Credits	6 CP (ECTS)
Semester	WS 17/18
Frequency	Every 2 nd semester.
Hyperlink	
Language	Englisc
Notes	

Dates Times Location					
Day	Time	Frequency	Duration	Room	Notes
Wednesday	8:00 – 9:00am	Singular event	18.10.2017	E-Bau [Bio] AdM 28 - Besprechungsraum E5P43	
Monday	1:00 – 6:00pm	Singular event	06.11.2017	E-Bau [Bio] AdM 28 - Besprechungsraum E5P43	
Tuesday	1:00 – 6:00pm	Singular event	07.11.2017	E-Bau [Bio] AdM 28 - Besprechungsraum E5P43	
Monday	1:00 – 6:00pm	Singular event	27.11.2017	E-Bau [Bio] AdM 28 - Besprechungsraum E5P43	
Tuesday	1:00 – 6:00pm	Singular event	28.11.2017	E-Bau [Bio] AdM 28 - Besprechungsraum E5P43	
Monday	1:00 – 6:00pm	Singular event	08.01.2018	E-Bau [Bio] AdM 28 - Besprechungsraum E5P43	
Tuesday	1:00 – 6:00pm	Singular event	09.01.2018	E-Bau [Bio] AdM 28 - Besprechungsraum E5P43	
Monday	1:00 – 6:00pm	Singular event	05.02.2018	E-Bau [Bio] AdM 28 - Besprechungsraum E5P43	
Tuesday	1:00 – 6:00pm	Singular event	06.02.2018	E-Bau [Bio] AdM 28 - Besprechungsraum E5P43	

Contents	
Instructors	Anthes, Nils , Dr. rer. nat. (responsible)
Prerequisites	All participants need to actively work on an own, individual writing project in parallel to this module. Previous experience shows that this should optimally (though not necessarily!) be a draft manuscript (for PhD students) or your current thesis (for BSc or MSc candidates). Working on other types of writing projects (e.g. excursion protocols,

	funding application) is possible but often less fruitful for participants. If in doubt, please contact the course advisor.
Course Description	<p>Following a first introductory meeting (Wed 18 Oct 8ct-9), this module consists of 8 half-day workshops. Each workshop has two introductory lectures and practical applications to your own writing project.</p> <p>Throughout the module, we develop the essential principles of scientific writing in the life sciences. This includes first steps to start a writing task, the detailed structure and components of scientific texts, techniques to achieve a consistent, coherent and unambiguous writing style, and approaches to revise and finalize scientific texts. We address the process of publishing scientific findings in primary journals (including details of the <i>submission</i> and <i>reviewing</i> process). Moreover, we discuss the extent to which writing style or structure differ between e.g. scientific papers and student theses. Finally, we will discuss the specificities of writing research proposals, funding applications as well as job applications.</p> <p>All participants apply the principles developed during the seminar sessions to their own current writing project (optimally your current draft of a scientific manuscript or thesis, but exceptions may apply). This includes structured reciprocal peer-feedback among students. Depending on the topic, the practical work varies between group components (jointly in the course room) and individual work at home (with individual time allocation but fixed submission dates).</p> <p>All participants have to prepare one seminar presentation. In between the four tandem-workshops, students (a) fulfill peer-feedback assignments and (b) continuously work on their individual writing project for final submission.</p>
Methods of Assessment	<ul style="list-style-type: none"> - Small written and oral tasks during seminar days. - Several home assignments. - Repeated reciprocal peer-feedback. - Final evaluation of writing task.
Notes	!! The proposed classroom dates collide with your other courses? Please get in contact with Nils Anthes and attend the introductory meeting. We try to solve scheduling problems where feasible.
Literature	<p>Day, R.A. & B. Gastel (2006): How to write & publish a scientific paper. 6th ed. Greenwood Press.</p> <p>Pechenik, J.A. (2007): A short guide to writing about biology. 6th ed.. Pearson Longman.</p> <p>More literature provided during the seminar sessions.</p>
Target Audience	Students of Biology, Geoecology, but also students of all other disciplines in the Life Sciences.