

Excerpt from the module catalogue (summer 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 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 | SS 2018 |
| 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 | SS 2018 |
| 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 Concepts in Cell Biology (Schiene – F) (4076)

| Basic Information | |
|-----------------------|---|
| Type of Course | Lecture |
| Course Number | 4076 |
| Credits | 3 CP (ECTS) |
| Semester | SS 2018 |
| Frequency | |
| Hyperlink | http://www.pct.uni-tuebingen.de |
| Language | English |
| Notes | |

| Dates Times Location | | | | | |
|--------------------------|---------------|-------------------|------------------------|---|-------|
| Day | Time | Frequency | Duration | Room | Notes |
| Friday | 2:30 – 4:00pm | Weekly | 20.04. – 20.07.2018 | Verfügungsgebäude Morgenstelle seminar room 2.033 | |
| Friday | 2:30 – 4:00pm | Singular event | 27.07.2018 | Verfügungsgebäude Morgenstelle seminar room 2.034 | exam |

| Contents | |
|------------------------------|--|
| Instructors | Macek, Boris , Prof. , Dr. rer. nat. (responsible) |
| Prerequisites | Basic knowledge of molecular cell biology OR Participation in lecture “Concepts in Cell Biology”. |
| Course Description | The content of this lecture course builds on the fore-running lecture ‘Concepts in Cell Biology’. Recent progress in essential topics of cell biology will be presented by the lecturers. Topics include: nuclear organisation, cell shape regulation, cell polarity, signal transduction, innate immunity, cancer & immunity, viral infection, cell cycle control, regulatory RNAs, vascular cell biology, stem cell biology and autophagy. |
| Methods of Assessment | Exam (graded) |
| Notes | Final place allocation on the first day of the lecture. This module is part of MCBI 4139 “Advanced Molecular Cell Biology”. |
| Literature | Relevant recent Literature will be distributed. General Lit.: Lodish et al., 2013, Molecular Cell Biology, 7th edition, Freeman & Company, New York |
| Target Audience | MSc Biology, especially with focus “Molecular Cell Biology & Immunology” |

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 I: Autoimmune Diseases (4109)

| Basic Information | |
|-----------------------|----------------|
| Type of Course | Block seminar |
| Course Number | 4109 |
| Credits | 1,5 CP (ECTS) |
| Semester | SS 2018 |
| Frequency | Every semester |
| Hyperlink | |
| Language | English |
| Notes | |

| Dates Times Location | | | | | |
|--------------------------|-------------------|-------------------|------------|---|---|
| Day | Time | Frequency | Duration | Room | Notes |
| Tuesday | 4:30 – 6:00 pm | Singular event | 05.06.2018 | Verfügungsgebäude Morgenstelle – seminar room 1.033 | Preliminary discussion as an introduction to the seminar “Autoimmune Diseases” |

| Contents | |
|------------------------------|---|
| Instructors | Klein, Reinhild , apl. Prof. , Dr. med. (responsible) |
| Prerequisites | BSc certificate Course may be attended by medical students from 3 clin. BSc certificate required for natural scientists. Prior knowledge of immunology essential, for example the lecture “Basic Immunology” or participation in the Master course Molecular Cell Biology & Immunology (MCBI). |
| Course Description | Introduction to basic immunological processes involved in autoimmune diseases. Autoimmune diseases in children, neuro-immunological diseases, HLA and association with autoimmune diseases, insights into clinical research. |
| Methods of Assessment | Presentation and discussion will be graded. |
| Notes | Medical Students please see TüKliF. Natural Scientists: Advanced Seminar I (1,5 CP) can be combined with the Cell Biology-Immunology Colloquium as a component of “Clinical Immunology”, Course No. 4137 (3 CP) (MCBI). |
| Literature | |
| Target Audience | Medical students from 3. Clinical term Natural scientists (MSc) Students participating in the Master Course “Molecular Cell Biology & Immunology (MCBI)” |

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 | SS 2018 |
| Frequency | Every semester. |
| Hyperlink | |
| Language | English |
| Notes | Journal Club |

| Dates Times Location | | | | | |
|--------------------------|----------------|-----------|--------------------|---|-------|
| Day | Time | Frequency | Duration | Room | Notes |
| Friday | 12:30 – 2:00pm | Weekly | 24.04 – 05.10.2018 | Verfügungsgebäude Morgenstelle – seminar room 2.034 | |
| Friday | 12:30 – 2:00pm | Weekly | 24.04 – 05.10.2018 | 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” |

Autophagy & Longevity (Schiene – M) (4073)

| Basic Information | |
|-----------------------|-------------------|
| Type of Course | Lecture / seminar |
| Course Number | 4073 |
| Credits | 6 CP (ECTS) |
| Semester | SS 2018 |
| Frequency | |
| Hyperlink | |
| Language | English |
| Notes | |

| Dates Times Location | | | | | |
|--------------------------|---------------|----------------|--------------------|---|------------------------------------|
| Day | Time | Frequency | Duration | Room | Notes |
| Monday | 5:30 – 6:30pm | Singular event | 16.04.2018 | Verfügungsgebäude Morgenstelle – seminar room 2.034 | Preliminary discussion (mandatory) |
| Monday | 5:00 – 6:30pm | Singular event | 16.04.2018 | Verfügungsgebäude Morgenstelle – seminar room 2.033 | |
| Monday | 5:15 – 6:00pm | Weekly | 30.04 – 28.07.2018 | Verfügungsgebäude Morgenstelle – seminar room 2.034 | Lecture |
| Monday | 5:15 – 6:00pm | Weekly | 30.04 – 28.07.2018 | Verfügungsgebäude Morgenstelle – seminar room 2.033 | |
| Monday | 6:15 – 7:00pm | Weekly | 30.04 – 28.07.2018 | Verfügungsgebäude Morgenstelle – seminar room 2.033 | Seminar |
| Monday | 6:15 – 7:00pm | Weekly | 30.04 – 28.07.2018 | Verfügungsgebäude Morgenstelle – seminar room 2.034 | |

| Contents | |
|------------------------------|--|
| Instructors | Proikas-Cezanne, Tassula , apl. Prof. , Dr. rer. nat. (responsible) |
| Prerequisites | BSc in biology, biochemistry, molecular medicine. Exceptions possible upon request (email tassula.proikas-cezanne@uni-tuebingen.de). |
| Course Description | This lecture and seminar series (6 CP) will provide an in-depth introduction to the process of autophagy, focusing on the role of autophagy in longevity and age-related human diseases (such as cancer, neurodegeneration). |
| Methods of Assessment | Attendance, seminar presentation, written exam. |
| Notes | |

| | |
|------------------------|--|
| Literature | Literature will be provided for each participant and distributed at the preliminary discussion |
| Target Audience | Master students (biology, biochemistry, molecular medicine). Master students specializing in cell biology/immunology are encouraged to attend. BSc students with a particular interest in autophagy are also welcome. |

General Genetics (4020)

| Basic Information | |
|-----------------------|---------------|
| Type of Course | Block seminar |
| Course Number | 4020 |
| Credits | 12 CP (ECTS) |
| Semester | |
| Frequency | |
| Hyperlink | |
| Language | English |
| Notes | |

| Dates Times Location | | | | | |
|--------------------------|----------------|----------------|------------|--|-----------------------------------|
| Day | Time | Frequency | Duration | Room | Notes |
| Monday | 12:15 – 1:15pm | Singular event | 16.04.2018 | ZMBP,6. Floor, 6N19 | Preliminary discussion, set dates |
| Friday | 1:15 – 3:15pm | Singular event | 03.08.2018 | ZMBP, AdM 32 – Besprecher 2 ZMBP 6R01 | Poster presentation |

| 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. |

Cells on Drugs Inhibitors and Mutants in Cell Biology

| Basic Information | |
|-----------------------|------------------------|
| Type of Course | Block seminar (1 week) |
| Course Number | |
| Credits | 6 CP (ECTS) |
| Semester | |
| Frequency | Every semester |
| Hyperlink | |
| Language | English |
| Notes | |

| Dates Times Location | | | | | |
|--------------------------|------------------|---------------|--------------------|---|-------|
| Day | Time | Frequency | Duration | Room | Notes |
| | 9:00am – 5:00pm | Block seminar | 17.09 – 21.09.2018 | ZMBP AdM 32 – kleines Praktikumslabor ZMBP 4U14 | |
| | 11:00am – 5:00pm | Block Seminar | 27.09 – 28.09.2018 | ZMBP AdM 32 – Besprecher 2 ZMBP 6R01 | |

| Contents | |
|------------------------------|--|
| Instructors | Richter, Sandra, Dr. rer. nat. (responsible) |
| Prerequisites | |
| Course Description | <p>Vesicle trafficking is important for the viability and development of all organisms. Chemical inhibitors are potent tools in cell biology as they allow the analysis of different trafficking routes and facilitate the localization of proteins.</p> <p>In this module, students will use confocal laser scanning microscopy to learn which trafficking routes exist in plants and which inhibitors can be used to block them. Furthermore, physiological experiments will demonstrate how crucial vesicle trafficking is.</p> |
| Methods of Assessment | |
| Notes | 1 week of daily practical seminars, including a lecture. |
| Literature | |
| Target Audience | Master Biology |

Computational Ecology: Ecological modelling using differential equations (Schiene – M/W) (4209)

| Basic Information | |
|-----------------------|--------------------------------|
| Type of Course | Seminar |
| Course Number | 4209 |
| Credits | 6 CP (ECTS) |
| Semester | SS 2018 |
| Frequency | Every 2 nd semester |
| Hyperlink | |
| Language | English |
| Notes | |

| Dates Times Location | | | | | |
|--------------------------|---------------|-----------|--------------------|---|-------|
| Day | Time | Frequency | Duration | Room | Notes |
| Monday | 5:00 – 7:00pm | Weekly | 16.04 – 23.07.2018 | Bio Hörsaalgebäude AdM 3 - Praktikum/CIP-Pool 152 | |
| Wednesday | 5:00 – 7:00pm | Weekly | 18.04 – 25.07.2018 | Bio Hörsaalgebäude AdM 3 - Praktikum/CIP-Pool 152 | |

| Contents | |
|---------------------------|---|
| Instructors | Allhoff, Korinna , Dr. rer. nat. (responsible) |
| Prerequisites | <p>The participation in the course "Systemanalyse" held by Christiane Zarfl as part of the Bachelor of Science in Geoeology is a useful (but not compulsory) preparation.</p> <p>Students with very little experience in programming are explicitly welcome. All mathematical techniques and all programming skills will be explained when needed so that no special prior knowledge is required.</p> |
| Course Description | <p>Models provide a virtual laboratory where different hypotheses can be tested with very little effort. They can help to identify important mechanisms, to inspire targeted experiments, to understand the dynamics within complex ecosystems and to predict their responses to disturbances and environmental change. In some cases, models can even help to answer ecological questions that are otherwise difficult to address, for example because experiments would be too expensive, too complex, or ethically problematic.</p> <p>This course is at the same time an introduction to modeling, an introduction to programming and a repetition of basic ecological principles. Each week, we will start with an ecological question, translate this question into a mathematical model and investigate this model using</p> |

| | |
|------------------------------|---|
| | <p>analytical tools and computer simulations. We will start with simple models describing the growth of single populations (such as exponential or logistic growth), then move on to models of pairwise species interactions (such as predation or competition), and finally investigate more complex systems (including, for example, more than two species, adaptive behavior or spatial dynamics). Each model will be analyzed in an interactive manner, with lots of opportunities for practical hands-on experiences. The simulation results will be discussed in depth, allowing for detailed discussions of the underlying ecological principles.</p> <p>We will use iPython notebooks to run our simulations. Python is an easy to learn, high-level programming language for general-purpose programming. It is freely available and universally applicable, which makes it a powerful tool for various projects both inside and outside academia. The notebooks contain plain text as well as executable code. They run on all commonly used platforms and can be edited in a normal browser, which ensures a quick and uncomplicated start even for total beginners.</p> |
| Methods of Assessment | <p>The evaluation is based on three short written exams (covering theoretical concepts in ecology and basic mathematical skills, 20% each) and a programming exercise at the end of the semester (40%). The course scores 6 ECTS.</p> |
| Notes | <p>It will be beneficial to work with your own computer, especially for the modeling exercise at the end of the course. No classes during week of 21st of May 2018.</p> |
| Literature | <p>Murray, James D. Mathematical biology I: an introduction. Springer-Verlag, 2002.</p> <p>Gotelli, Nicholas J. A primer of ecology. Sunderland, Sinauer Associates, 1995.</p> <p>May, Robert. Theoretical ecology: principles and applications. Oxford University Press, 2007.</p> <p>Strogatz, Steven H. Nonlinear dynamics and chaos: with applications to physics, biology, chemistry, and engineering. Westview press, 2014.</p> <p>Rossant, Cyrille. IPython interactive computing and visualization cookbook. Packt Publishing Ltd, 2014.</p> |
| Target Audience | <p>The course is primarily aimed at students in the Master of Science in Evolution and Ecology or Geoecology, but students of other master programs, as well as PhD students, are also welcome.</p> |

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

| Basic Information | |
|-----------------------|-------------|
| Type of Course | Seminar |
| Course Number | 4156 |
| Credits | 3 CP (ECTS) |
| Semester | SS 2018 |
| Frequency | |
| Hyperlink | |
| Language | English |
| Notes | |

| Dates Times Location | | | | | |
|--------------------------|----------------|-----------|---------------------|--|-------|
| Day | Time | Frequency | Duration | Room | Notes |
| Friday | 9:00 – 11:00am | Weekly | 20.04. – 27.07.2018 | 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: Neotropic diversity of adaptations, a glance through plant physiology and plant-animal interactions

| Basic Information | |
|-----------------------|--------------------------------|
| Type of Course | Field Trip (35 days) |
| Course Number | |
| Credits | 9 CP (ECTS) |
| Semester | SS 2018 |
| Frequency | Every 2 nd semester |
| Hyperlink | |
| Language | English |
| Notes | |

| Dates Times Location | | | | | |
|--------------------------|------|-----------|----------|------|-------|
| Day | Time | Frequency | Duration | Room | Notes |
| | | | | | |

| Contents | |
|------------------------------|---|
| Instructors | Harter, Klaus , o. Prof. , Dr. rer. nat. (responsible) |
| Prerequisites | |
| Course Description | <p>In this course students will learn about the primary motors for biological diversification regarding plant physiology and interactions with animals throughout different ecosystems of Colombia. We aim to observe and discuss the interface of Plant-Animal-Human interactions across different landscapes and ecosystems, highlighting the importance of each player within these relationships.</p> <p>By means of field observations we will also address following phenomena:</p> <ul style="list-style-type: none"> - How the geospatial location of Colombia and its geological conditions allow a great diversity in species and physiological adaptations that can be observed all across the country. - How this great pool of genetic variation and abundance of physiological adaptations make it a unique batch of resources for food production, livestock, pharmacy, raw material industries and ground research. |
| Methods of Assessment | <p>2 days of seminar in Tuebingen</p> <p>35 days of field trip</p> <p>Graded seminar presentations and protocols.</p> |

| | |
|------------------------|---|
| | <ul style="list-style-type: none"> • 1h of weekly meeting with one of the module directors during 4 weeks before the seminar presentations to discuss literature research and presentation content • 1h presentation plus discussion in Tuebingen • appr. 30min summary presentation at topic-relevant location in Colombia • Excursion report |
| Notes | <p>There will be an introduction in February.</p> <p>If you would like to participate please register for this talk with the same name in the Wintersemester 2017/18.</p> <p>The field trip itself will take place in September 2018, Estimated costs 3.500€.</p> <p>For questions please contact:</p> <p>Juan Suarez, juan.suarez@zmbp.uni-tuebingen.de, or Felipe Sehuanes, juan-felipe.sehuanes@student.uni-tuebingen.de</p> |
| Literature | Will be handed out after students are officially enrolled in the course. |
| Target Audience | <p>Bachelor students in Biology and Geoecology in at least the third study year (all basic modules have to be completed successfully)</p> <p>Master students in Biology and Geoecology;</p> <p>PhD students in Biology and Geoecology</p> |

Field Trip: Sensory Systems in Natural Environments (3150)

| Basic Information | |
|-----------------------|-------------|
| Type of Course | Field Trip |
| Course Number | 3150 |
| Credits | 6 CP (ECTS) |
| Semester | SS 2018 |
| Frequency | |
| Hyperlink | |
| Language | English |
| Notes | |

| Dates Times Location | | | | | |
|--------------------------|-----------------|-----------|--------------------|------------|-------|
| Day | Time | Frequency | Duration | Room | Notes |
| | 9:00am – 5:00pm | Daily | 18.07 – 02.08.2018 | Field Trip | |

| Contents | |
|---------------------------|--|
| Instructors | Benda, Jan , Prof. , Dr. rer. nat. (responsible) |
| Prerequisites | |
| Course Description | <p>Sensory systems and communication behaviors show a large diversity even in closely related species. This diversity results among other things from adaptation to highly specific natural habitats and from evolution of intraspecific communication. Despite that, studies of sensory systems are usually limited to a small number of established model systems in a few model species, done in well controlled laboratory conditions with standard stimuli. In our field course we want to analyze the richness and variability of natural stimuli and interfering noise signals in the natural habitats. At the same time we want to study behavior and sensory physiology in different species to see how they use their sensory systems in these environments. Through this comparative approach we want to send sensory systems from the lab back into their natural context.</p> <p>The dry meadows of Slovenian Karst boost with high density of different insect species. There we will focus on the songs and the auditory system of grasshoppers and bush-crickets. Both behavioral observations and experiments as well as electrophysiological recordings in the lab and in the field are the focus of the field trip. In addition we will have little projects on vibrational communication in Cicadinae, insect vision, and filiform</p> |

| | |
|------------------------------|--|
| | <p>sensilla in bugs (Heteroptera).</p> <p>Organizers: Prof. Jan Benda, University Tübingen, Germany, and Ales Skorjanc, University Ljubljana, Slovenia.</p> |
| Methods of Assessment | Report, short presentation. |
| Notes | <p>Date for a first meeting will be announced in due time.</p> <p>Interested students from both Germany and Slovenia are welcome to participate.</p> <p>Students from Slovenia: to register please contact Jan Benda (jan.benda@uni-tuebingen.de) or Ales Skorjanc (ales.skorjanc@bf.uni-lj.si).</p> |
| Literature | |
| Target Audience | Bachelor Biology, Master Neurobiology/Ecology/... |

Field Trip: Tropical Marine Ecology (3066)

| Basic Information | |
|-------------------|---|
| Type of Course | Block (4 weeks; 2 weeks seminar + 2 weeks field trip) |
| Course Number | 3066 |
| Credits | 6 CP (ECTS) |
| Semester | SS 2018 |
| Frequency | |
| Hyperlink | http://www.evoeco.uni-tuebingen.de/ |
| Language | English |
| Notes | |

| Dates Times Location | | | | | |
|--------------------------|------|-----------|----------|------|-------|
| Day | Time | Frequency | Duration | Room | Notes |
| | | | | | |

| Contents | |
|--------------------|---|
| Instructors | Michiels, Nico K. , o. Prof. , Dr. rer. nat. (responsible) |
| Prerequisites | |
| Course Description | <p>Information and registration to nico.michiels@uni-tuebingen.de and registration via Campus</p> <p>This 4-week block module (6 CP) consists of 3 components:</p> <p>(1) Blockseminar (2 days; <i>some time in Summer 2018</i>): During a 2-day block seminar in Tübingen, students present recent research and study approaches with relevance to the biology and ecology of coral reef organisms. Moreover, on a half-day trip to the Wilhelma Zoo in Stuttgart, we will familiarize with the most relevant coral reef fish families. The detailed schedule for the seminar and Wilhelma excursion will be fixed in agreement with the course participants.</p> <p>(2) 14-day excursion (September 2018) to Mangrove Bay, South of El Qusair, Red Sea (Egypt): During the first 3-4 days, participants familiarize with the coral reef ecosystem, its inhabitants and functional groups, at the highly diverse Mangrove Bay house reef, which includes the full gradient from exposed reef slopes to shallow Mangrove forests. As the central course component, students then develop - based on their own field observations - small independent research projects. Students first formulate a research hypothesis based on their observations, then develop a convincing (observational or experimental) study design to evaluate their hypothesis, and finally collect a statistically meaningful dataset for quantitative analysis. All projects will be extensively and critically discussed and evaluated during daily progress meetings.</p> |

| | |
|------------------------------|--|
| | <p>All research projects (individually or in small teams) will be briefly presented to the hotel guests. The excursions further excludes short trips into the adjacent desert, a visit to the nearby small egyptian town of El Quseir, and a full-day boat trip.</p> <p>All projects will be performed on snorkelling. SCUBA diving is possible, but not required. Partipants with a diving certificate and insurance can dive (usually, the majority of students does not dive).</p> <p>(3) Post-excursion practical (<i>dates to be agreed upon, some time in October depending on student schedules at the beginning of the winter term</i>): We will jointly analyze the data collected during the field trip. All participants finally develop a short scientific paper to report about their project.</p> <p>The course block will be completely taught in English.</p> <p>All students interested in this excursion must informally register as soon as possible starting 31 January until 31 March 2017 via the Campus website. This registration is initially not binding - but you will then automatically be kept updated about final registration procedures. Given that booking with the travel agent needs to fixed very soon, early registrants have a higher likelihood to be accepted for the course!</p> <p>Costs: For students immatriculated at Tübingen university, we can offer the course at € 900,-pp.</p> <p>This price includes travel & visum, accommodation (twin rooms), extensive half-board catering, on-site snorkeling and a 1-day boat-trip. The price is subsidized by the university and the Animal Evolutionary Ecology group.</p> <p>The price excludes lunches & drinks (expect ~50-90 € in total pp), rental of snorkeling gear if necessary (wetsuits for free rent at our department). We recommend purchasing your own snorkel, mask and open water fins incl. neoprene booties), scuba diving (= expect 20 € per dive) + required gear.</p> <p>For further information, you may also contact the course provider.</p> |
| Methods of Assessment | <p>Talk in the preparatory seminar</p> <p>Development of independent research project during the excursions, including a short written research proposal</p> <p>Paper-style project report.</p> |
| Notes | <p>Introductory meeting tba., 17ct, E-Bau Morgenstelle, E5 P43</p> |
| Literature | |
| Target Audience | <p>Phd students; Lehramt/Bachelor/Master students in Biology, Geocology, or related fields.</p> |

Frontiers in Plant Ecology (Schiene – M)

| Basic Information | |
|-----------------------|-------------|
| Type of Course | Seminar |
| Course Number | |
| Credits | 2 CP (ECTS) |
| Semester | SS 2018 |
| Frequency | |
| Hyperlink | |
| Language | English |
| Notes | |

| Dates Times Location | | | | | |
|--------------------------|------------------|-----------|------------------------|------|-------|
| Day | Time | Frequency | Duration | Room | Notes |
| Monday | 2:30 – 3:30pm | Weekly | 23.04 – 09.07.2018 | | |
| Monday | 2:30 – 3:30pm | Weekly | 16.07. – 23.07.2018 | | |

| Contents | |
|------------------------------|--|
| Instructors | Bossdorf, Oliver , Prof. , Dr. sc. nat. (responsible) |
| Prerequisites | |
| Course Description | In this course we discuss current research frontiers in plant ecology, based on a cluster of recent papers for each. Before each semester, the topics are determined bottom-up (suggestions by all, then voting) by the interested members of the Plant Ecology and Plant Evolutionary group. In the last year, the frontier topics included e.g. the ecology and evolution of plants in cities, ecological genomics and epigenomics, the ecology of allelopathic interactions, and big data in plant invasion biology. In addition to the topic clusters selected a priori, there are also a few “wildcard” dates where other current papers are discussed in a classic journal-club style. |
| Methods of Assessment | Students who regularly participate and read the literature, and prepare at least one discussion with an introduction/summary of an article can obtain 2 CP. The grading will be based on the quality of this preparation, as well as on the general involvement in the discussions. MSc students can count the course within the module “Advanced Plant Evolutionary Ecology II (4133). |
| Notes | MSc or PhD students who are interested in joining the course should write to Anna (anna.lampe-bucharova@uni- |

| | |
|------------------------|---|
| | tuebingen.de) |
| Literature | |
| Target Audience | MSc in Evolution & Ecology, MSc Geoecology, PhD in ecology or evolutionary biology (e.g. EVEREST at University of Tübingen or EDGE Track at PhD program of MPI). The course is particularly suitable for MSc and PhD students interested in plant ecology who already have some background in ecology and some experience with doing science. |

Fundamentals of Sensorimotor Integration (Schiene – M) (4085)

| Basic Information | |
|-----------------------|-------------|
| Type of Course | Lecture |
| Course Number | 4085 |
| Credits | 3 CP (ECTS) |
| Semester | SS 2018 |
| Frequency | |
| Hyperlink | |
| Language | English |
| Notes | |

| Dates Times Location | | | | | |
|--------------------------|-------------------|-----------|-----------------------|--|-------|
| Day | Time | Frequency | Duration | Room | Notes |
| Monday | 2:00 – 4:00 pm | Weekly | 16.04 – 23.07.2018 | E-Bau [Bio] AdM 28 – seminar room E7A23 | |

| Contents | |
|------------------------------|--|
| Instructors | Ilg, Uwe , apl. Prof. , Dr. rer. nat. (responsible) |
| Prerequisites | |
| Course Description | <p>The lecture provides an overview of sensorimotor integration in the animal kingdom, including man. One of the hallmarks of sensorimotor integration is the modification of sensory processing by ongoing executed motor actions. Since many motor actions are consequences of sensory stimuli, sensorimotor integration can be explained as a closed-loop feed-back system. The examples presented in the lecture extend from simple reactions and its learning-related modifications in the marine snail <i>Aplysia</i> to the complex eye movement pattern reflecting cognitive abilities in humans. The use of sub-human primates in this research is explained and justified in detail by different examples. On several occasions, basic principles of learning are addressed; the neuronal substrate of motor learning and adaptation is explained in detail. Tool use and tool fabrication observed by the Caledonian crows are introduced. The lecture places special emphasis on the visual system. Nevertheless, examples from other modalities such as the electric sense, the mechanism of echolocation and the importance of whiskers for prey detection in blindfolded seals are presented as well.</p> |
| Methods of Assessment | Written exam, graded. |

| | |
|------------------------|--|
| Notes | |
| Literature | Most of the topics are covered in standard neuroscience and/or animal physiology textbooks. Please browse the respective categories of textbooks in the Graduate School's library. Specific readings will be provided during the lectures. |
| Target Audience | |

Introduction to Scientific Communication (Schiene – Th) (4057)

| Basic Information | |
|-----------------------|-------------|
| Type of Course | Seminar |
| Course Number | 4057 |
| Credits | 6 CP (ECTS) |
| Semester | |
| Frequency | |
| Hyperlink | |
| Language | English |
| Notes | |

| Dates Times Location | | | | | |
|--------------------------|----------------|----------------|--------------------|------|-------|
| Day | Time | Frequency | Duration | Room | Notes |
| Monday | 9:00 – 10:00am | Singular event | 16.04.2018 | | |
| Thursday | 5:00 – 6:00pm | Weekly | 19.04 – 26.07.2018 | | |

| Contents | |
|------------------------------|--|
| Instructors | Heilbronner, Simon , Dr. rer. nat. (responsible) |
| Prerequisites | 1 st year MSc in Biology |
| Course Description | <p>During this module, participants are acquainted with techniques on how to deal with scientific data. Participants will regularly attend lectures of external speakers taking place on Thursdays 5:15 - 6:30 pm, alternating at seminar rooms in the Biology department (E-building, 3rd floor, N12) and the Medical Microbiology (Elfriede-Aulhorn Str.). At the end of the module, participants are expected to compose a one-page report (including an abstract) for every attended lecture. Therein, the topic of the respective lecture and key results are to be presented and discussed in the light of related literature. Participants are guided in detailing scientific problems, pointing out data and results in a logical and comprehensive way. Lectures are usually announced one or two days in advance. Finally, participants are expected to attend an (inter)national conference and actively participate by presenting a poster as a co-author.</p> |
| Methods of Assessment | Written reports, protocols (50%), poster (50%) |
| Notes | Lectures of external speakers take place on Thursdays 5:15 - 6:30 pm, alternating at |

| | |
|------------------------|--|
| | <p>Location: seminar rooms in the Biology department (E-building, 3rd floor, N12) and the Medical Microbiology (Elfriede-Aulhorn Str.).</p> <p>Lectures are usually announced one or two days in advance.</p> |
| Literature | |
| Target Audience | |

Modern Methods of Flow Cytometry (S2)

| Basic Information | |
|-----------------------|-------------------------|
| Type of Course | Block seminar (4 weeks) |
| Course Number | |
| Credits | 6 CP (ECTS) |
| Semester | SS 2018 |
| Frequency | Every semester |
| Hyperlink | |
| Language | English |
| Notes | |

| Dates Times Location | | | | | | |
|--------------------------|------------------|----------------|-------------------------|---|---|---------------------|
| Day | Time | Frequency | Duration | Room | | Notes |
| Friday | 1:00 – 2:00pm | Singular event | 20.04.2018 | ZMBP AdM32 Besprecher 2 ZMBP 6R01 | – | Preparatory meeting |
| | 9:00 – 11:00am | Block event | 14.05 – 18.05.2018 | ZMBP AdM32 Besprecher 3 ZMBP 6R01 | – | Lecture |
| | 11:00am – 1:00pm | Block event | 15.05 – 17.05.2018 | | | Lab practical |
| | 9:00 – 11:00am | Block event | 21.05.2018 - 24.05.2018 | ZMBP AdM32 Besprecher 3 ZMBP 6R01 | – | Lecture |
| | 11:00am – 1:00pm | Block event | 21.05.2018 - 24.05.2018 | | | Lab practical |
| | 9:00 – 11:00am | Block event | 28.05.2018 - 31.05.2018 | ZMBP AdM32 Besprecher 3 ZMBP 6R01 | – | Lecture |
| | 11:00am – 1:00pm | Block event | 28.05.2018 - 31.05.2018 | | | Lab practical |
| | 9:00 – 11:00am | Block event | 04.06.2018 - 07.06.2018 | ZMBP AdM32 Besprecher 3 ZMBP 6R01 | – | Lecture |
| | 11:00am – 1:00pm | Block event | 04.06.2018 - 07.06.2018 | | | 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 |

| | |
|------------------------------|--|
| | <ul style="list-style-type: none"> - 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 |

Molecular Plant Physiology (Schiene – Th) (4018)

| Basic Information | |
|-----------------------|--------------------------------|
| Type of Course | Lecture |
| Course Number | 4018 |
| Credits | 6 CP (ECTS) |
| Semester | SS 2018 |
| Frequency | Every 2 nd semester |
| Hyperlink | |
| Language | English |
| Notes | |

| Dates Times Location | | | | | |
|--------------------------|-----------------|-----------|--------------------|---|-------|
| Day | Time | Frequency | Duration | Room | Notes |
| Thursday | 5:00 – 7:00pm | Weekly | 19.04 – 12.07.2018 | ZMBP Adm 32 – Besprecher 2 ZMBP 6R01 | |
| Thursday | 9:00am – 1:00pm | Weekly | 19.07 – 26.07.2018 | ZMBP Adm 32 – Besprecher 3 ZMBP 6N01 | |
| Thursday | 1:00 – 6:00pm | Weekly | 19.07 – 26.07.2018 | ZMBP Adm 32 – Besprecher 3 ZMBP 6N01 | |

| Contents | |
|------------------------------|--|
| Instructors | Oecking, Claudia , Prof. , Dr. rer. nat. (responsible) |
| Prerequisites | |
| Course Description | <p>The lecture addresses current topics in molecular plant physiology and is accompanied by a seminar which allows an in depth study of the research introduced in the lectures</p> <p>Topics:</p> <ul style="list-style-type: none"> - Molecular Phytobiology - Molecular physiology of hormone effects - Molecular physiology of abiotic stress perception - Analysis of cellular signal mediators and modulators - Phytochemicals - miRNAs and other small RNAs - functional genome analysis |
| Methods of Assessment | 60% seminar, 40% practical |
| Notes | |
| Literature | |
| Target Audience | 1 st – 3 rd MSc semester |

Current Topics in General Genetics (Schiene – T) (4014)

| Basic Information | |
|-----------------------|-----------------|
| Type of Course | Lecture/seminar |
| Course Number | 4014 |
| Credits | 6 CP (ECTS) |
| Semester | SS 2018 |
| Frequency | |
| Hyperlink | |
| Language | English |
| Notes | |

| Dates Times Location | | | | | |
|--------------------------|-----------------|----------------|--------------------|---|---------|
| Day | Time | Frequency | Duration | Room | Notes |
| Tuesday | 5:15 – 6:15pm | Singular event | 17.04.2018 | ZMBP AdM32 – Besprecher 2 ZMBP 6R01 | |
| Tuesday | 5:15 – 7:15pm | Weekly | 24.04 – 17.07.2018 | ZMBP AdM32 – Besprecher 2 ZMBP 6R01 | Lecture |
| Tuesday | 9:15am – 5:00pm | Singular event | 24.07.2018 | ZMBP AdM32 – Besprecher 2 ZMBP 6R01 | Seminar |

| Contents | |
|------------------------------|---|
| Instructors | Lahaye, Thomas , o. Prof. , Dr. rer. nat. (responsible) |
| Prerequisites | |
| Course Description | The lecture provides an overview of current research topics in General Genetics and Molecular Plant Biology. Tutorials accompanying the lecture will discuss the topics in more detail. Participants will develop small research projects for the topics and write an application for the research project, which they will present in the seminar. |
| Methods of Assessment | Seminar participation and application for the research project. |
| Notes | Preparatory meeting and distribution of topics on the 17.04.2018. |
| Literature | Literature will be announce via e-mail prior to the course. |
| Target Audience | MSc. 1 st – 3 rd semester |

Experimental Design (S1) (4197)

| Basic Information | |
|-----------------------|-------------------------|
| Type of Course | Block seminar (4 weeks) |
| Course Number | 4197 |
| Credits | 6 CP (ECTS) |
| Semester | SS 2018 |
| Frequency | Every semester |
| Hyperlink | |
| Language | English |
| Notes | |

| Dates Times Location | | | | | |
|--------------------------|-----------------|-----------|--------------------|--------------------------------------|-------|
| Day | Time | Frequency | Duration | Room | Notes |
| Monday | 9:00am – 5:00pm | Weekly | 16.04 – 07.05.2018 | E-Bau [Bio] AdM 28 - Praktikum E4A20 | |
| Tuesday | 9:00am – 5:00pm | Weekly | 17.04 – 08.05.2018 | E-Bau [Bio] AdM 28 - Praktikum E4A20 | |
| Wednesday | 9:00am – 5:00pm | Weekly | 18.04 – 09.05.2018 | E-Bau [Bio] AdM 28 - Praktikum E4A20 | |
| Thursday | 9:00am – 5:00pm | Weekly | 19.04 – 03.05.2018 | E-Bau [Bio] AdM 28 - Praktikum E4A20 | |

| Contents | |
|---------------------------|--|
| Instructors | Bitton, Pierre-Paul , Ph.D. (responsible) |
| Prerequisites | Competent knowledge of biology. |
| Course Description | <p>Through the presentation of pre-existing examples and ideas developed by the students, this module will emphasize the central importance of formulating strong hypotheses which are to be addressed by conducting well planned and executed experimental/sampling designs. The module is taught entirely in English.</p> <p>The students will</p> <ul style="list-style-type: none"> • learn to optimize experimental and sampling designs • learn to critically evaluate the design of an experiment • learn how to formulate constructive criticism, and how to accept criticism • improve their evaluation of published scientific articles, critically investigating for potential errors in their methodology, particularly experimental design • improve their English language skills |

| | |
|------------------------------|---|
| Methods of Assessment | Assignment or written report. |
| Notes | |
| Literature | t.b.a. |
| Target Audience | Master's degree programs of the Department of Biology, if applicable related degree courses of sciences or medicine |

Marine Biology (S1) (3169)

| Basic Information | |
|-----------------------|--------------------------------|
| Type of Course | Block seminar (4 weeks) |
| Course Number | 3169 |
| Credits | 3 CP (ECTS) |
| Semester | SS 2018 |
| Frequency | Every 2 nd semester |
| Hyperlink | |
| Language | English |
| Notes | |

| Dates Times Location | | | | | |
|--------------------------|------------------|-----------|--------------------|--------------------------------------|-------|
| Day | Time | Frequency | Duration | Room | Notes |
| Monday | 9:00am – 12:00pm | weekly | 16.04 – 07.05.2018 | E-Bau [Bio] AdM 28 - Praktikum E4A20 | |
| Tuesday | 9:00am – 12:00pm | weekly | 17.04 – 08.05.2018 | E-Bau [Bio] AdM 28 - Praktikum E4A20 | |
| Wednesday | 9:00am – 12:00pm | weekly | 18.04 – 09.05.2018 | E-Bau [Bio] AdM 28 - Praktikum E4A20 | |
| Thursday | 9:00am – 12:00pm | weekly | 19.04 – 03.05.2018 | E-Bau [Bio] AdM 28 - Praktikum E4A20 | |

| Contents | |
|---------------------------|---|
| Instructors | Harant, Ulrike , Dr. rer. nat. (responsible) |
| Prerequisites | |
| Course Description | <p>The lecture part of this course (2 h / day) gives an introduction to marine ecosystems and is aimed at students interested in marine biology, ecology, and the complexity of marine habitats.</p> <p>The lecture is split into four main blocks:</p> <ul style="list-style-type: none"> - Oceanography - General marine ecology - Marine habitats - Human impact <p>After each lecture there will be a seminar of one hour duration where students present short scientific papers to the class that match the current lecture topics followed by a short discussion (papers will be provided).</p> <p>At the end of the course the students should have achieved the following:</p> <ul style="list-style-type: none"> - A comprehensive overall knowledge of the marine environment. - The interconnectability of marine environments. |

| | |
|------------------------------|---|
| | <ul style="list-style-type: none"> - The abiotic and biotic components that affect marine ecosystems. |
| Methods of Assessment | <ul style="list-style-type: none"> - Cumulative exam in the final semester week. - Small weekly achievement tests at the end of each week - Participation during the seminar (presentation of the scientific paper & discussion) <p>The grade will be calculated as follows:</p> <ul style="list-style-type: none"> - 40 % final exam - 30 % weekly achievement tests - 30 % Seminar presentation on current research topics in marine biology |
| Notes | <p>A successful participation is required for further marine biological excursions within the department of animal evolutionary ecology (e.g. Tropical Marine Ecology, Marine Biodiversity) and is also highly recommended for the Tamariu excursion.</p> |
| Literature | <p><i>Textbooks:</i></p> <ul style="list-style-type: none"> • Ott J. (1996) Meereskunde, 2. Auflage. Ulmer Verlag, Stuttgart. • Levinton J. S. (2009) Marine Biology, 3rd edition. Oxford University Press, New York. • Trujillo A. P. & Thurman H. V. (2005) Essentials of Oceanography, 9th edition. Pearson Prentice Hall, New Jersey. <p><i>Online platform ILIAS:</i></p> <p>ppt. files of the lecture will be accessible via the online platform ILIAS</p> |
| Target Audience | <p>BSc / MSc in Biology, Geoecology, Bioinformatics and other related subjects.</p> |

Molecular Mouse Genetics (S1) (4132)

| Basic Information | |
|-----------------------|---|
| Type of Course | Block seminar (4 weeks) |
| Course Number | 4132 |
| Credits | 6 CP (ECTS) |
| Semester | SS 2018 |
| Frequency | |
| Hyperlink | |
| Language | English |
| Notes | Mandatory meeting on April, 9 th , 5pm, room 2.034, AdM 15 |

| Dates Times Location | | | | | |
|--------------------------|------------------|----------------|------------|--|-------|
| Day | Time | Frequency | Duration | Room | Notes |
| Monday | 5:00 – 6:00pm | Singular event | 09.04.2018 | Verfügungsgebäude Morgenstelle, seminar room 2.034 | |
| Tuesday | 8:30am – 5:00pm | | 17.04.2018 | Verfügungsgebäude Morgenstelle, seminar room 2.034 | |
| Wednesday | | | 18.04.2018 | | |
| Thursday | | | 19.04.2018 | | |
| Tuesday | 8:30am – 5:00pm | | 24.04.2018 | Verfügungsgebäude Morgenstelle, seminar room 2.034 | |
| Wednesday | | | 25.04.2018 | | |
| Thursday | | | 26.04.2018 | | |
| Monday | 10:15am – 5:00pm | Singular event | 30.04.2018 | | |
| Wednesday | 10:15am – 5:00pm | | 02.05.2018 | | |
| Thursday | | | 03.05.2018 | | |
| Monday | 8:30am – 5:00pm | Singular event | 07.05.2018 | Verfügungsgebäude Morgenstelle, seminar room 2.034 | |
| Tuesday | 8:30am – 5:00pm | | 08.05.2018 | Verfügungsgebäude Morgenstelle, seminar room 2.034 | |
| Wednesday | | | 09.05.2018 | | |
| Friday | 8:30 – 11:00am | Singular event | 11.05.2018 | Verfügungsgebäude Morgenstelle, seminar room 2.034 | exam |

| Contents | |
|------------------------------|---|
| Instructors | Nordheim, Alfred , o. Prof. , Dr. rer. nat. (responsible) |
| Prerequisites | BSc Biology |
| Course Description | This course teaches the advanced basics in molecular genetics with focus on molecular mouse genetics. |
| Methods of Assessment | Exam (graded) and protocols. |

| | |
|------------------------|---|
| Notes | |
| Literature | Nordheim & Knippers, 2015, Molekulare Genetik, 10. Auflage, Thieme Verlag; Nagy et al., Manipulating the Mouse Embryo, 3rd edition, Cold Spring Harbor Laboratory Press |
| Target Audience | MSc "Molecular Cell Biology and Immunology" |

Reef Ecology (S1) (3178)

| Basic Information | |
|-----------------------|--------------------------------|
| Type of Course | Block seminar (4 weeks) |
| Course Number | 3178 |
| Credits | 3 CP (ECTS) |
| Semester | SS 2018 |
| Frequency | Every 2 nd semester |
| Hyperlink | |
| Language | English |
| Notes | |

| Dates Times Location | | | | | |
|--------------------------|---------------|----------------|---------------------|--------------------------------------|-------|
| Day | Time | Frequency | Duration | Room | Notes |
| Monday | 2:00 – 5:00pm | Weekly | 16.04. – 07.05.2018 | E-Bau [Bio] AdM 28 - Praktikum E5A20 | |
| Tuesday | 2:00 – 5:00pm | Weekly | 17.04. – 08.05.2018 | E-Bau [Bio] AdM 28 - Praktikum E5A20 | |
| Wednesday | 2:00 – 5:00pm | Weekly | 18.04. – 02.05.2018 | E-Bau [Bio] AdM 28 - Praktikum E5A20 | |
| Thursday | 2:00 – 5:00pm | Weekly | 19.04. – 03.05.2018 | E-Bau [Bio] AdM 28 - Praktikum E5A20 | |
| Wednesday | 2:00 – 5:00pm | Singular event | 09.05.2018 | E-Bau [Bio] AdM 28 - Praktikum E5A20 | Exam |

| Contents | |
|---------------------------|---|
| Instructors | Harant, Ulrike , Dr. rer. nat. (responsible) |
| Prerequisites | |
| Course Description | <p>This course gives a broad overview of reef biology, including:</p> <ul style="list-style-type: none"> - Coral biology What are corals? Why are corals interesting? Symbiotic interactions etc. - Coral reef complexity Insight into the complex interactions among different reef organisms and their environment. How are they connected and why? - Biodiversity of coral reefs Why are coral reefs so diverse? Where do you find the highest diversity and why exactly there? - History of coral reefs When did corals first appear? What did reefs look like 100 |

| | |
|------------------------------|---|
| | <p>My ago? Are corals the only important reef builders in Earths history?</p> <p>- Conservation aspects and human impact</p> <p>Threats for this fantastic ecosystem, including global warming, deseases, human foot prints will be discusses. What are coral reefs going to look like in 100 years?</p> <p>In the first 2 weeks of the course 2 h lectures will be given each day adressing the topics mentioned above. After each lecture, we will discuss important new findings in coral reef ecology. This will give the students a solid understanding of the system which can then be applied when working on their own project later on. During the third week, the students will form groups and will focus on how to develop a marine protected aread within a specific coral reef area. By combining their knowledge acquired during the course and an intensive literature research, students will identify problems of this area, show what has already be done, what still needs to be done and most importantly how it could be done (in a realistic way). The results of this project phase will then be presented in an oral presentation within the last week of the course.</p> <p>At the end of the course the students should have achieved the following:</p> <ol style="list-style-type: none"> 1. A comprehensive overall knowledge of reef ecology 2. Understand the complexity of this system 3. The abiotic and biotic components that affect such complex communities 4. The major and minor threats these systems have to face. |
| Methods of Assessment | <ul style="list-style-type: none"> - Cumulative exam in the final semester week. - Participation during the daily paper discussion. - Participation during the project phase (including presentation of your project, effort shown during the literature search and discussion). <p>The grade will be calculated as follows:</p> <ul style="list-style-type: none"> - 40 % written final exam - 40 % oral presentation - 20 % participation during discussions |
| Notes | |
| Literature | <p>Books:</p> <ul style="list-style-type: none"> • Ott J. (1996) Meereskunde, 2. Auflage. Ulmer Verlag, Stuttgart. • Levinton J. S. (2009) Marine Biology, 3rd edition. Oxford University Press, New York. • Mora C. (2015) Ecology of Fishes on coral reefs • Goldberg W.M. (2013) Biology of Reefs and Reef Organisms <p>Additional literature will be indicated on the lecture slides. The slides used during the course will be provided after each lecture at ILIAS.</p> |
| Target Audience | All students interested in reef ecology are welcome! |

Cell Differentiation (S2) (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 May, 14 th . Verfügungsgebäude, AdM15, room 2.016 |

| Dates Times Location | | | | | |
|--------------------------|-----------------|-----------|--------------------|------|-------|
| Day | Time | Frequency | Duration | Room | Notes |
| | 9:00am – 5:00pm | | 07.05 – 15.06.2018 | | |

| 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 | |

Experimental Plant Physiology (S2) (4019)

| Basic Information | |
|-----------------------|---------------------------------|
| Type of Course | Block seminar (4 weeks) |
| Course Number | 4019 |
| Credits | 6 CP (ECTS) |
| Semester | SS 2018 |
| Frequency | Every 2 nd semester. |
| Hyperlink | |
| Language | English |
| Notes | |

| Dates Times Location | | | | | |
|--------------------------|------------------|----------------|---------------------|---|-------|
| Day | Time | Frequency | Duration | Room | Notes |
| Monday | 9:00 – 10:30am | Singular event | 14.05.2018 | ZMBP AdM32 – Besprecher 2 ZMBP 6R01 | |
| | 10:30am – 5:00pm | | 14.05. – 18.05.2018 | | |
| Monday | 9:00am – 5:00pm | Singular event | 21.05.2018 | ZMBP AdM32 – Besprecher 2 ZMBP 6R01 | |
| | 9:00am – 5:00pm | | 22.05 – 01.06.2018 | | |
| Wednesday | 9:00am – 5:00pm | Singular event | 13.06.2018 | ZMBP AdM32 – Besprecher 2 ZMBP 6R01 | |

| Contents | |
|------------------------------|--|
| Instructors | Chaban, Christina , Dr. rer. nat. (responsible) |
| Prerequisites | BSc. In Biology, Biochemistry or other closely related subjects |
| Course Description | <p>Introduction to molecular plant physiology and implementation of different methods and techniques</p> <ul style="list-style-type: none"> - Introduction to independent work in a lab and experimental design - Teamwork in smaller groups - Presentation of results - Lab protocols |
| Methods of Assessment | Practical part (60%), Report (25%), Literature seminar (25%) |
| Notes | |
| Literature | t.b.a. |
| Target Audience | MSc. Biology, 1 st -3 rd semester. |

Introduction to Next Generation Sequencing (S2) (NGS)

| Basic Information | |
|-----------------------|-------------------------|
| Type of Course | Block seminar (4 weeks) |
| Course Number | |
| Credits | 6 CP (ECTS) |
| Semester | SS 2018 |
| Frequency | |
| Hyperlink | |
| Language | English |
| Notes | |

| Dates Times Location | | | | | |
|--------------------------|-----------------|-----------|--------------------|--------------------------------------|-------|
| Day | Time | Frequency | Duration | Room | Notes |
| Monday | 9:00am – 4:00pm | Weekly | 14.05 – 11.06.2018 | E-Bau [Bio] AdM 28 - Praktikum E4A20 | |
| Tuesday | 9:00am – 4:00pm | Weekly | 15.05 – 12.06.2018 | E-Bau [Bio] AdM 28 - Praktikum E4A20 | |
| Wednesday | 9:00am – 4:00pm | Weekly | 16.05 – 13.06.2018 | E-Bau [Bio] AdM 28 - Praktikum E4A20 | |
| Thursday | 9:00am – 4:00pm | Weekly | 17.05 – 14.06.2018 | E-Bau [Bio] AdM 28 - Praktikum E4A20 | |

| Contents | |
|------------------------------|--|
| Instructors | Ruiz Fadel, Fernanda , M.Sc. (responsible) |
| Prerequisites | |
| Course Description | Introduction to gene sequencing, NGS (Next Generation Sequencing) and genome analysis. Including theory, practical classes in the lab and computer, and paper discussions. |
| Methods of Assessment | Presentation, active discussion participation, practical protocol, writing a review paper. |
| Notes | |
| Literature | papers will be provided in class |
| Target Audience | BSc.; BEd.; MSc.; MEd. Biology, Bioinformatics, ... |

Proteomics of Cell Signaling (S3) (4077)

| Basic Information | |
|-----------------------|---|
| Type of Course | Block seminar (4 weeks) |
| Course Number | |
| Credits | 6 CP (ECTS) |
| Semester | SS 2018 |
| Frequency | |
| Hyperlink | http://www.pct.uni-tuebingen.de/ |
| Language | English |
| Notes | |

| Dates Times Location | | | | | |
|--------------------------|---------------|----------------|------------|---|--------------------------|
| Day | Time | Frequency | Duration | Room | Notes |
| Monday | 09:00 - 13:00 | Singular event | 18.06.2018 | Verfügungsgeb. Morgenstelle - Seminarraum 2.033 | |
| Tuesday | 09:00 - 13:00 | Singular event | 19.06.2018 | Verfügungsgeb. Morgenstelle - Seminarraum 2.033 | |
| Wednesday | 09:00 - 13:00 | Singular event | 20.06.2018 | Verfügungsgeb. Morgenstelle - Seminarraum 2.033 | |
| Thursday | 09:00 - 13:00 | Singular event | 21.06.2018 | Verfügungsgeb. Morgenstelle - Seminarraum 2.033 | |
| Monday | 11:00 - 13:00 | Singular event | 25.06.2018 | | Prep seminars group 2 |
| Monday | 09:00 - 17:00 | Singular event | 25.06.2018 | | Practical course group 1 |
| Tuesday | 11:00 - 13:00 | Singular event | 26.06.2018 | | Prep seminars group 3 |
| Tuesday | 09:00 - 17:00 | Singular event | 26.06.2018 | | Practical course group 2 |
| Wednesday | 11:00 - 13:00 | Singular event | 27.06.2018 | | Prep seminars group 1 |
| Wednesday | 09:00 - 17:00 | Singular event | 27.06.2018 | | Practical course group 3 |
| Thursday | 09:00 - 10:30 | Singular event | 28.06.2018 | Verfügungsgeb. Morgenstelle - Seminarraum 2.033 | |
| Thursday | 12:00 - 17:00 | Singular event | 28.06.2018 | | Practical course group 1 |
| Monday | 09:00 - 12:00 | Singular event | 02.07.2018 | Verfügungsgeb. Morgenstelle - Seminarraum 2.033 | |
| Monday | 12:00 - 17:00 | Singular event | 02.07.2018 | | Practical course group 2 |
| Tuesday | 09:00 - 12:00 | Singular event | 03.07.2018 | Verfügungsgeb. Morgenstelle - | |

| | | | | | |
|-----------|---------------|----------------|------------|---|--------------------------|
| | | | | Seminarraum 2.033 | |
| Tuesday | 12:00 - 17:00 | Singular event | 03.07.2018 | | Practical course group 3 |
| Wednesday | 09:00 - 12:00 | Singular event | 04.07.2018 | Verfügungsgeb. Morgenstelle - Seminarraum 2.033 | |
| Wednesday | 12:00 - 17:00 | Singular event | 04.07.2018 | E-Bau [Bio] AdM 28 - Computerraum N13 / E3H07 | |
| Thursday | 09:00 - 17:00 | Singular event | 05.07.2018 | E-Bau [Bio] AdM 28 - Computerraum N13 / E3H07 | |
| Monday | 09:00 - 10:30 | Singular event | 09.07.2018 | Verfügungsgeb. Morgenstelle - Seminarraum 2.033 | |
| Thursday | 10:30 - 12:30 | Singular event | 12.07.2018 | Verfügungsgeb. Morgenstelle - Seminarraum 2.033 | Exam |

| Contents | |
|------------------------------|--|
| Instructors | Macek, Boris , Prof. , Dr. rer. nat. (responsible) |
| Prerequisites | Enrollment in the Masters Class 2016-2018 of the Major "Molecular Cell Biology & Immunologie". Successful participation in the courses of the WS 2016/17 is mandatory |
| Course Description | <p>This Module covers the basic principles of biological signal transduction and methodology used to analyze it at the protein level. Special emphasis will be given to the biosynthesis, biology and analysis of posttranslational modifications of proteins as the main mediators of signal transduction. The seminar will cover the key literature from the field of biological signal transduction and proteomics. The practical course will provide a hands-on-experience in acquiring and analyzing large quantitative phosphoproteomic datasets.</p> <p>Students will deepen their knowledge about the main principles of biological signal transduction in prokaryotes, lower- and higher eukaryotes and gain a deeper insight into the modern methods used to study biological signal transduction. Seminars will offer a contact with the most recent and relevant literature on proteomics of signal transduction and the practical course will provide an opportunity for a hands-on- acquisition and interpretation of a large quantitative phosphoproteomic dataset.</p> |
| Methods of Assessment | Written exam (100%), regular participation |
| Notes | |
| Literature | Will be given at the beginning of the module. |
| Target Audience | The module is offered to the M.Sc. students specializing in Molecular Cell Biology/Immunology (MCB/I) |

Quantitative Genetics (S3) (4065)

| Basic Information | |
|-----------------------|------------------------------|
| Type of Course | Block seminar (4 weeks) |
| Course Number | 4065 |
| Credits | 6 CP (ECTS) |
| Semester | SS 2018 |
| Frequency | |
| Hyperlink | |
| Language | Taught in English on demand. |
| Notes | |

| Dates Times Location | | | | | |
|--------------------------|-----------------|-----------|---------------------|---|-------|
| Day | Time | Frequency | Duration | Room | Notes |
| Monday | 9:00am – 4:00pm | Weekly | 18.06. – 12.07.2018 | E-Bau [Bio] AdM 28 - Praktikum E4A20 | |
| Tuesday | 9:00am – 4:00pm | Weekly | 19.06. – 10.07.2018 | E-Bau [Bio] AdM 28 - Praktikum E4A20 | |
| Wednesday | 9:00am – 4:00pm | Weekly | 20.06. – 11.07.2018 | E-Bau [Bio] AdM 28 - Praktikum E4A20 | |
| Thursday | 9:00am – 4:00pm | Weekly | 21.06. – 12.07.2018 | E-Bau [Bio] AdM 28 - Praktikum E4A20 | |

| Contents | |
|------------------------------|---|
| Instructors | Foerster, Katharina , Prof. , Dr. rer. nat. (responsible) |
| Prerequisites | |
| Course Description | <p>Quantitative genetics analyses whether similarities between individuals have a genetic basis, without identifying the responsible gene loci. Phenotype data are connected with pedigree analysis in order to detect genetic variation, heritability, genetic correlation and natural selection. The data analyses micro-evolutionary processes.</p> <p>The first part of the course will introduce the basics of quantitative genetics and simulated data will be analyzed with ASReml (Animal Model Analysis).</p> <p>The second part will discuss recent studies in the field.</p> <p>The third part will analyze simulated data with MCM GLMM for R (Bayesian Animal Model Analysis).</p> |
| Methods of Assessment | Oral exam. |
| Notes | We will decide together on a time schedule in mid February. |
| Literature | |
| Target Audience | Bachelor Biology, Master EvE |

Yeast Cell Biology and Imaging (S4) (4203)

| Basic Information | |
|-----------------------|---------------------------------|
| Type of Course | Lecture/seminar |
| Course Number | 4203 |
| Credits | 6 CP (ECTS) |
| Semester | SS 2018 |
| Frequency | Every 2 nd semester. |
| Hyperlink | |
| Language | English |
| Notes | |

| Dates Times Location | | | | | |
|--------------------------|------------------|----------------|---------------------|---|-------|
| Day | Time | Frequency | Duration | Room | Notes |
| Monday | 9:00am – 12:00pm | Singular event | 16.07.2018 | Verfügungsgeb. Morgenstelle, seminar room 1.033 | |
| Monday | 9:00am – 5:00pm | Weekly | 30.07. – 10.08.2018 | Verfügungsgeb. Morgenstelle, seminar room 1.033 | |
| Wednesday | 9:00am – 12:00pm | Singular event | 08.08.2018 | Verfügungsgeb. Morgenstelle, seminar room 1.033 | |
| | 9:00am – 5:00pm | | 16.07. – 10.08.2018 | | |

| 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. |

Biotic Interactions: Plant-Animal-Interactions (Schiene – Th) (3132)

| Basic Information | |
|-----------------------|-------------------|
| Type of Course | Lecture / Seminar |
| Course Number | 3132 |
| Credits | 6 CP (ECTS) |
| Semester | SS 2018 |
| Frequency | |
| Hyperlink | |
| Language | English |
| Notes | |

| Dates Times Location | | | | | |
|--------------------------|---------------|----------------|---------------------|--|----------|
| Day | Time | Frequency | Duration | Room | Notes |
| Thursday | 4:00 – 6:00pm | Weekly | 19.04. – 19.07.2018 | Bio Hörsaalgebäude AdM 3 – Besprechungsraum 36 | Lecture |
| Thursday | 6:00 – 7:00pm | Weekly | 19.04. – 19.07.2018 | Bio Hörsaalgebäude AdM 3 – Besprechungsraum 36 | Exercise |
| Thursday | 4:00 – 7:00pm | Singular event | 26.07.2018 | Bio Hörsaalgebäude AdM 3 – Hörsaal N11 | Exam |

| Contents | |
|------------------------------|---|
| Instructors | Gruntman, Michal , Ph.D. (responsible) |
| Prerequisites | |
| Course Description | <p>The diversity of plants' shapes, sizes, odors and colors is enormous. Many of these characteristics are directly and indirectly related to strategies for increasing fitness by attracting and rejecting animals. Likewise, many animal groups have adapted their behavior and sensory abilities in accordance with the plants characteristics in order to maximize their own fitness. Due to their key role in many ecosystems, understanding of plant-animal interactions at the various organization levels are central to our understanding of the world in which we live.</p> <p>The objective of the course is to introduce the key interactions between plant and animals: herbivory, pollination and seed dispersal and to study how each of them shape both plants and animals from the level of the individual to the ecosystems.</p> |
| Methods of Assessment | <ul style="list-style-type: none"> - lectures - seminar |

| | |
|------------------------|---|
| | <ul style="list-style-type: none"> - excercises - final exam |
| Notes | <p>If the time (16:00-19:00) collides with other courses, it can be shifted to 17:00-20:00, according to students' requirements</p> <p>Please read your student e-mail (name@student.uni-tuebingen.de).</p> |
| Literature | |
| Target Audience | MSc. Biology, BSc. Biology, Geography, ... |

Advanced Methods in Molecular Biology (Schiene – F) (3161)

| Basic Information | |
|-----------------------|-------------|
| Type of Course | Lecture |
| Course Number | 3161 |
| Credits | 6 CP (ECTS) |
| Semester | SS 2018 |
| Frequency | |
| Hyperlink | |
| Language | English |
| Notes | |

| Dates Times Location | | | | | |
|--------------------------|-------------------|----------------|---------------------|--------------------------------------|---------|
| Day | Time | Frequency | Duration | Room | Notes |
| Friday | 10:15am – 12:00pm | weekly. | 20.04. - 20.07.2018 | ZMBP AdM 32 - Besprecher 2 ZMBP 6R01 | Lecture |
| Friday | 12:00 – 5:00pm | Singular event | 18.05. - 18.05.2018 | ZMBP AdM 32 - Besprecher 2 ZMBP 6R01 | Seminar |
| Friday | 12:00 – 5:00pm | Singular event | 06.07. - 06.07.2018 | ZMBP AdM 32 - Besprecher 2 ZMBP 6R01 | Seminar |
| Friday | 10:00am – 12:00pm | Singular event | 27.07.2018 | | Exam |

| Contents | |
|------------------------------|---|
| Instructors | Lahaye, Thomas , o. Prof. , Dr. rer. nat. (responsible) |
| Prerequisites | |
| Course Description | <p>This module aims at providing an overview of modern methods in Molecular Biology. Advanced methods used e.g. for gene cloning, gene expression analysis, genome editing, protein-DNA as well as protein-protein interaction studies will be presented. In the seminar, selected aspects will be discussed in more detail in the context of a Journal club. The lectures, discussions and presentations will be given in English.</p> <p>At the end of the module an exam will be written covering the content of lectures.</p> |
| Methods of Assessment | Regular participation, exam (graded) |
| Notes | |
| Literature | |
| Target Audience | BSc. 3 rd year |

Behavioral Ecology II (Schiene – F) (4060)

| Basic Information | |
|-----------------------|-------------|
| Type of Course | Seminar |
| Course Number | 4060 |
| Credits | 6 CP (ECTS) |
| Semester | SS 2018 |
| Frequency | |
| Hyperlink | |
| Language | English |
| Notes | |

| Dates Times Location | | | | | |
|--------------------------|------------------|----------------|------------|--------------------------------------|-------|
| Day | Time | Frequency | Duration | Room | Notes |
| Friday | 10:15am – 1:00pm | Singular event | 20.04.2018 | E-Bau [Bio] AdM 28 – Praktikum E4A20 | |
| Friday | 10:15am – 1:00pm | Singular event | 04.05.2018 | E-Bau [Bio] AdM 28 – Praktikum E4A20 | |
| Friday | 10:15am – 1:00pm | Singular event | 18.05.2018 | E-Bau [Bio] AdM 28 – Praktikum E4A20 | |
| Friday | 10:15am – 1:00pm | Singular event | 08.06.2018 | E-Bau [Bio] AdM 28 – Praktikum E4A20 | |
| Friday | 10:15am – 1:00pm | Singular event | 22.06.2018 | E-Bau [Bio] AdM 28 – Praktikum E4A20 | |
| Friday | 10:15am – 1:00pm | Singular event | 06.07.2018 | E-Bau [Bio] AdM 28 – Praktikum E4A20 | |
| Friday | 10:15am – 1:00pm | Singular event | 20.07.2018 | E-Bau [Bio] AdM 28 – Praktikum E4A20 | |

| Contents | |
|------------------------------|---|
| Instructors | Foerster, Katharina , Prof. , Dr. rer. nat. (responsible) |
| Prerequisites | |
| Course Description | <p>Each week, we read literature to a specific topic in behavioural ecology. Participants prepare questions on the topic and design experiments or correlational studies that might further our knowledge on the discussed topic. Faculty members present their current work on some of these topics.</p> <p>Learning objectives: To gain a deeper insight into some areas of behavioral ecology. To read original work, to stimulate own ideas for research projects, to work in a team and to design and present project proposals.</p> |
| Methods of Assessment | Regular active participation, written homework, oral |

| | |
|------------------------|--|
| | presentation of parts of the homework. |
| Notes | |
| Literature | |
| Target Audience | BSc. Biology, MSc. EvE |

Evolutionary Cognitive Neuroscience (Schiene – M) (4108)

| Basic Information | |
|-----------------------|---|
| Type of Course | Lecture / seminar |
| Course Number | 4108 |
| Credits | 6 CP (ECTS) |
| Semester | SS 2018 |
| Frequency | |
| Hyperlink | |
| Language | English |
| Notes | Combined participation in the lecture (Mo, 4-6 pm) + seminar ("Physiology of Cognition and Behaviour", Mo, 2-4 pm) is mandatory (except for Master students of the "Neural and Behavioral Sciences"-program who only need to attend the lecture). |

| Dates Times Location | | | | | |
|--------------------------|---------------|-----------|---------------------|---------------------------------------|-------|
| Day | Time | Frequency | Duration | Room | Notes |
| Monday | 4:00 – 6:00pm | Weekly | 16.04. – 23.07.2018 | E-Bau [Bio] AdM 28 – lecture hall N12 | |

| Contents | |
|---------------------------|---|
| Instructors | Brecht, Katharina , Dipl.-Psych. |
| Prerequisites | Knowledge about fundamental neuroscience, behavior and physiology is required. |
| Course Description | <p>This 6 CP-Module consists of the lecture "Evolutionary Cognitive Neuroscience"(Mo, 4-6 pm) and the seminar "Physiology of Cognition and Behaviour" (Mo, 2-4 pm; see Campus):</p> <ul style="list-style-type: none"> - With a strong emphasis on evolutionary and comparative aspects, the lecture "Evolutionary Cognitive Neuroscience" addresses the behavioural and neural foundations of cognition in the animal kingdom (from insects to humans) from a comparative perspective. Topics comprise: Theory of evolution; evolutionary neuroscience; phylogeny and ontogeny of communication & social cognition; neuroethological model systems of cognition, core knowledge of objects, actions, number, and space. - The topic of the seminar "Physiology of Cognition and Behaviour" in the summer term 2016 is "Numerical competence: from behaviour to neurons". Recent findings from the current literature will be presented and |

| | |
|------------------------------|---|
| | <p>discussed. This seminar aims at elucidating behavioural and neuronal mechanisms and principles giving rise to cognition and complex behaviour.</p> <p>Learning objectives:</p> <ul style="list-style-type: none"> - To identify the fundamental evolutionary and physiological constraints driving the design of different cognitive behaviours from a comparative point of view. - To grasp the adaptive value of cognition. - To characterize the similarities and differences of human compared to animal cognition. - To understand the neural mechanisms giving rise to cognition across the animal kingdom. - To become familiar with the techniques used to link brain and cognition. - To learn to think critically about issues related to topical concepts in cognition. |
| Methods of Assessment | written exam to the lecture (50%) + seminar participation (50%) |
| Notes | |
| Literature | <p>Shettleworth (2010): Cognition, Evolution and Behavior.</p> <p>Kaas (2009) Evolutionary Neuroscience.</p> <p>Purves et al. (2008) Principles of Cognitive Neuroscience.</p> <p>Numerous reviews and original research papers</p> |
| Target Audience | Students of biology, cognitive science, psychology, and related areas |

Molecular Cell Biology (Schiene – M) (4024)

| Basic Information | |
|-----------------------|-------------|
| Type of Course | Lecture |
| Course Number | 4024 |
| Credits | 6 CP (ECTS) |
| Semester | SS 2018 |
| Frequency | |
| Hyperlink | |
| Language | English |
| Notes | |

| Dates Times Location | | | | | |
|--------------------------|------------------|----------------|---------------------|--|---------|
| Day | Time | Frequency | Duration | Room | Notes |
| Monday | 11:00am – 1:00pm | Weekly | 16.04. – 30.07.2018 | ZMBP AdM 32 – Besprecher 2 ZMBP 6R01 | Lecture |
| Thursday | 09:00am – 5:00pm | Singular event | 26.07.2018 | ZMBP AdM 32 – Besprecher 2 ZMBP 6R01 | Seminar |
| Friday | 09:00am – 1:00pm | Singular event | 27.07.2018 | ZMBP AdM 32 – Besprecher 2 ZMBP 6R01 | |

| Contents | |
|------------------------------|--|
| Instructors | Jürgens, Gerd , o. Prof. , Dr. rer. nat. (responsible) |
| Prerequisites | |
| Course Description | This module provides an overview of current research topics in molecular cell biology. |
| Methods of Assessment | Regular participation, presentation in the seminar, poster presentation |
| Notes | |
| Literature | |
| Target Audience | MSc. / BSc. Biology |

Physiology of Cognition and Behaviour (Schiene – M)

| Basic Information | |
|-------------------|---|
| Type of Course | Seminar |
| Course Number | |
| Credits | 3 or 6 CP (ECTS) |
| Semester | SS 2018 |
| Frequency | |
| Hyperlink | |
| Language | English |
| Notes | This seminar is a <u>mandatory</u> part of the Neuro Master module “Evolutionary Cognitive Neuroscience 4108” . |

| Dates Times Location | | | | | |
|--------------------------|---------------|-----------|---------------------|---|-------|
| Day | Time | Frequency | Duration | Room | Notes |
| Monday | 2:00 – 4:00pm | Weekly | 16.04. – 23.07.2018 | E-Bau [Bio] AdM 28 – Besprechungsraum E6N43 | |

| Contents | |
|-----------------------|--|
| Instructors | Brecht, Katharina , Dipl.-Psych. |
| Prerequisites | |
| Course Description | <p>Topic of summer term 2016: Numerical competence - from behaviour to neurons</p> <p>Recent findings from the current literature will be presented and discussed. This seminar aims at elucidating behavioural and neuronal mechanisms and principles giving rise to numerical cognition as an example for abstract behaviour. General principles of ethology, psychophysics, functional imaging and single-neuron physiology will be discussed using the example of number representations.</p> |
| Methods of Assessment | This seminar is a <u>mandatory</u> part of the Neuro Master module “Evolutionary Cognitive Neuroscience 4108” . It is also suited as a stand-alone seminar (3 Credits) Seminar presentation and discussion. |
| Notes | This seminar is a <u>mandatory</u> part of the 6 CP- Master module “Evolutionary Cognitive Neuroscience 4108” (together with the lecture “Evolutionary Cognitive Neuroscience” on Monday, 4-6 pm) |
| Literature | |
| Target Audience | Participants of the Module “Evolutionary Cognitive Neuroscience 4108”; Students of Biology and related areas; MSc. of Cognitive Science |

Introduction to R (S4) (4134)

| Basic Information | |
|-----------------------|-------------------------|
| Type of Course | Block seminar (2 weeks) |
| Course Number | 4134 |
| Credits | 3 CP (ECTS) |
| Semester | SS 2018 |
| Frequency | |
| Hyperlink | |
| Language | English |
| Notes | |

| Dates Times Location | | | | | |
|--------------------------|--------------------|-----------|------------------------|------|-------|
| Day | Time | Frequency | Duration | Room | Notes |
| Monday – Thursday | 9:00am – 4:00pm | Daily | 16.07. – 19.07.2018 | | |
| Monday – Thursday | 9:00am – 4:00pm | Daily | 23.07. - 26.07.2018 | | |

| Contents | |
|------------------------------|--|
| Instructors | Lampej-Bucharová, Anna , Ph.D. (responsible) |
| Prerequisites | |
| Course Description | <p>R is a powerful, flexible, and free software used by many researchers for working with data and doing statistical analyses. Our goal is to introduce its potential, and provide the skills to use this software for statistics and data visualization.</p> <p>The course will cover: Import, manipulate, and save data in the R environment Understanding 'object-oriented' programming Basic data visualization Use R for statistics Advanced data visualization</p> |
| Methods of Assessment | Take-home exercises. |
| Notes | |
| Literature | |
| Target Audience | BSc, MSc or PhD students in Evolution & Ecology, Geocology, or other biological disciplines |

A journey through the RNA world: from ribozymes to riboswitches (Schiene – F) (4021)

| Basic Information | |
|-----------------------|---------------|
| Type of Course | Block seminar |
| Course Number | 4021 |
| Credits | 6 CP (ECTS) |
| Semester | SS 2018 |
| Frequency | |
| Hyperlink | |
| Language | English |
| Notes | |

| Dates Times Location | | | | | |
|--------------------------|--------------------|----------------|---------------------|------|--------------------|
| Day | Time | Frequency | Duration | Room | Notes |
| Tuesday | 8:15 – 10:15am | Singular event | 03.07.2018 | | |
| Friday | 12:15 – 2:15pm | weekly. | 27.04. - 25.05.2018 | | Lecture / tutorial |
| Friday | 4:00 – 6:00pm | Singular event | 01.06.2018 | | |
| Friday | 12:15 – 2:15pm | weekly. | 08.06. - 06.07.2018 | | |
| Friday | 10:15 – 5:30pm | Singular event | 13.07.2018 | | |
| Friday | 10:15am – 12:15 pm | Singular event | 20.07.2018 | | exam |

| Contents | |
|---------------------------|--|
| Instructors | Wachter, Andreas , Dr. rer. nat. (responsible) |
| Prerequisites | Participations in the basic module “Biomolecules of the Cell”, “Molecular Biology I and II” or other equivalent modules. |
| Course Description | <p>This module aims at providing an overview of the functional capacity of RNA elements in viruses, bacteria and eukaryotes. Besides catalytically active RNAs, mainly aspects of RNA-based gene regulatory mechanisms will be discussed. In the wide field of RNA-mediated gene control, topics will be primarily focused on structured mRNA elements including thermosensors and riboswitches.</p> <p>The lecture section will provide an introduction into the various aspects of RNA functions in different cellular processes. In the tutorial and the seminar, selected aspects will be discussed in more detail and general principles will be worked out. The lectures will be given in English,</p> |

| | |
|------------------------------|--|
| | <p>whereas discussions and presentations can be held in German as well.</p> <p>Learning objectives:</p> <ul style="list-style-type: none"> - RNA world hypothesis - Ribozymes (catalytic RNAs) - Regulatory mRNA elements, e.g. thermosensors & riboswitches. The major goal of this module is to provide an insight into the functional and regulatory capacity of RNA, which is extensively exploited by all living organisms. Students should broaden their knowledge in this field and discuss in the seminar and tutorial selected aspects based on provided research articles. <p>A final written examination will take place on July 21st, 2017 at 10 c.t. at ZMBP, in room6R01 (Besprecher 2).</p> |
| Methods of Assessment | Seminar (40%), Exam (60%) |
| Notes | |
| Literature | |
| Target Audience | |

Essentials of Ecology (Schiene – T/W) (4151)

| Basic Information | |
|-----------------------|-----------|
| Type of Course | Seminar |
| Course Number | 4151 |
| Credits | CP (ECTS) |
| Semester | SS 2018 |
| Frequency | |
| Hyperlink | |
| Language | English |
| Notes | |

| Dates Times Location | | | | | |
|--------------------------|---------------|----------------|---------------------|------|--------------------|
| Day | Time | Frequency | Duration | Room | Notes |
| Tuesday | 4:00 – 6:00pm | Weekly | 17.04. - 24.07.2018 | | |
| Tuesday | 4:00 – 6:00pm | Singular event | 12.06.2018 | | |
| Wednesdays | 5:00 – 7:00pm | Weekly | | | Hilgendorf Lecture |

| Contents | |
|---------------------------|--|
| Instructors | Bossdorf, Oliver , Prof. , Dr. sc. nat. (responsible) |
| Prerequisites | |
| Course Description | <p>The course will introduce students to some of the big fundamental questions in ecology, and to some current frontier research topics. It consists of a regular theoretical course on Tuesday 16-18, and a seminar on Wednesdays 17-19.</p> <p>The seminar part requires the regular attendance of the EvE Seminar or Hilgendorf lecture on Wednesdays, where scientists from Tübingen or elsewhere, including scientists from abroad, present their current research. The students are expected to summarize several of the seminars through concept maps, which will be graded.</p> <p>The theoretical course part consists of a mix of lectures and more active group work and covers a range of different ecological concepts, the history of some ecological ideas, and some of the most important current topics in ecological science.</p> <p>Learning objectives:</p> <ul style="list-style-type: none"> - Understanding of fundamental concepts in ecology - Understanding the dynamic nature of science: how concepts are debated and develop over time |

| | |
|------------------------------|---|
| | <ul style="list-style-type: none"> - Critical discussion of scientific questions - Use of concept maps to summarize complex problems |
| Methods of Assessment | |
| Notes | |
| Literature | |
| Target Audience | <p>The course is primarily aimed at MSc students in Evolution & Ecology. It is, however, also a good module for students in other MSc programs in biology, MSc students in Geocology, PhD students who would like to update their knowledge in ecology, or any other interested student in biology.</p> |