Courses taught in English, Winter Semester 2017/18

Biochemistry – Bachelor ............................................................................................................................ 2
Biology – Master ........................................................................................................................................ 4
Applied Environmental Geoscience AEG – Master ..................................................................................... 21
Geoeconomy – Bachelor ............................................................................................................................... 23
Geoeconomy – Master ................................................................................................................................. 25
Geosciences – Bachelor ............................................................................................................................... 26
Geosciences – Master ................................................................................................................................. 27
Scientific Archaeology – Bachelor ............................................................................................................. 27
Scientific Archaeology – Master ................................................................................................................ 28
Palaeoanthropology – Bachelor .................................................................................................................. 34
Environmental Sciences – Bachelor ........................................................................................................... 35
Bioinformatics – Bachelor ............................................................................................................................ 35
Bioinformatics – Master ............................................................................................................................... 36
Computer Science – Bachelor ....................................................................................................................... 39
Computer Science – Master ......................................................................................................................... 39
Media Technologies – Master ...................................................................................................................... 42
Medicineinformatics – Master ..................................................................................................................... 44
Mathematics – Bachelor .............................................................................................................................. 47
Mathematics – Master ................................................................................................................................. 49
Mathematical Physics – Master ................................................................................................................... 51
Nanoscience – Bachelor ............................................................................................................................... 55
Nanoscience – Master ................................................................................................................................. 57
Physics – Bachelor ....................................................................................................................................... 60
Cognition Science – Bachelor ...................................................................................................................... 64
Cognition Science – Master ......................................................................................................................... 67
School Psychology – Master .......................................................................................................................... 71
Biochemistry – Bachelor

Course title: Biochemie III (metabolism)  (Course number: BSCBC300)
Link: http://campus.uni-tuebingen.de/20172e157348
Course type: Lecture
Contact hours: 4
Course coordinator: Prof. Dr. rer. nat. Gabriele Dodt, Prof. Ph.D. Ana Jesús Garcia-Sáez, PD Dr. rer. nat. Elisabeth Fuß, Prof. Dr. Dirk Schwarzer
Course description
Stoffwechsel

Course title: Institutskolloquium  (Course number: INSTKOLL)
Course title: S1 Wahlpflichtmodul 15o Science of cooking  (Course number: S1WPM15O)
Link: http://campus.uni-tuebingen.de/20172e157357
Course type: Block Course
Contact hours:
Course coordinator: Prof. Ph.D. Ana Jesús Garcia-Sáez, Dr. rer. nat. Jakob Suckale
Target audience
B. Sc. Biochemistry, 3. year
Prerequisites
The participants should have basic knowledge of mathematics, physics and biochemistry.
Course description
History of science and cooking, Food components, Basic transformation processes during cooking: phase transitions, Energy, temperature and heat transfer; Elasticity and texture; Diffusion and spherification; Viscosity and polymers; Emulsions and foams; Baking and Fermentation. Applications in Haute Cuisine and food industry.

Course title: Seminar zur Vorlesung Biochemie III  (Course number: BSCBC301)
Link: http://campus.uni-tuebingen.de/20172e157351
Course type: Seminar
Contact hours: 1
Course coordinator: Prof. Dr. rer. nat. Gabriele Dodt, Prof. Ph.D. Ana Jesús Garcia-Sáez, PD Dr. rer. nat. Elisabeth Fuß, Prof. Dr. Dirk Schwarzer, Prof. Dr. rer. nat. Thorsten Stafforst
Course description
Stoffwechsel

Course title: Vorlesung Proteinexpression und Proteinreinigung  (Course number: SCH15EV)
Link: http://campus.uni-tuebingen.de/20172e157366
Course type: Lecture
Contact hours: 2
Course coordinator: o. Prof. Dr. rer. nat. Thilo Stehle

Course title: W2 Molecular and Cellular Proteomics (3037)
Link: http://campus.uni-tuebingen.de/20172e158259
Course type: Block Course
Contact hours:
Course coordinator: Prof. Dr. rer. nat. Boris Macek, Ph.D. Nicolas Nalpas
Target audience
Bachelor - 3rd years students: Biology, Biochemistry, Bioinformatics
Course description
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. 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. 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. 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.

Additional information
http://www.pct.uni-tuebingen.de/

Course title: W2 Regulatory Mechanisms in Gene Expression 3043
Link: http://campus.uni-tuebingen.de/20172e159055
Course type: Block Course
Contact hours:
Course coordinator: o. Prof. Dr. rer. nat. Klaus Harter, Dr. rer. nat. Christina Chaban
Prerequisites
Erfolgreiche Teilnahme am Modul Molekularbiologie II / Teil Pflanzenphysiologie

Course description
The practical part of the Module will focus on learning methods using Functional Genomic with real examples from current research topics. These methods will include working with Databanks, the annotation and sequencing of DNA and other methods needed to conduct phylogenetic analysis that are a foundation of Functional Genomics. The students will als be required to also conduct wet-lab experiments that include the isolation of genomic DNA, PCR and sequencing of DNA. Den Abschluss des Moduls bildet ein gemeinsames Literaturseminar, bei dem aktuelle Arbeiten zum oben genannten Themenkreis von den Studierenden vorgestellt und diskutiert werden.

Course title: W5 Wahlpflichtmodul 15j: Modern Genetic Engineering / Methoden der Modernen Gentechnik  (Course number: W5WPM15J)
Link: http://campus.uni-tuebingen.de/20172e157045
Course type: Block Course
Contact hours:
Course coordinator: PD Dr. rer. nat. Andrea Gust, PD Dr. rer. nat. Elisabeth Fuß
Prerequisites
Module 1 (BCI), 6 (BCII) of the bachelor “Biochemie” or equivalent (basic chemistry and biochemistry of proteins and nucleic acids)

Course description
Contents: Practical course: (model organism: plant) PCR: primer design, mutagenesis; cloning techniques (Gateway); sequencing and analysis of results; transient expression of proteins in Nicotiana benthamiana; transformation of Arabidopsis and analysis Lectures and Seminar: gene cloning techniques (classical, Gateway, synthesis of genes), PCR and mutagenesis, sequencing techniques, generation of genetically modified organisms (Virus-induced-gene-silencing, amiRNA-technology, ZFN, TALEN, CRISPR), …. In the seminar the topics of the lectures will be discussed in more detail based on talks to be given by the participants.
Biology – Master

Course title: Advanced Animal Evolutionary Ecology II (4064)
Link: http://campus.uni-tuebingen.de/20172e157260
Course type: Block Course
Contact hours:
Course coordinator: o. Prof. Dr. rer. nat. Nico K. Michiels, Dr. rer. nat. Nils Anthes, Ph.D. Pierre-Paul Bitton, Dr. rer. nat. Ulrike Harant
Target audience
MSc - Evolution und Ökologie
Course description
This 6CP (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. 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 connetions to theresearch or teaching that is usually offered within our group. Hence, if interested in combining several small courses into our Advanced module, please contact any of the indicated supervisors well in time.
Additional information
http://www.evoeco.uni-tuebingen.de

Course title: Advanced Plant Ecology II (4062)
Link: http://campus.uni-tuebingen.de/20172e154272
Course type: Block Course
Contact hours:
Course coordinator: Prof. Dr. rer. nat. Katja Tielbörger, Ph.D. Michal Gruntman, Dr. rer. nat. Jan Ruppert
Target audience
MSc Bio / Major Evolution and Ecolgy
Course description
This module offers the opportunity to combine several courses, the combined amount of earned credit points should equal 6 ECTS. 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). 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.

Course title: Advanced Seminar II: Principles of Innate and Adaptive Immunology (4207)
Link: http://campus.uni-tuebingen.de/20172e157859
Course type: Seminar
Contact hours: 2
Course coordinator: o. Prof. Ph.D. Alexander Weber
Course description
The seminar “Principles of Innate and Adaptive Immunity” is a joint cooperation between the Department of Immunology and the Department of Dermatology.
Course title: Aktuelle Themen der Zell- und Entwicklungsbioiogie - Current Topics in Developmental Genetics (4016)
Link: http://campus.uni-tuebingen.de/20172e156786
Course type: Block Course
Contact hours: 2
Course coordinator: Dr. rer. nat. Anke Beermann, Dipl.-Agrarbiol. Simone Frühholz, Dr. rer. nat. Christopher Grefen, PD Dr. rer. nat. habil. Bernard Moussian, Dr. rer. nat. Sabine Müller, Dr. rer. nat. Laura Ragni, Prof. Dr. rer. nat. Rolf Reuter, Dr. rer. nat. Sandra Richter, Hon.-Prof. Dr. rer. nat. Ralf Sommer, Dr. rer. nat. Detlef Weigel, o. Prof. Dr. rer. nat. Gerd Jürgens
Target audience
Themenmodul im Masterprogramm des ZMBP. Diplomanden und Doktoranden werden ebenfalls zugelassen, Masterstudenten haben aber Vorrang.
Prerequisites
Bachelor
Course description
Überblick über den Stand der Forschung und aktuelle Forschungsthemen in der molekularen Zellbiologie.

Course title: Analysing Publications: Literature Seminar of Molecular Cell Biology [Bio 4114]
Link: http://campus.uni-tuebingen.de/20172e154333
Course type: Seminar
Contact hours: 2
Course coordinator: o. Prof. Dr. rer. nat. Alfred Nordheim, apl. Prof. Dr. rer. nat. Tassula Proikas-Cezanne
Target audience
Studierende des MSc Studienganges “Molecular Cell Biology & Immunology”.
Prerequisites
Grundkenntnisse der molekularen Zellbiologie.
Course description

Course title: Colour Vision across Species (Fr) (4084)
Link: http://campus.uni-tuebingen.de/20172e157034
Course type: Seminar
Contact hours: 1
Course coordinator: Dr. rer. nat. Annette Werner
Target audience
For students interested in the field of biology, neuroscience, bioinformatics and medicine
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.
Additional information
http://www.annettewerner.com/index.html

Course title: Comparative innate immunity in animals and plants, Themenmodul 4026
Link: http://campus.uni-tuebingen.de/20172e157049
Course type: Lecture/Exercises
Contact hours: 3  
Course coordinator: o. Prof. Dr. rer. nat. Thorsten Nürnberger, Prof. Dr. rer. nat. Georg Felix, PD Dr. rer. nat. Andrea Gust, Dr. rer. nat. Birgit Kemmerling  
Target audience  
M.Sc. in Biochemistry or Biology  
Course description  
Module comprises a lecture, seminar and tutorial. The lecture (winter semester) concerns current topics of innate immunity in animals and plants. The seminar (summer semester) consolidates the topics covered in the lecture by using original publications. Content of the tutorial (summer semester) will be writing of a research proposal based on the original publications covered in the seminar. The seminar and tutorial will take place in the summer semester. Final schedule for the seminar and the discussion of proposals within the tutorial will be according to agreement.  

Course title: Concepts of Molecular Cell Biology [Bio 4039]  
Link: http://campus.uni-tuebingen.de/20172e154338  
Course type: Lecture  
Contact hours:  
Course coordinator: PD Dr. rer. nat. Wolfram Antonin, Prof. Dr. rer. nat. Boris Macek, apl. Prof. Dr. rer. nat. Tassula Proikas-Cezanne, Prof. Dr. rer. nat. Rolf Reuter, o. Prof. Dr. rer. nat. Alfred Nordheim  
Prerequisites  
Aufnahme in den MSc Studiengang “Molecular Cell Biology & Immunology”. Diese Veranstaltung (bestehend aus beiden zusammen gehörigen Teilen: Vorlesung + Seminar) ist ein Pflichtmodul des MSc Curriculums “Molecular Cell Biology & Immunology”.  
Course description  
Die Vorlesung behandelt wichtige ausgewählte Problemstellungen der Zellbiologie, die von genereller Bedeutung für ein Verständnis der eukaryontischen Zelle sind. Das zugehörige Seminar greift die in der Vorlesung behandelten Themen auf, indem jeweils eine aktuelle Veröffentlichung aus dem Bereich der Molekularen Zellbiologie von den Studierenden präsentiert werden.  

Course title: Current Topics in Proteome Research (Schiene Fr) (4156)  
Link: http://campus.uni-tuebingen.de/20172e158207  
Course type: Seminar  
Contact hours:  
Course coordinator: Prof. Dr. rer. nat. Boris Macek, Ph.D. Nicolas Nalpas  
Target audience  
The target group are M.Sc. students (NOT those from Cell Biology/Immunology) and Ph.D. students.  
Course description  
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. The target group are M.Sc. students (NOT those from Cell Biology/Immunology) and Ph.D. students.  

Course title: Elective: Advanced-Level Course in Plant Physiology 4031  
Link: http://campus.uni-tuebingen.de/20172e159052
**Course type:** Block Course  
**Contact hours:** 13  
**Course coordinator:** o. Prof. Dr. rer. nat. Klaus Harter, Dr. rer. nat. Christina Chaban, Dr. rer. nat. Nina Jaspert, Dr. rer. nat. Sascha Laubinger, Prof. Dr. rer. nat. Claudia Oecking, Dr. rer. nat. Virtudes Mira-Rodado, Dr. rer. nat. Markus Albert, Dr. rer. nat. Gabriel Schaaf  

**Prerequisites**  
A background in molecular plant science is expected  

**Course description**  
Implementation of a small research project involving a wide spectrum of methods  

---  

**Course title:** EvE Seminar / Hilgendorf Lecture  
**Link:** [http://campus.uni-tuebingen.de/20172e157258](http://campus.uni-tuebingen.de/20172e157258)  
**Course type:** Colloquium  
**Contact hours:** 2  
**Course coordinator:** o. Prof. Dr. rer. nat. Nico K. Michiels  

**Target audience**  
The EvE Seminar and the Hilgendorf Lecture are open for all interested persons.  

**Course description**  
Local and internationally acclaimed external guests present their latest work in the field of Evolutionary Biology and Ecology. Note that on some occasions the Evolution and Ecology Seminar is replaced by a Hilgendorf Lecture, which takes place in the Sigwartstraße, lecture hall S320. Please check the up-to-date online program at [www.everest.uni-tuebingen.de/hilgendorf-lecture.html](http://www.everest.uni-tuebingen.de/hilgendorf-lecture.html).  

**Additional information**  

---  

**Course title:** Evolution and Ecology Seminar  
**Link:** [http://campus.uni-tuebingen.de/20172e154274](http://campus.uni-tuebingen.de/20172e154274)  
**Course type:** AG/Kolloquium  
**Contact hours:** 2  
**Course coordinator:** Ph.D. Mark Bilton, Prof. Dr. rer. nat. Katja Tielbörger  

**Target audience**  
This seminar specifically targets all Tübingen students (undergrad, postgrad) interested in Ecology and Evolution - this is your direct access to learn more about ongoing local research and establish contacts.  

**Course description**  
This is the scientific colloquium of the Institute for Evolution and Ecology. Speakers are early career researchers as well as senior scientists in the broad fields of Ecology, Biodiversity and Evolution. On the one hand, this is the platform where scientists from within Tübingen (University, Max Planck Institutes) disseminate and share their research topics with a broader audience. On the other hand, we frequently invite external guest speakers to present novel findings and research perspectives. Moreover, it is the place where scientists working in the fields of ecology and evolution meet and discuss their most recent findings.  

---  

**Course title:** Exkursion/Geländepraktikum: Marine Biodiversity: Indonesia (3136)  
**Link:** [http://campus.uni-tuebingen.de/20172e157267](http://campus.uni-tuebingen.de/20172e157267)  
**Course type:** Block Course  
**Contact hours:**  
**Course coordinator:** o. Prof. Dr. rer. nat. Nico K. Michiels, Dr. rer. nat. Ulrike Harant, Dr. rer. nat. Nils Anthes  

**Target audience**
Advanced students in biology or geo-ecology (BSc, LA, MSc)

Prerequisites
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). 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. 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. You need a valid passport, but no visum.

Course description
This course is for advanced students in marine biology with sufficient SCUBA diving experience only. The course takes place in a field station from Operation Wallacea (www.opwall.com), with which we cooperate. It is situated on Hoga, a small coral reef island in the Wakatobi archipelago in SE Sulawesi, Indonesia. The course will focus predominantly on reef fish diversity. Much of the work will involve diving or snorkeling and identifying, photographing and observing fishes in the field. We shall pay special attention to fluorescence in fishes and work on a database in which fish that do and such that do not fluoresce are listed. Some specimens will be taken into the lab for closer inspection and spectrometric measurements. 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. Hoga is a reef biodiversity hotspot in the “coral triangle”. The number of coral and fish species is among the highest in the world and truly very impressive. Hoga 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 (no running water, 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. The programme will consist mainly of work directly on or in the vicinity of the island. If there is enough interest, we shall go for a 5-7 day boat trip to remote coral atols and island, that are even more pristine than Hoga. It is also planned to go and visit a nearby village to experience local living conditions and habits.

Additional information
http://www.evoeco.uni-tuebingen.de/

Course title: Frontiers in Plant Ecology
Link: http://campus.uni-tuebingen.de/20172e154278
Course type: Seminar
Contact hours: 2
Course coordinator: Prof. Dr. sc. nat. Oliver Bossdorf
Target audience
MSc in Evolution & Ecology, MSc Geocology, 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.

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 members of the Plant Ecology and Plant Evolutionary group. In the last year, the frontier topics included e.g. plants in cities, big data in invasion biology, plant functional traits, allelopathy, global change & herbaria specimen, or ecological genetics and genomics. 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.

Course title: Frontiers in Systems Neurophysiology  
Link: http://campus.uni-tuebingen.de/20172e158815  
Course type: Seminar  
Contact hours:  
Course coordinator: Prof. Dr. rer. nat. Andreas Nieder

Course title: Gastrointestinal (GI) Mucosal Pathophysiology  (Course number: S01SMOMMED04)  
Link: http://campus.uni-tuebingen.de/20172e156450  
Course type: Seminar  
Contact hours:  
Course coordinator: Ph.D. Tamia K. Lapointe  
Prerequisites  
Stud. Mol.Med M.Sc., der Mikrobiologie und der Biochemie  
Course description  
Total workload: 120 h Class time: 45 h (Friday 9:30-12:30, Konferenzraum Virologie, 3. OG, E.-Aulhorn-Str. 6) Self-study: 75 h (5-6 h per week)

Course title: Integrative Neurobiology: Behavior and Cognition (4205)  
Link: http://campus.uni-tuebingen.de/20172e158396  
Course type: Lecture  
Contact hours: 2  
Course coordinator: o. Prof. Dr. rer. nat. Hanspeter Mallot  
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.

Course title: Integrative Neurobiology: Cellular and Molecular  
Link: http://campus.uni-tuebingen.de/20172e159369  
Course type: Lecture  
Contact hours: 2  
Course coordinator: Jun.-Prof. Dr. rer. nat. Aristides Arrenberg, PD Dr. rer. nat. Hansjürgen Volkmer, Prof. Dr. rer. nat. Jan Benda  
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.

Course title: Introduction into Scientific Communication (4057)  
Link: http://campus.uni-tuebingen.de/20172e159303  
Course type: Seminar  
Contact hours: 4  
Course coordinator: Dr. rer. nat. Simon Heilbronner  
Prerequisites  
1st year Msc in Biology  
Course description  
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.

**Course title**: Introduction to Computational Neuroscience / Seminar (3028) (Fr / Mo)
**Link**: http://campus.uni-tuebingen.de/20172e157039
**Course type**: Seminar
**Contact hours**: 2
**Course coordinator**: o. Prof. Dr. rer. nat. Hanspeter Mallot, Dipl.-Biol. Gerrit Ecke, M.Sc. Banafsheh Grochulla

**Target audience**
The course is listed for the following programs (program names in German) Biologie Bachelor, 3. Jahr (optional - Wahlpflicht) Biologie Master (optional - Wahlpflicht) Biologie Lehramt (optional - Wahlpflicht) Kognitionswissenschaft Bachelor, 3. Jahr (mandatory - Pflichtveranstaltung) Neuro- und Verhaltenswissenschaft (Lecture mandatory, seminar optional) NanoScience (optional - Wahlpflicht) Promotionsstudium in Neurowissenschaft und verwandten Gebieten Students from other programs are welcome.

**Course description**
The course will provide an overview over the field of computational neuroscience focussing on four topics: (i) biophysics of excitable membranes: Hodgekin-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. The focus of the course is on central neuroscience mechanisms; mathematical formalizations are presented on a medium level that should be accessible with highschool or introductory BSc level knowledge of mathematics. 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 computation and (c) prepare a handout for the class. All students are required to read each weeks’ paper in advance of the seminar. Please note that for the lecture you have to register separately!

**Additional information**
http://www.cog.uni-tuebingen.de/

**Course title**: Introduction to Computational Neuroscience / Vorlesung (3028) (Fr)
**Link**: http://campus.uni-tuebingen.de/20172e157042
**Course type**: Lecture
**Contact hours**: 4
**Course coordinator**: o. Prof. Dr. rer. nat. Hanspeter Mallot

**Target audience**
The course is listed for the following programs (program names in German) Biologie Bachelor, 3. Jahr (optional - Wahlpflicht) Biologie Master (optional - Wahlpflicht) Biologie Lehramt (optional - Wahlpflicht) Kognitionswissenschaft Bachelor, 3. Jahr (mandatory - Pflichtveranstaltung) Neuro- und Verhaltenswissenschaft (Lecture mandatory, seminar optional) NanoScience (optional - Wahlpflicht) Promotionsstudium in Neurowissenschaft und verwandten Gebieten Students from other programs are welcome.

**Course description**
The course will provide an overview over the field of computational neuroscience focussing on four topics: (i) biophysics of excitable membranes: Hodgekin-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. The focus of the course is on central neuroscience mechanisms; mathematical formalizations are presented on a medium level that should be accessible with highschool or introductory BSc level knowledge of mathematics. 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 computation and (c) prepare a handout for the class. All students are required to read each weeks’ paper in advance of the seminar.

Additional information
http://www.cog.uni-tuebingen.de/

Course title: Introduction to MSc “Molecular Cell Biology & Immunology”
Link: http://campus.uni-tuebingen.de/20172e161026
Course type: Introductory Course
Contact hours:
Course coordinator: Dr. rer. nat. Sven Hülsmann

Course title: Lab Methods in Microbiological Research (4124)
Link: http://campus.uni-tuebingen.de/20172e158658
Course type: Internship
Contact hours:
Course coordinator: apl. Prof. Dr. rer. nat. Christoph Mayer, o. Prof. Dr. rer. nat. Wolfgang Wohlleben
Prerequisites
Basics in biology, chemistry and biochemistry. Participation in the Module “Microbiology”
Course description
Module Content Investigation of microbial physiology Quantification of microbial activities Active participation in a current research project and to the colloquium of the department

Course title: Laborpraktikum Innate & Adaptive Immunity [Bio 4042]  (Course number: S07PIMMU01)
Link: http://campus.uni-tuebingen.de/20172e157847
Course type: Block Course
Contact hours: 16
Course coordinator: o. Prof. Dr. rer. nat. Hans-Georg Rammensee, Prof. Dr. rer. nat. Stefan Stevanovic, Prof. Dr. med. Jan Wehkamp, PD Dr. rer. nat. Stella E. Autenrieth, PD Dr. rer. nat. Cécile Gouttefangeas, Prof. Dr. med., Dipl.-Phys. Gundram Jung, apl. Prof. Dr. rer. nat. Gerd Klein, apl. Prof. Dr. med. Reinhold Klein, apl. Prof. Dr. rer. nat. Oliver Planz, apl. Prof. Dr. rer. nat., Dipl.-Biol. Birgit Schitteki, o. Prof. Ph.D. Alexander Weber
Target audience
Prerequisites
Abgeschlossenes Bachelorstudium
Course description
Laborpraktikum Immunologie als Arbeitsgruppenpraktikum mit begleitenden Mitarbeiterseminaren For further information and registration, please attend the “Vorbesprechung” (information seminar) that takes place on the first Monday in term, 18.15. for MSc students!

Course title: Lecture “Advanced Immunology” (Immunologie für Fortgeschrittene; nur im WS) [Bio 4002]
Link: http://campus.uni-tuebingen.de/20172e157844
Course type: Lecture
Contact hours: 2
Course coordinator: PD Dr. rer. nat. Stella E. Autenrieth, PD Dr. rer. nat. Cécile Gouttefangeas, Prof. Dr. med., Dipl.-Phys. Gundram Jung, o. Prof. Dr.-Ing. Oliver Kohlbacher, o. Prof. Dr. rer. nat. Thorsten Nürnberg, apl. Prof. Dr. rer. nat. Oliver Planz, Dr. med. Dominik Schneidawind, Prof. Dr. rer. nat. Stefan Stevanovic, Prof. Dr. med. Dr. rer. nat. Ghazaleh Tabatabai, o. Prof. Ph.D. Alexander Weber, o. Prof. Dr. med. Lars Zender, o. Prof. Dr. rer. nat. Hans-Georg Rammensee

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.

Prerequisites
Abgeschlossenes Bachelorstudium

Course description
Fortgeschrittene Vorlesung für Masterstudiengänge Biologie, Biochemie, Bioinformatik und Molekularmedizin sowie Studierende des Fachs Humanmedizin. Advanced Immunology (Vorlesung) findet nur im WS statt.

Course title: Modern Methodology in Flow Cytometry
Link: http://campus.uni-tuebingen.de/20172e159046
Course type: Block Course
Contact hours:
Course coordinator: Dr. Kenneth Berendzen

Target audience
MSc. 1. - 3. Semester

Course description
Content: Introduction to flow cytometry The following topics will be subject of this course: Set-up and methodologies for FACS and Flow Cytometry Typical Applications for FACS and Cytometry Quantification of DNA content for cell cycle analysis, endoreduplication Dye Spillover and compensation Sorting (FACS) Own evaluation of own data generated over the course

Course title: Project Conceptualization (4012) MEEMS
Link: http://campus.uni-tuebingen.de/20172e157261
Course type: Block Course
Contact hours:
Course coordinator: o. Prof. Dr. rer. nat. Nico K. Michiels

Target audience
Pflichtmodul MSc  Evolution und Ökologie Compulsory module MSc  Evolution and Ecology

Course description
In this module, MSc students present the details of their MSc thesis project in two separate presentations. Presentation 1 ideally takes place before the practical work for the thesis project has actually started. In this presentation, the candidate presents his/her planned project as if it were a grant application. The emphasis is on background information (literature, previous work), the envisaged sampling or experimental design or any other relevant methodology, expected outcome and future perspectives. Presentation 2 ideally takes place after data collection and analysis for the Msc thesis has finished, shortly before or after thesis submission. There are four opportunities to give these presentations each year: On the last Friday before a semester term starts and on the first Monday after a semester term has finished, both for the summer and winter term. The event is called “MEEMS” (Meeting of the Ecology and Evolution Master Students). The organizer of the module contacts ALL MSc students who have not yet present both talks EVERY time a MEEMS is coming up and offers the option to register for a presentation (1st or 2nd). The final programme of a MEEMS is sent to all members of the Institute for Evolution and Ecology. All
PhD students and scientists contribute to the evaluation of the talks. These evaluations are used to determine the mark. After both presentations have been presented, the average mark determines the mark for the module. It is recommended to register for this module in CAMPUS. The module organizer (N. Michiels) will check and do this for all students who present their second talk in a MEEMS.

**Course title**: Project Module MSc Molecular Cell Biology & Immunology (W3+W4) (4105)  
**Link**: http://campus.uni-tuebingen.de/20172e154337  
**Course type**: Block Course  
**Contact hours**:  
**Course coordinator**: PD Dr. rer. nat. Wolfram Antonin, PD Dr. rer. nat. Uwe Irion, Prof. Dr. rer. nat. Boris Macek, PD Dr. rer. nat. habil. Bernard Moussian, apl. Prof. Dr. rer. nat. Tassula Proikas-Cezanne, o. Prof. Dr. rer. nat. Hans-Georg Rammensee, Prof. Dr. rer. nat. Rolf Reuter, Prof. Dr. rer. nat. Stefan Stevanovic, o. Prof. Dr. rer. nat. Alfred Nordheim  
**Target audience**: Studierende des MSc Curriculums “Biologie” mit dem Vertiefungsfach “Molecular Cell Biology & Immunology”.  
**Prerequisites**: Pflichtmodule 4138, 4139 und 4051 erfolgreich abgeschlossen.  
**Course description**: This practical course (4105) prepares for the subsequent MSc thesis project. Module 4105 will be oriented on the research topic to be addressed during the MSc thesis project. Accordingly, the course is intended to be supervised by the instructor who will also supervise the MSc thesis project.

**Course title**: Research Module MSc Molecular Cell Biology & Immunology (W1+W2) (4104)  
**Link**: http://campus.uni-tuebingen.de/20172e154339  
**Course type**: Block Course  
**Contact hours**:  
**Course coordinator**: o. Prof. Dr. rer. nat. Alfred Nordheim, PD Dr. rer. nat. Uwe Irion, Prof. Dr. rer. nat. Boris Macek, PD Dr. rer. nat. habil. Bernard Moussian, apl. Prof. Dr. rer. nat. Tassula Proikas-Cezanne, o. Prof. Dr. rer. nat. Hans-Georg Rammensee, Prof. Dr. rer. nat. Rolf Reuter, Prof. Dr. rer. nat. Stefan Stevanovic  
**Target audience**: Studierende des MSc Curriculums “Molecular Cell Biology & Immunology”.  
**Prerequisites**: Teilnahmeverurschung: Pflichtmodule 4138, 4139 und 4051 erfolgreich abgeschlossen.  
**Course description**: This practical course offers the student the opportunity to gain comprehensive practical experience in pursuing a research-directed project in the field of cell biology and immunology.

**Course title**: Scientific Writing (in englischer Sprache) (Ferienveranstaltung)  
**Link**: http://campus.uni-tuebingen.de/20172e156799  
**Course type**: Seminar  
**Contact hours**: 2  
**Course coordinator**: Dr. rer. nat. Laura Ragni, o. Prof. Dr. rer. nat. Gerd Jürgens  
**Target audience**: Master (summer semester) and PhD students (winter semester)  
**Prerequisites**: Requirement: laboratory experience in biology (better plant biology)  
**Course description**: How to write scientific manuscripts, grant proposals and reports Lectures + exercises
Course title: Seminar “Meet the Expert” [Bio Kurs 4003] (Course number: S00SIMMU04)
Link: http://campus.uni-tuebingen.de/20172e157835
Course type: Seminar
Contact hours: 2
Course coordinator: o. Prof. Dr. rer. nat. Hans-Georg Rammensee, Prof. Dr. rer. nat. Stefan Stevanovic
Target audience
Masterstudiengänge Biochemie, Bioinformatik, Biologie, Molekulare Medizin
Prerequisites
Abgeschlossenes Bachelorstudium
Course description
Das Seminar findet begleitend zum Institutsseminar des Interfakultären Instituts für Zellbiologie (gleichzeitig Kolloquium des SFB 685 “Immuntherapie”) statt (dienstags, 17 ct). Jeweils 1 - 2 Studierende betreuen einen Seminartermin (Vorstellung des Gastredners, Diskussion einer Veröffentlichung des Redners, Teilnahme am Vortrag im Rahmen des “Zellbiologisch-Immunologisches Kolloquiums”, Fragerunde, Nachsitzung). Die Vorträge finden im Seminarraum 2.033/2.034, Verfügungsgebäude, Auf der Morgenstelle 15, statt. The seminar accompanies the SFB-seminar series that is organized by the Institute of Cell Biology (Department of Immunology). Pairs of students are responsible for presenting the work of the guest speaker in advance. They are expected to participate actively in the discussion of the lecture.

Course title: Sensory flow processing across modalities and species
Link: http://campus.uni-tuebingen.de/20172e161508
Course type: Seminar
Contact hours:
Course coordinator: Jun.-Prof. Dr. rer. nat. Aristides Arrenberg, Prof. Dr. rer. nat. Jan Benda, Akad. Rat/Rätin Dr. rer. nat. Annette Denzinger, Dr. rer. nat. Jan Grewe, o. Prof. Dr. rer. nat. Hanspeter Mallot
Target audience
Projektbeteiligte des Mini-Graduiertenkollegs Sensory Flow sowie interessierte Studierende und Wissenschaftler im Bereich (Neuro-)biologie.
Prerequisites
Vertiefe Kenntnisse der Biologie
Course description

Course title: W1 Molecular Drosophila Genetics [Bio 4193]
Link: http://campus.uni-tuebingen.de/20172e154871
Course type: Block Course
Contact hours:
Course coordinator: Dr. rer. nat. Sven Hülsmann
Target audience
Students with an interest in Developmental Genetics and Cell Biology
Prerequisites
Bachelor degree
Course description
This course introduces a large variety of genetic tools that scientists use to address cell biological questions using Drosophila as a model system. In lectures, seminars, and exercises, students work through the molecular mechanisms, the genetics, and the applications of several genetic tools. In practical classes, students gain experiences in generating genetic tools and applying some of the techniques. The discussed methods include 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 The selection of practically applied techniques depends mainly on the current focus of the lab; specific interests of students can be considered. In the last course (summer 2016), we generated a deletion in a gene with an unknown function. For the following course (W1 winter semester 2016/17), we plan to continue the analysis of the functions of the gene. Thus, the focus of the practical classes will be on FRT-mediated deletion Overexpression systems Gene expression assays CRISPR/Cas The will be a preparatory meeting on October the 19th, at 17:15 in room 1.034 (IFIZ).

Course title: W2/W3 The Cell Nucleus [Bio 4072]
Link: http://campus.uni-tuebingen.de/20172e154340
Course type: Block Course
Contact hours:
Course coordinator: o. Prof. Dr. rer. nat. Alfred Nordheim, Mitarbeiter
Target audience
Studierende des MSc Studienganges “Molecular Cell Biology & Immunology”. Das Modul 4072 (The Cell Nucleus) ist ein Pflichtmodul für die Studierenden des MSc Studienganges “Molecular Cell Biology & Immunology”.
Prerequisites
Abschluss BSc Curriculum. Aufnahme in MSc Curriculum “Biologie” (speziell: Vertiefungsfach ‘Molecular Cell Biology & Immunology’).
Course description
This practical course will provide hands-on experience with ongoing research projects focusing on the topic of functions of the cell nucleus. Pairs of students (‘tandems’) will be supervised by experienced researchers (post-docs, graduate students). Different research laboratories of Tuebingen research institutions will be involved in the supervision.

Course title: W2 Advanced Biometry (4008)
Link: http://campus.uni-tuebingen.de/20172e154282
Course type: Block Course
Contact hours:
Course coordinator: Dr. rer. nat. Jan Ruppert, Ph.D. Michal Gruntman, Prof. Dr. rer. nat. Katja Tielbörger
Target audience
Obligatory course for Masters in Evolution and Ecology recommended for the 2nd year Master Pflichtmodul für Masters mit Schwerpunkt Evolution und Ökologie, empfohlen fürs 2. Jahr Master open for others
Prerequisites
Preconditions for participation are a basic knowledge in statistics and experimental design.
Course description
This course introduces to state-of-the-art methods in the 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.

Course title: W2 Conservation Biology (3102)
Link: http://campus.uni-tuebingen.de/20172e158590
Course type: Block Course
Contact hours:
Course coordinator: Ph.D. Hendrik Thomassen
Target audience
MSc Biology, BSc Biology, Geoecology
Course description
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.

Course title: W2 Global Change Ecology (3173)
Link: http://campus.uni-tuebingen.de/20172e158990
Course type: Block Course
Contact hours: 4
Course coordinator: Dr. sc. nat. Madalin Parepa
Target audience
Biology Bachelor, 3rd year Biology Master, Ecology & Evolution Geoökologie Master
Course description
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. 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. The course language is English.

Course title: W3 Macroevolutionary and Microevolutionary Analysis (4007)
Link: http://campus.uni-tuebingen.de/20172e158587
Course type: Block Course
Contact hours:
Course coordinator: Prof. Dr. rer. nat. Katharina Foerster, Dr. rer. nat. Stefan Fischer
Target audience
MSc Biologie / Biologie Diplom, BSc Biologie
Prerequisites
none
Course description
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. 2) Microevolution: This part introduces to the basics of population genetics and quantitative genetics. It deals with population and individual genetic variation, the causes of allele frequency changes, selection, heritability, and adaptation.
Course title: W3 Synthetische Biologie (4135)
Link: http://campus.uni-tuebingen.de/20172e159137
Course type: Block Course
Contact hours:
Course coordinator: Dr. rer. nat. Robert Morbitzer, Dr. rer. nat. Annett Strauß, o. Prof. Dr. rer. nat. Thomas Lahaye
Target audience
Master Biologie (1.-3. Fachsemester)
Course description
This module gives an introduction into methods used in 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 you to the CLC Main Workbench software, an important tool for in silico cloning and sequence analyses.

Course title: W3 Visual Ecology (4118)
Link: http://campus.uni-tuebingen.de/20172e157262
Course type: Block Course
Contact hours: 4
Course coordinator: Ph.D. Pierre-Paul Bitton, o. Prof. Dr. rer. nat. Nico K. Michiels
Target audience
This course is intended for advanced undergraduates (3rd-Year Bachelor) and Master students. PhD students are also welcome to attend.
Prerequisites
Background in basic zoology is mandatory. A background in ecology, evolution, neurobiology or physics is advantageous.
Course description
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. 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. The course will be taught by Dr. Pierre-Paul Bitton, an Canadian scientist with a background in bird visual ecology. The 2-hour lecture will be based on the books listed under “literature”. The 2-hour practical part will offer hands-on experience in spectrophotometry, eye anatomy, eye diversity, types pigments, structural colours, as well as discussion of current literature and the design of experiments in this field.
Additional information
http://www.evoeco.uni-tuebingen.de/

Course title: W3 Yeast Cell Biology and Imaging (4203)
Link: http://campus.uni-tuebingen.de/20172e159184
Course type: Lecture/Excercises
Contact hours:
Course coordinator: Jun.-Prof. Ph.D. Jennifer Ewald
Target audience
Master or advanced Bachelor students in Biology or related fields with interest in yeast cell biology and microscopy.
Course description
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. Please bring a laptop if possible.

**Course title:** W4 Cell Differentiation  
**Link:** http://campus.uni-tuebingen.de/20172e156999  
**Course type:** Block Course  
**Contact hours:**  
**Course coordinator:** PD Dr. rer. nat. habil. Bernard Moussian  

**Course description**  
In diesem Modul sollen verschiedene Differenzierungsmechanismen unter anderem beim Modelorganismus Drosophila melanogaster studiert werden. Entsprechende Themen werden dabei historisch anhand von Publikationen abgegrenzt. Dabei ist es wichtig die Fragestellungen zu erkennen und zu formulieren, die zugrundeliegenden Daten zu verstehen und einzuordnen und die Schlussfolgerungen zu ziehen. Über die einzelnen Schritte werden die Studenten/Innen täglich in Form von kurzen Zusammenfassungen (300 Wörter) berichten. Gemeinsam mit einem Abschlussbericht wird die Note ermittelt.

**Course title:** W-Schiene (Di, Mi, Do): Biostatistics I (3010)  
**Link:** http://campus.uni-tuebingen.de/20172e157265  
**Course type:** Block Course  
**Contact hours:**  
**Course coordinator:** o. Prof. Dr. rer. nat. Nico K. Michiels, Dr. rer. nat. Nils Anthes  
**Target audience**  
MSc 1st year, BSc 3rd year. Students in Biology, Geocology, Medicine, Biochemistry, Naturwissenschaftliche Archäologie, ...  
**Prerequisites**  
Participants will need a laptop with the latest version of the freeware “R”, optimally accompanied by the interface “RStudio”  

**Course description**  
The content of this module (taught in English) is identical to the W4 block module “Biostatistik I” (taught in German); 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). 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 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. 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.

**Additional information**  
http://www.evoeco.uni-tuebingen.de

**Course title:** W-Schiene (Fr) Biomimetics of Animal Constructions (3098)  
**Link:** http://campus.uni-tuebingen.de/20172e158239  
**Course type:** Block Course  
**Contact hours:** 4  
**Course coordinator:** Prof. Dr. rer. nat. Oliver Jörg Betz, Prof. Dr. rer. nat. James Nebelsick  
**Target audience**  
Biologie Bachelor, Master, Lehramt; Geologie, Geökologie, Umweltwissenschaften, NWT
Prerequisites
Bachelor, Grundlagenkenntnisse der Speziellen Zoologie, Kenntnisse in der Literaturrecherche

Course description

Course title: W-Schiene (Fr) Evolutionäre Ökologie der Pflanzen (3154)
Link: http://campus.uni-tuebingen.de/20172e158992
Course type: Block Course
Contact hours: 4
Course coordinator: Ph.D. Johannes Scheepens
Target audience

Course description

Course title: W-Schiene (Mi, Fr): Essentials in Evolutionary Biology (4009)
Link: http://campus.uni-tuebingen.de/20172e157264
Course type: Block Course
Contact hours: 4
Course coordinator: o. Prof. Dr. rer. nat. Nico K. Michiels

Target audience
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).

Course description
>>>>>> IMPORTANT: <<<<<<<< FIRST SEMINAR: 18 OCTOBER at 5 pm Room N10 (Auf der Morgenstelle 3) FIRST LECTURE: 20 OCTOBER at 8 am Room E5A20 (Auf der Morgenstelle 28) Contact nico.michiels@uni-tuebingen.de for more information (in case you have not yet registered here in Campus). 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. The seminar part (Wednesdays 1700-1900, room and schedule will be announced during first session) provides talks given by selected speakers from Tübingen or elswhere, 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. 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). This module is compulsory for MSc students in Evolution and Ecology.

Additional information

Course title: W-Schiene (Mi, Fr) Behavioural Ecology I (4052)
Link: http://campus.uni-tuebingen.de/20172e158588
Course type: Block Course
Contact hours: 
Course coordinator: Prof. Dr. rer. nat. Katharina Foerster
Target audience
BSc Bio MSc Bio
Course description
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.

Course title: W-Schiene (Mo, Di) Scientific Writing Skills (3074)
Link: http://campus.uni-tuebingen.de/20172e157254
Course type: Block Course
Contact hours: 5
Course coordinator: Dr. rer. nat. Nils Anthes, o. Prof. Dr. rer. nat. Nico K. Michiels
Target audience
Students of Biology, Geocology, but also students of all other disciplines in the Life Sciences. The module is designed for (under)graduate students that enter their thesis work in parallel (MSc and PhD in particular, also open to BSc students).
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
!! 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. 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. 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 submission and reviewing 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. 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). 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.

Applied Environmental Geoscience AEG – Master

**Course title**: Aquatic and Environmental Chemistry (Sorption and Partitioning Processes)
**Link**: [http://campus.uni-tuebingen.de/20172e153944](http://campus.uni-tuebingen.de/20172e153944)
**Course type**: Lecture/Excercises
**Contact hours**: 4
**Course coordinator**: Prof. Dr. rer. nat. Peter Grathwohl, Prof. Dr. sc. nat. Stefan Haderlein, Jun.-Prof. Dr. rer. nat. Christiane Zarfl

**Course title**: Case Studies in Environmental Geoscience
**Link**: [http://campus.uni-tuebingen.de/20172e153974](http://campus.uni-tuebingen.de/20172e153974)
**Course type**: Projekt
**Contact hours**: 2
**Course coordinator**: Prof. Dr.-Ing. Olaf A. Cirpka, Ph.D. Chuanhe Lu

**Course title**: Earth Processes (V)
**Link**: [http://campus.uni-tuebingen.de/20172e154035](http://campus.uni-tuebingen.de/20172e154035)
**Course type**: Lecture
**Contact hours**: 2
**Course coordinator**: Dr. rer. nat. Renate Kostrewa

**Course title**: Environmental Analytical Chemistry
**Link**: [http://campus.uni-tuebingen.de/20172e153936](http://campus.uni-tuebingen.de/20172e153936)
**Course type**: Lecture/Excercises
**Contact hours**: 3
**Course coordinator**: Prof. Dr. rer. nat. Christian Zwiener

**Course title**: Environmental Analytical Chemistry Lab
**Link**: [http://campus.uni-tuebingen.de/20172e153935](http://campus.uni-tuebingen.de/20172e153935)
**Course type**: Block Course
**Contact hours**: 
**Course coordinator**: N.N., Prof. Dr. rer. nat. Christian Zwiener

**Course title**: Environmental Modeling I (VÜ)
**Link**: [http://campus.uni-tuebingen.de/20172e153961](http://campus.uni-tuebingen.de/20172e153961)
**Course type**: Lecture/Excercises
**Contact hours**: 6
**Course coordinator**: Dr.-Ing. Claus Haslauer, Ph.D. Chuanhe Lu

**Course title**: Environmental Risk Assessment
**Link**: [http://campus.uni-tuebingen.de/20172e153977](http://campus.uni-tuebingen.de/20172e153977)
**Course type**: Lecture/Excercises
**Contact hours**: 3
**Course coordinator**: Prof. Dr. sc. nat. Beate Escher
**Course title:** Geo-Information Systems/Remote Sensing (VÜ)
**Link:** [http://campus.uni-tuebingen.de/20172e153857](http://campus.uni-tuebingen.de/20172e153857)
**Course type:** Lecture/Excercises
**Contact hours:** 4
**Course coordinator:** Dr. rer. nat. Gerhard Lörcher, Prof. Dr.-Ing. Dietrich Schröder

**Course title:** Geotechnical Engineering (Soil Mechanics Lab)
**Link:** [http://campus.uni-tuebingen.de/20172e153952](http://campus.uni-tuebingen.de/20172e153952)
**Course type:** Exercises
**Contact hours:** 3
**Course coordinator:** Dr. rer. nat. Carsten Leven-Pfister

**Course title:** Geotechnical Engineering (V)
**Link:** [http://campus.uni-tuebingen.de/20172e157538](http://campus.uni-tuebingen.de/20172e157538)
**Course type:** Lecture
**Contact hours:** 2
**Course coordinator:** Hon.-Prof. Dipl.-Ing. Johannes Rudolf Giere

**Course title:** Hydrogeochemical Modeling
**Link:** [http://campus.uni-tuebingen.de/20172e153925](http://campus.uni-tuebingen.de/20172e153925)
**Course type:** Lecture/Excercises
**Contact hours:** 2
**Course coordinator:** Dr. rer. nat. Silvia Orsetti

**Course title:** Hydrogeology (Ü)
**Link:** [http://campus.uni-tuebingen.de/20172e153922](http://campus.uni-tuebingen.de/20172e153922)
**Course type:** Lecture/Excercises
**Contact hours:** 2

**Course title:** Hydrogeology (V)
**Link:** [http://campus.uni-tuebingen.de/20172e153924](http://campus.uni-tuebingen.de/20172e153924)
**Course type:** Lecture
**Contact hours:** 4
**Course coordinator:** Prof. Dr.-Ing. Olaf A. Cirpka

**Course title:** Interactions of geomorphology, dams and flood hazards in fluvial systems
**Link:** [http://campus.uni-tuebingen.de/20172e161571](http://campus.uni-tuebingen.de/20172e161571)
**Course type:** Lecture/Excercises
**Contact hours:** 2
**Course coordinator:** Dr. Ana Lucía Vela

**Course title:** Lab Course Environmental Chemistry
**Link:** [http://campus.uni-tuebingen.de/20172e153938](http://campus.uni-tuebingen.de/20172e153938)
**Course type:** Practical Course
**Contact hours:** 5
**Course coordinator:** Dipl.-Geowiss. Daniel Buchner, Prof. Dr. rer. nat. Christian Zwiener

**Course title:** Molecular Microbial Ecology
**Link:** [http://campus.uni-tuebingen.de/20172e161640](http://campus.uni-tuebingen.de/20172e161640)
**Course type:** Seminar
**Contact hours:** 2
Course coordinator: Dr. rer. nat. Sara Kleindienst

**Course title:** Principles of Model Calibration  
**Link:** http://campus.uni-tuebingen.de/20172e160648  
**Course type:** Lecture/Exercises  
**Contact hours:** 2  
**Course coordinator:** Dr.-Ing. Erik Daniel Erdal

**Course title:** Spectroscopic and microscopic analysis in the environment  
**Link:** http://campus.uni-tuebingen.de/20172e154027  
**Course type:** Lecture/Exercises  
**Contact hours:** 6  
**Course coordinator:** Dr. rer. nat. James Byrne

**Course title:** Sustainable Environmental Biotechnology Systems  
**Link:** http://campus.uni-tuebingen.de/20172e154991  
**Course type:** Exercises  
**Contact hours:** 2

**Course title:** Sustainable Environmental Biotechnology Systems  
**Link:** http://campus.uni-tuebingen.de/20172e154992  
**Course type:** Seminar  
**Contact hours:** 2  
**Course coordinator:** Dr. rer. nat. Claudia Tominski

**Course title:** Teach@Tübingen Disinfection Byproducts in Drinking Water - Formation, Characterization and Minimization  
**Link:** http://campus.uni-tuebingen.de/20172e161473  
**Course type:** Lecture/Exercises  
**Contact hours:** 2  
**Course coordinator:** Kirsten Studer

**Course title:** Water Treatment (Module Water Treatment and Remediation)  
**Link:** http://campus.uni-tuebingen.de/20172e153934  
**Course type:** Lecture/Exercises  
**Contact hours:** 3  
**Course coordinator:** Prof. Dr. rer. nat. Christian Zwiener

**Geoecology – Bachelor**

**Course title:** Climatology and Ecosystems of the Earth (VÜ)  
**Link:** http://campus.uni-tuebingen.de/20172e153858  
**Course type:** Lecture/Exercises  
**Contact hours:** 6  
**Course coordinator:** Prof. Dr. rer. nat. Jens Bange, Prof. Dr. Hervé Bocherens, PD Dr. rer. nat. Dorothee Drucker-Bocherens, Dr. rer. nat. Martin Ebner, PD Dr. rer. nat. Dr. rer. nat. Wilfried Konrad, Prof. Dr. Yvonne Oelmann, Dr. rer. nat. Hartmut Schulz, Jun.-Prof. Dr. rer. nat. Ilka Weikusat
Course title: Dynamik der Erde (V) – Dynamics of the Earth
Link: http://campus.uni-tuebingen.de/20172e153796
Course type: Lecture
Contact hours: 4
Course coordinator: Prof. Dr. phil. Todd Ehlers, Prof. Dr. rer. nat. Madelaine Böhme
Course description
The lecture will be held in English. The Powerpoint Presentations are in German. The exam will be offered in English and German.

Course title: EvE Seminar / Hilgendorf Lecture
Link: http://campus.uni-tuebingen.de/20172e157258
Course type: Colloquium
Contact hours: 2
Course coordinator: o. Prof. Dr. rer. nat. Nico K. Michiels
Target audience
The EvE Seminar and the Hilgendorf Lecture are open for all interested persons.
Course description
Local and internationally acclaimed external guests present their latest work in the field of Evolutionary Biology and Ecology. Note that on some occasions the Evolution and Ecology Seminar is replaced by a Hilgendorf Lecture, which takes place in the Sigwartstraße, lecture hall S320. Please check the up-to-date online program at www.everest.uni-tuebingen.de/hilgendorf-lecture.html.
Additional information

Course title: Introduction to Earth Surface Processes
Link: http://campus.uni-tuebingen.de/20172e154043
Course type: Lecture/Exercises
Contact hours: 4
Course coordinator: Dr. rer. nat. Reinhard Drews

Course title: W2 Conservation Biology (3102)
Link: http://campus.uni-tuebingen.de/20172e158590
Course type: Block Course
Contact hours:
Course coordinator: Ph.D. Hendrik Thomassen
Target audience
MSc Biology, BSc Biology, Geoecology
Course description
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.

Course title: W2 Global Change Ecology (3173)
Link: http://campus.uni-tuebingen.de/20172e158990
Course type: Block Course
Contact hours: 4
Course coordinator: Dr. sc. nat. Madalin Parepa
Target audience: Biology Bachelor, 3rd year Biology Master, Ecology & Evolution Geoökologie Master
Course description: 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. 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. The course language is English.

Geoecology – Master

Course title: Evolution and Ecology Seminar
Link: http://campus.uni-tuebingen.de/20172e154274
Course type: AG/Kolloquium
Contact hours: 2
Course coordinator: Ph.D. Mark Bilton, Prof. Dr. rer. nat. Katja Tielbörger
Target audience: This seminar specifically targets all Tübingen students (undergrad, postgrad) interested in Ecology and Evolution - this is your direct access to learn more about ongoing local research and establish contacts.
Course description: This is the scientific colloquium of the Institute for Evolution and Ecology. Speakers are early career researchers as well as senior scientists in the broad fields of Ecology, Biodiversity and Evolution. On the one hand, this is the platform where scientists from within Tübingen (University, Max Planck Institutes) disseminate and share their research topics with a broader audience. On the other hand, we frequently invite external guest speakers to present novel findings and research perspectives. Moreover, it is the place where scientists working in the fields of ecology and evolution meet and discuss their most recent findings.

Course title: Molecular Microbial Ecology
Link: http://campus.uni-tuebingen.de/20172e161640
Course type: Seminar
Contact hours: 2
Course coordinator: Dr. rer. nat. Sara Kleindienst

Course title: Paleobiology Seminar
Link: http://campus.uni-tuebingen.de/20172e153972
Course type: Seminar
Contact hours: 1
Course coordinator: Prof. Dr. Hervé Bocherens
Geosciences – Bachelor

Course title: Dynamik der Erde (V) - Dynamics of the Earth
Link: http://campus.uni-tuebingen.de/20172e153796
Course type: Lecture
Contact hours: 4
Course coordinator: Prof. Dr. phil. Todd Ehlers, Prof. Dr. rer. nat. Madelaine Böhme
Course description
The lecture will be held in English. The Powerpoint Presentations are in German. The exam will be offered in English and German.

Course title: Earth System Dynamics Research Seminar
Link: http://campus.uni-tuebingen.de/20172e153859
Course type: Seminar
Contact hours: 2
Course coordinator: Prof. Dr. phil. Todd Ehlers

Course title: EvE Seminar / Hilgendorf Lecture
Link: http://campus.uni-tuebingen.de/20172e157258
Course type: Colloquium
Contact hours: 2
Course coordinator: o. Prof. Dr. rer. nat. Nico K. Michiels
Target audience
The EvE Seminar and the Hilgendorf Lecture are open for all interested persons.
Course description
Local and internationally acclaimed external guests present their latest work in the field of Evolutionary Biology and Ecology. Note that on some occasions the Evolution and Ecology Seminar is replaced by a Hilgendorf Lecture, which takes place in the Sigwartstraße, lecture hall S320. Please check the up-to-date online program at www.everest.uni-tuebingen.de/hilgendorf-lecture.html.

Additional information

Course title: Introduction to Earth Surface Processes
Link: http://campus.uni-tuebingen.de/20172e154043
Course type: Lecture/Exercises
Contact hours: 4
Course coordinator: Dr. rer. nat. Reinhard Drews

Course title: Paläobiologie
Link: http://campus.uni-tuebingen.de/20172e153844
Course type: Lecture/Exercises
Contact hours: 6
Course coordinator: Prof. Dr. Hervé Bocherens
Geosciences – Master

Course title: Earth System Dynamics Research Seminar  
Link: http://campus.uni-tuebingen.de/20172e153859  
Course type: Seminar  
Contact hours: 2  
Course coordinator: Prof. Dr. phil. Todd Ehlers

Course title: EvE Seminar / Hilgendorf Lecture  
Link: http://campus.uni-tuebingen.de/20172e157258  
Course type: Colloquium  
Contact hours: 2  
Course coordinator: o. Prof. Dr. rer. nat. Nico K. Michiels

Target audience
The EvE Seminar and the Hilgendorf Lecture are open for all interested persons.

Course description
Local and internationally acclaimed external guests present their latest work in the field of Evolutionary Biology and Ecology. Note that on some occasions the Evolution and Ecology Seminar is replaced by a Hilgendorf Lecture, which takes place in the Sigwartstraße, lecture hall S320. Please check the up-to-date online program at www.everest.uni-tuebingen.de/hilgendorf-lecture.html.

Additional information

Course title: Molecular Microbial Ecology  
Link: http://campus.uni-tuebingen.de/20172e161640  
Course type: Seminar  
Contact hours: 2  
Course coordinator: Dr. rer. nat. Sara Kleindienst

Course title: Paleobiology Seminar  
Link: http://campus.uni-tuebingen.de/20172e153972  
Course type: Seminar  
Contact hours: 1  
Course coordinator: Prof. Dr. Hervé Bocherens

Scientific Archaeology – Bachelor

Course title: Dynamik der Erde (V)  
Link: http://campus.uni-tuebingen.de/20172e153796  
Course type: Lecture  
Contact hours: 4  
Course coordinator: Prof. Dr. phil. Todd Ehlers, Prof. Dr. rer. nat. Madelaine Böhme

Course description

Course title: Microfauna in archaeological context  
Link: http://campus.uni-tuebingen.de/20172e159988
Course type: Block Course  
Contact hours: 2  

Course title: NWA-05c-1: Anthrakologie  
Link: http://campus.uni-tuebingen.de/20172e158331  
Course type: Exercises  
Contact hours: 2  
Course coordinator: PD Dr. phil. Katleen Irene Irma Deckers  

Course title: The evolution of culture and cognition.  
Link: http://campus.uni-tuebingen.de/20172e160641  
Course type: Lecture  
Contact hours: 2  
Course coordinator: Dr. rer. nat. Claudio Tennie  

Course description  
This lecture covers the theoretical and experimental basics of cultural cognition and evolution, drawing from different fields (mostly from archaeology, psychology and biology). The covered areas are important for understanding the evolutionary basis the co-evolution of culture and cognition that enable(d) human cultural behaviours to accumulate and diversify over time. This evolutionary aspect will require us to look at the ethology of non-human animals; with a particular focus on our closest living relatives (the non-human great apes). We will also explore the different definitions of culture, some of the current debates and the methodical approaches that are in use in this relatively new research field. Given the recent nature of this research field, it is to be expected that much of the covered issues, methods and logic will be new to those attending this lecture, and so it should not be expected that this lecture will be of an "easy listening" type. Participation in all lectures is also highly recommended for a full basic understanding of this topic. Note that I will aim to place my slides on this online folder, as pdf, a day prior to the lecture. Do not share these files outside of class, and do not place them online yourself: https://tinyurl.com/y6wxx7mc  
Probable dates for this lecture: Einführungswoche: no lecture  

Scientific Archaeology – Master

Course title: Crash Course in Human Osteology  
Link: http://campus.uni-tuebingen.de/20172e160943  
Course type: Praktische Übung  
Contact hours: 2  
Course coordinator: Ph.D. Sireen El Zaatarri  

Course title: Essential Statistics  (Course number: CM04C)  
Link: http://campus.uni-tuebingen.de/20172e159193  
Course type: Lecture/Excercises  
Contact hours: 4  
Course coordinator: PD Dr. rer. nat. Philipp Berens  
Course description  
Statistical techniques are ubiquitous in quantitative neuroscience research. Therefore, they are
essential for the correct understanding and interpretation of results published in the literature, and for publishing and properly reporting the results of one's own research. This lecture will cover basic statistical concepts for neuroscientists, such as descriptive statistics, hypothesis testing, and correlation and regression analysis. An intuitive understanding of the central concepts will be facilitated via exercises. Computer exercises will be conducted using the package JASP (www.jasp-stats.org). The lecture will be accompanied by a tutorial.

Additional information
http://www.neuroschool-tuebingen.de/courses/winter-term/master-neural-behav-sci/

Course title: Material Science and Archaeological Ceramics: Ceramic Petrography and Geochemistry
Link: http://campus.uni-tuebingen.de/20172e157245
Course type: Lecture/Excercises
Contact hours: 4
Course coordinator: Dr. Silvia Amicone

Course title: Microfauna in archaeological context
Link: http://campus.uni-tuebingen.de/20172e159988
Course type: Block Course
Contact hours: 2

Course title: Modern Human Origins
Link: http://campus.uni-tuebingen.de/20172e160597
Course type: Seminar
Contact hours: 2
Course coordinator: Ph.D. Christian Bentz, Dr. rer. nat. Hugo Reyes-Centeno, Ph.D. Yonatan Sahle

Course title: NWA-01-1: Theorien und Methoden der Archäologie (S)
Link: http://campus.uni-tuebingen.de/20172e158320
Course type: Seminar
Contact hours: 2
Course coordinator: Dr. rer. nat. Manuel Will

Course title: NWA-01-2: INA Kolloquium
Link: http://campus.uni-tuebingen.de/20172e158321
Course type: Colloquium
Contact hours: 2
Course coordinator: Dr. phil. Susan Mentzer, Prof. Dr. rer. nat. Christopher Miller, Prof. Dr. Hervé Bocherens, Dr. phil. Britt Starkovich

Course title: NWA-02-2: NWA I: Knochen als Quelle (S)
Link: http://campus.uni-tuebingen.de/20172e158322
Course type: Seminar
Contact hours: 2
Course coordinator: Dr. phil. Marta Díaz-Zorita Bonilla, PD Dr. rer. nat. Dorothee Drucker-Bocherens, Dr. phil. Britt Starkovich

Course title: NWA-03-1: NWA II: Archäobotanik (S)
Link: http://campus.uni-tuebingen.de/20172e158325
Course type: Seminar
Contact hours: 2  
Course coordinator: Dr. rer. nat. Simone Riehl, Dr. rer. nat. Özgür Cizer, M.Sc. Doga Karakaya, PD Dr. rer. nat. Elena Marinova-Wolff  
Course description  
Program  Date  Topic  
26.10.2017  General introduction to archaeobotany – Riehl, 2h lecture  
TOPICS: Main research questions and terminology; field and laboratory methods; preservation of plant macroremains and taphonomy  
READING: Main textbooks: Jacomet/Kreuz (1999), Pearsall (2000)  
02.11.17  Domestication of cereals and other plant species with focus on the Near East – Riehl, 1h lecture, 1h student presentations  
QUESTION: How can we differentiate between gathering, cultivating and domestication of species in the archaeobotanical record and how does this influence our understanding of the dynamics of agricultural development?  
09.11.17  Stable isotope applications in archaeobotany – Riehl, 1h lecture, 1h student presentations  
QUESTION: What can we learn on ancient agriculture by stable isotope analysis on archaeobotanical remains?  
READING: Araus et al. (1998 & 1999), Bogaard et al. (2013), Ferro et al. (2005), Fiorentino et al. (2014), Fraser et al. (2011), Messager et al. (2015), Vaiglove et al. (2014)  
16.11.17  The development of agriculture in central Anatolia (established agricultural societies) – Cizer, 1h lecture, 1h student presentations  
QUESTION: Cropped cultivation in Pre-Urban societies: Emphasis on wild plant gathering or plant domestication?  
23.11.17  The development of agriculture in central Anatolia (established agricultural societies) – Cizer, 1h lecture, 1h student presentations  
QUESTION: Development of agriculture in Proto-urban societies: Are plant assemblages useful to understand the urbanization process and its impact on the environment?  
30.11.17  Ethnographic studies on traditional agro-pastoral societies – Karakaya, 1h lecture, 1h student presentations  
QUESTION: Can ethnographic evidence be useful for identifying past agricultural practices? What are the historical attestations for the nomadic communities in Assyrian cuneiform sources? How to recognize pastoral communities in the archaeological and archaeobotanical records?  
05.12.17  Food economy in complex societies - Karakaya, 1h lecture, 1h student presentations  
QUESTION: What are the sources of information for studying food systems in archaeology? How do the textual resources help to identify the agricultural foundation of complex societies? How to define the emerging social complexity in archaeology in reference to food systems? What were the roles of organic consumables (e.g. grape, olive oil, pomegranate) in international trade? What are the changes of crop preferences in the 1st millennium BCE?  
READINGs: Fuller and Stevens (2009); Genz (2003); Gumerman (1997); Halstead (2011); Hamilakis (1999); Nakassis, Parkinson and Galaty (2011); Radner (2017); Riehl (2009); Sherratt (1999); Ward (2003); Zeder (1991)  
14.12.17  Feasting and Commensalism in the Near East – Why do humans feast? - Karakaya, 1h lecture, 1h student presentations  
QUESTION: Why study feasting in archaeology? What are the social anthropological approaches to feasting? What are the archaeological correlates to recognize feasting activities in material culture? How to feed the dead ancestors and deities?  
READINGs: Lange in Altmann and Fu (2014); Hoffner (1995); Pollock (2003); Ballanger (2011); Sarpaki (2009); Sasson (2004); Schmandt-Besserat (2001); Struble and Herrmann (2009); Twiss (2011); Zuckerman (2007)  
21.12.17  General introduction to plant micro-remains (pollen and phytoliths) - Marinova, 1h lecture, 1h student presentations  
TOPICS: General principals, theoretical concerts for study, sampling and interpretation of plant micro-remains  
READINGs: Pearsall 2000, Gaillard 2007  
11.01.2018  Vegetation history and reconstruction – Marinova, 1h lecture, 1h student presentations  
TOPICS: General introduction in the vegetation history and vegetation

Course title: NWA-03-2: NWA II: Geoarchaeology (V-S)
Link: http://campus.uni-tuebingen.de/20172e158324
Course type: Seminar
Contact hours: 2
Course coordinator: PD Dr. phil. Katleen Irene Irma Deckers

Course title: NWA-04-1: NWA III: Einführung Archäometrie (V)
Link: http://campus.uni-tuebingen.de/20172e158327
Course type: Lecture
Contact hours: 2
Course coordinator: Dr. rer. nat. Patrick Schmidt
Course description
The module ZNA-4, Aktuelle Naturwissenschaftliche Archäologie III: Archäometrie aims in introducing the basics of Archaeometry. The module is composed of a general lecture and a workshop in which each student will actively participate. Both the lecture and the workshop will have as primary objective the communication of knowledge about the aims and methods used for archaeometric research. Addressed methodological sections comprise: sampling techniques, remote sensing, the nature of archaeo-materials and their study, the understanding of the most commonly used analytical techniques and dating methods used in archaeology. Thematic sections comprise: the study of lithic raw material, ceramics, building materials, metals and stable isotopes in archaeological science. Students will acquire theoretical knowledge about the used terminology, learn to deal with archaeological samples and learn to critically read specific archaeometric literature.

Course title: NWA-04-2: NWA III: Einführung Paläogenetik (V/S)
Link: http://campus.uni-tuebingen.de/20172e158326
Course type: Seminar
Contact hours: 2
Course coordinator: Dr. rer. nat. Verena Schünemann

Course title: NWA-05a-1: Erweiterte Grundlagen der Zooarchäologie - Zooarchäologie II
Link: http://campus.uni-tuebingen.de/20172e158330
Course type: Lecture
Contact hours: 2
Course coordinator: Dr. phil. Britt Starkovich
Course title: NWA-05a-2: Erweiterte Grundlagen der Zooarchäologie - Zooarchäologie II  
Link: http://campus.uni-tuebingen.de/20172e158329  
Course type: Seminar  
Contact hours: 2  
Course coordinator: Dr. phil. Britt Starkovich  

Course title: NWA-05c-1: Anthrakologie  
Link: http://campus.uni-tuebingen.de/20172e158331  
Course type: Exercises  
Contact hours: 2  
Course coordinator: PD Dr. phil. Katleen Irene Irma Deckers  

Course title: NWA-05c-2: Palynologie  
Link: http://campus.uni-tuebingen.de/20172e158333  
Course type: Lecture/Excercises  
Contact hours: 2  
Course coordinator: Prof. Dr. rer. nat. Brigitte Urban  

Course title: NWA-05e-1: Practical Archaeometry  
Link: http://campus.uni-tuebingen.de/20172e158340  
Course type: Lecture  
Contact hours: 2  
Course coordinator: Dr. Silvia Amicone, Jun.-Prof. Dr. phil. Cynthia Debono Spiteri, Dr. phil. Marta Díaz-Zorita Bonilla, PD Dr. rer. nat. Dorothee Drucker-Bocherens  

Course title: NWA-05e-2: Practical Archaeometry  
Link: http://campus.uni-tuebingen.de/20172e158339  
Course type: Exercises  
Contact hours: 2  
Course coordinator: Jun.-Prof. Dr. phil. Cynthia Debono Spiteri, Dr. Silvia Amicone, Dr. phil. Marta Díaz-Zorita Bonilla, PD Dr. rer. nat. Dorothee Drucker-Bocherens  

Course title: The evolution of culture and cognition.  
Link: http://campus.uni-tuebingen.de/20172e160641  
Course type: Lecture  
Contact hours: 2  
Course coordinator: Dr. rer. nat. Claudio Tennie  

Course description  
This lecture covers the theoretical and experimental basics of cultural cognition and evolution, drawing from different fields (mostly from archaeology, psychology and biology). The covered areas are important for understanding the evolutionary basis the co-evolution of culture and cognition that enable(d) human cultural behaviours to accumulate and diversify over time. This evolutionary aspect will require us to look at the ethology of non-human animals; with a particular focus on our closest living relatives (the non-human great apes). We will also explore the different definitions of culture, some of the current debates and the methodical approaches that are in use in this relatively new research field. Given the recent nature of this research field, it is to be expected that much of the covered issues, methods and logic will be new to those attending this lecture, and so it should not be expected that this lecture will be of an "easy listening" type. Participation in all lectures is also highly recommended for a full basic understanding of this topic. Note that I will aim to place my slides on this online folder, as pdf, a day prior to the lecture. Do not share these files outside of class, and do not place them online yourself: https://tinyurl.com/y6wxx7mc  
Probable dates for this lecture: Einführungswoche: no lecture
### Course title: W-Schiene (Di, Mi, Do): Biostatistics I (3010)

**Link:** [http://campus.uni-tuebingen.de/20172e157265](http://campus.uni-tuebingen.de/20172e157265)

**Course type:** Block Course

**Contact hours:**

**Course coordinator:** o. Prof. Dr. rer. nat. Nico K. Michiels, Dr. rer. nat. Nils Anthes

**Target audience**
MSc 1st year, BSc 3rd year. Students in Biology, Geoecology, Medicine, Biochemistry, Naturwissenschaftliche Archäologie, ...

**Prerequisites**
Participants will need a laptop with the latest version of the freeware “R”, optimally accompanied by the interface “RStudio”

**Course description**
The content of this module (taught in English) is identical to the W4 block module “Biostatistik I” (taught in German); Both courses are targeted at BSc and MSc students of Biology, Geoecology 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). 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 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. 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.

**Additional information**
[http://www.evoeco.uni-tuebingen.de](http://www.evoeco.uni-tuebingen.de)

### Course title: W-Schiene (Mi, Fr): Essentials in Evolutionary Biology (4009)

**Link:** [http://campus.uni-tuebingen.de/20172e157264](http://campus.uni-tuebingen.de/20172e157264)

**Course type:** Block Course

**Contact hours:** 4

**Course coordinator:** o. Prof. Dr. rer. nat. Nico K. Michiels

**Target audience**
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).

**Course description**
>>>>> IMPORTANT: <<<<<<<< FIRST SEMINAR: 18 OCTOBER at 5 pm Room N10 (Auf der Morgenstelle 3) FIRST LECTURE: 20 OCTOBER at 8 am Room E5A20 (Auf der Morgenstelle 28) Contact nico.michiels@uni-tuebingen.de for more information (in case you have not yet registered here in Campus). 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. The seminar part (Wednesdays 1700-1900, room and schedule will be announced during first session) provides 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. 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). This module is compulsory for MSc students in Evolution and Ecology.

Additional information

Palaeoanthropology – Bachelor

Course title: Modern Human Origins
Link: http://campus.uni-tuebingen.de/20172e160597
Course type: Seminar
Contact hours: 2
Course coordinator: Ph.D. Christian Bentz, Dr. rer. nat. Hugo Reyes-Centeno, Ph.D. Yonatan Sahle

Course title: PAL-08a: Fossilgeschichte: Introduction to human evolution (V)
Link: http://campus.uni-tuebingen.de/20172e158352
Course type: Lecture
Contact hours: 2
Course coordinator: Ph.D. Mark Walter Grabowski

Course title: PAL-08b: Fossilgeschichte: Introduction to human evolution (Ü)
Link: http://campus.uni-tuebingen.de/20172e158345
Course type: Exercises
Contact hours: 2
Course coordinator: Ph.D. Mark Walter Grabowski

Course title: The evolution of culture and cognition.
Link: http://campus.uni-tuebingen.de/20172e160641
Course type: Lecture
Contact hours: 2
Course coordinator: Dr. rer. nat. Claudio Tennie
Course description
This lecture covers the theoretical and experimental basics of cultural cognition and evolution, drawing from different fields (mostly from archaeology, psychology and biology). The covered areas are important for understanding the evolutionary basis of cultural cognition and evolution

drawing from different fields (mostly from archaeology, psychology and biology). The covered areas are important for understanding the evolutionary basis of cultural cognition and evolution. This evolutionary aspect will require us to look at the ethology of non-human animals; with a particular focus on our closest living relatives (the non-human great apes). We will also explore the different definitions of culture, some of the current debates and the methodical approaches that are in use in this relatively new research field. Given the recent nature of this research field, it is to be expected that much of the covered issues, methods and logic will be new to those attending this lecture, and so it should not be expected that this lecture will be of an "easy listening" type. Participation in all lectures is also highly recommended for a full basic understanding of this topic. Note that I will aim to place my slides on this online folder, as pdf, a day prior to the lecture. Do not share these files outside of class, and do not place them online yourself: https://tinyurl.com/y6wxx7mc

Environmental Sciences – Bachelor

Course title: Dynamik der Erde (V)
Link: http://campus.uni-tuebingen.de/20172e153796
Course type: Lecture
Contact hours: 4
Course coordinator: Prof. Dr. phil. Todd Ehlers, Prof. Dr. rer. nat. Madelaine Böhme
Course description

Course title: EvE Seminar / Hilgendorf Lecture
Link: http://campus.uni-tuebingen.de/20172e157258
Course type: Colloquium
Contact hours: 2
Course coordinator: o. Prof. Dr. rer. nat. Nico K. Michiels
Target audience
The EvE Seminar and the Hilgendorf Lecture are open for all interested persons.
Course description
Local and internationally acclaimed external guests present their latest work in the field of Evolutionary Biology and Ecology. Note that on some occasions the Evolution and Ecology Seminar is replaced by a Hilgendorf Lecture, which takes place in the Sigwartstraße, lecture hall S320. Please check the up-to-date online program at www.everest.uni-tuebingen.de/hilgendorf-lecture.html.
Additional information

Course title: Introduction to Earth Surface Processes
Link: http://campus.uni-tuebingen.de/20172e154043
Course type: Lecture/Excercises
Contact hours: 4
Course coordinator: Dr. rer. nat. Reinhard Drews

Course title: Water Treatment (Module Water Treatment and Remediation)
Link: http://campus.uni-tuebingen.de/20172e153934
Course type: Lecture/Excercises
Contact hours: 3
Course coordinator: Prof. Dr. rer. nat. Christian Zwiener

Bioinformatics – Bachelor

Course title: Advanced Java for Bioinformatics (Course number: BIOINF4399)
Link: http://campus.uni-tuebingen.de/20172e157687
Course type: Lecture
Bioinformatics – Master

Course title: Advanced Java for Bioinformatics  (Course number: BIOINF4399)
Link: http://campus.uni-tuebingen.de/20172e157687
Course type: Lecture

Contact hours:
Course coordinator: o. Prof. Dr. math. Daniel Huson, Mitarbeiter
Additional information
http://www-ab.informatik.uni-tuebingen.de/teaching/ws2017/java

Course title: Advanced Mathematical Logic  (Course number: INFO4467)
Link: http://campus.uni-tuebingen.de/20172e157759
Course type: Lecture

Contact hours:
Course coordinator: o. Prof. Dr. phil. Peter Schroeder-Heister
Prerequisites
Solid knowledge in Mathematical Logic, for example from the introductory course given in the current winter semester.
Course description
This course is announced under my name in order to have an entry in the course list. It will be given by a visiting professor in compact form (2 weeks) during the spring vacations, that is, in February or March 2018. It is an 6 ECTS course which includes tutorials with assessed exercises. Its intended audience are students with a solid knowledge in Mathematical Logic, for example from the introductory course on Mathematical Logic in the current winter term. The course will address advanced topics such as Gödel’s incompleteness theorems and foundations of set theory. Further particulars will be announced later in the winter semester.

Course title: Advanced Medical Informatics  (Course number: MEDZ4110)
Link: http://campus.uni-tuebingen.de/20172e160527
Course type: Lecture/Excercises

Contact hours:
Course coordinator: Prof. Dr. rer. nat. Nico Pfeifer

Course title: Advanced Topics in Perception Engineering  (Course number: INFO4381)
Link: http://campus.uni-tuebingen.de/20172e160925
Course type: Seminar

Contact hours:
Course coordinator: Jun.-Prof. Dr. rer. nat. Enkelejda Kasneci, M.Sc. Wolfgang Fuhl

Course title: Bioinformatics I/Sequence Bioinformatics  (Course number: BIOINF4110)
Link: http://campus.uni-tuebingen.de/20172e157677
Course type: Lecture/Excercises
Contact hours: 6
Course coordinator: Mitarbeiter, apl. Prof. Dr. math. Katja Nieselt
Prerequisites
Grundlagen der Bioinformatik, Programmierkenntnisse (Java)

Course description
The lecture “Bioinformatics I” is the first in the series on “Bioinformatics”, which are mandatory for all bioinformatics Master students. Sequence-based and machine learning algorithms and applications are the focus of this lecture.

Course title: Bioinformatics Tools  (Course number: BIOINF4240)
Link: http://campus.uni-tuebingen.de/20172e157678
Course type: Internship
Contact hours:
Course coordinator: o. Prof. Dr. math. Daniel Huson, Mitarbeiter
Additional information
http://ab.inf.uni-tuebingen.de/teaching/ws2017/tools

Course title: Cheminformatics  (Course number: BIO4372)
Link: http://campus.uni-tuebingen.de/20172e160292
Course type: Lecture/Excercises
Contact hours:
Course coordinator: Mitarbeiter, Dr. rer. nat. Philipp Thiel

Course title: Displays  (Course number: INF4178)
Link: http://campus.uni-tuebingen.de/20172e157727
Course type: Lecture/Excercises
Contact hours:
Course coordinator: o. Prof. Dr.-Ing. Hendrik Lensch, M.Sc. Jieen Chen

Course title: Extensibility and Modularity in Programming Languages  (Course number: INFO4244)
Link: http://campus.uni-tuebingen.de/20172e161670
Course type: Seminar
Contact hours:
Course coordinator: Prof. Dr.-Ing. Klaus Ostermann, M.Sc. Julian Jabs
Additional information
http://ps.informatik.uni-tuebingen.de/teaching/ws17/empl/

Course title: Flying Robots  (Course number: INF4364)
Link: http://campus.uni-tuebingen.de/20172e157732
Course type: Internship
Contact hours: 4
Course coordinator: M.Sc. Ma Wang

Course title: Lambda Calculus and Combinatory Logic  (Course number: INF4465)
Link: http://campus.uni-tuebingen.de/20172e160328
Course type: Lecture/Excercises
Contact hours:
Course coordinator: Dr. rer. nat. Thomas Piecha

Course title: Machine Learning and Artificial Neural Networks in Biomedical Applications (Course number: INF4192)
Link: http://campus.uni-tuebingen.de/20172e157725
Course type: Seminar
Contact hours: 2
**Course coordinator:** Dr. rer. nat. Martin Spüler  
**Course description**  
Im Seminar “Maschinelles Lernen und Künstliche Neuronale Netze in der biomedizinischen Anwendung” werden aktuelle Themen aus der Signalverarbeitung im Bereich der Verarbeitung von Nervensignalen (z.B.: Neuroprothetik oder Brain-Computer-Interfaces), medizinischer Signale (z.B.: fMRT oder MEG) oder verwandten Bereichen sowie in diesen Bereichen verwendeten Algorithmen der Signalverarbeitung bearbeitet.  
------------------------------------------------------------  
The seminar “Machine Learning” and Artificial Networks in Biomedical Applications” covers current topics of signal processing on neural signals (e.g., fMRI, EEG or MEG) for their use in biomedical applications (e.g., neuroprosthetics of brain-computer interfaces, BCIs) and related topics, as well as methods and algorithms applied in those fields.

**Course title:** Machine Learning for Health  
**Link:** http://campus.uni-tuebingen.de/20172e160533  
**Course type:** Seminar  
**Contact hours:**  
**Course coordinator:** Prof. Dr. rer. nat. Nico Pfeifer

**Course title:** Machine Learning in Biomedicine (Course number: MEDZ4250)  
**Link:** http://campus.uni-tuebingen.de/20172e161818  
**Course type:** Internship  
**Contact hours:**  
**Course coordinator:** Prof. Dr. rer. nat. Nico Pfeifer

**Course title:** Mathematical Logic (Course number: INF4654)  
**Link:** http://campus.uni-tuebingen.de/20172e160327  
**Course type:** Seminar  
**Contact hours:**  
**Course coordinator:** o. Prof. Dr. phil. Peter Schroeder-Heister  
**Prerequisites**  
Solid knowledge of first-order logic.  
**Course description**  
Selected topics from mathematical and philosophical logic. Solid knowledge in first-order logic is presupposed. It is planned that presentations of the participants take place at several half-day and/or full-day sessions towards the end of the semester. However, at the planning meeting we might decide to have the seminar in a weekly or fortnightly fashion. Depending on the subject and course studied, this seminar counts for either philosophy or computer science. If (and only if!) all participants are German speaking, presentations can be given in German.

**Course title:** Rendering (Course number: INF4175)  
**Link:** http://campus.uni-tuebingen.de/20172e157726  
**Course type:** Lecture/Excercises  
**Contact hours:** 4  
**Course coordinator:** o. Prof. Dr.-Ing. Hendrik Lensch, B.Sc. Raphael Braun, M.Sc. Sebastian Herholz

**Course title:** Systems Biology: Simulation of Dynamic Network States (Course number: BIOINF4394)  
**Link:** http://campus.uni-tuebingen.de/20172e157680  
**Course type:** Lecture/Excercises  
**Contact hours:**
**Course coordinator:** Dr. rer. nat. Andreas Dräger  
**Course description**  
This class teaches how methods from computational modeling can be applied to biological systems. This includes creating models of biochemical reaction networks, simulation and analysis of their dynamic responses as well as fundamental programming techniques for solving problems of systems biology.

**Course title:** Vorkurs Informatik für Biologien (Master Bioinformatik, Variante B)  
**Link:** [http://campus.uni-tuebingen.de/20172e161513](http://campus.uni-tuebingen.de/20172e161513)  
**Course type:** Sonstiges  
**Contact hours:**  

_Additional information_  

**Computer Science – Bachelor**

**Course title:** Advanced Mathematical Logic  
(Course number: INFO4467)  
**Link:** [http://campus.uni-tuebingen.de/20172e157759](http://campus.uni-tuebingen.de/20172e157759)  
**Course type:** Lecture  
**Contact hours:**  
**Course coordinator:** o. Prof. Dr. phil. Peter Schroeder-Heister  
**Prerequisites**  
Solid knowledge in Mathematical Logic, for example from the introductory course given in the current winter semester.  
**Course description**  
This course is announced under my name in order to have an entry in the course list. It will given by a visiting professor in compact form (2 weeks) during the spring vacations, that is, in February or March 2018. It is an ECTS course which includes tutorials with assessed exercises. Its intended audience are students with a solid knowledge in Mathematical Logic, for example from the introductory course on Mathematical Logic in the current winter term. The course will address advanced topics such as Gödel’s incompleteness theorems and foundations of set theory. Further particulars will be announced later in the winter semester.

**Computer Science – Master**

**Course title:** Advanced Java for Bioinformatics  
(Course number: BIOINF4399)  
**Link:** [http://campus.uni-tuebingen.de/20172e157687](http://campus.uni-tuebingen.de/20172e157687)  
**Course type:** Lecture  
**Contact hours:**  
**Course coordinator:** o. Prof. Dr. math. Daniel Huson, Mitarbeiter  
**Additional information**  
[http://www-ab.informatik.uni-tuebingen.de/teaching/ws2017/java](http://www-ab.informatik.uni-tuebingen.de/teaching/ws2017/java)

**Course title:** Advanced Mathematical Logic  
(Course number: INFO4467)  
**Link:** [http://campus.uni-tuebingen.de/20172e157759](http://campus.uni-tuebingen.de/20172e157759)  
**Course type:** Lecture  
**Contact hours:**
Course coordinator: o. Prof. Dr. phil. Peter Schroeder-Heister

Prerequisites
Solid knowledge in Mathematical Logic, for example from the introductory course given in the current winter semester.

Course description
This course is announced under my name in order to have an entry in the course list. It will given by a visiting professor in compact form (2 weeks) during the spring vacations, that is, in February or March 2018. It is an 6 ECTS course which includes tutorials with assessed exercises. Its intended audience are students with a solid knowledge in Mathematical Logic, for example from the introductory course on Mathematical Logic in the current winter term. The course will address advanced topics such as Gödel’s incompleteness theorems and foundations of set theory. Further particulars will be announced later in the winter semester.

Course title: Advanced Medical Informatics (Course number: MEDZ4110)
Link: http://campus.uni-tuebingen.de/20172e160527
Course type: Lecture/Excercises
Contact hours:
Course coordinator: Prof. Dr. rer. nat. Nico Pfeifer

Course title: Advanced Topics in Perception Engineering (Course number: INFO4381)
Link: http://campus.uni-tuebingen.de/20172e160925
Course type: Seminar
Contact hours:
Course coordinator: Jun.-Prof. Dr. rer. nat. Enkelejda Kasneci, M.Sc. Wolfgang Fuhl

Course title: Cheminformatics (Course number: BIO4372)
Link: http://campus.uni-tuebingen.de/20172e160292
Course type: Lecture/Excercises
Contact hours:
Course coordinator: Mitarbeiter, Dr. rer. nat. Philipp Thiel

Course title: Displays (Course number: INF4178)
Link: http://campus.uni-tuebingen.de/20172e157727
Course type: Lecture/Excercises
Contact hours:
Course coordinator: o. Prof. Dr.-Ing. Hendrik Lensch, M.Sc. Jieen Chen

Course title: Extensibility and Modularity in Programming Languages (Course number: INFO4244)
Link: http://campus.uni-tuebingen.de/20172e161670
Course type: Seminar
Contact hours:
Course coordinator: Prof. Dr.-Ing. Klaus Ostermann, M.Sc. Julian Jabs

Additional information
http://ps.informatik.uni-tuebingen.de/teaching/ws17/empl/

Course title: Flying Robots (Course number: INF4364)
Link: http://campus.uni-tuebingen.de/20172e157732
Course type: Internship
Contact hours: 4
Course coordinator: M.Sc. Ma Wang
Course title: Lambda Calculus and Combinatory Logic  (Course number: INF4465)
Link: http://campus.uni-tuebingen.de/20172e160328
Course type: Lecture/Excercises
Contact hours:
Course coordinator: Dr. rer. nat. Thomas Piecha

Course title: Machine Learning and Artificial Neural Networks in Biomedical Applications
(Course number: INF4192)
Link: http://campus.uni-tuebingen.de/20172e157725
Course type: Seminar
Contact hours: 2
Course coordinator: Dr. rer. nat. Martin Spüler

Course description
Im Seminar “Maschinelles Lernen und Künstliche Neuronale Netze in der biomedizinischen
Anwendung” werden aktuelle Themen aus der Signalverarbeitung im Bereich der Verarbeitung
von Nervensignalen (z.B.: Neuroprothetik oder Brain-Computer-Interfaces), medizinischer
Signale (z.B.: fMRT oder MEG) oder verwandten Bereichen sowie in diesen Bereichen
verwendeten Algorithmen der Signalverarbeitung bearbeitet.
------------------------------------------------------------
The seminar “Machine Learning” and Artificial
Networks in Biomedical Applications” covers current topics of signal processing on neural signals
(e.g., fMRI, EEG or MEG) for their use in biomedical applications (e.g., neuroprosthetics of
brain-computer interfaces, BCIs) and related topics, as well as methods and algorithms applied in
those fields..

Course title: Machine Learning for Health
Link: http://campus.uni-tuebingen.de/20172e160533
Course type: Seminar
Contact hours:
Course coordinator: Prof. Dr. rer. nat. Nico Pfeifer

Course title: Mathematical Logic  (Course number: INF4654)
Link: http://campus.uni-tuebingen.de/20172e160327
Course type: Seminar
Contact hours:
Course coordinator: o. Prof. Dr. phil. Peter Schroeder-Heister
Prerequisites
Solid knowledge of first-order logic.
Course description
Selected topics from mathematical and philosophical logic. Solid knowledge in first-order logic is
presupposed. It is planned that presentations of the participants take place at several half-day
and/or full-day sessions towards the end of the semester. However, at the planning meeting we
might decide to have the seminar in a weekly or fortnightly fashion. Depending on the subject and
course studied, this seminar counts for either philosophy or computer science. If (and only if!) all
participants are German speaking, presentations can be given in German.

Course title: Rendering  (Course number: INF4175)
Link: http://campus.uni-tuebingen.de/20172e157726
Course type: Lecture/Excercises
Contact hours: 4
Course coordinator: o. Prof. Dr.-Ing. Hendrik Lensch, B.Sc. Raphael Braun, M.Sc. Sebastian
Herholz


**Course title:** Systems Biology: Simulation of Dynamic Network States  (Course number: BIOINF4394)
**Link:** [http://campus.uni-tuebingen.de/20172e157680](http://campus.uni-tuebingen.de/20172e157680)
**Course type:** Lecture/Excercises
**Contact hours:**
**Course coordinator:** Dr. rer. nat. Andreas Dräger

**Course description**
This class teaches how methods from computational modeling can be applied to biological systems. This includes creating models of biochemical reaction networks, simulation and analysis of their dynamic responses as well as fundamental programming techniques for solving problems of systems biology.

---

**Media Technologies – Master**

**Course title:** Advanced Java for Bioinformatics  (Course number: BIOINF4399)
**Link:** [http://campus.uni-tuebingen.de/20172e157687](http://campus.uni-tuebingen.de/20172e157687)
**Course type:** Lecture
**Contact hours:**
**Course coordinator:** o. Prof. Dr. math. Daniel Huson, Mitarbeiter

**Additional information**
[http://www-ab.informatik.uni-tuebingen.de/teaching/ws2017/java](http://www-ab.informatik.uni-tuebingen.de/teaching/ws2017/java)

---

**Course title:** Advanced Mathematical Logic  (Course number: INFO4467)
**Link:** [http://campus.uni-tuebingen.de/20172e157759](http://campus.uni-tuebingen.de/20172e157759)
**Course type:** Lecture
**Contact hours:**
**Course coordinator:** o. Prof. Dr. phil. Peter Schroeder-Heister

**Prerequisites**
Solid knowledge in Mathematical Logic, for example from the introductory course given in the current winter semester.

**Course description**
This course is announced under my name in order to have an entry in the course list. It will given by a visiting professor in compact form (2 weeks) during the spring vacations, that is, in February or March 2018. It is an 6 ECTS course which includes tutorials with assessed exercises. Its intended audience are students with a solid knowledge in Mathematical Logic, for example from the introductory course on Mathematical Logic in the current winter term. The course will address advanced topics such as Gödel’s incompleteness theorems and foundations of set theory. Further particulars will be announced later in the winter semester.

---

**Course title:** Advanced Medical Informatics  (Course number: MEDZ4110)
**Link:** [http://campus.uni-tuebingen.de/20172e160527](http://campus.uni-tuebingen.de/20172e160527)
**Course type:** Lecture/Excercises
**Contact hours:**
**Course coordinator:** Prof. Dr. rer. nat. Nico Pfeifer

---

**Course title:** Advanced Topics in Perception Engineering  (Course number: INFO4381)
**Link:** [http://campus.uni-tuebingen.de/20172e160925](http://campus.uni-tuebingen.de/20172e160925)
**Course type:** Seminar
**Contact hours:**
**Course coordinator:** Jun.-Prof. Dr. rer. nat. Enkelejda Kasneci, M.Sc. Wolfgang Fuhl
Course title: Cheminformatics  (Course number: BIO4372)
Link: http://campus.uni-tuebingen.de/20172e160292
Course type: Lecture/Excercises
Contact hours:
Course coordinator: Mitarbeiter, Dr. rer. nat. Philipp Thiel

Course title: Displays  (Course number: INF4178)
Link: http://campus.uni-tuebingen.de/20172e157727
Course type: Lecture/Excercises
Contact hours:
Course coordinator: o. Prof. Dr.-Ing. Hendrik Lensch, M.Sc. Jieen Chen

Course title: Extensibility and Modularity in Programming Languages  (Course number: INFO4244)
Link: http://campus.uni-tuebingen.de/20172e161670
Course type: Seminar
Contact hours:
Course coordinator: Prof. Dr.-Ing. Klaus Ostermann, M.Sc. Julian Jabs
Additional information
http://ps.informatik.uni-tuebingen.de/teaching/ws17/empl/

Course title: Flying Robots  (Course number: INF4364)
Link: http://campus.uni-tuebingen.de/20172e157732
Course type: Internship
Contact hours: 4
Course coordinator: M.Sc. Ma Wang

Course title: Lambda Calculus and Combinatory Logic  (Course number: INF4465)
Link: http://campus.uni-tuebingen.de/20172e160328
Course type: Lecture/Excercises
Contact hours:
Course coordinator: Dr. rer. nat. Thomas Piecha

Course title: Machine Learning and Artificial Neural Networks in Biomedical Applications  (Course number: INF4192)
Link: http://campus.uni-tuebingen.de/20172e157725
Course type: Seminar
Contact hours: 2
Course coordinator: Dr. rer. nat. Martin Spüler
Course description
Im Seminar “Maschinelles Lernen und Künstliche Neuronale Netze in der biomedizinischen Anwendung” werden aktuelle Themen aus der Signalverarbeitung im Bereich der Verarbeitung von Nervensignalen (z.B.: Neuprothetik oder Brain-Computer-Interfaces), medizinischer Signale (z.B.: fMRI oder MEG) oder verwandten Bereichen sowie in diesen Bereichen verwendeten Algorithmen der Signalverarbeitung bearbeitet.

------------------------------------------------------------ The seminar “Machine Learning” and Artificial Networks in Biomedical Applications” covers current topics of signal processing on neural signals (e.g., fMRI, EEG or MEG) for their use in biomedical applications (e.g., neuroprosthetics of brain-computer interfaces, BCIs) and related topics, as well as methods and algorithms applied in those fields..

Course title: Machine Learning for Health
Course type: Seminar
Contact hours:
Course coordinator: Prof. Dr. rer. nat. Nico Pfeifer

Course title: Mathematical Logic  (Course number: INF4654)
Link: http://campus.uni-tuebingen.de/20172e160327
Course type: Seminar
Contact hours:
Course coordinator: o. Prof. Dr. phil. Peter Schroeder-Heister
Prerequisites
Selected topics from mathematical and philosophical logic. Solid knowledge in first-order logic is presupposed. It is planned that presentations of the participants take place at several half-day and/or full-day sessions towards the end of the semester. However, at the planning meeting we might decide to have the seminar in a weekly or fortnightly fashion. Depending on the subject and course studied, this seminar counts for either philosophy or computer science. If (and only if!) all participants are German speaking, presentations can be given in German.

Course title: Rendering  (Course number: INF4175)
Link: http://campus.uni-tuebingen.de/20172e157726
Course type: Lecture/Excercises
Contact hours: 4
Course coordinator: o. Prof. Dr.-Ing. Hendrik Lensch, B.Sc. Raphael Braun, M.Sc. Sebastian Herholz

Course title: Systems Biology: Simulation of Dynamic Network States  (Course number: BIOINF4394)
Link: http://campus.uni-tuebingen.de/20172e157680
Course type: Lecture/Excercises
Contact hours:
Course coordinator: Dr. rer. nat. Andreas Dräger
Course description
This class teaches how methods from computational modeling can be applied to biological systems. This includes creating models of biochemical reaction networks, simulation and analysis of their dynamic responses as well as fundamental programming techniques for solving problems of systems biology.

Medicineinformatics – Master

Course title: Advanced Java for Bioinformatics  (Course number: BIOINF4399)
Link: http://campus.uni-tuebingen.de/20172e157687
Course type: Lecture
Contact hours:
Course coordinator: o. Prof. Dr. math. Daniel Huson, Mitarbeiter
Additional information
http://www-ab.informatik.uni-tuebingen.de/teaching/ws2017/java

Course title: Advanced Mathematical Logic  (Course number: INFO4467)
Link: http://campus.uni-tuebingen.de/20172e157759
Course type: Lecture
Contact hours:
Course coordinator: o. Prof. Dr. phil. Peter Schroeder-Heister
Prerequisites
Solid knowledge in Mathematical Logic, for example from the introductory course given in the current winter semester.

Course description
This course is announced under my name in order to have an entry in the course list. It will be given by a visiting professor in compact form (2 weeks) during the spring vacations, that is, in February or March 2018. It is an 6 ECTS course which includes tutorials with assessed exercises. Its intended audience are students with a solid knowledge in Mathematical Logic, for example from the introductory course on Mathematical Logic in the current winter term. The course will address advanced topics such as Gödel's incompleteness theorems and foundations of set theory. Further particulars will be announced later in the winter semester.

Course title: Advanced Medical Informatics (Course number: MEDZ4110)
Link: http://campus.uni-tuebingen.de/20172e160527
Course type: Lecture/Exercises
Contact hours:
Course coordinator: Prof. Dr. rer. nat. Nico Pfeifer

Course title: Advanced Topics in Perception Engineering (Course number: INFO4381)
Link: http://campus.uni-tuebingen.de/20172e160925
Course type: Seminar
Contact hours:
Course coordinator: Jun.-Prof. Dr. rer. nat. Enkelejda Kasneci, M.Sc. Wolfgang Fuhl

Course title: Bioinformatics I/Sequence Bioinformatics (Course number: BIOINF4110)
Link: http://campus.uni-tuebingen.de/20172e157677
Course type: Lecture/Exercises
Contact hours: 6
Course coordinator: Mitarbeiter, apl. Prof. Dr. math. Katja Nieselt
Prerequisites
Grundlagen der Bioinformatik, Programmierkenntnisse (Java)
Course description
The lecture “Bioinformatics I” is the first in the series on “Bioinformatics”, which are mandatory for all bioinformatics Master students. Sequence-based and machine learning algorithms and applications are the focus of this lecture.

Course title: Cheminformatics (Course number: BIO4372)
Link: http://campus.uni-tuebingen.de/20172e160292
Course type: Lecture/Exercises
Contact hours:
Course coordinator: Mitarbeiter, Dr. rer. nat. Philipp Thiel

Course title: Displays (Course number: INF4178)
Link: http://campus.uni-tuebingen.de/20172e157727
Course type: Lecture/Exercises
Contact hours:
Course coordinator: o. Prof. Dr.-Ing. Hendrik Lensch, M.Sc. Jieen Chen
Course title: Extensibility and Modularity in Programming Languages  (Course number: INFO4244)
Link: http://campus.uni-tuebingen.de/20172e161670
Course type: Seminar
Contact hours:
Course coordinator: Prof. Dr.-Ing. Klaus Ostermann, M.Sc. Julian Jabs
Additional information
http://ps.informatik.uni-tuebingen.de/teaching/ws17/empl/

Course title: Flying Robots  (Course number: INF4364)
Link: http://campus.uni-tuebingen.de/20172e157732
Course type: Internship
Contact hours: 4
Course coordinator: M.Sc. Ma Wang

Course title: Lambda Calculus and Combinatory Logic  (Course number: INF4465)
Link: http://campus.uni-tuebingen.de/20172e160328
Course type: Lecture/Excercises
Contact hours:
Course coordinator: Dr. rer. nat. Thomas Piecha

Course title: Machine Learning and Artificial Neural Networks in Biomedical Applications  
(Course number: INF4192)
Link: http://campus.uni-tuebingen.de/20172e157725
Course type: Seminar
Contact hours: 2
Course coordinator: Dr. rer. nat. Martin Spüler
Course description
Im Seminar “Maschinelles Lernen und Künstliche Neuronale Netze in der biomedizinischen 
Anwendung” werden aktuelle Themen aus der Signalverarbeitung im Bereich der Verarbeitung 
von Nervensignalen (z.B.: Neuroprothetik oder Brain-Computer-Interfaces), medizinischer 
Signale (z.B.: fMRT oder MEG) oder verwandten Bereichen sowie in diesen Bereichen 
verwendeten Algorithmen der Signalverarbeitung bearbeitet.

The seminar “Machine Learning” and Artificial Networks in Biomedical Applications” covers current topics of signal processing on neural signals (e.g., fMRI, EEG or MEG) for their use in biomedical applications (e.g., neuroprosthetics of brain-computer interfaces, BCIs) and related topics, as well as methods and algorithms applied in those fields.

Course title: Machine Learning for Health
Link: http://campus.uni-tuebingen.de/20172e160533
Course type: Seminar
Contact hours:
Course coordinator: Prof. Dr. rer. nat. Nico Pfeifer

Course title: Machine Learning in Biomedicine  (Course number: MEDZ4250)
Link: http://campus.uni-tuebingen.de/20172e161818
Course type: Internship
Contact hours:
Course coordinator: Prof. Dr. rer. nat. Nico Pfeifer

Course title: Mathematical Logic  (Course number: INF4654)
Link: http://campus.uni-tuebingen.de/20172e160327
Course type: Seminar
Contact hours:
Course coordinator: o. Prof. Dr. phil. Peter Schroeder-Heister
Prerequisites
Solid knowledge of first-order logic.
Course description
Selected topics from mathematical and philosophical logic. Solid knowledge in first-order logic is presupposed. It is planned that presentations of the participants take place at several half-day and/or full-day sessions towards the end of the semester. However, at the planning meeting we might decide to have the seminar in a weekly or fortnightly fashion. Depending on the subject and course studied, this seminar counts for either philosophy or computer science. If (and only if!) all participants are German speaking, presentations can be given in German.

Course title: Rendering  (Course number: INF4175)
Link: http://campus.uni-tuebingen.de/20172e157726
Course type: Lecture/Excercises
Contact hours: 4
Course coordinator: o. Prof. Dr.-Ing. Hendrik Lensch, B.Sc. Raphael Braun, M.Sc. Sebastian Herholz

Course title: Systems Biology: Simulation of Dynamic Network States  (Course number: BIOINF4394)
Link: http://campus.uni-tuebingen.de/20172e157680
Course type: Lecture/Excercises
Contact hours:
Course coordinator: Dr. rer. nat. Andreas Dräger
Course description
This class teaches how methods from computational modeling can be applied to biological systems. This includes creating models of biochemical reaction networks, simulation and analysis of their dynamic responses as well as fundamental programming techniques for solving problems of systems biology.

Mathematics – Bachelor

Course title: Algebraic Transformation Groups  (Course number: MAT4512V)
Link: http://campus.uni-tuebingen.de/20172e159236
Course type: Lecture
Contact hours: 4
Course coordinator: Prof. Dr. rer. nat. Jürgen Hausen

Course title: Foundations of Quantum Mechanics  (Course number: MAT6504V)
Link: http://campus.uni-tuebingen.de/20172e159260
Course type: Lecture
Contact hours: 4
Course coordinator: apl. Prof. Dr. rer. nat. Roderich Tumulka

Course title: Geometry in Physics  (Course number: MAT6511V)
Link: http://campus.uni-tuebingen.de/20172e159264
Course type: Lecture
Contact hours: 4  
Course coordinator: Prof. Dr. rer. nat. Stefan Teufel

Course title: Group Representations in Physics  (Course number: MAT6505V)  
Link: http://campus.uni-tuebingen.de/20172e159262  
Course type: Lecture  
Contact hours: 4  
Course coordinator: Dr. rer. nat. Stefan Keppeler

Course title: Introduction to Partial Differential Equations  (Course number: MAT5521V)  
Link: http://campus.uni-tuebingen.de/20172e159251  
Course type: Lecture  
Contact hours: 4  
Course coordinator: Prof. Ph.D. Marcello Porta

Course title: Mathematical Quantum Theory  (Course number: MAT6512V)  
Link: http://campus.uni-tuebingen.de/20172e159266  
Course type: Lecture  
Contact hours: 4  
Course coordinator: Prof. Dr. rer. nat. Christian Hainzl

Course title: Number Theory and Cryptography  (Course number: MAT4531V)  
Link: http://campus.uni-tuebingen.de/20172e160960  
Course type: Lecture  
Contact hours: 4  
Course coordinator: apl. Prof. Dr. rer. nat. Elena Klimenko

Course title: Übungen zur Vorlesung Algebraic Transformation Groups  (Course number: MAT4512X)  
Link: http://campus.uni-tuebingen.de/20172e159237  
Course type: Exercises  
Contact hours: 2  
Course coordinator: Prof. Dr. rer. nat. Jürgen Hausen

Course title: Übungen zur Vorlesung Foundations of Quantum Mechanics  (Course number: MAT6504X)  
Link: http://campus.uni-tuebingen.de/20172e159261  
Course type: Exercises  
Contact hours: 2  
Course coordinator: apl. Prof. Dr. rer. nat. Roderich Tumulka

Course title: Übungen zur Vorlesung Geometry in Physics  (Course number: MAT6511X)  
Link: http://campus.uni-tuebingen.de/20172e159265  
Course type: Exercises  
Contact hours: 2  
Course coordinator: Prof. Dr. rer. nat. Stefan Teufel

Course title: Übungen zur Vorlesung Group Representations in Physics  (Course number: MAT6505X)  
Link: http://campus.uni-tuebingen.de/20172e159263  
Course type: Exercises  
Contact hours: 2
Course coordinator: Dr. rer. nat. Stefan Keppeler

Course title: Übungen zur Vorlesung Introduction to Partial Differential Equations  (Course number: MAT5521X)
Link: http://campus.uni-tuebingen.de/20172e159252
Course type: Exercises
Contact hours: 2
Course coordinator: Prof. Ph.D. Marcello Porta

Course title: Übungen zur Vorlesung Mathematical Quantum Theory  (Course number: MAT6512X)
Link: http://campus.uni-tuebingen.de/20172e159267
Course type: Exercises
Contact hours: 2
Course coordinator: Prof. Dr. rer. nat. Christian Hainzl

Course title: Übungen zur Vorlesung Number Theory and Cryptography  (Course number: MAT4531X)
Link: http://campus.uni-tuebingen.de/20172e160961
Course type: Exercises
Contact hours: 2
Course coordinator: apl. Prof. Dr. rer. nat. Elena Klimenko

Mathematics – Master

Course title: Algebraic Transformation Groups  (Course number: MAT4512V)
Link: http://campus.uni-tuebingen.de/20172e159236
Course type: Lecture
Contact hours: 4
Course coordinator: Prof. Dr. rer. nat. Jürgen Hausen

Course title: Foundations of Quantum Mechanics  (Course number: MAT6504V)
Link: http://campus.uni-tuebingen.de/20172e159260
Course type: Lecture
Contact hours: 4
Course coordinator: apl. Prof. Dr. rer. nat. Roderich Tumulka

Course title: Geometry in Physics  (Course number: MAT6511V)
Link: http://campus.uni-tuebingen.de/20172e159264
Course type: Lecture
Contact hours: 4
Course coordinator: Prof. Dr. rer. nat. Stefan Teufel

Course title: Group Representations in Physics  (Course number: MAT6505V)
Link: http://campus.uni-tuebingen.de/20172e159262
Course type: Lecture
Contact hours: 4
Course coordinator: Dr. rer. nat. Stefan Keppeler

Course title: Hartree-Fock Theory  (Course number: MAT6506V)
Link: http://campus.uni-tuebingen.de/20172e160293
Course type: Lecture
Contact hours: 2
Course coordinator: Prof. Ph.D. Marcello Porta

Course title: Introduction to Partial Differential Equations  (Course number: MAT5521V)
Link: http://campus.uni-tuebingen.de/20172e159251
Course type: Lecture
Contact hours: 4
Course coordinator: Prof. Ph.D. Marcello Porta

Course title: Mathematical Quantum Theory  (Course number: MAT6512V)
Link: http://campus.uni-tuebingen.de/20172e159266
Course type: Lecture
Contact hours: 4
Course coordinator: Prof. Dr. rer. nat. Christian Hainzl

Course title: Number Theory and Cryptography  (Course number: MAT4531V)
Link: http://campus.uni-tuebingen.de/20172e160960
Course type: Lecture
Contact hours: 4
Course coordinator: apl. Prof. Dr. rer. nat. Elena Klimenko

Course title: Übungen zur Vorlesung Algebraic Transformation Groups  (Course number: MAT4512X)
Link: http://campus.uni-tuebingen.de/20172e159237
Course type: Exercises
Contact hours: 2
Course coordinator: Prof. Dr. rer. nat. Jürgen Hausen

Course title: Übungen zur Vorlesung Foundations of Quantum Mechanics  (Course number: MAT6504X)
Link: http://campus.uni-tuebingen.de/20172e159261
Course type: Exercises
Contact hours: 2
Course coordinator: apl. Prof. Dr. rer. nat. Roderich Tumulka

Course title: Übungen zur Vorlesung Geometry in Physics  (Course number: MAT6511X)
Link: http://campus.uni-tuebingen.de/20172e159265
Course type: Exercises
Contact hours: 2
Course coordinator: Prof. Dr. rer. nat. Stefan Teufel

Course title: Übungen zur Vorlesung Group Representations in Physics  (Course number: MAT6505X)
Link: http://campus.uni-tuebingen.de/20172e159263
Course type: Exercises
Contact hours: 2
Course coordinator: Dr. rer. nat. Stefan Keppeler

Course title: Übungen zur Vorlesung Introduction to Partial Differential Equations  (Course number: MAT5521X)
Link: http://campus.uni-tuebingen.de/20172e159252
Course type: Exercises
Contact hours: 2
Course coordinator: Prof. Ph.D. Marcello Porta

Course title: Übungen zur Vorlesung Mathematical Quantum Theory  (Course number: MAT6512X)
Link: http://campus.uni-tuebingen.de/20172e159267
Course type: Exercises
Contact hours: 2
Course coordinator: Prof. Dr. rer. nat. Christian Hainzl

Course title: Übungen zur Vorlesung Number Theory and Cryptography  (Course number: MAT4531X)
Link: http://campus.uni-tuebingen.de/20172e160961
Course type: Exercises
Contact hours: 2
Course coordinator: apl. Prof. Dr. rer. nat. Elena Klimenko

Mathematical Physics – Master

Course title: Algebraic Transformation Groups  (Course number: MAT4512V)
Link: http://campus.uni-tuebingen.de/20172e159236
Course type: Lecture
Contact hours: 4
Course coordinator: Prof. Dr. rer. nat. Jürgen Hausen

Course title: Exercises for Introduction to General Relativity  (Course number: VFERT)
Link: http://campus.uni-tuebingen.de/20172e158415
Course type: Exercises
Contact hours: 2
Course coordinator: Prof. Ph.D. Konstantinos Kokkotas, Daniela Doneva
Course description
Day and time will be fixed during the first lecture.
Additional information
http://www.tat.physik.uni-tuebingen.de/~kokkotas/Teaching/GTR.html

Course title: Exercises for Numerical Methods in Physics and Astrophysics  (Course number: VFNMPAP)
Link: http://campus.uni-tuebingen.de/20172e158413
Course type: Exercises
Contact hours: 2
Course coordinator: Prof. Ph.D. Konstantinos Kokkotas, Daniela Doneva,
Course description
Day and time will be fixed during the first lecture.
Additional information
http://www.tat.physik.uni-tuebingen.de/~kokkotas/Teaching/Num_Methods.html

Course title: Exercises Quantum Field Theory / Übungen zur Quantenfeldtheorie  (Course number: VFQFTTP)
Link: http://campus.uni-tuebingen.de/20172e162360
Course type: Exercises
Contact hours: 2
Course coordinator: Prof. Dr. rer. nat. Werner Vogelsang

Course title: Foundations of Quantum Mechanics  (Course number: MAT6504V)
Link: http://campus.uni-tuebingen.de/20172e159260
Course type: Lecture
Contact hours: 4
Course coordinator: apl. Prof. Dr. rer. nat. Roderich Tumulka

Course title: Geometry in Physics  (Course number: MAT6511V)
Link: http://campus.uni-tuebingen.de/20172e159264
Course type: Lecture
Contact hours: 4
Course coordinator: Prof. Dr. rer. nat. Stefan Teufel

Course title: Group Representations in Physics  (Course number: MAT6505V)
Link: http://campus.uni-tuebingen.de/20172e159262
Course type: Lecture
Contact hours: 4
Course coordinator: Dr. rer. nat. Stefan Keppeler

Course title: Hartree-Fock Theory  (Course number: MAT6506V)
Link: http://campus.uni-tuebingen.de/20172e160293
Course type: Lecture
Contact hours: 2
Course coordinator: Prof. Ph.D. Marcello Porta

Course title: Introduction to General Relativity  (Course number: VFERT)
Link: http://campus.uni-tuebingen.de/20172e158416
Course type: Lecture
Contact hours: 2
Course coordinator: Prof. Ph.D. Konstantinos Kokkotas
Additional information
http://www.tat.physik.uni-tuebingen.de/~kokkotas/Teaching/GTR.html

Course title: Introduction to Partial Differential Equations  (Course number: MAT5521V)
Link: http://campus.uni-tuebingen.de/20172e159251
Course type: Lecture
Contact hours: 4
Course coordinator: Prof. Ph.D. Marcello Porta

Course title: Machine Learning I  (Course number: NIP02A)
Link: http://campus.uni-tuebingen.de/20172e159210
Course type: Lecture/Excercises
Contact hours: 3
Course coordinator: Prof. Dr. Matthias Bethge
Prerequisites
Students should have a basic knowledge of linear algebra and probability theory. The exercise-sheets will involve some matlab-programming, so a basic familiarity with matlab would be advantageous.
Course description
The scientific discipline of “Machine learning” is concerned with developing and studying algorithms which can learn structure from data. Thus, it both provides important practical tools for data analysis as well as theoretical concepts for understanding how sensory systems can infer structure from empirical observations. This course will provide an introduction to important topics and algorithms in machine learning. A particular focus of this course will be on algorithms that have a clear statistical (and often Bayesian) interpretation. We will cover both supervised algorithms (i.e. which try to learn an association between inputs and desired outputs) as well as unsupervised algorithms (which try to build up an internal model from inputs alone). The “supervised” learning component of the course will include various linear and nonlinear regression algorithms as well as linear discriminants, logistic regression and nonlinear classification algorithms. The “unsupervised” learning component of the course will include fundamental concepts and algorithms of dimensionality reduction, blind source separation, and clustering.

Course title: Mathematical Quantum Theory  (Course number: MAT6512V)
Link: http://campus.uni-tuebingen.de/20172e159266
Course type: Lecture
Contact hours: 4
Course coordinator: Prof. Dr. rer. nat. Christian Hainzl

Course title: Number Theory and Cryptography  (Course number: MAT4531V)
Link: http://campus.uni-tuebingen.de/20172e160960
Course type: Lecture
Contact hours: 4
Course coordinator: apl. Prof. Dr. rer. nat. Elena Klimenko

Course title: Numerical Methods in Physics and Astrophysics  (Course number: VFNMPAP)
Link: http://campus.uni-tuebingen.de/20172e158414
Course type: Lecture
Contact hours: 2
Course coordinator: Prof. Ph.D. Konstantinos Kokkotas
Course description
student hours/ Sprechstunde: T.B.D. Morgenstelle 10: C10 P17, C10 P13 contact: kostas.kokkotas@uni-tuebingen.de
Additional information
http://www.tat.physik.uni-tuebingen.de/~kokkotas/Teaching/Num_Methods.html

Course title: Planet Formation  (Course number: APP104)
Link: http://campus.uni-tuebingen.de/20172e158411
Course type: Lecture
Contact hours: 2
Course coordinator: Prof. Dr. rer. nat. Wilhelm Kley
Target audience
Students in Bachelor of Physics, Master in Astro and Particle Physics
Prerequisites
Basic knowledge in Physics and interest in Astronomy & Astrophysics
Course description
Overview of the observational status (Solar System and extrasolar planets), star formation (theory and observations), growth from dust to planets, massive planets, dynamics of multi-planet systems, Solar System.
Additional information
http://www.tat.physik.uni-tuebingen.de/~kley/lehre/planeten/index.html

**Course title:** Quantum Field Theory / Quantenfeldtheorie  (Course number: VFQFTTP)
**Link:** http://campus.uni-tuebingen.de/20172e160579
**Course type:** Lecture
**Contact hours:** 4
**Course coordinator:** Prof. Dr. rer. nat. Werner Vogelsang

**Course title:** Theoretical Astrophysics  (Course number: VFTAP)
**Link:** http://campus.uni-tuebingen.de/20172e158409
**Course type:** Lecture
**Contact hours:** 2
**Course coordinator:** Prof. Dr. rer. nat. Wilhelm Kley

**Target audience**
Bachelor in Physics: Specialisation in Astronomy & Astrophysics of Theoretical Physics Master in Astro and Particle Physics.

**Prerequisites**
Basic courses in Physics. Interest in the Topic.

**Course description**
Introduction to the foundations of Theoretical Astrophysics. Brief introduction to thermodynamics/hydrodynamics. Applications: sound waves, shock waves, accretion physics, hydrodynamical instabilities. The lecture (includ. excercises) counts for the specialization in Astronomy&Astrophysics or Theoretical Physics (Bachelor of Physics), or Master Astro and Particle Physics.

**Additional information**
http://www.tat.physik.uni-tuebingen.de/~kley/lehre/theoast/

**Course title:** Übungen zur Vorlesung Algebraic Transformation Groups  (Course number: MAT4512X)
**Link:** http://campus.uni-tuebingen.de/20172e159237
**Course type:** Exercises
**Contact hours:** 2
**Course coordinator:** Prof. Dr. rer. nat. Jürgen Hausen

**Course title:** Übungen zur Vorlesung Foundations of Quantum Mechanics  (Course number: MAT6504X)
**Link:** http://campus.uni-tuebingen.de/20172e159261
**Course type:** Exercises
**Contact hours:** 2
**Course coordinator:** apl. Prof. Dr. rer. nat. Roderich Tumulka

**Course title:** Übungen zur Vorlesung Geometry in Physics  (Course number: MAT6511X)
**Link:** http://campus.uni-tuebingen.de/20172e159265
**Course type:** Exercises
**Contact hours:** 2
**Course coordinator:** Prof. Dr. rer. nat. Stefan Teufel

**Course title:** Übungen zur Vorlesung Group Representations in Physics  (Course number: MAT6505X)
**Link:** http://campus.uni-tuebingen.de/20172e159263
**Course type:** Exercises
**Contact hours:** 2
Course coordinator: Dr. rer. nat. Stefan Keppeler

Course title: Übungen zur Vorlesung Introduction to Partial Differential Equations  (Course number: MAT5521X)
Link: http://campus.uni-tuebingen.de/20172e159252
Course type: Exercises
Contact hours: 2
Course coordinator: Prof. Ph.D. Marcello Porta

Course title: Übungen zur Vorlesung Mathematical Quantum Theory  (Course number: MAT6512X)
Link: http://campus.uni-tuebingen.de/20172e159267
Course type: Exercises
Contact hours: 2
Course coordinator: Prof. Dr. rer. nat. Christian Hainzl

Course title: Übungen zur Vorlesung Number Theory and Cryptography  (Course number: MAT4531X)
Link: http://campus.uni-tuebingen.de/20172e160961
Course type: Exercises
Contact hours: 2
Course coordinator: apl. Prof. Dr. rer. nat. Elena Klimenko

Nanoscience – Bachelor

Course title: Analytical Methods and Applications in Life and Nanoscience
Link: http://campus.uni-tuebingen.de/20172e159179
Course type: Lecture
Contact hours: 2
Course coordinator: Prof. Ph.D. Ana Jesús Garcia-Sáez, Dr. rer. nat. Anita Jannasch, Prof. Dr. rer. nat. Erik Schäffer
Course description
In the lecture, key analytical methods that are used in life science to investigate nanometer-sized objects are presented and their applications discussed.

Course title: Analytical Methods and Applications in Life and Nanoscience
Link: http://campus.uni-tuebingen.de/20172e159180
Course type: Seminar
Contact hours: 2
Course coordinator: M.Sc. Naghmeh Azadfar, Dr. rer. nat. Anita Jannasch, Prof. Dr. rer. nat. Erik Schäffer

Course title: Experimental Techniques in NanoScience and Bio-Physics  (Course number: VFTNSBP)
Link: http://campus.uni-tuebingen.de/20172e158515
Course type: Lecture
Contact hours: 2
Course coordinator: PD Dr. rer.nat. Fajun Zhang, Dr. rer. nat. Alexander Gerlach, Prof. Dr. rer. nat. Frank Schreiber
Course description
The course will provide a basis for modern experimental techniques in the area of nano-science and bio-physics and also cover the fundamentals of some of the experiments in the F-practicals.

1.1 IR spectroscopy 1.2 Raman spectroscopy 1.3 Optical microscopy 2.1 X-ray scattering from surfaces 2.2 X-ray scattering from nanoparticles 2.3 Light scattering 3.1 Photoelectron spectroscopy 3.2 Surface science techniques 3.3 Fundamentals of vacuum technology 4.1 Growth and preparation of surfaces and nano-structures 4.2 Thin film growth 4.3 Nanoparticles and their manipulation 4.4 Growth of protein single crystals 4.5 Self-assembled monolayers 4.6 Bio-functionalised surfaces

Course title: Introduction to Computational Neuroscience / Seminar (3028) (Fr / Mo)
Link: http://campus.uni-tuebingen.de/20172e157039
Course type: Seminar
Contact hours: 2

Target audience
The course is listed for the following programs (program names in German) Biologie Bachelor, 3. Jahr (optional - Wahlpflicht) Biologie Master (optional - Wahlpflicht) Biologie Lehramt (optional - Wahlpflicht) Kognitionswissenschaft Bachelor, 3. Jahr (mandatory - Pflichtveranstaltung) Neuro- und Verhaltenswissenschaft (Lecture mandatory, seminar optional) NanoScience (optional - Wahlpflicht) Promotionsstudium in Neurowissenschaft und verwandten Gebieten Students from other programs are welcome.

Course description
The course will provide an overview over the field of computational neuroscience focussing on four topics: (i) biophysics of excitable membranes: Hodgekin-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. The focus of the course is on central neuroscience mechanisms; mathematical formalizations are presented on a medium level that should be accessible with highschool or introductory BSc level knowledge of mathematics. 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 computation and (c) prepare a handout for the class. All students are required to read each week’s paper in advance of the seminar. Please note that for the lecture you have to register separately!

Additional information
http://www.cog.uni-tuebingen.de/

Course title: Introduction to Computational Neuroscience / Vorlesung (3028) (Fr)
Link: http://campus.uni-tuebingen.de/20172e157042
Course type: Lecture
Contact hours: 4
Course coordinator: o. Prof. Dr. rer. nat. Hanspeter Mallot

Target audience
The course is listed for the following programs (program names in German) Biologie Bachelor, 3. Jahr (optional - Wahlpflicht) Biologie Master (optional - Wahlpflicht) Biologie Lehramt (optional - Wahlpflicht) Kognitionswissenschaft Bachelor, 3. Jahr (mandatory - Pflichtveranstaltung) Neuro- und Verhaltenswissenschaft (Lecture mandatory, seminar optional) NanoScience (optional - Wahlpflicht) Promotionsstudium in Neurowissenschaft und verwandten Gebieten Students from other programs are welcome.

Course description
The course will provide an overview over the field of computational neuroscience focussing on four topics: (i) biophysics of excitable membranes: Hodgekin-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. The focus of the course is on central neuroscience mechanisms; mathematical formalizations are presented on a medium level that should be accessible with highschool or introductory BSc level knowledge of mathematics. 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 computation and (c) prepare a handout for the class. All students are required to read each weeks’ paper in advance of the seminar.

Additional information
http://www.cog.uni-tuebingen.de/

Course title: Nano-Science II
Link: http://campus.uni-tuebingen.de/20172e158866
Course type: Seminar
Contact hours: 2
Course coordinator: Dr. rer. nat. Üner Kolukisaoglu

Nanoscience – Master

Course title: Aktuelle Themen der Zell- und Entwicklungsbiologie - Current Topics in Developmental Genetics (4016)
Link: http://campus.uni-tuebingen.de/20172e156786
Course type: Block Course
Contact hours: 2
Course coordinator: Dr. rer. nat. Anke Beermann, Dipl.-Agrarbiol. Simone Früholz, Dr. rer. nat. Christopher Grefen, PD Dr. rer. nat. habil. Bernard Moussian, Dr. rer. nat. Sabine Müller, Dr. rer. nat. Laura Ragni, Prof. Dr. rer. nat. Rolf Reuter, Dr. rer. nat. Sandra Richter, Hon.-Prof. Dr. rer. nat. Ralf Sommer, Dr. rer. nat. Detlef Weigel, o. Prof. Dr. rer. nat. Gerd Jürgens

Target audience
Themenmodul im Masterprogramm des ZMBP. Diplomanden und Doktoranden werden ebenfalls zugelassen, Masterstudenten haben aber Vorrang.

Prerequisites
Bachelor

Course description
Überblick über den Stand der Forschung und aktuelle Forschungsthemen in der molekularen Zellbiologie.

Course title: ANM7 (Sensoren)  (Course number: PC0810)
Link: http://campus.uni-tuebingen.de/20172e154550
Course type: Lecture
Contact hours: 2
Course coordinator: Dr. rer. nat. Nicolae Barsan, Dr. rer. nat. Alexandru Oprea, Prof. Dr. rer. nat. Udo Weimar

Course title: Comparative innate immunity in animals and plants, Themenmodul 4026
Link: http://campus.uni-tuebingen.de/20172e157049
Course type: Lecture/Excercises
Contact hours: 3
Course coordinator: o. Prof. Dr. rer. nat. Thorsten Nümberger, Prof. Dr. rer. nat. Georg Felix, PD
Dr. rer. nat. Andrea Gust, Dr. rer. nat. Birgit Kemmerling

**Target audience**
M.Sc. in Biochemistry or Biology

**Course description**
Module comprises a lecture, seminar and tutorial. The lecture (winter semester) concerns current topics of innate immunity in animals and plants. The seminar (summer semester) consolidates the topics covered in the lecture by using original publications. Content of the tutorial (summer semester) will be writing of a research proposal based on the original publications covered in the seminar. The seminar and tutorial will take place in the summer semester. Final schedule for the seminar and the discussion of proposals within the tutorial will be according to agreement.

**Course title**: Data analysis with statistics and fitting
**Link**: http://campus.uni-tuebingen.de/20172e159183
**Course type**: Lecture/Excercises
**Contact hours**: 2
**Course coordinator**: Dr. rer. nat. Anita Jannasch

**Course description**
anrechenbar im fächerübergreifenden Mastermodul (6010) für alle Masterstudiengänge der Biologie

**Course title**: Elective: Advanced-Level Course in Plant Physiology 4031
**Link**: http://campus.uni-tuebingen.de/20172e159052
**Course type**: Block Course
**Contact hours**: 13
**Course coordinator**: o. Prof. Dr. rer. nat. Klaus Harter, Dr. rer. nat. Christina Chaban, Dr. rer. nat. Nina Jaspert, Dr. rer. nat. Sascha Laubinger, Prof. Dr. rer. nat. Claudia Oecking, Dr. rer. nat. Virtudes Mira-Rodado, Dr. rer. nat. Markus Albert, Dr. rer. nat. Gabriel Schaaf

**Prerequisites**
A background in molecular plant science is expected

**Course description**
Implementation of a small research project involving a wide spectrum of methods

**Course title**: Introduction to Computational Neuroscience / Seminar (3028) (Fr / Mo)
**Link**: http://campus.uni-tuebingen.de/20172e157039
**Course type**: Seminar
**Contact hours**: 2
**Course coordinator**: o. Prof. Dr. rer. nat. Hanspeter Mallot, Dipl.-Biol. Gerrit Ecke, M.Sc. Banafsheh Grochulla

**Target audience**
The course is listed for the following programs (program names in German) Biologie Bachelor, 3. Jahr (optional - Wahlpflicht) Biologie Master (optional - Wahlpflicht) Biologie Lehramt (optional - Wahlpflicht) Kognitionswissenschaft Bachelor, 3. Jahr (mandatory - Pflichtveranstaltung) Neuro- und Verhaltenswissenschaft (Lecture mandatory, seminar optional) NanoScience (optional - Wahlpflicht) Promotionsstudium in Neurowissenschaft und verwandten Gebieten Students from other programs are welcome.

**Course description**
The course will provide an overview over the field of computational neuroscience focussing 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. The focus of the course is on central neuroscience mechanisms; mathematical formalizations are presented on a medium level that should be accessible with highschool or introductory BSc level
knowledge of mathematics. 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 computation and (c) prepare a handout for the class. All students are required to read each week's paper in advance of the seminar. Please note that for the lecture you have to register separately!

**Additional information**
http://www.cog.uni-tuebingen.de/

---

**Course title:** Introduction to Computational Neuroscience / Vorlesung (3028) (Fr)
**Link:** http://campus.uni-tuebingen.de/20172e157042
**Course type:** Lecture
**Contact hours:** 4
**Course coordinator:** o. Prof. Dr. rer. nat. Hanspeter Mallot

**Target audience**
The course is listed for the following programs (program names in German) Biologie Bachelor, 3. Jahr (optional - Wahlpflicht) Biologie Master (optional - Wahlpflicht) Biologie Lehramt (optional - Wahlpflicht) Kognitionswissenschaft Bachelor, 3. Jahr (mandatory - Pflichtveranstaltung) Neuro- und Verhaltenswissenschaft (Lecture mandatory, seminar optional) NanoScience (optional - Wahlpflicht) Promotionsstudium in Neurowissenschaft und verwandten Gebieten Students from other programs are welcome.

**Course description**
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. The focus of the course is on central neuroscience mechanisms; mathematical formalizations are presented on a medium level that should be accessible with highschool or introductory BSc level knowledge of mathematics. 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 computation and (c) prepare a handout for the class. All students are required to read each week's paper in advance of the seminar.

**Additional information**
http://www.cog.uni-tuebingen.de/

---

**Course title:** Molecular Biophysics (Übungen)
**Link:** http://campus.uni-tuebingen.de/20172e159181
**Course type:** Exercises
**Contact hours:** 2
**Course coordinator:** M.Sc. Michael Bugiel, M.Sc. Tobias Jachowski, Dr. rer. nat. Anita Jannasch, Prof. Dr. rer. nat. Erik Schäffer

**Course title:** Molecular Biophysics (Vorlesung)
**Link:** http://campus.uni-tuebingen.de/20172e159182
**Course type:** Lecture
**Contact hours:** 2
**Course coordinator:** Dr. rer. nat. Anita Jannasch, PD Dr. rer. nat. habil. Hans Joachim Schöpe, Prof. Dr. rer. nat. Erik Schäffer
Physics – Bachelor

**Course title:** Advanced Topics in Gravitation  
**Link:** [http://campus.uni-tuebingen.de/20172e162217](http://campus.uni-tuebingen.de/20172e162217)  
**Course type:** Lecture  
**Contact hours:** 2  
**Course coordinator:** Prof. Ph.D. Konstantinos Kokkotas, Ph.D. Andrew Coates

**Course title:** Advanced Topics in Soft and Molecular Matter  
**Link:** [http://campus.uni-tuebingen.de/20172e158514](http://campus.uni-tuebingen.de/20172e158514)  
**Course type:** Lecture  
**Contact hours:** 2  
**Course coordinator:** Prof. Dr. rer. nat. Frank Schreiber, Jun.-Prof. Dr. rer. nat. Katharina Broch

**Course title:** Astronomy & Astrophysics  
(Course number: APP101)  
**Link:** [http://campus.uni-tuebingen.de/20172e161732](http://campus.uni-tuebingen.de/20172e161732)  
**Course type:** Lecture  
**Contact hours:** 4  
**Course coordinator:** Prof. Dr. rer. nat. Andrea Santangelo, Jun.-Prof. Dr. rer. nat. Beate Stelzer

**Course title:** Endpoints of Stellar Evolution: Supernovae, White Dwarfs, Neutron Stars, Black Holes  
(Course number: VFEPSE)  
**Link:** [http://campus.uni-tuebingen.de/20172e158552](http://campus.uni-tuebingen.de/20172e158552)  
**Course type:** Lecture  
**Contact hours:** 2  
**Course coordinator:** Prof. Dr. rer. nat. Andrea Santangelo  
**Course description**  
IMPORTANT NOTE: this module is equivalent to VFHESG High-Energy Sources in our Galaxy (as reported in the Physik Modulhandbuch)  
In this lecture we intend to discuss the endpoints of stellare evlolution. In particular we will focus on:  
1. Supernovae: from pre-collapse to the spectacular “explosion”  
2. Supernova remnants: their relevance in astronomy and astrophysics  
3. White Dwarf: the playground of a degenarate electron gas and the various types  
4. Neutron stars: equation of state, their many faces and the space time around them  
5. Black Holes: what are they, how they manifests themselves, and why they are sources of gravitational waves

**Course title:** Exercises for Theoretical Astrophysics  
(Course number: VFTAP)  
**Link:** [http://campus.uni-tuebingen.de/20172e158408](http://campus.uni-tuebingen.de/20172e158408)  
**Course type:** Exercises  
**Contact hours:** 2  
**Course coordinator:** Prof. Dr. rer. nat. Wilhelm Kley, Dr. rer. nat. Christoph Schäfer  
**Prerequisites**  
Vordiplom  
**Course description**  
Begleitende Übungen zur Vorlesung Theoretische Astrophysik  
**Additional information**  
[http://www.tat.physik.uni-tuebingen.de/~kley/lehre/theoast/](http://www.tat.physik.uni-tuebingen.de/~kley/lehre/theoast/)

**Course title:** Exercises for High Energy Astrophysics  
(Course number: VFHAP)  
**Link:** [http://campus.uni-tuebingen.de/20172e158496](http://campus.uni-tuebingen.de/20172e158496)  
**Course type:** Exercises  
**Contact hours:** 2  
**Course coordinator:** Prof. Dr. rer. nat. Andrea Santangelo
Target audience
Students who want to specialize in astrophysics and astro-particle physics. Students of the Master in Astro and Particle physics.

Course title: Exercises for Introduction to General Relativity (Course number: VFERT)
Link: http://campus.uni-tuebingen.de/20172e158415
Course type: Exercises
Contact hours: 2
Course coordinator: Prof. Ph.D. Konstantinos Kokkotas, Daniela Doneva
Course description
Day and time will be fixed during the first lecture.
Additional information
http://www.tat.physik.uni-tuebingen.de/~kokkotas/Teaching/GTR.html

Course title: Exercises for Numerical Methods in Physics and Astrophysics (Course number: VFNMPAP)
Link: http://campus.uni-tuebingen.de/20172e158413
Course type: Exercises
Contact hours: 2
Course coordinator: Prof. Ph.D. Konstantinos Kokkotas, Daniela Doneva,
Course description
Day and time will be fixed during the first lecture.
Additional information
http://www.tat.physik.uni-tuebingen.de/~kokkotas/Teaching/Num_Methods.html

Course title: Exercises Quantum Field Theory / Übungen zur Quantenfeldtheorie (Course number: VFQFTTP)
Link: http://campus.uni-tuebingen.de/20172e162360
Course type: Exercises
Contact hours: 2
Course coordinator: Prof. Dr. rer. nat. Werner Vogelsang

Course title: Experimental Techniques in NanoScience and Bio-Physics (Course number: VFTNSBP)
Link: http://campus.uni-tuebingen.de/20172e158515
Course type: Lecture
Contact hours: 2
Course coordinator: PD Dr. rer. nat. Fajun Zhang, Dr. rer. nat. Alexander Gerlach, Prof. Dr. rer. nat. Frank Schreiber
Course description
The course will provide a basis for modern experimental techniques in the area of nano-science and bio-physics and also cover the fundamentals of some of the experiments in the F-practicals.
1.1 IR spectroscopy 1.2 Raman spectroscopy 1.3 Optical microscopy 2.1 X-ray scattering from surfaces 2.2 X-ray scattering from nanoparticles 2.3 Light scattering 3.1 Photoelectron spectroscopy 3.2 Surface science techniques 3.3 Fundamentals of vacuum technology 4.1 Growth and preparation of surfaces and nano-structures 4.2 Thin film growth 4.3 Nanoparticles and their manipulation 4.4 Growth of protein single crystals 4.5 Self-assembled monolayers 4.6 Bio-functionalised surfaces

Course title: High Energy Astrophysics (Course number: VFHAP)
Link: http://campus.uni-tuebingen.de/20172e158558
Course type: Lecture/Excercises
Contact hours: 2
Course coordinator: Prof. Dr. rer. nat. Andrea Santangelo

Prerequisites
No preconditions are necessary, even if you should know a bit of physics and mathematics.

Course description
The lecture deals with astrophysics processes relevant in astrophysics and astroparticle physics. The physics details of the astrophysical processes will be discussed trying to present also the astrophysical context in which these processes play a role. The key topics that will be studied in details are: 1) Basics of radiation and blackbody radiation; 2) Relativistic effects; 3) Bremsstrahlung; 4) Thomson vs. Compton scattering; 5) Inverse Compton and comptonizations processes; 6) Synchrotron radiation; 5) Fermi Acceleration mechanism; 6) production of very high energy photons; 7) production of neutrinos in astrophysics; 8) Annihilation and decay processes (dark Matter signatures).

Additional information

Course title: Introduction to General Relativity  (Course number: VFERT)
Link: http://campus.uni-tuebingen.de/20172e158416
Course type: Lecture
Contact hours: 2
Course coordinator: Prof. Ph.D. Konstantinos Kokkotas

Additional information
http://www.tat.physik.uni-tuebingen.de/~kokkotas/Teaching/GTR.html

Course title: Journal Club - Quantum Many-Body Physics
Link: http://campus.uni-tuebingen.de/20172e163336
Course type: Forschungsseminar
Contact hours: 2
Course coordinator: Prof. Dr. rer. nat. Sabine Andergassen

Course title: Numerical Methods in Physics and Astrophysics  (Course number: VFNMPAP)
Link: http://campus.uni-tuebingen.de/20172e158414
Course type: Lecture
Contact hours: 2
Course coordinator: Prof. Ph.D. Konstantinos Kokkotas

Course description
student hours/ Sprechstunde:T.B.D.Morgenstelle 10: C10 P17, C10 P13 contact:
kostas.kokkotas@uni-tuebingen.de

Additional information
http://www.tat.physik.uni-tuebingen.de/~kokkotas/Teaching/Num_Methods.html

Course title: Planet Formation  (Course number: APP104)
Link: http://campus.uni-tuebingen.de/20172e158411
Course type: Lecture
Contact hours: 2
Course coordinator: Prof. Dr. rer. nat. Wilhelm Kley

Target audience
Students in Bachelor of Physics, Master in Astro and Particle Physics

Prerequisites
Basic knowledge in Physics and interest in Astronomy & Astrophysics

Course description
Overview of the observational status (Solar System and extrasolar planets), star formation
(theory and observations), growth from dust to planets, massive planets, dynamics of multi-planet systems, Solar System.

Additional information
http://www.tat.physik.uni-tuebingen.de/~kley/lehre/planeten/index.html

Course title: Preclinical Imaging and Radiopharmacy  (Course number: S06SDRAD01)
Link: http://campus.uni-tuebingen.de/20172e155487
Course type: Seminar
Contact hours: 
Course coordinator: Prof. Dr. rer. nat., Dipl.-Ing. Bernd Pichler, Dr. rer. nat. Jonathan Disselhorst
Prerequisites
ab 2 klin. Semester, Studierende der Biologie, Physik, Pharmazie und Biochemie ab dem 5. FS
Course description
Mitarbeiterseminar mit Vorträgen und Diskussionen über aktuelle Projekte sowie Vorträge von eingeladenen Gastsprecher, Journal Club

Course title: Quantum Field Theory / Quantenfeldtheorie  (Course number: VFQFTTP)
Link: http://campus.uni-tuebingen.de/20172e160579
Course type: Lecture
Contact hours: 4
Course coordinator: Prof. Dr. rer. nat. Werner Vogelsang

Course title: Stellar Structure and Evolution  (Course number: VFBES)
Link: http://campus.uni-tuebingen.de/20172e160523
Course type: Lecture
Contact hours: 2
Course coordinator: Prof. Dr. rer. nat. Klaus Werner
Prerequisites
Basic knowledge in astronomy would be useful
Course description
Stars are the “engines” of the chemical evolution of the Universe. All species besides hydrogen and helium were generated in stars or at events during their final stage of their lives. The evolution of galaxies and the entire Universe can only be understood, if we know the evolution of their building blocks: the stars. What is the interior structure of stars? What drives their evolution? Stars live long, but not eternal. The course covers these topics: Stellar parameters Equilibrium conditions (stellar structure equations) Properties of stellar matter Computation of stellar models The main sequence Evolution beyond the main sequence
Additional information
http://www.uni-tuebingen.de/index.php?id=3130

Course title: Theoretical Astrophysics  (Course number: VFTAP)
Link: http://campus.uni-tuebingen.de/20172e158409
Course type: Lecture
Contact hours: 2
Course coordinator: Prof. Dr. rer. nat. Wilhelm Kley
Target audience
Bachelor in Physics: Specialisation in Astronomy & Astrophysics of Theoretical Physics Master in Astro and Particle Physics.
Prerequisites
Basic courses in Physics. Interest in the Topic.
Course description
Introduction to the foundations of Theoretical Astrophysics. Brief introduction to
thermodynamics/hydrodynamics. Applications: sound waves, shock waves, accretion physics,
hydrodynamical instabilities. The lecture (includ. exercises) counts for the specialization in
Astronomy&Astrophysics or Theoretical Physics (Bachelor of Physics), or Master Astro and
Particle Physics.

Additional information
http://www.tat.physik.uni-tuebingen.de/~kley/lehre/theoast/

Cognition Science – Bachelor

Course title: Colour Vision across Species (Fr) (4084)
Link: http://campus.uni-tuebingen.de/20172e157034
Course type: Seminar
Contact hours: 1
Course coordinator: Dr. rer. nat. Annette Werner
Target audience
For students interested in the field of biology, neuroscience, bioinformatics and medicine
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.

Additional information
http://www.annettewerner.com/index.html

Course title: Data Structures and Algorithms for Computational Linguistics
Link: http://campus.uni-tuebingen.de/20172e155054
Course type: Proseminar
Contact hours: 6
Course coordinator: M.A. Jochen Saile
Prerequisites
parallel participation in ‘Introduction to Computational Linguistics’
Course description
In order to process language automatically with the help of a computer, it is necessary to emulate
linguistic knowledge in the computer: Objects (e.g. words, sentences or trees) must be formally
represented as data structures, and procedures must be defined to work with these units.
Algorithms are step-by-step problem-solving procedures which can be implemented on a
computer in a programming language. In this course, we will look at data structures (strings,
fields, lists, and parse trees, among other data structures) and basic algorithms needed for
modelling problems in Computational Linguistics. We will use the programming language Java for
implementations. This course is obligatory for ISCL students in their first semester. However,
space permitting, it is open to other participants as well.

Course title: Introduction to Computational Neuroscience / Seminar (3028) (Fr / Mo)
Link: http://campus.uni-tuebingen.de/20172e157039
Course type: Seminar
Contact hours: 2
Banafsheh Grochulla
Target audience
The course is listed for the following programs (program names in German) Biologie Bachelor, 3. Jahr (optional - Wahlpflicht) Biologie Master (optional - Wahlpflicht) Biologie Lehramt (optional - Wahlpflicht) Kognitionswissenschaft Bachelor, 3. Jahr (mandatory - Pflichtveranstaltung) Neuro- und Verhaltenswissenschaft (Lecture mandatory, seminar optional) NanoScience (optional - Wahlpflicht) Promotionsstudium in Neurowissenschaft und verwandten Gebieten Students from other programs are welcome.

Course description
The course will provide an overview over the field of computational neuroscience focussing on four topics: (i) biophysics of excitable membranes: Hodgekin-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. The focus of the course is on central neuroscience mechanisms; mathematical formalizations are presented on a medium level that should be accessible with highschool or introductory BSc level knowledge of mathematics. 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 computation and (c) prepare a handout for the class. All students are required to read each weeks’ paper in advance of the seminar. Please note that for the lecture you have to register separately!

Additional information
http://www.cog.uni-tuebingen.de/

Course title: Introduction to Computational Neuroscience / Vorlesung (3028) (Fr)
Link: http://campus.uni-tuebingen.de/20172e157042
Course type: Lecture
Contact hours: 4
Course coordinator: o. Prof. Dr. rer. nat. Hanspeter Mallot

Target audience
The course is listed for the following programs (program names in German) Biologie Bachelor, 3. Jahr (optional - Wahlpflicht) Biologie Master (optional - Wahlpflicht) Biologie Lehramt (optional - Wahlpflicht) Kognitionswissenschaft Bachelor, 3. Jahr (mandatory - Pflichtveranstaltung) Neuro- und Verhaltenswissenschaft (Lecture mandatory, seminar optional) NanoScience (optional - Wahlpflicht) Promotionsstudium in Neurowissenschaft und verwandten Gebieten Students from other programs are welcome.

Course description
The course will provide an overview over the field of computational neuroscience focussing on four topics: (i) biophysics of excitable membranes: Hodgekin-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. The focus of the course is on central neuroscience mechanisms; mathematical formalizations are presented on a medium level that should be accessible with highschool or introductory BSc level knowledge of mathematics. 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 computation and (c) prepare a handout for the class. All students are required to read each weeks’ paper in advance of the seminar.

Additional information
http://www.cog.uni-tuebingen.de/
Course title: Linguistics for Cognitive Science  
Link: http://campus.uni-tuebingen.de/20172e157669  
Course type: Proseminar  
Contact hours: 4  
Course coordinator: Prof. Dr. phil. Harald Baayen

Course title: Mathematical Methods: Logic  
Link: http://campus.uni-tuebingen.de/20172e155055  
Course type: Proseminar  
Contact hours: 2  
Course coordinator: Dr. phil. Michael Franke

Course description  
The course introduces basic formal notions of set theory, propositional and predicate logic. The main learning goals are to understand the notion of logical entailment, to get some practical experience with proving simple propositions, and to get familiar with the logical analysis of natural language meaning. The course will be accompanied by weekly homework assignments and weekly tutorial.

Course title: Philosophy of Linguistics  
Link: http://campus.uni-tuebingen.de/20172e155056  
Course type: Proseminar  
Contact hours: 2  
Course coordinator: Dr. phil. Michael Franke

Course description  
In this course, we will look at language and linguistics from a philosophical perspective. We will ask what language and what meaning is. We will ask what science is in general and what linguistics is in particular. We discuss basic notions such as ‘prediction’, ‘explanation’ or ‘reduction’ and the role they play in linguistics. The course also would like to convey a sense of philosophical method, in particular the careful analysis of arguments presented in philosophical texts.

Course title: Programming Course Computational Linguistics  
Link: http://campus.uni-tuebingen.de/20172e158644  
Course type: Proseminar  
Contact hours: 8  
Course coordinator: Dr. phil. Daniël de Kok  
Prerequisites  
- Data Structures and Algorithms for Language Processing I  
- Data Structures and Algorithms for Language Processing II

Course description  
This programming course provides an introduction to algorithms and data structures that are commonly used in computational linguistics, such as string distance measures, data structures for approximate string search, finite state automata, and parsing algorithms. The course is driven by assignments where participants implement these algorithms and data structures in small, but practical, applications.

Course title: Vision Science Colloquium  
Link: http://campus.uni-tuebingen.de/20172e157820  
Course type: Colloquium  
Contact hours:  
Course coordinator: Dr. rer. nat. Uli Wannek  
Course description
Cognition Science – Master

Course title: Automatic Generation of Questions
Link: http://campus.uni-tuebingen.de/20172e157617
Course type: Hauptseminar
Contact hours: 4
Course coordinator: Prof. Dr. phil. Detmar Meurers

Course description
Questions play a central role as functional contexts for language use. As such, they are relevant in a number of contexts: Questions support the interpretation of answers in a concrete language-based context. They make it possible to test knowledge, to verify whether someone has read a given text, or to explore the interpretations drawn from a given text. Questions can foster learning and are central to assessment. In computational linguistics, the automatic generation of questions is an attractive challenge given the mix of function, meaning and grammatical characteristics that it involves. In this seminar, we survey different techniques for generating questions and their use cases.

Additional information
http://purl.org/dm/17/ws/hs

Course title: Flying Robots  (Course number: INF4364)
Link: http://campus.uni-tuebingen.de/20172e157732
Course type: Internship
Contact hours: 4
Course coordinator: M.Sc. Ma Wang

Course title: Introduction ot Psychtoolbox
Link: http://campus.uni-tuebingen.de/20172e161889
Course type: Lecture
Contact hours: 2
Course coordinator: M.Sc. Heiko Schütt
Additional information
http://www.wsi.uni-tuebingen.de/lehrstuehle/neuronale-informationsverarbeitung/teaching/lectures-seminars

Course title: Machine Learning and Artificial Neural Networks in Biomedical Applications
(Course number: INF4192)
Link: http://campus.uni-tuebingen.de/20172e157725
Course type: Seminar
Contact hours: 2
Course coordinator: Dr. rer. nat. Martin Spüler

Course description
Im Seminar “Maschinelles Lernen und Künstliche Neuronale Netze in der biomedizinischen Anwendung” werden aktuelle Themen aus der Signalverarbeitung im Bereich der Verarbeitung von Nervensignalen (z.B.: Neuroprothetik oder Brain-Computer-Interfaces), medizinischer Signale (z.B.: fMRT oder MEG) oder verwandten Bereichen sowie in diesen Bereichen
verwendeten Algorithmen der Signalverarbeitung bearbeitet.

The seminar “Machine Learning” and Artificial Networks in Biomedical Applications” covers current topics of signal processing on neural signals (e.g., fMRI, EEG or MEG) for their use in biomedical applications (e.g., neuroprosthetics of brain-computer interfaces, BCIs) and related topics, as well as methods and algorithms applied in those fields..

Course title: Machine Learning I  (Course number: NIP02A)
Link: http://campus.uni-tuebingen.de/20172e159210
Course type: Lecture/Excercises
Contact hours: 3
Course coordinator: Prof. Dr. Matthias Bethge
Prerequisites
Students should have a basic knowledge of linear algebra and probability theory. The exercise-sheets will involve some matlab-programming, so a basic familiarity with matlab would be advantageous.

Course description
The scientific discipline of “Machine learning” is concerned with developing and studying algorithms which can learn structure from data. Thus, it both provides important practical tools for data analysis as well as theoretical concepts for understanding how sensory systems can infer structure from empirical observations. This course will provide an introduction to important topics and algorithms in machine learning. A particular focus of this course will be on algorithms that have a clear statistical (and often Bayesian) interpretation. We will cover both supervised algorithms (i.e. which try to learn an association between inputs and desired outputs) as well as unsupervised algorithms (which try to build up an internal model from inputs alone). The “supervised” learning component of the course will include various linear and nonlinear regression algorithms as well as linear discriminants, logistic regression and nonlinear classification algorithms. The “unsupervised” learning component of the course will include fundamental concepts and algorithms of dimensionality reduction, blind source separation, and clustering.

Course title: Methods in Neuropsychology  (Course number: NB05A)
Link: http://campus.uni-tuebingen.de/20172e155124
Course type: Lecture
Contact hours: 2
Course coordinator: Dr. Marc Himmelbach
Prerequisites
none
Course description
Over the recent years, many new techniques have been developed to study the human brain and human brain function. The aim of this course is to assess the usefulness of these techniques when studying cognitive functions like perception, memory and action. To achieve this goal, this course will provide a theoretical and practical overview of the techniques available in neuropsychology to study human brain function. At the end of this course, students will be able to plan, implement and analyse neuropsychological experiments. The following topics will be covered: 1) Psychophysics 2) Transcranial Magnetic Stimulation (TMS) 3) Electroencephalography (EEG) and Magnetoencephalography (MEG) 4) New, alternative methods like positron emission tomography (PET), near infrared spectroscopy (NIRS) and invasive methods 5) Functional magnetic resonance imaging (fMRI) 6) Combining multiple techniques in the same experiment

Additional information
Course title: Motor Systems  (Course number: NIP05C)
Link: http://campus.uni-tuebingen.de/20172e159207
Course type: Block Course
Contact hours: 3
Course coordinator: Prof. Dr. rer. nat. Cornelius Schwarz
Additional information

Course title: Neural Dynamics  (Course number: NIP01B)
Link: http://campus.uni-tuebingen.de/20172e159211
Course type: Lecture/Excercises
Contact hours: 3
Course coordinator: Prof. Dr.-Ing. Martin Giese
Prerequisites
Basic knowledge of analysis and linear algebra. Basic programming skills (MATLAB or Python). Elementary knowledge about neurons and the structure of the nervous system (as provided by the courses in Functional Neuronatomy and Neurophysiology).
Course description
The activity patterns of neurons result from complex dynamic interactions between many neurons, or compartments of individual neurons in the nervous system. Neural models try to capture the fundamental properties of such dynamical processes and, making them accessible for mathematical analysis and computer simulation. This course treats the basic biophysics of the signal generation and transmission in neurons and discusses how the underlying physical and physiological phenomena can be approximated by mathematical models. Typically, such models can be characterized as nonlinear dynamical systems. The course provides a systematic introduction in the mathematical theory of linear and nonlinear dynamical systems, and demonstrates how these mathematical methods can be applied to analyze fundamental properties of neurons and neural networks. This framework provides a deeper understanding of fundamental phenomena neural structures, such as passive and active signal propagation, active pattern formation and decision, and basic properties of oscillations and synchronization in neural systems.
Additional information

Course title: Physiological and Physical Basis of Functional Brain Imaging  (Course number: NB06A)
Link: http://campus.uni-tuebingen.de/20172e159201
Course type: Lecture
Contact hours: 2
Course coordinator: Prof. Dr. rer. nat. Andreas Bartels, apl. Prof. Dr. rer. nat. Christoph Braun
Prerequisites
Basic knowledge in physics and neurophysiology.
Course description
Recent functional imaging techniques provide a non-invasive window to probe the human brain function while it is performing a task or experiencing a sensory stimulation. To understand the capabilities and limitations of each of the techniques, it is important to review the chain of physiological and physical events leading to the imaging signals. The physiological and physical basis of the following imaging methods will be covered: Functional Magnetic Resonance Imaging (fMRI), Positron Emission Tomography (PET), Electroencephalography (EEG), Magnetoencephalo-graphy (MEG) and Near Infrared Spectroscopy (NIRS). In addition, recent
Developments combining different imaging modalities via simultaneous acquisition or via post-processing will be discussed. At the end of the course, there will be an open discussion about the capabilities and limitations of each imaging method.

**Course title:** Second Language Acquisition  
**Link:** [http://campus.uni-tuebingen.de/20172e157188](http://campus.uni-tuebingen.de/20172e157188)  
**Course type:** Lecture  
**Contact hours:** 2  
**Course coordinator:** Prof. Dr. phil. Detmar Meurers  
**Course description**  
This course offers an introduction at the graduate level to the study of language acquisition, in particular Second Language Acquisition (SLA). The course surveys the major SLA theories, their goals, research methodology, and major findings, emphasizing the interdisciplinary link to linguistic modeling and cognition.  
**Additional information**  

**Course title:** Sensory Systems II - Auditory and Remaining (Course number: NB03C)  
**Link:** [http://campus.uni-tuebingen.de/20172e159204](http://campus.uni-tuebingen.de/20172e159204)  
**Course type:** Lecture  
**Contact hours:** 2  
**Course coordinator:** apl. Prof. Dr. rer. nat. Christoph Braun, Prof. Ph.D., Dr. Ing. Anthony W. Gummer, apl. Prof. Dr. rer. nat. Horst Herbert, Hon.-Prof. Dr. rer. nat. Joachim Ostwald, apl. Prof. Dr. rer. nat. Francois Paquet-Durand  
**Course description**  
This lecture addresses the sensory systems, starting with signal transduction at the sensory receptors and up to higher order processing and psychophysics. The topics include: cochlea and central auditory system, somatosensory system, nociception and pain, and the chemical senses with olfaction and gustation. Comparative aspects, such as signal transduction processes, coding of sensory information and cortical representation, will be emphasized.  
**Additional information**  

**Course title:** S Eye-tracking methodology seminar  
**Link:** [http://campus.uni-tuebingen.de/20172e161428](http://campus.uni-tuebingen.de/20172e161428)  
**Course type:** Seminar  
**Contact hours:** 2  
**Course coordinator:** Ph.D. Nicolas Masson

**Course title:** Vision Science Colloquium  
**Link:** [http://campus.uni-tuebingen.de/20172e157820](http://campus.uni-tuebingen.de/20172e157820)  
**Course type:** Colloquium  
**Contact hours:**  
**Course coordinator:** Dr. rer. nat. Uli Wannek  
**Course description**  
Termine siehe Link zur Homepage  
**Additional information**  
[http://www.wsi.uni-tuebingen.de/lehrstuehle/neuronale-informationsverarbeitung/teaching/colloquium](http://www.wsi.uni-tuebingen.de/lehrstuehle/neuronale-informationsverarbeitung/teaching/colloquium)

**Course title:** Visual Systems (Course number: NIP05B)  
**Link:** [http://campus.uni-tuebingen.de/20172e159206](http://campus.uni-tuebingen.de/20172e159206)
Course type: Block Course  
Contact hours: 2  
Course coordinator: Ph.D. Ziad Hafed, Jun.-Prof. Dr. rer. nat. Aristides Arrenberg, Prof. Dr. rer. nat. Andreas Bartels, Dr. Thomas Münch, Ph.D. Daniel Rathbun  
Additional information:  

School Psychology – Master

Course title: S Eye-tracking methodology seminar  
Link: http://campus.uni-tuebingen.de/20172e161428  
Course type: Seminar  
Contact hours: 2  
Course coordinator: Ph.D. Nicolas Masson