



RUB

RUHR-UNIVERSITÄT BOCHUM

RUBiss
INTERNATIONAL STUDENT SERVICES

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INTERNATIONAL COURSE CATALOGUE

SoSe 2012

Degree programmes, seminars and lectures
taught in English and other foreign languages

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Dear student, dear researcher, dear guest,

this is the International Course Catalogue (ICC) of the Ruhr-Universität Bochum, a project realized by RUBiss – RUB international student services at the International Office. The International Course Catalogue gives an overview on RUB's foreign language offers – for international students who want to organise their semester programme as well as students planning on studying in Bochum or partners and guests wanting to get a general idea on RUB's international courses and programmes.

It contains the following:

1. A list of **international (English) Master and PhD programmes:**

RUB offers several entire degree programmes in different disciplines that are taught entirely in English. The ICC informs on content, requirements and application procedure.

2. A compilation of **seminars and lectures (Bachelor, Master and PhD) held in English or another foreign language:**

Many departments of RUB offer seminars and lectures in English or other foreign languages. Those are usually NOT part of an international degree programme.

The ICC gives information on the content and requirements, as well as credit points and contact persons. Also, it is stated if courses are credited for the "Optionalbereich" and if they are especially suitable for exchange students.

3. **Additional information** on studying and researching international at RUB:

RUB's international profile, going abroad, RUBiss – RUB international student services, Welcome Centre for internationally mobile researchers, application and admission, contact addresses.

We hope that you will find the International Course Catalog a helpful guide for your semester programme and wish you a good start for the new semester!

Your team of RUBiss – RUB International Student Services

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RUB'S INTERNATIONAL PROFILE

Consistent internationalisation is the focus of our future strategy “Research Campus RUB”. RUB is on its way towards becoming one of the top European universities and is therefore further extending and improving its successful research and teaching concepts.

People from 130 countries are currently studying or carrying out research on campus. More than 4,000 of these are international students, approximately 500 are international PhD students and several hundred are international researchers. About 500 international students spend time at RUB each year and just as many RUB students complete parts of their degree abroad.

German and international students are constantly in contact with current research topics throughout the course of numerous international degree programmes, some of which are taught in English. 15 degree programmes also offer dual degrees with partner universities. Two entire RUB master’s degree programmes can even be completed abroad.

Research at RUB is globally linked and geared towards internationalisation, for example in the interdisciplinary research departments. PhD students from across the world are carrying out cutting-edge research in several graduate schools with support from the Research School on campus. Young researchers are working on interdisciplinary matters in international teams, for example in the Mercator Research Groups.

RUB is a member of the Utrecht Network and many more international university networks. It signed collaboration agreements with numerous prestigious partner universities and these collaborations are put into practice by way of active projects which are taking place for students and researchers. RUB is also running liaison offices in New York, Moscow and Rio de Janeiro with its neighbouring universities Dortmund and Duisburg-Essen as part of the University Alliance Metropolis Ruhr (UAMR)

STUDYING AT RUB

In the middle of the metropolitan Ruhr region in the heart of Europe, the Ruhr-Universität with its 20 faculties is home to 5,000 employees and over 36,000 students from 130 countries. The university was opened in 1965 after a construction period of only three years. It was the first new university to be established in Germany following the Second World War and was also the first university in the Ruhr area altogether. Today, it is one of the ten biggest universities in Germany.

The Ruhr-Universität offers research facilities and teaching in all major academic disciplines: humanities, natural sciences, engineering and medicine are all together on one campus. The university's greatest strength is its interdisciplinary cooperation, and there are a lot of special interdisciplinary and international Bachelors and Masters programmes for you to choose from. Altogether, the RUB offers approximately 150 bachelors and masters programmes in various combinations. The range of subjects is even bigger as the Ruhr-Universität cooperates with its neighbouring universities Dortmund and Duisburg-Essen to form the University Alliance Metropolis Ruhr (UAMR), and students can choose courses from all three universities.

Almost all degree programmes are offered with the Bachelors and Masters qualifications. Within your Bachelors studies, when choosing humanities or social sciences, you will usually study two subjects, while in natural and engineering sciences Bachelor programmes usually consist of just one subject.

If you are enrolled in subjects at the Ruhr-Universität Bochum in the areas of humanities and social or natural sciences, you will also have to attend courses in the "options modules" (Optionalbereich), in addition to the subjects you have chosen. Therefore, courses that are credited for the “options modules” are marked in the International Course Catalogue.

DOUBLE AND JOINT DEGREES

Numerous double and joint degree programmes provide the opportunity to obtain the degree of a partner university alongside the RUB-degree:

Double Bachelor's Degree in History with Université François Rabelais Tours

The students study at their home university for two semesters, then change to the other university. The 5th semester is spent in Tours by all students, the 6th in Bochum.

Contact:

Name: Prof. Dr. Gerhard Lubich
Email: Gerhard.lubich@rub.de

Name: Stephanie Caspari
Email: Stephanie.b.caspari@rub.de

Double Degree in Philology with Universidad Oviedo

After spending time at the partner university during the last year of their studies, students gain the Spanish Licenciatura degree and the German Master degree.

Contact:

Name: Lidia Santiso Saco
Email: lidia.saco@rub.de

Double Degree "Russian Culture" with RGGU in Moscow

Students of (Russian) Culture at the RGGU and at RUB obtain a Master degree of the RUB and of the RGGU after successfully completing their studies.

Contact:

Name: Dr. Klaus Waschik
Email: Klaus.waschik@rub.de

Double Master's Degree for students of "Financial Services" at the CDHK at Tongji-University, Shanghai, with the Faculty of Economics

Students of the CDHK can continue their studies at RUB from the 4th semester onwards.

Contact:

Name: Prof. Dr. Bernahrd Pellens
Email: pellens@iur.rub.de

Double Master's Degree of the Faculty of Mechanical Engineering with the CDHK at Tongji University, Shanghai

Double degree in production techniques that can be obtained by German and Chinese students (studying at both locations).

Contact:

Name: Prof. Dr.-Ing. Horst Meier
Email: Meier@lps.rub.de

Double Master's Degree in Gender Studies with the University of Graz

Double degree "Master of Arts" is awarded, a full academic degree in both participating countries. The degree course focuses on an international, mainly European, perspective on Gender Studies.

Contact:

Name: Julia Figdor
Email: GenderStudies@rub.de

Double Degree in Law with Université François Rabelais Tours

Both double Bachelor's and double Master's degree. Students spent two semesters together in Bochum and two in Tours.

Contact:

Name: Norman Heenemann
Email: Norman.Heenemann@rub.de

Name: Véronique Müller
Email: Veronique.Mueller@rub.de

Double Degree in Philology with Université François Rabelais Tours

Students of both partner universities can spend the last year of their studies at the partner institution. Students are awarded a Master's degree of both RUB and Université Tours.

Contact:

Name: Jürgen Niemeyer
Email: Juergen.Niemeyer@rub.de

Joint Master's Degree in Humanitarian Action (NOHA)

After successfully completing all programme components students will be awarded a Joint Dipolma in International Humanitarian Action from the home and host universities.

Contact:

Name: Markus Moke
Email: Markus.Moke@rub.de
www.ifhv.de/

Joint Master's Degree Film and Audiovisual Media

Integrated studies in three different European countries, at key media and media studies locations

Contact:

Name: Prof. Dr. Oliver Fahle
Email: Oliver.Fahle@rub.de
www.rub.de/ifm/studium/master-film-av.html

Name: Jasmin Stommel
Email: Jasmin.Stommel@rub.de

Double Master's Degree in Deutsches, Türkisches und Internationales Wirtschaftsrecht

Joint Master programme of Ruhr-Universität Bochum and Kültür Universität Istanbul in German and Turkish. Takes place in Istanbul.

Contact:

Name: Yesim Ülker-Can
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www.rub.de/deut-tuerk-wima

APPLICATION AND ADMISSION

As an **exchange student** to RUB, you have to apply for an exchange programme at your home university. You will find all the information at www.international.rub.de/gaststudis.

If you wish to **complete a degree at RUB**, you are very welcome to submit your application. Please note, however, that you have to fulfill certain criteria to study at RUB:

Your **higher education entrance qualification** must be recognised as the equivalent to the German qualification. Your higher education entrance qualification (HZB) is your school leaving certificate or a proof of studies already completed. To qualify for admission at RUB, you must be able to prove that you have got a HZB for a German university.

You will find more information on this subject at www.international.rub.de/bewerbung/zulassung/hzb

Also, for most degree programmes, you need sufficient **German skills**. An exception are the International degree programmes stated in the first chapter of this brochure. Those Programmes have individual application procedures.

For successful studies in a regular course at the Ruhr- University, a high standard of German language skills are required. Language skills can be proven by one of the following examinations:

- DSH examination (level 2 or 3)
- ZOP examination of the Goethe-Institut
- German language diploma, level II, of the Goethe-Institut
- TestDaF with the grades 4 x 4 or 16 points

You will find more information on this subject at www.international.rub.de/bewerbung/zulassung/deutschkenntnisse

Ruhr-Universität Bochum offers an **online application** system. Application procedure can differ, depending on the country you are coming from and the subject you are planning to study at the RUB.

You will find the online application tool at www.international.rub.de/bewerbung/verfahren

Please note the **application deadlines** at RUB:
Application period, winter semester: 15/05 - 15/07
Application period, summer semester: 15/11 - 15/01

International degree programmes may have own deadlines and application procedures. For more information check the chapter “International Master Programmes” from page 13.

THE INTERNATIONAL OFFICE

The International Office is responsible for all aspects of the University's international contacts and activities.

It fosters and coordinates the university's international relationships, builds contacts with partner universities and handles projects and programmes with foreign partners. In addition, it supports university faculties and chairs in building international relationships. Whilst the team from RUBiss looks after international students, the "Welcome Centre" was established to support international visiting academics. RUB students who want to go abroad as part of their studies, are also advised by the International Office.

RUBISS – RUB INTERNATIONAL STUDENT SERVICES

In order to be able to study successfully, it is important that you feel comfortable, both at university and in daily life. Only then will you be able to focus on your studies. This is why "RUBiss – RUB international student services" was established and now combines all provisions and services for international students at RUB. As well as support in the application and admission process or with administrative tasks and legal affairs concerning foreign nationals, you will find contact persons for other important issues which go beyond your academic studies, such as e.g. advice and support in social, cultural and study related affairs – there is always a sympathetic ear for you at RUBiss.

Both at the beginning of and during the semester, events are organised: On various excursions, you will have the opportunity to get to know your new surroundings, to settle in and to meet fellow students. Tutors and members of the RUBiss team are present at these events and are available to answer all of your questions in a relaxed atmosphere. RUBiss also provides offers that may be useful for your studies or your future career: During the last year, two new projects were started that get funding by the DAAD: „Praktika international“ and the “Rechtschreibkorrekturbüro”.

The RUBiss team publishes a semester programme every semester. In it, you will find a range of different events, workshops and excursions. You can also register for our newsletter to stay informed on current events.



RUBiss, International Office

Ruhr-Universität Bochum

FNO-Building

Email: RUBiss@rub.de

www.international.rub.de/rubiss

WELCOME CENTRE FOR INTERNATIONAL RESEARCHERS

The Welcome Centre is the place to go for international academics, researchers, scientists and other university-related professionals and their families who seek advice, support and services regarding their research stay at Ruhr-Universität Bochum. We also offer support and advice to their hosts and faculties at Ruhr-Universität.

We assist researchers with their preparation for the trip and offer support during their stay in Bochum. Here they can find information, recommendations and support regarding specific topics and areas that are relevant for the research stay in Bochum, including necessary residence and work formalities, as well as helpful hints for a smooth social integration and everyday life in Germany.

Services for international researchers and their families include:

- Internet portal in German and English
- Check lists for preparing the stay and negotiating the first days after arrival
- Advice on formalities (visa, registration, health insurance)
- Assistance in finding accommodation
- Support in dealings with the authorities (tutor service)
- Counselling in legal matters
- Assistance in finding a kindergarten or school for your children
- International Lounge for visiting researchers
- Excursions and events for visiting scientists and scholars
- German language courses at various levels
- Online portal International Researchers' Gallery

Welcome Centre Events

The Welcome Centre invites international researchers and their families to many various events such as excursions in the region, monthly "Coffee with the Rector" in the International Lounge, AvH-lectures, monthly "International Women's' Exchange", Christmas and Summer Reception.

The Welcome Centre in Bochum is registered as "local service point" in EURAXESS – EU-wide network providing information and advice for internationally mobile researchers.



Welcome Centre, International Office
Ruhr-Universität Bochum
FNO-Building
Email: welcome-centre@rub.de
www.rub.de/welcome-centre

International Lounge for visiting researchers:
Mensa building, main entrance, Bistro level

OUTGOING SERVICES

The Outgoing Services assist those RUB students who want to spend some time of their studies abroad. On the outgoing websites you will find information on studying and interning abroad, on summer schools, foreign language courses and scholarship programmes. You will get to know more about exchange programmes, contact persons and financing.

RUB students who want to study abroad in Europe may participate in the ERASMUS programme. RUB has some 244 partner universities in Europe. Students can spend 3 to 12 months abroad and will be supported financially by the ERASMUS Mobility Grant. The ERASMUS programme is also eligible for students interning in one of the 33 ERASMUS countries (the 27 EU member states, Iceland, Norway, Switzerland, Liechtenstein, Croatia and Turkey).

Those students who would like to study outside of Europe may choose from RUB's many partner universities worldwide, where students may study one or two semesters without paying any tuition fees. There are university-wide cooperations with the following universities:

- Universidade Federal de Minas Gerais, Brazil
- Universidad de Monterrey, Mexico
- Universidad Autónoma de Nuevo León, Mexico
- Universidad Autónoma Metropolitana, Mexico
- Universidad Católica del Norte, Chile
- Lindenwood University in St.Charles, Missouri, USA
- National Taiwan University, Taiwan
- Ewha Womans University, Korea
- Soongsil University, Korea
- Sogang University, Korea
- Kyungpook National University, Korea
- Osaka University, Japan

The following universities offer RUB-students a monthly scholarship in addition to reimbursing tuition:

- Université François Rabelais in Tours, France
- Universidad de Oviedo, Spain
- Belorussian State University Minsk, Belarus
- Tongji University in Shanghai, China

As a member of the Utrecht Network, RUB students may participate in the MAUI (Mid-America Universities International) and AEN (Australian-European Network) exchange programmes:

MAUI Exchange Programme:

Baylor University Waco, TX	Texas State University San Marcos, TX
Kansas State University Manhattan, KS	University of Missouri Kansas City, MO
Missouri University of Science & Technology Rolla, MO	University of Missouri St. Louis, MO

Oklahoma State University Stillwater, OK	University of Nebraska Kearney, NE
Southern Illinois University at Carbondale, IL	University of Nebraska Lincoln, NE
Texas Tech University Lubbock, TX	University of Nebraska Omaha, NE
University of Kansas Lawrence, KS	University of Oklahoma Norman, OK

AEN Exchange Programme:

Deakin University Victoria	University of Tasmania Tasmania
Edith Cowan University Western Australia	University of Western Sydney New South Wales
Griffith University Queensland	University of Wollongong New South Wales
Macquarie University New South Wales	

Students studying abroad for one semester (3 to 6 months) at a partner university of RUB via an exchange programme of either the International Office or the faculties/institutes (excluded are those universities located in the 33 ERASMUS countries), students conducting research in preparation of their thesis at a university, company or organization abroad (1 to 6 months) or students interning abroad in companies or organizations worldwide (excluded are ERASMUS member states) for 1.5 to 3 months may apply for a PROMOS scholarship. Study trips of 5 to 15 students (doctoral students included) for 5 – 12 days may also be eligible for PROMOS funding.

Outgoing Services, International Office
Ruhr-Universität Bochum
FNO-Building

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uta.baier@uv.rub.de
www.international.rub.de/ausland

CONTACTS

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Isolde Hausmann	Room: FNO 01/184 Tel.: +49 (0) 234 32- 26801 E-Mail: Isolde.Hausmann@uv.rub.de Consultation Hours: Mon - Fri, 9 - 12 a.m. & 1:30 - 4 p.m.
Information Room	
Theodoros Markakidis	Room: FNO 01/172 Tel.: +49 (0) 234 32-22199 E-Mail: Theodoros.Markakidis@uv.rub.de Consultation Hours: Mon – Thu: 9 - 12 a.m. & 2 - 4 p.m. Fri: 9 a.m. - 1 p.m. & 2 - 3 p.m.
Directors	
Monika Sprung	Room: FNO 01/182 Tel.: +49(0)234 32-25483 E-Mail: Monika.Sprung@uv.rub.de Consultation Hours: By appointment
Jutta Schmid	Room: FNO 01/186 Tel.: +49 (0) 234 32-28763 E- Mail: Jutta.Schmid@uv.rub.de Consultation Hours: By appointment
Application and Admission	
Karsten Alt	Room: FNO 01/171 Tel.: +49 (0) 234 32- 28739 E-Mail: Karsten.Alt@uv.rub.de Consultation Hours: Mon - Thu: 9 - 12 a.m.
Angelika Tatang	Room: FNO 01/ 171 Tel.: +49 (0) 234 32- 23739 E-Mail: Angelika.Tatang@uv.rub.de Consultation Hours: Mon - Thu: 9 -12 a.m.

Rubiss- RUB International Student Service	
Elena Díaz	Room: FNO 01/180 Tel.: +49 (0)234 32-22699 E-Mail: Elena.Diaz@uv.rub.de Consultation Hours: By appointment
Magdalena Bichmann	Room: FNO 01/177 Tel.: +49 (0)234 32-27248 E-Mail: Magdalena.Bichmann@uv.rub.de Consultation Hours: Mon-Fri, 9 - 12 a.m.
Sarah Stücken	Room: FNO 01/176 Tel.: +49 (0)234 32-27676 E-Mail: Sarah.Stuecken@uv.rub.de Consultation Hours: Mon-Fri 10 - 12 a.m. & 2 - 3.30 p.m.
Outgoing Services	
Veronika Fuckel	Room: FNO 01/183 Tel.: +49 (0)234 32-28913 E-Mail: Veronika.Fuckel@uv.rub.de Consultation Hours: Mon & Thu: 2.30 - 4.30 p.m. Tue & Wed: 10.30 - 12.30 a.m.
Uta Baier	Room: FNO 01/183 Tel.: +49 (0)234 32-29814 E-Mail: Uta.Baier@uv.rub.de Consultation Hours: Mon & Thu: 10.30 - 12.30 a.m. Tue & Wed: 2.30 - 4.30 p.m.
Welcome Centre	
Anna Gopon	Room: FNO 01/185 Tel.: +49 (0)234 32- 28824 E-Mail: Anna.Gopon@uv.rub.de Consultation Hours: By appointment
Alexandra Redel	Room: FNO 02/32 Tel.: +49 (0)234 32- 25408 E-Mail: Alexandra.Redel@uv.rub.de Consultation Hours: Mon, Wed & Fri: 9 - 12 a.m. Tue & Thu: 2 - 4 p.m.
Internationalisation	
Ulrike Herrlich	Room: FNO 01/185 Tel.: +49 (0)234 32-24747 E-Mail: Ulrike.Herrlich@uv.rub.de Consultation Hours: By appointment

INTERNATIONAL MASTER PROGRAMMES

The following chapter contains RUB's international Master and PhD programmes that are taught entirely in English.

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FACULTY OF CHEMISTRY AND BIOCHEMISTRY

<http://www.chemie.rub.de>

Contact:

Name: Dr. Manfred Groß

Room: NC 02/128

Tel: 0234/32-24571

Email: chemie@rub.de

MASTER OF BIOCHEMISTRY

Language: English

Degree programme: MSc

Requirements: A qualified BSc (= a BSc with an average mark better than 2.5) in Biochemistry or a related subject, such as Molecular Biology, Biotechnology, Chemical Biology, or Chemistry with a major in Biochemistry)

Application Deadline: 15/07/12

Begin: October 8, 2012

Course description:

The Master Course in "Biochemistry" builds on the foundations laid by a BSc in Biochemistry or in a related subject. It constitutes the second step towards a comprehensive education and training in the sciences and methods necessary to understand and exploit the molecular and chemical basis of biological and physiological processes. The goal of this course is to enable the student to independently apply the theoretical and technical knowledge gained to tackle and solve open questions in the life sciences, either in academia or in industry.

To reach this goal students will receive up to 26 hours of teaching per week over a period of 3 semesters, i.e., a total of 77.5 hours, comprising 16 hrs of lectures, 12 hrs of seminars, and a full 49.5 hrs of practicals. In the fourth semester experiments for the Master thesis project will be performed with the goal to submit a thesis after 6 months.

A unique feature of the MSc Biochemistry in Bochum is the possibility to choose between six Focal Point Programmes in which all courses, starting with the 2nd semester, are geared towards a topic chosen at the end of the first semester. Available topics include

a) Biochemistry of the Nervous System; b) Biomolecular Chemistry; c) Molecular Medicine; d) Proteins: Structure and Function; e) Molecular Biology and Biotechnology of Plants and Microorganisms; and f) Stem Cell Biochemistry.

Further highlights of this Master Course include compulsory practical training in experimental approaches that use isotopes, a course that in addition to credit points yields a federal certificate required for Radiation Safety Officer duties in academia and industry; and a practical course in the handling of experimental animals, which is conducted in collaboration with the company Bayer HealthCare at their premises in Wuppertal.

The Faculty of Chemistry and Biochemistry appreciates if their Master students choose to spend one or more semesters abroad. The faculty supports this choice by unbureaucratically accepting courses taken abroad as equivalent if they fit the general philosophy of the Master Programme in Biochemistry at RUB.

MASTER OF CHEMISTRY

Language: English

Degree programme: MSc

Requirements: A qualified BSc (= a BSc with an average mark better than 2.5) in Chemistry or a related subject

Application Deadline: 15/07/12

Begin: October 8, 2012

Course description:

The Master Course in "Chemistry" builds on the foundations laid by a BSc in Chemistry or a related subject. It constitutes the second step towards a comprehensive education and training in chemistry comprising all aspects from organic and inorganic synthesis to physical and theoretical descriptions of chemical reactions. The goal of this course is to enable the student to independently apply the theoretical and technical knowledge gained to tackle and solve open questions in chemistry, either in academia or in industry.

To reach this goal students will receive a research orientated education comprising lectures and seminars but also, to a large extent, practicals. The first and second semester aim to provide an in depth-understanding in inorganic chemistry, organic chemistry and physical chemistry through lectures as well as a practicals in selected disciplines. The third semester allows the students to select a specialization practical including a 3-month practical. In the fourth semester experiments for the Master thesis project will be performed with the goal to submit a thesis after 6 months.

A unique feature of the MSc in Chemistry at the Ruhr-University Bochum is the possibility to choose between a number of focal point programmes as specialization including organic, inorganic, physical, analytical, industrial ("Technische Chemie") and theoretical chemistry as well as interdisciplinary programmes such as functional materials. The practicals are mainly performed in various research groups using state of the art research equipment thus guiding the students into research at an early stage. The research groups with PhD students and PostDocs from all over the world provide the basis for an education in an international environment.

The Faculty of Chemistry and Biochemistry appreciates if their Master students choose to spend one or more semesters abroad. The faculty supports this choice by unbureaucratically accepting courses taken abroad as equivalent if they fit the general philosophy of the Master Programme in Chemistry at RUB.

INTERNATIONAL MASTER OF MOLECULAR SCIENCES AND SIMULATION (IMOS)

Language: English

Degree programme: MSc

Requirements: A qualified B.Sc. (= a BSc with an average mark better than 1.9 or international equivalent) in Chemistry, Physics, Biology, Engineering or a related interdisciplinary subject. In case of more than 20 applicants a selection will take place.

Application Deadline for international students: May 15, 2012.

Begin: October 1, 2012 (optional levelling courses in scientific English and Mathematics), October 8, 2011, mandatory course program.

Course description:

The international master program “Molecular Sciences and Simulation” (iMOS) interfaces between the traditional scientific disciplines chemistry and physics with a strong focus on concepts of molecular science, modern laser-spectroscopic and microscopic experimental techniques, computer simulations, and quantum chemistry. It is thus tailored for excellent students who want to learn in depth experimental and theoretical techniques in order to tackle today’s scientific challenges in (bio)molecular sciences in a broad sense.

The topics of this master program have been specially designed to attract outstanding students with a B.Sc. from a broad variety of disciplines (chemistry, physics, biology, mathematics and engineering). The students are driven by their interest for a deeper molecular understanding of (bio)chemical and (bio)physical processes but do not wish to focus on chemical synthesis and “bench chemistry”.

iMOS is a true interdisciplinary program which was set-up to meet the new challenges for a top level education for the next generation of young scientists. Promotion of young researchers will be pursued with a focus on early hands-on experience and participation in high profile research projects in combination with a study program stimulating scientific curiosity and creativity.

Study goal of the iMOS program is to acquire competence in solving problems and to apply methodological expert knowledge in an interdisciplinary context. The idea is to give the students early in their career “hands on” experience in both cutting-edge science and modern techniques. They will learn how to develop and solve scientific questions by employing suitable theoretical and experimental methods. In the framework of this MSc program, students will be trained in using state-of-the-art methods in a broad sense with early participation in research.

One of the special features of this program is an international research project that will be carried out at one of the worldwide top institutions in the field of molecular sciences and simulation. This is part of a leadership training program for future leaders in science and industry, since the next generation will have to be undoubtedly people that have learned to work effectively in international, intercultural and interdisciplinary teams.

COMPUTATIONAL ENGINEERING

<http://compeng.rub.de>

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COMPUTATIONAL ENGINEERING

Language: English

Degree programme: MSc

Requirements: A B.Sc. or comparable degree in an engineering sciences subject; profound English language skills, both written and spoken

Application Deadline: deadline for international students: 01/05/12

Begin: 10/10/2012

Course description:

The master's programme Computational Engineering focuses on the consolidation of knowledge in computer-oriented methods of Engineering Sciences. It provides to students key-skills in engineering mechanics, mathematics and computer science required for innovatively designing and analysing high-tech engineering systems and materials. Besides, the programme conveys so-called soft skills like the capacity for teamwork, the ability to manage conflict situations, and communication skills. It is exactly this unique blend of computer- and engineering-related knowledge with these soft skills which accounts for the high academic standard of the programme. The programme is thus especially designed to qualify students for the requirements of today's job market for engineers, opening them the doors to upper and top positions in the industry and at institutions of higher education.

The master's programme Computational Engineering has the following goals:

- The imparting of skills in the field of computer-oriented methods in Engineering Sciences to qualify students to perform complex tasks with an emphasis on simulation and modelling independently and on their own responsibility. The master's programme thus qualifies students for positions in research and development with managerial responsibility.
- The imparting of skills for writing academic theses on a post-graduate level.

In addition, the programme is aimed at enabling graduates to solve challenging problems in research and practice. At the same time, it aims at opening them the doors to various occupational fields on the international job market on the basis of 'global competencies'. In order to achieve these goals great emphasis is placed on research.

In its concept, the RUB Master programme is designed so as to include courses offered by various faculties, mainly the faculties of Civil- and Environmental Engineering (course coordination), Mechanical Engineering and Mathematics to offer students a highly sophisticated education, breeding tomorrow's specialists and executives.

For further details about our courses please go to: <http://compeng.rub.de>: Sub-item 'Curriculum'

INSTITUTE OF DEVELOPMENT RESEARCH AND DEVELOPMENT POLICY

www.development-research.org

Contact:

Name: Dr. Gabriele Bäcker

Room: GB 1/59

Tel: 0234/32- 22418

Email: ieephd@rub.de

PHD IN INTERNATIONAL DEVELOPMENT STUDIES

Language: English

Degree programme: PhD

Requirements: 1. Qualified university degree (Master or an equivalent to the German Diploma or Staatsexamen) with an overall grade equivalent to 2.7 (fully satisfactory) in the German grading system after completion of relevant studies with a duration of at least 4 years , or 2. Qualified degree with an overall grade equivalent to 1.7 (fully good) in the German grading system after completion of relevant studies with a duration of at least three years plus preparatory studies for the PhD of usually three semesters. For international degrees the equivalence will be judged during the application process. Candidates who have to follow preparatory studies before admission to the PhD in International Development Studies can be accepted for such preparatory studies at the Ruhr-University Bochum

Course description:

Starting from winter 2007, the Institute of Development Research and Development Policy offers a 3-year English-language PhD program in International Development Studies. It is implemented by the Institute of Development Research and Development Policy on behalf of the Faculties of Geography, Law, Social Science, and Economics. Annually up to 12 PhD candidates are accepted to the program. The PhD program in International Development Studies is a combination of working on individual PhD research projects as well as participating in selected teaching modules. Teaching modules deal with developmental issues from a multidisciplinary perspective. These seminars are complemented by courses on research methods and statistical analysis. Regular presentation and discussion of individual research projects form part of the semi-annual „Research Colloquium“ in which all PhD candidates as well as supervisors take part. A field research phase in the fourth semester forms an integral part of the PhD-program. Courses on “Generic Skills” include seminars on Scientific Writing, Scientific Presentation and Professional (Scientific) Communication. They aim at the training of key competences and are offered in cooperation with the Ruhr-University Bochum Research School.

INSTITUTE OF DEVELOPMENT RESEARCH AND DEVELOPMENT POLICY

www.development-research.org

Contact:

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Room: BB 1/153
Tel: 0234/32- 22458
Email: Meik.Nowak@rub.de

MASTER OF ARTS IN DEVELOPMENT MANAGEMENT

Language: English

Degree programme: Master

Requirements: An above average B.A. or relevant degree in political science, social science, law, economics or geography or in other subjects related to the planning and evaluation of development programs and projects career experience in a relevant field; preference is given to candidates whose employers offer a reintegration guarantee. For DAAD scholarship applicants within the program "postgraduate courses with relevance to developing countries" at least two years career experience is required, other applicants shall demonstrate practical experience at least through a relevant internship. Minimum certified proficiency in written and spoken English -TOEFL: 79-80 points internet based (equivalent to 213 points computer based or 550 paper based) or IELTS: band 6

Application Deadline: 31/12/2013

Begin: September 2014 in Bochum

Course description:

The MADM is addressed to young professionals from all over the world with a B.A. or relevant degree and practical experience with relevance for development management who need further academic qualification for their future professional career in a field related to development management and cooperation.

Since winter 2000, the Institute of Development Research and Development Policy has offered an international English-language Master Program in Development Management. Since May 2002, the program has also been offered at the University of the Western Cape, South Africa; originally as part of the DAAD initiative "German Programs of Study Abroad" and now as part of the DAAD funded "South African - German Centre for Development Research and Criminal Justice". The duration of each program cycle is three semesters (18 months). For each intake, up to 25 students are accepted in Bochum and up to 20 students in Cape Town.

The course starts every two years with the next intake in 2012. For international participants a German language course is offered from beginning of August. The program itself starts in September with a Summer School on Research Methods and Development Practice. In this introductory Summer School the Bochum students will also meet with the students from the Cape Town intake, who started earlier and have by then already completed their first semester. Apart from coursework the Summer School usually includes a seminar on Inter-cultural Communication and Team Building as well as some excursions for you to get more familiar with Bochum, the region and Germany.

Proofs of academic achievement: n.s.

FACULTY OF GEOSCIENCES

INSTITUTE FOR GEOLOGY, MINERALOGY AND GEOPHYSICS

www.rub.de/sediment

Contact:

Name: Prof. Dr. Adrian Immenhauser
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MS.C. RESOURCES AND ENERGY (GEOSCIENCES)

Language: English

Degree programme: MSc

Requirements: B.Sc. in geosciences or related natural sciences, English language proficiency (written and spoken), and sufficient physical fitness to perform fieldwork

Application Deadline: 15/07/2012 for international students

Begin: 08/10/2012

Course description:

The Institute for Geology, Mineralogy and Geophysics offers a comprehensive two-year (four terms) M.Sc. programme in fundamental and applied geosciences.

The goal of this M.Sc. programme is to provide students with a solid background in geoscience disciplines that are particularly relevant for a subsequent employment in the industry (mainly hydrocarbon industry).

Main topics covered include sedimentology/stratigraphy, geophysics/seismic interpretation and structural geology/tectonics.

Additional topics include aspects of geo-engineering and hydrogeology.

Frontal class room instructions are complemented by practical laboratory courses and hands-on field training.

INSTITUTE FOR INTERNATIONAL LAW OF PEACE AND ARMED CONFLICT

www.ifhv.rub.de

Contact:

Name: Markus Moke
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JOINT EUROPEAN MASTER'S IN INTERNATIONAL HUMANITARIAN ACTION

Language: English

Degree programme: Master of Arts in Humanitarian Action

Requirements: Master's degree or equivalent

Application Deadlines:

ERASMUS MUNDUS 15/12/2011

NOHA and NOHA Mundus 15/03/2012

Begin: First week of September with the Intensive Programme (IP)

Course description:

The Joint European Master's in International Humanitarian Action is a inter-university, multidisciplinary postgraduate programme that provides high quality academic education and professional competencies for personnel working or intending to work in the area of humanitarian action. This European Master's Degree was created in 1993 as a result of concerted efforts on the part of the Network On Humanitarian Action (NOHA) Universities, working in close collaboration with the European Commission's Humanitarian Aid Office (ECHO) and Directorate-General for Education and Culture. This initiative was a response to a growing need from the humanitarian assistance community for higher educational qualifications specifically suited to addressing complex humanitarian emergencies. In addition to collaboration and support from the European Union, the programme has the backing of nongovernmental organisations (NGOs), inter-governmental organisations (IGOs), and other actors of the humanitarian relief community with whom the Network has strong collaborative links.

More than 15 years of experience have proved the Network's capacity to educate and train highly committed, interdisciplinary persons who can act at all levels of humanitarian relief operations and who can function in a variety of ways to enhance the delivery of humanitarian assistance and sustainable actions. Over 1800 NOHA graduated professionals work in the field of humanitarian relief and international co-operation as managers, administrators, researchers, evaluators, monitors, consultants, and representatives of international organisations and institutions. They hold positions of responsibility in all kinds of national and international intergovernmental and non-governmental organisations both in the field and at headquarters all around the world.

FACULTY OF MECHANICAL ENGINEERING

www.icams.de/mss

Contact:

Name: Prof. Dr. Alexander Hartmaier
Room: UHW 12/1211
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Dr. Manuel Piacenza
UHW 11/1105
Tel: 0234/32-29332
Email: mss@icams.de

MATERIALS SCIENCE AND SIMULATION

Language: English

Degree programme: MSc

Requirements: Bachelor (B. Sc.) or comparable degree in one of the following or related disciplines: Materials Science, Mechanical Engineering, Physics, Civil and Environmental Engineering, Electrical Engineering, Chemical Engineering, Power Engineering, Chemistry, Nanotechnology, Mathematics, or Computer Sciences

Application Deadline:

Visa required: 15th March/15th June for winter term / 15th September for summer term (short track)

No visa required: 15th March for summer term (short track)/ 15 September for winter term

Begin: Short track: summer term: April (preparatory courses for short track: around 15th March)
winter term (regular track): October

Course description:

Maintaining and expanding societies' industrial and economic capacity has become increasingly dependent on the rapid availability of sophisticated materials designed for extreme conditions. At the same time, the life-cycles of materials have become shorter due to frequent adaptation to, or even new design for, specific requirements and environments. Advanced computer simulation has been established as a key tool for increasing the speed of materials development at reduced costs and will gain a wide importance in academic and industrial research and development.

The Master of Science programme „Materials Science and Simulation“ meets the need for material scientists trained in numerical simulation as well as experimental characterization and processing techniques. Moreover, theoretical and practical knowledge in numerical methods has proven to be one of the most decisive key qualifications of nationally and internationally successful materials scientists and this development is still to continue. The programme focuses on providing you with a thorough knowledge in materials science and hands-on experience with state-of-the-art numerical methods. Furthermore it will enable you to apply your practical skills and knowledge in experimental settings already during your studies.

In detail, the programme will provide you with:

- a comprehensive knowledge of materials science, physics and numerical methods
- practical experience and the necessary theoretical background in applying modern numerical and experimental methods on all relevant scales
- competence to plan and conduct key experiments in modern characterization and processing techniques
- the ability to apply advanced modelling and simulation methods
the build-up of research competence by planning and conducting student research projects
a thorough understanding of the interrelation between processing, structure and properties of materials
- hands-on experience in project-oriented teamwork, project management skills and interdisciplinary communication.

The Masters course combines compulsory lectures in materials science, physics, numerical methods on different length and time scales, and programming techniques. In the specialization areas lectures can be selected from the fields “modelling and simulation” or “processing and characterization.” The lectures typically combine teaching of the theoretical background with the practical application of the gained knowledge in terms of computer models or lab experience. First practical research experience is gained from the research project scheduled in the third semester. Furthermore, the complete fourth semester is dedicated to the Masters thesis project. A complete course description can be downloaded from www.icams.de/mss.

FACULTY OF MEDICINE

www.rub.de/istem

Contact:

Name Molecular and Developmental Stem Cell Biology
Building MA/5/158
Tel: 0234/32-24556
Email: iSTEM@rub.de

INTERNATIONAL MASTER OF MOLECULAR AND DEVELOPMENTAL STEM CELL BIOLOGY

Language: English

Degree programme: MSc

Requirements: Applicants are required to have a top bachelor's degree in the life sciences (e.g., B.Sc. in biology, microbiology, biomedicine, molecular biology) or a state examination/master's in a medical subject. Selection via RUB-NC.

Application Deadline: 15th of July 2012

Begin: winter term; Duration: 4 semesters

Course description:

The goal of the study course is to train experts in all aspects of cutting edge stem cell biology and their theoretical as well as practical implementation either in the industrial or academic environment.

During the first year of the program, students achieve a fundamental understanding of developmental processes that are linked to the current progress of stem cell research. This theoretical knowledge is further deepened and expanded on by hands-on experience during practical modules. The inclusion of guest lecturers gives students the opportunity to get in contact with program-associated researchers and learn about prime examples of current topics in stem cell research. This practical knowledge is further expanded by the inclusion of a mandatory bioinformatics course. During the second year the curriculum switches in part to application-oriented courses that confront students with stem cell based approaches to the treatment of various illnesses as well as future prospects. The 4th semester is reserved for the master thesis.

It is also mandatory for the students to successfully complete a language course. Other acquired skills include a basic understanding of bioethics and legal aspects of biomedical work, skills in good medical practice and grant writing skills.

The master course comprises a 4-semester program providing a broad base of knowledge in the subjects studied as well as their methodology and theory. The average workload is calculated at 900 hours of work per semester of study, approximating 30 credit points per semester.

We do not expect our students to pay a tuition fee aside from the 254€ social fee.

INTERNATIONAL SEMINARS AND LECTURES

The following chapter contains a compilation of seminars and lectures (Bachelor, Master and PhD) held in English or another foreign language.

Please note: These seminars and lectures are usually **NOT** part of an international degree programme.

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FACULTY OF BIOLOGY AND BIOTECHNOLOGY

<http://www.biologie.ruhr-uni-bochum.de/>

Contact:

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 Consultation hours: n.V.

SCIENTIFIC PRESENTATION IN ENGLISH

Language: English

Department: General Zoology and Neurobiology

Degree programme: Master

Module: Scientific Presentation in english

Module taught entirely in English.

Course type: Seminar

Credit Points: 3

Teacher/Lecturer: Dr. Melanie Mark

Requirements: Bachelor degree

Room	Day, Time	Begin
ND 6/56b	Wednesday, 9:00-10:00	02/04/2012

Course description:

The goals of this weekly course are to learn how to read and critique research papers, to learn how to present a professional summary of a recent paper in English, and to acquire some background information and knowledge on recent topics in the field of Neurosciences. Every Wednesday a presenter will introduce and describe a current article from a scientific journal ie Nature, Science, Neuron, Cell or Nature Neuroscience.

The presenter will present a 30 min seminar which should include an introduction to the topic, the hypothesis or questions the authors were addressing, a description of the results, conclusions from the results and potential improvements, critiques or future experiments which can be performed. The seminar will be followed by a student led discussion period and critique of presentation. Non-presenters are expected to attend at least 6 seminars, to read the article presented for the week and to participate in the discussion following the presentation.

Proofs of academic achievement: Lecture

This course is credited for „Optionalbereich“.

This course is especially suitable for exchange students.

COLLOQUIUM: ACTUAL RESULTS IN CELL BIOLOGY AND MOLECULAR NEUROBIOLOGY (190606)

Language: english

Department: Cell Morphology and Molecular Neurobiology

Degree programme: any

Module: n.s.

Module taught entirely in English.

Course type: seminar

Credit Points: 1.0

Teacher/Lecturer: Prof. Dr. A. Faissner, Prof. Dr. S. Wiese, Dr. N. Brösicke, Dr. U. Theocharidis

Requirements: none

Room	Day, Time	Begin
ND 05 / 392	Mon, 9:15 - 10:30	continuously

Course description:

Scientists from the department present actual research results.

Proofs of academic achievement: oral presentation

MODERN METHODS IN LIFE SCIENCES: ANALYSES OF RECEPTOR PHOSPHOTYROSIN PHOSPHATASES IN THE VISUAL SYSTEM (190806)

Language: ger/en

Department: Cell Morphology and Molecular Neurobiology

Degree programme: PhD

Module: n.s.

Module taught entirely in English: yes, according to agreement

Course type: introductory course

Credit Points: 1 / 1,5 / 2

Teacher/Lecturer: Prof. Dr. A. Faissner, J. Reinhard

Requirements: Master degree

Room	Day, Time	Begin
according to prior agreement		

Course description:

Theoretical and practical information is given about the cell biological and molecular biological analysis of receptor tyrosin phosphatases. Depending on the agreements the course can be attended for 3 to 5 days.

Proofs of academic achievement: n.s.

MODERN METHODS IN LIFE SCIENCES: CULTURE AND ANALYSIS OF EMBRYONIC HIPPOCAMPAL NEURONS UNDER DEFINED CONDITIONS, OF RETINAL GANGLION CELLS AND OF NEUROSPHERES (190805)

Language: ger/en

Department: Cell Morphology and Molecular Neurobiology

Degree programme: PhD

Module: n.s.

Module taught entirely in English: yes, according to agreement

Course type: introductory course

Credit Points: 1 / 1,5 / 2

Teacher/Lecturer: Prof. Dr. A. Faissner, M. Geissler

Requirements: Master degree

Room	Day, Time	Begin
according to prior agreement		

Course description:

Theoretical and practical information is given about the culture of diverse primary cell types of the nervous system. Depending on the agreements the course can be attended for 3 to 5 days.

Proofs of academic achievement: n.s.

MODERN METHODS IN LIFE SCIENCES: VIDEO MICROSCOPY AND CONFOCAL LASER SCANNING MICROSCOPY (190807)

Language: ger / en

Department: Cell Morphology and Molecular Neurobiology

Degree programme: PhD

Module: n.s.

Module taught entirely in English: yes, according to agreement

Course type: introductory course

Credit Points: 1 / 1,5 / 2

Teacher/Lecturer: Prof. Dr. A. Faissner, Dr. A. Klausmeyer, Dr. U. Theocharidis, J. Reinhard

Requirements: Master degree

Room	Day, Time	Begin
according to prior agreement		

Course description:

Theoretical and practical information is given about different microscopy techniques. Depending on the agreements the course can be attended for 3 to 5 days.

Proofs of academic achievement: n.s.

ADVANCED TUTORIAL (S-MODULE): AXON GENERATION AND SYNAPTOGENESIS (190 372)

Language: ger/en

Department: Cell Morphology and Molecular Neurobiology

Degree programme: BSc / MSc

Module: n.s.

Module taught entirely in English: yes, according to agreement

Course type: practical course

Credit Points: 15

Teacher/Lecturer: Prof. Dr. A. Faissner

Requirements:

GMP passed

basic module in cell or neurobiology, biochemistry or microbiology passed

lecture in cell or neurobiology attended

Room	Day, Time	Begin
according to prior agreement		

Course description:

The module addresses the molecular basis of axon generation and synaptogenesis. The focus lies on the influence of the extracellular matrix. Issues are inter alia the primary culture of neurons from different brain regions and of glial cells and the culture of defined glial cell lines. The analysis is based on immunocytology and the use of immunofluorescence techniques, biochemical studies and the characterization of expressed genes, Western blot, immunoprecipitation and the biochemical and molecular characterization of the extracellular matrix.

Proofs of academic achievement: seminar, written protocol

ADVANCED TUTORIAL (S-MODULE): NEURON-GLIA BIOLOGY AND SYNAPTIC PLASTICITY (190 373)

Language: ger/en

Department: Cell Morphology and Molecular Neurobiology

Degree programme: BSc / MSc

Module: n.s.

Module taught entirely in English: yes, according to agreement

Course type: practical course

Credit Points: 15

Teacher/Lecturer: Prof. Dr. A. Faissner, M. Geissler

Requirements:

GMP passed

basic module in cell or neurobiology, biochemistry or microbiology passed
lecture in cell or neurobiology attended

Room	Day, Time	Begin
according to prior agreement		

Course description:

The module addresses the molecular basis of the interaction between neurons and glia cells. The focus lies on the influence of the extracellular matrix. Issues are inter alia the primary culture of neurons from different brain regions and of glial cells and the culture of defined glial cell lines. Long-term cultures are used to analyse synaptic plasticity under defined conditions. The analysis is based on immunocytology and the use of immunofluorescence techniques, biochemical studies and the characterization of expressed genes, Western blot, immunoprecipitation and the biochemical and molecular characterization of the extracellular matrix.

Proofs of academic achievement: seminar, written protocol

SEMINAR / LITERATURE CLUB: ACTUAL PUBLICATIONS IN MOLECULAR AND CELLULAR NEUROBIOLOGY (190552)

Language: en

Department: Cell Morphology and Molecular Neurobiology

Degree programme: any

Module: n.s.

Module taught entirely in English.

Course type: seminar

Credit Points: 1,0

Teacher/Lecturer: Prof. Dr. A. Faissner, Dr. N. Brösicke, Dr. U. Theocharidis

Requirements: n.s.

Room	Day, Time	Begin
NDEF 05/	Thursday, 16:45	continously

Course description:

Students and scientists from the department present actual publications in molecular and cellular neurobiology

Proofs of academic achievement: oral presentation

ADVANCED TUTORIAL (S-MODULE): TRANSCRIPTION FACTORS AND REGULATION OF NEURAL STEM CELLS (190 374)

Language: ger/en

Department: Cell Morphology and Molecular Neurobiology

Degree programme: BSc / MSc

Module: n.s.

Module taught entirely in English: yes, according to agreement

Course type: practical course

Credit Points: 15

Teacher/Lecturer: Prof. Dr. A. Faissner, Dr. U. Theocharidis

Requirements:

GMP passed

basic module in cell or neurobiology, biochemistry or microbiology passed

lecture in cell or neurobiology attended

Room

Day, Time

Begin

according to prior agreement

Course description:

The module addresses the molecular basis of gene regulation of neural stem cells. The focus lies on the influence of the extracellular matrix of the developing nervous system and the regulation of matrix proteins. Issues are inter alia the primary culture of stem cells of the nervous system and their immunocytochemical and molecular biological analysis. Expression studies and genetic manipulations are carried out. In addition to histochemical studies an analysis of the developing nervous system and the neural stem cell niches will be performed. Transcription factors in neural development and the proteins of the extracellular matrix are in the focus.

Methods: Preparation of neural tissue for cell culture, video microscopy, immunocytochemistry with application of fluorescence techniques, RT-PCR, Western blot, in situ hybridization, immunohistochemistry, dot blot in vitro hybridization, Southern blot, chromatin immunoprecipitation, Dual-Luciferase Promotor Assays, cloning, plasmid purification, transfection

Proofs of academic achievement: seminar, written protocol

ADVANCED TUTORIAL (S-MODULE): ANALYSIS OF PROTEIN TYROSIN PHOSPHATASES IN NEURAL STEM CELLS (190 375)

Language: ger/en

Department: Cell Morphology and Molecular Neurobiology

Degree programme: BSc / MSc

Module: n.s.

Module taught entirely in English: yes, according to agreement

Course type: practical course

Credit Points: 15

Teacher/Lecturer: Prof. Dr. A. Faissner, J. Reinhard

Requirements:

GMP passed

basic module in cell or neurobiology, biochemistry or microbiology passed
 lecture in cell or neurobiology attended

Room	Day, Time	Begin
according to prior agreement		

Course description:

The module deals with cell and molecular biological studies on the development of the visual system and neural stem cells of mammals. One focus is the role of Phosphotyrosinphosphatases in this context. It will cover following items: primary culture of neural stem and retinal ganglion cells , culture defined glial cell lines, immunocytology with defined neural antigens in the visual system and the brain, using immunofluorescence techniques, fluorescence and confocal laser scanning microscopy, biochemical studies, characterization of expressed genes, Western blot, immunoprecipitation, biochemical and molecular characterization of receptor phosphotyrosine phosphatases in neural stem cells and the visual system, transfection and ectopic expression of PTPs, functional assays in co-culture systems and the analysis of functions and properties of retinal stem cells.

Proofs of academic achievement: seminar, written protocol

ADVANCED TUTORIAL (S-MODULE): BIOLOGY OF MYELIN PRODUCING CELLS

Language: ger/en

Department: Cell Morphology and Molecular Neurobiology

Degree programme: BSc / MSc

Module: n.s.

Module taught entirely in English: yes, according to agreement

Course type: practical course

Credit Points: 15

Teacher/Lecturer: Prof. Dr. A. Faissner, S. van Leeuwen

Requirements:

GMP passed

basic module in cell or neurobiology, biochemistry or microbiology passed
 lecture in cell or neurobiology attended

Room	Day, Time	Begin
according to prior agreement		

Course description:

Oligodendrocytes in the central and Schwann cells in the peripheral nervous system stand in the focus of this course. With primary cell cultures and cell lines we analyse the molecular biological basis of the interaction between myelin producing glia cells and neurons. We use histological and immunocytochemical approaches for the analysis of these cells in the developing nervous system.

Methods: culture of primary cells and cell lines, RT-PCR, Western blot, in situ hybridization, immunocyto-/histochemistry, fluorescence microscopy, laser scanning microscopy, video microscopy

Proofs of academic achievement: seminar, written protocol

ADVANCED TUTORIAL (S-MODULE): GLYCOBIOLOGY OF NEURAL STEM CELLS

Language: ger/en

Department: Cell Morphology and Molecular Neurobiology

Degree programme: BSc / MSc

Module: n.s.

Module taught entirely in English: yes, according to agreement

Course type: practical course

Credit Points: 15

Teacher/Lecturer: Prof. Dr. A. Faissner, E. Hennen

Requirements:

GMP passed

basic module in cell or neurobiology, biochemistry or microbiology passed

lecture in cell or neurobiology attended

Room	Day, Time	Begin
according to prior agreement		

Course description:

The S-module provides the basis of protein biochemistry, molecular biological, and immunological methods in cell and developmental biology. The focus lies on the study of glycoproteins of the central nervous system. This projects deals with scientific questions in the current research process. Depending on the focus of the project some of the following methods are taught and used independently: immunocytochemistry, immunohistochemistry, RT-PCR, Western blot, in situ hybridization, cloning, plasmid purification, cell culture of primary tissue, culture of cell lines, production and purification of monoclonal antibodies

Proofs of academic achievement: seminar, written protocol

ADVANCED TUTORIAL (S-MODULE): BIOTECHNOLOGICAL METHODS IN MOLECULAR NEUROBIOLOGY

Language: ger/en

Department: Cell Morphology and Molecular Neurobiology

Degree programme: BSc / MSc

Module: n.s.

Module taught entirely in English: yes, according to agreement

Course type: practical course

Credit Points: 15

Teacher/Lecturer: Prof. Dr. A. Faissner, Dr. U. Theocharidis, Dr. N. Brösicke, S. van Leeuwen

Requirements:

GMP passed

basic module in cell or neurobiology, biochemistry or microbiology passed

lecture in cell or neurobiology attended

Room	Day, Time	Begin
according to prior agreement		

Course description:

The module focuses on the molecular basis of developmental neurobiology. Using molecular biological and biotechnological methods, various aspects of cellular and molecular neurobiology can be elucidated. Objectives are the production and the molecular genetics of expression constructs and recombinant expression of proteins for use in cell culture and protein biochemical analysis. In addition, primary cells and cell lines are genetically manipulated and examined for the molecular and cellular biological effects. Using concrete examples bioinformatical techniques in the form of database analysis and sequence comparisons are carried out. The independent development and implementation of cloning strategies are learned and nurtured.

Methods: RT-PCR, cloning, plasmid purification, transfection, protein expression, Western blot, in situ hybridization, chromatin immunoprecipitation, dual-luciferase promoter binding studies, immunocyto-/histochemistry

Proofs of academic achievement: seminar, written protocol

ADVANCED TUTORIAL (S-MODULE): TUMOR STEM CELLS AND BIOLOGY OF GLIAL TUMORS

Language: ger/en

Department: Cell Morphology and Molecular Neurobiology

Degree programme: BSc / MSc

Module: n.s.

Module taught entirely in English: yes, according to agreement

Course type: practical course

Credit Points: 15

Teacher/Lecturer: Prof. Dr. A. Faissner, Dr. N. Brösicke

Requirements:

GMP passed

basic module in cell or neurobiology, biochemistry or microbiology passed

lecture in cell or neurobiology attended

Room	Day, Time	Begin
according to prior agreement		

Course description:

The course focuses on the study of cellular and molecular aspects of tumor formation in the nervous system. It uses the culture of glial tumor cell lines and defined neural immunocytological antigens of the extracellular matrix and the cytoskeleton, immunofluorescence techniques and laser scanning microscopy, immunological studies of tumor cell lines and studies of ECM in primary tumors (in cooperation). An investigation of the neural regulation of extracellular matrix in tumor cells by cytokines by ELISA and Western blot is possible as well as profiling of receptor genes in tumor cell systems, analysis of integrins, PTPs and ECM glycoproteins, cell biological assays for proliferation, adhesion and migration of tumor cells, and finally the video microscopy of tumor cells of the nervous system.

Proofs of academic achievement: seminar, written protocol

SCIENCE MEETING / MITARBEITERSEMINAR: AKTUELLE FORSCHUNGSPROJEKTE (190565)

Language: English

Department: Faculty of Biology and Biotechnology, Geobotany, ND 03/174

Degree programme: -

Module: n.s.

Course type: Seminar

Credit Points: 1

Teacher/Lecturer: Prof. Dr. Dominik Begerow

Requirements: Own research in the field of Evolutionary Mycology

Room	Day, Time	Begin
ND 1 / 58	Monday, 9:00 – 10:00	by arrangement

Course description:

Exchange on research concepts, progress report and discussion of new results.

Proofs of academic achievement: none

PRACTICAL EXERCISES IN BIOTECHNOLOGY

Language: English

Department: Lehrstuhl für Biophysik

Degree programme: Master of Science in Biology / Biochemistry

Module: S-Module Biotechnology (limited accession)

Module taught entirely in English.

Course type: 190335 Research Practical

Credit Points: 15

Teacher/Lecturer: Hofmann, Kötting, Lübben

Requirements: Bachelors Degree in Biology / Biochemistry

Room	Day, Time	Begin
by arrangement	by arrangement	by arrangement

Course description:

Heterologous expression and purification of pharmacologically relevant membrane proteins (practical exercises in cloning, expression and purification of membrane proteins or their functional domains)

Proofs of academic achievement: Written protocol on the exercises

This course is especially suitable for exchange students.

ACCOMPANYING SEMINAR TO THE PRACTICAL EXERCISES BIOTECHNOLOGY

Language: English

Department: Lehrstuhl für Biophysik

Degree programme: Master of Science in Biology / Biochemistry

Module: S-Module Biotechnology (limited accession)

Module taught entirely in English.

Course type: 190336 Seminar

Credit Points: 1

Teacher/Lecturer: Hofmann, Kötting, Lübben

Requirements: Bachelors Degree in Biology / Biochemistry

Room	Day, Time	Begin
by arrangement	by arrangement	by arrangement

Course description:

Heterologous expression and purification of pharmacologically relevant membrane proteins (accompanying seminar to the practical exercises in cloning, expression and purification of membrane proteins or their functional domains)

Proofs of academic achievement: Oral seminar contribution

This course is especially suitable for exchange students.

JOURNAL CLUB

Language: English

Department: Cell Physiology

Degree programme: Bachelor/Master/PhD

Module: n.s.

Module taught entirely in English.

Course type: seminar

Credit Points: 2

Teacher/Lecturer: Prof. Hatt, Dr. J. Wäring

Requirements: n.s.

Room	Day, Time	Begin
ND 4/74-75	Friday, 9.00-10.00	13/04/12

Course description:

Discussion of newest publications in the field

Proofs of academic achievement: regular and active presence

This course is especially suitable for exchange students.

PROGRESS REPORT

Language: English

Department: Cell Physiology

Degree programme: Bachelor / Master / PhD

Module: n.s.

Module taught entirely in English.

Course type: colloquium

Credit Points: 1

Teacher/Lecturer: Prof. Hatt, Dr. J. Wäring

Requirements: n.s.

Room	Day, Time	Begin
ND 4 / 74-75	according to prior agreement	April 2012

Course description:

Report and discussion of experimental data

Proofs of academic achievement: regular and active presence

This course is especially suitable for exchange students.

COMPUTATIONAL ENGINEERING

<http://compeng.rub.de>

Contact:

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CONCRETE ENGINEERING AND DESIGN

Language: English

Department: Computational Engineering

Degree programme: Master

Module: Concrete Engineering and Design

Module taught entirely in English.

Course type: Lecture 2h / Exercise 2h

Credit Points: 6

Teacher/Lecturer: Prof. Dr.-Ing Mark and assistants

Requirements: Ideally a B.Sc. degree in an engineering sciences subject; basic knowledge in structural engineering, mechanics of beams, reinforced concrete design and material properties

Room	Day, Time	Begin
IA 4/56	Mon 11:30 – 13:00; Thu 08:30 – 10:00	See blackboard notice at the respective department

Course description:

The module includes the following topics:

- principles and safety concept of Eurocode 2
- material properties and modelling
- bending and shear design
- design principles using spreadsheet analyses and optimisation methods
- moment-curvature-relations
- numerical section modelling (fibre model)
- strut-and-tie-modelling
- redistribution of sectional forces
- principles of pre-stressing:
 - o methods of pre-stress application
 - o time-variant and time-invariant losses
 - o calculation of deviation forces
 - o application in FE-methods
- application of mathematical software in nonlinear calculations
- optional: case study according to WP15 or W13

Proofs of academic achievement: Written examination

This course is especially suitable for exchange students.

DYNAMICS AND ADAPTRONICS

Language: English

Department: Computational Engineering

Degree programme: Master

Module: Dynamics and Adaptronics

Module taught entirely in English

Course type: Lecture 2h / Exercise 2h

Credit Points: 6

Teacher/Lecturer: Prof. Dr.-Ing Nestorovic / Appl. Prof. Dr. rer.nat. Le

Requirements: Ideally a B.Sc. degree in an engineering sciences subject; basic knowledge in structural mechanics, control theory and active mechanical structures

Room	Day, Time	Begin
CAE Pool IA 3/152	Wed 10:15 – 11:45; Fri 12:00 – 13:30	See blackboard notice at the respective department

Course description:

The course introduces the first principles of the dynamics of discrete and continuous mechanical systems: Newton laws and Hamilton variational principles. The force and energy methods for deriving the equation of motion for systems with a finite number of degrees of freedom as well as for continuous systems are demonstrated. The energy conservation law for conservative systems and the energy dissipation law for dissipative systems are studied. Various exact and approximate methods for solving dynamical problems, along which the Laplace transform method, the method of normal mode for coupled systems, and the Rayleigh method are developed for the free and forced vibrations. Various practical examples and applications to resonance and active vibration control are shown.

Further, an overall insight of the modelling and control of active structures is given within the course. The terms and definitions as well as potential fields of application are introduced. For the purpose of the controller design for active structural control, the basics of the control theory are introduced: development of linear time invariant models, representation of linear differential equations systems in the state-space form, controllability, observability and stability conditions of control systems. The parallel description of the modelling methods in structural mechanics enables the students to understand the application of control approaches. Finite element modelling is an important prerequisite in structural control. Basics of the numerical model development are introduced. Control methods include time-continuous as well as discrete-time controllers in the state space for multiple-input multiple-output systems, as well as methods of the classical control theory for single-input single output systems. Differences and analogies between continuous and discrete time control systems are specified and pointed out on the basis of a pole placement method. Closed-loop controller design for active structures is explained. Different application examples and problem solutions show the feasibility and importance of the control

methods for structural development. The term, design and implementation of observers in the controller design are introduced in terms of the practical aspects of structural control.

Proofs of academic achievement: Written examination

This course is especially suitable for exchange students.

ADVANCED FINITE ELEMENT METHODS

Language: English

Department: Computational Engineering

Degree programme: Master

Module: Advanced Finite Element Methods

Module taught entirely in English

Course type: Lecture 2h / Exercise 2h

Credit Points: 6

Teacher/Lecturer: Prof. Dr. tech. Günther Meschke and assistants

Requirements: Ideally a B.Sc. degree in an engineering sciences subject; basics in mathematics, mechanics and structural analysis, good knowledge in Finite Element Methods in Linear Structural Mechanics

Room	Day, Time	Begin
HZO 90	Mon 08:15 – 11:30	See blackboard notice at the respective department

Course description:

Based upon a brief summary of non-linear continuum mechanics the weak form of non-linear elastodynamics, its consistent linearization and its finite element discretization are discussed and, in a first step, specialized to one-dimensional spatial truss elements to understand the principles of the formulation of geometrically nonlinear finite elements. In addition, an overview on nonlinear constitutive models including elasto-plastic and damage models is given. The second part of the lecture is focussed on algorithms to solve the resulting non-linear equilibrium equations by load- and arc-length controlled Newton-type iteration schemes. Finally, the non-linear finite element method is used for the non-linear stability analysis of structures.

The lectures are supplemented by exercises to support the understanding of the underlying theory and to demonstrate the application of the non-linear finite element method for the solution of selected examples. Furthermore, practical applications of the non-linear finite element method are demonstrated by means of a commercial finite element programme.

Proofs of academic achievement: Written examination, student projects and presentations

This course is especially suitable for exchange students.

COMPUTATIONAL FLUID DYNAMICS

Language: English

Department: Computational Engineering

Degree programme: Master

Module: Computational Fluid Dynamics

Module taught entirely in English.

Course type: Lecture / Exercise

Credit Points: 6

Teacher/Lecturer: Prof. Dr. Christiane Helzel, Dr. M. Lipinski, Prof. Dr. Rüdiger Verfürth

Requirements: Ideally a B.Sc. degree in an engineering sciences subject; basic knowledge on partial differential equations and their variational formulation, finite element methods, numerical methods for the solution of large linear and non-linear systems of equations

Room	Day, Time	Begin
NA 2/24 (Mon); NA 1/64 (Wed)	Mon 11:15 – 12:45; Wed 15:15 – 16:45	See blackboard notice at the respective department

Course description:

1st week: Modelization

velocity, Lagrangian / Eulerian representation; transport theorem, Cauchy theorem; conservation of mass, momentum and energy; compressible Navier-Stokes / Euler equations; nonstationary incompressible Navier-Stokes equations; stationary incompressible Navier-Stokes equations; Stokes equations; boundary conditions

2nd week: Notations and auxiliary results

differential operators; Sobolev spaces and their norms; properties of Sobolev spaces; finite element partitions and their properties; finite element spaces; nodal bases

3rd week: FE discretization of the Stokes equations. 1st attempt

Stokes equations; variational formulation in $\{\text{div } \mathbf{u} = 0\}$; non-existence of low-order finite element spaces in $\{\text{div } \mathbf{u} = 0\}$; remedies

4th to 5th week: Mixed finite element discretization of the Stokes equations

mixed variational formulation; general structure of finite element approximation; an example of an unstable low-order element; inf-sup condition; motivation via linear systems; catalogue of stable elements; error estimates; structure of discrete problem

6th week: Petrov-Galerkin stabilization

idea: consistent penalty term; general structure; catalogue of stabilizations; connection with bubble elements; structure of discrete problem; error estimates; choice of stabilization parameters

7th week: Non-conforming methods

idea; most important example; error estimates; local solenoidal bases

8th week: Streamline formulation

stream function; connection to bi-Laplacian; FE discretizations

9th week Numerical solution of the discrete problems

general structure and difficulty; Uzawa algorithm; improved version of Uzawa algorithm; multigrid; conjugate gradient variants

10th week: Adaptivity

aim of a posteriori error estimation and adaptivity; residual estimator; local Stokes problems; choice of refinement zones; refinement rules

11th week: FE discretization of the stationary incompressible Navier-Stokes equations variational problem; finite elements discretization; error estimates; streamline-diffusion stabilization; upwinding

12th week: Solution of the algebraic equations

Newton iteration and its relatives; path tracking; non-linear Galerkin methods; multigrid

13th week: Adaptivity

error estimators; type of estimates; implementation

14th week: Finite element discretization of the instationary incompressible Navier-Stokes equations variational problem; time-discretization; space discretization; numerical solution; projection schemes; characteristics; adaptivity

14th week: Space-time adaptivity

Overview; residual a posteriori error estimator; time adaptivity; space adaptivity

14th week: Discretization of compressible and inviscid problems

Systems in divergence form; finite volume schemes; construction of the partitions; relation to finite element methods; construction of numerical fluxes

Proofs of academic achievement: Written examination

This course is especially suitable for exchange students.

NUMERICAL METHODS AND STOCHASTICS

Language: English

Department: Computational Engineering

Degree programme: Master

Module: Numerical Methods and Stochastics

Module taught entirely in foreign language: Yes

Course type: Lecture / Exercise

Credit Points: 6

Teacher/Lecturer: Prof. Dr. H. Dehling, Prof. Dr. R. Verfürth

Requirements: Ideally a B.Sc. degree in an engineering sciences subject; basic knowledge of partial differential equations, numerical methods and stochastics

Room

NA 6/99 (Mon); IA 3/56

Day, Time

Mon 15:15 – 16:45; Wed

Begin

02.04.2012

and NA 01/99 (Wed)

12:30 – 14:00

Course description:

Numerical Methods:

- Boundary value problems for ordinary differential equations (shooting, difference and finite element methods)
- Finite element methods (short retrospective preparing subsequent material)
- Efficient solvers (preconditioned conjugate gradient and multigrid algorithms)
- Finite volume methods (systems in divergence form, discretization, relation to finite element methods)
- Nonlinear optimization (gradient-type methods, derivative-free methods, simulated annealing)

Stochastics:

- Fundamental concepts of probability and statistics: (multivariate) densities, extreme value distributions, descriptive statistics, parameter estimation and testing, confidence intervals, goodness of fit tests
- Time series analysis: trend and seasonality, ARMA models, spectral density, parameter estimation, prediction
- Multivariate statistics: correlation, principal component analysis, factoranalysis
- Linear models: multiple linear regression, F-test for linear hypotheses, Analysis of Variance

Proofs of academic achievement: Written Examination**This course is especially suitable for exchange students.****CONTINUUM MECHANICS****Language:** English**Department:** Computational Engineering**Degree programme:** Master**Module:** Continuum Mechanics

Module taught entirely in foreign language: Yes

Course type: Lecture / exercise**Credit Points:** 6**Teacher/Lecturer:** Prof. Dr. rer. nat. K. Hackl**Requirements:** Ideally a B.Sc. degree in an engineering sciences subject

Room	Day, Time	Begin
IA 3/56 (Tue); IA 2/56 (Wed)	Tue 08:30 – 10:00; Wed 08:30 – 10:00	03.04.2012

Course description:

The course starts with an introduction to the advanced analytical techniques of linear elasticity theory, then moves on to the continuum-mechanical concepts of nonlinear elasticity and ends

with the discussion of material instabilities and microstructures. Numerous examples and applications will be given.

- Advanced Linear Elasticity
- Beltrami equation
- Navier equation
- stress-functions
- scalar- and vector potentials
- Galerkin-vector
- Love-function
- solution of Papkovich - Neuber
- Nonlinear Deformation
- Strain tensor
- Polar decomposition
- stress-tensors
- equilibrium
- strain-rates
- Nonlinear Elastic Materials
- Covariance and isotropy
- Hyperelastic materials
- constrained materials
- Hypoelastic materials
- objective rates
- material stability
- microstructures

Proofs of academic achievement: Written examination

This course is especially suitable for exchange students.

FLUID DYNAMICS

Language: English

Department: Computational Engineering

Degree programme: Master

Module: Fluid Dynamics

Module taught entirely in English.

Course type: Lecture / Exercise

Credit Points: 3

Teacher/Lecturer: Prof. Dr.-Ing. R. Hoeffler and assistants

Requirements: Ideally a B.Sc. degree in an engineering sciences subject; Fluid Mechanics (B. Sc. Level)

Room

Day, Time

Begin

IAN 00/18

Tue 10:15 - 11:45

03.04.2012

Course description:

The technical basics of dynamic fluid flows are introduced, studied and recapitulated as well as related problems which are relevant for practical applications and solution procedures with an emphasis put on computational aspects. The lectures and exercises contain the following topics:

- short review of hydrostatics and dynamics of incompressible flows involving friction (conservation of mass, energy and momentum, Navier-Stokes equations)
- potential flow
- isotropic turbulence and turbulence in a boundary layer flow
- flow over streamlined and bluff bodies

The students are guided in the exercises to working out assessment and solution strategies for related, typical technical problems in fluid dynamics.

Proofs of academic achievement: Written examination

This course is especially suitable for exchange students.

COMPUTATIONAL MODELLING OF SUBSURFACE TRANSPORT PROCESSES

Language: English

Department: Computational Engineering

Degree programme: Master

Module: Computational Modelling of Subsurface Transport Processes

Module taught entirely in English.

Course type: n.s.

Credit Points: 5

Teacher/Lecturer: Prof. Dr.-Ing. C. Koenig

Requirements: Ideally a B.Sc. degree in an engineering sciences subject; Mathematics, Fluid Mechanics (Bachelor), Numerical Methods in Engineering; FEM in Linear Structural Mechanics

Room	Day, Time	Begin
CAE Pool IA 6/56	Tue 14:15 – 15:45, Fri 14:00 – 14:45	03.04.2012

Course description:

Physical phenomena in porous and fractured media

- Confined and unconfined flow
- Variable saturated media
- Seepage flow
- Advection-dispersion model
- Linear adsorption
- Multiphase flow

- Density dependent flow
- Matrix diffusion in fractured media
- Energy transport
- Cubic law
- Reactive transport
- Heterogeneity
- Non Darcy flow

Numerical methods

- Particle tracking
- Random walk
- Finite element method
- Method of characteristics
- Last square method
- Preconditioned conjugate gradient solver
- Operator split technique
- Upwind methods
- Optimisation for inverse modelling
- Stochastic generation of fractures

Application

- Practical projects (project studies, optional: case-studies)

Proofs of academic achievement: Oral examination

This course is especially suitable for exchange students.

FINITE ELEMENT TECHNOLOGY

Language: English

Department: Computational Engineering

Degree programme: Master

Module: Finite Element Technology

Module taught entirely in English.

Course type: Lecture / Exercise

Credit Points: 3

Teacher/Lecturer: Dr.-Ing. S. Klinge

Requirements: Ideally a B.Sc. degree in an engineering sciences subject; basic knowledge of tensor analysis, continuum mechanics and Linear Finite Element Methods

Room

IA 3/56

Day, Time

Thu 10:15 – 11:45

Begin

05.04.2012

Course description:

The design of effective, enhanced finite element formulations avoiding locking effects is the goal of this course. For that purpose, the error estimation typical for this numerical procedure is elaborated first. In addition to a purely mathematical definition, an engineering interpretation of locking effects is discussed by means of illustrative examples. Subsequently, different state-of-the-art approaches eliminating the aforementioned effect are discussed in detail. These include:

- Reduced integration.
- Mixed finite element formulations.
- Enhanced Assumed Strain (EAS) concept.
- The examples consider the theory of small as well of finite deformations.

Proofs of academic achievement: Written examination

This course is especially suitable for exchange students.

ENVIRONMENTAL MODELLING

Language: English

Department: Computational Engineering

Degree programme: Master

Module: Environmental Modelling

Module taught entirely in English.

Course type: Lecture / Exercise

Credit Points: 4

Teacher/Lecturer: Prof. Dr. Harro Stolpe, Dipl.-Geol. Stefan Haas

Requirements: Ideally a B. Sc. degree in an engineering sciences subject; basics of Mathematics, Physics, Chemistry, Biology, Ecology

Room	Day, Time	Begin
IA 0/50	Thu 14:15 – 16:45	Please see blackboard notice at the respective department

Course description:

Dynamic systems are important in the natural and human made environment (e.g. water balance, population dynamic, nutrient flow). Dynamic systems can be mathematically described and calculated by difference equations.

The lecture "Environmental modelling" deals with dynamic systems in the field of ecology and environmental engineering. Contents of this lecture are system identification and programming. The students learn to use the modelling software "PowerSim Constructor Lite" (Freeware).

Examples:

- Population dynamics
- Predator-Prey-Simulation
- Watershed simulation
- Water balance of a little farm

Geographic Information Systems (GIS) are modern instruments for processing spatial data. They are used for environmental planning worldwide. Different information about soil, climate, water, vegetation must often be processed in large quantities and be explained spatially. The students get an introduction to the software ArcGIS 9.2.

Proofs of academic achievement: Written examination

This course is especially suitable for exchange students.

COMPUTATIONAL MODELLING OF MIXTURES

Language: English

Department: Computational Engineering

Degree programme: Master

Module: Computational Modelling of Mixtures

Module taught entirely in foreign language: Yes

Course type: Lecture / Exercise

Credit Points: 4

Teacher/Lecturer: Prof. Dr.-Ing. H. Steeb

Requirements: Ideally a B. Sc. degree in an engineering sciences subject; knowledge in mathematics and mechanics (Tensor Theory, Mechanical Modelling of Materials)

Room	Day, Time	Begin
IA 4/56	Fri 10:15 – 11:45	13.04.2012

Course description:

Several advanced issues in the field of continuum mixtures will be addressed. More precisely, the following topics will be covered:

- Basic concept of superimposed continua
- Kinematical description of continuum mixtures
- Balance equations for single and multiphase materials
- Material theory of mixtures
 - o Extended entropy inequality
 - o Principle of phase separation
 - o Equilibrium and non-equilibrium relations
- Basic binary models of solid-solid, solid-fluid and fluid-fluid mixtures including boundary and initial value problems (multiphase and multi-component fluids, consolidation processes, diffusion problems)
- Numerical solution strategies for coupled problems

Proofs of academic achievement: Written examination / Seminar papers

This course is especially suitable for exchange students.

FACULTY OF ECONOMICS

<http://www.wiwi.ruhr-uni-bochum.de>

Contact:

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 Consultation hours: n.s.

ECONOMICS OF MARKET FAILURE

Language: English

Department: Lehrstuhl für Angewandte Mikroökonomik

Degree programme: BSc in Management and Economics

Module: Economics of Market Failure

Module taught entirely in English.

Course type: Lecture (2h) plus tutorial (2h)

Credit Points: 10 ECTS

Teacher/Lecturer: Prof. Dr. Julio R. Robledo and assistants

Requirements: Good knowledge of basic microeconomic theory, good command of English.

Room	Day, Time	Begin
HGC 40	Tuesday 12.15-13.45	03/04/2012
HZO 70	Thursday 14.15-15.45	05/04/2012

Course description:

The module covers standard public economics allocation topics at an undergraduate level: equilibrium, Pareto-efficiency, public goods, externalities, asymmetric information, monopoly.

Proofs of academic achievement: Written examination

NETWORK ECONOMICS

Language: English

Department: Lehrstuhl für Angewandte Mikroökonomik

Degree programme: MSc in Management and Economics

Module: Network Economics

Module taught entirely in English

Course type: Lecture (2h) plus tutorial (2h)

Credit Points: 10 ECTS

Teacher/Lecturer: Prof. Dr. Julio R. Robledo and assistants

Requirements: Good knowledge of basic microeconomic theory, good command of English.

Room	Day, Time	Begin
GC 03/42	Tuesday 16.15-17.45	03/04/2012
GC 03/42	Thursday 12.15-13.45	05/04/2012

Course description:

The module analyzes the competition in networks markets with standard industrial organization tools. We will focus on complementarities, compatibilities, network externalities, switching costs, etc. The industries covered will range from the hardware and software industry to telecoms, information goods, banking networks, etc. The module will follow mainly the approachable book by Oz Shy (2001) *The Economics of Network Industries*, which will be complimented by journal papers.

Proofs of academic achievement: Written examination

LABOR ECONOMICS

Language: English

Department: Chair for Empirical Economics

Degree programme: Master

Module: Labor Economics

This module is taught entirely in English

Course type: Lecture and Tutorial

Credit Points: 5

Teacher/Lecturer: Prof. Dr. Thomas K. Bauer

Requirements: Bachelor Degree in Economics. We recommend to have microeconomic basics and to participate in the module Applied Economics in advance.

Room	Day, Time	Begin
HBC 50 / HZO 60	Wednesday 10.15-11.45 / 18:00-18:45	11/04/2012

Course description:

The labor market affects the daily lives and the welfare of every individual directly. Hence, the analysis of labor markets is of importance and interest not only to economists but also to the population is large. Labor economics is a very challenging and a stimulating area in economics due to the special characteristics of the labor market. For example, different to capital workers are not commodities with fixed characteristics and make decisions about the nature of their participation in the labor market. Institutions affect the labor market much more than any other market.

The aim of this module is to give an understanding of the distinctive features of labor markets and the way in which they operate. Among other things, we will analyze labor supply, labor demand, human capital, and the role of different labor market institutions and labor market policies for wages and employment. Throughout the module, we attempt to integrate theoretical issues and empirical evidence, and to address questions of policy. The latter will concentrate on European issues.

Proofs of academic achievement: written examination

SELECTED PROBLEMS IN EMPIRICAL ECONOMICS

Language: English

Department: Chair for Empirical Economics

Degree programme: Master

Module: n.s.

Module taught entirely in English

Course type: Lecture, Literature Seminar

Credit Points: 5

Teacher/Lecturer: Prof. Dr. Thomas K. Bauer and postdocs from the RWI

Requirements: Bachelor Degree in Economics, knowledge in empirical research and econometrics

Room	Day, Time	Begin
GBCF 04/300	Wednesday, 14:00-18:00	06.06.2012

Course description:

This course provides the theoretical and empirical framework for analyzing actual politico-economic problems (with a special focus on education, health and labor markets). While the lecture serves to discuss theoretical and empirical basics the seminar deals with scientific publications from refereed journals that are presented by the participants. The aim of the course is to enable participants to conduct a detailed economic analysis of actual politico-economic topics.

Proofs of academic achievement: 50% written examination, 50% presentation

MARKETING MANAGEMENT

Language: English

Department: Marketing Department

Degree programme: Bachelor

Module: n.s.

Module taught entirely in English.

Course type: Lecture and Exercise

Credit Points: 10 ECTS

Teacher/Lecturer: Jun.-Prof. Doreen Pick

Requirements: none

Room	Day, Time	Begin
HZO 40	Wednesday, 14.00 - 18.00 h	04.04.2012
HZO 40	Thursday, 16.00 - 18.00 h	

Course description:

The goals of international companies are often not only value oriented, but also market and customer oriented. To achieve these goals is the purpose of marketing. The decisions which lead

to a market orientated management will be discussed. As lots of analyses in companies are usually conducted with statistical methods nowadays, these will also be content of the course.

Proofs of academic achievement: Written examination

GROWTH AND DEVELOPMENT ECONOMICS

Language: English

Department: Chair of Development Economics

Degree programme: MSc in Economics, MSc in Management and Economics; MSc in Management

Module: Growth and Development Economics

Module taught entirely in English.

Course type: Lecture + Exercise

Credit Points: 5 ECTS

Teacher/Lecturer: Prof. Dr. Wilhelm Löwenstein + Assistants

Requirements: Bachelors Degree in Management and Economics

Room	Day, Time	Begin
HGC 50 (Lecture)	Monday 12.15-13.45	02/04/2012
GC 03/42 (Exercise)	Monday 08.30-10.00	16/04/2012

Course description:

The course provides an overview over diverse growth theories. Models of the Post-Keynesian Growth Theory (Harrod/Domar Model and Two-Gaps Model) and the neoclassical growth model are discussed in detail. In particular, the determinants “savings” and “population growth” are critically assessed as well as the interdependency of growth and capital imports and foreign trade, respectively. Another focus is set on the analysis of “technological progress” as growth determinant. Subsequent to the theoretical models, problem oriented topics are covered, concentrating on development financing, trade, financial crisis, human capital accumulation, HIV/AIDS and technological progress in developing countries.

Proofs of academic achievement: written exam

This course is especially suitable for exchange students.

MODUL COMPETITION POLICY: COMPETITION THEORY AND POLICY

Language: English

Department: Chair of Competition Policy

Degree programme: Bachelor

Module: : Competition Theory and Policy

Module taught entirely in English.

Course type: Lecture

Credit Points: 5

Teacher/Lecturer: N.N.

Requirements: -

Room	Day, Time	Begin
HZO 60	Wednesday 10.15-11.45	11/04/2012

Course description:

The module „Competition Policy“ gives basic insights into the field of antitrust and competition policy in a global context. Using principles from industrial economics the economic impacts of cartels, joint-ventures, mergers, vertical contracts, price discrimination and so on are analyzed. The aim of this course is the understanding of basic economic principles of antitrust- and competition policy, under both a theoretical and a practical view.

Proofs of academic achievement: Written Examination

MODULE: ECONOMICS OF CONFLICT AND WAR

Language: English

Department: Chair of Competition Policy

Degree programme: Master

Module: Economics of Conflict and War

Module taught entirely in English.

Course type: Lecture

Credit Points: 5

Teacher/Lecturer: N.N.

Requirements: -

Room	Day, Time	Begin
GC 03/42	Thursday 10.15-11.45	12/04/2012

Course description:

In its various forms, conflict is one of the main obstacles to social and economic development. The aim of the course is to give some guidance to think about questions of conflict and war in local and global economies. The content will be based on the recent theoretical as well as empirical microeconomic and macroeconomic literature on causes and consequences of conflicts and wars. The application of theoretical and empirical economic tools to the study of conflict and the relationship between conflict and development are main focus of the course. By the end of the course, students should be able to evaluate the existing attempts researchers have made to measure the monetary and non-monetary costs of conflict and know the tools to analyse complex conflict settings.

Proofs of academic achievement: Attendance, active participation and the submission of a term paper is compulsory to pass the course.

FACULTY OF GEOSCIENCE

www.rub.de/gmg

Contact:

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ANALYSIS AND INTERPRETATION - INVERSE PROBLEMS

Language: English

Department: Institut fuer Geologie, Mineralogie und Geophysik

Degree programme: Master

Module: n.s.

Course type: Lecture and exercises

Credit Points: 5

Teacher/Lecturer: Prof. Dr. Wolfgang Friederich

Requirements: Generally: BSc in Geosciences or a related discipline. Specifically: candidates are required to contact the lecturer (wolfgang.friederich@rub.de) prior to admission to this course.

Room	Day, Time	Begin
n.s.	n.s.	n.s.

Course description:

Students learn general techniques of deriving earth models from observed data by solving an optimization problem with emphasis on inverse problems with inconsistent, erroneous and incomplete data.

For further information, please contact the lecturer(wolfgang.friederich@rub.de)

Proofs of academic achievement: Written examination and exercises

EXPLORATION GEOPHYSICS II

Language: English

Department: Institut fuer Geologie, Mineralogie und Geophysik

Degree programme: Master

Module: n.s.

Course type: n.s.

Credit Points: 5

Teacher/Lecturer: Prof. Dr. Jörg Renner

Requirements: none

Room	Day, Time	Begin
n.s.	n.s.	n.s.

Course description:

1) Introduction into origin of hydrocarbons; 2) Physical properties of hydrocarbons
 3) Basics of poro-elasticity; 4) Hydraulic borehole testing (theory and practice)
 5) Geothermal energy provision; 6) Particular seismic waves (guided waves, waves in fluid-saturated media)

aim: students are supposed to learn the basics of procedures often used in exploration beyond the seismic methods taught in "Exploration Geophysics I"; besides practical aspects the theoretical description (differential equations) and solving strategies are presented

For further information, please contact the lecturer.

Proofs of academic achievement: Written exam (+ weakly assignments)

LECTURES IN GLOBAL TECTONICS

Language: English

Department: Institut fuer Geologie, Mineralogie und Geophysik

Degree programme: Master

Module: n.s.

Course type: Lecture

Credit Points: 3

Teacher/Lecturer: Prof. Dr. Bernhard Stöckhert

Requirements: Generally: BSc in Geosciences or a related discipline. Specifically: candidates are required to contact the lecturer (bernhard.stoeckhert@rub.de) prior to admission to this course.

Room	Day, Time	Begin
n.s.	n.s.	n.s.

Course description:

Introduction to large scale tectonics and selected problems, including kinematics of plate motion, plate boundary zones, length and time scales of deformation, properties of crust and lithosphere. Emphasis is on the integration of geological, geophysical, petrologic and geodetic concepts and information. In particular, a solid background in geophysics and petrology (on the Bachelor level at minimum) is prerequisite.

For further information, please contact the lecturer.

Proofs of academic achievement: Written examination

LOW-TEMPERATURE THERMOCHRONOMETRY

Language: English

Department: Institut fuer Geologie, Mineralogie und Geophysik

Degree programme: Master

Module: n.s.

Course type: Lecture and exercise

Credit Points: 3

Teacher/Lecturer: Dr. Manfred Brix

Requirements: BSC in Geosciences or a related discipline

Room	Day, Time	Begin
n.s.	n.s.	n.s.

Course description:

The course provides an overview on dating techniques and their applications to the evolution of rocks between 300°C and ambient temperatures. Case studies cover the reconstruction of cooling, uplift, exhumation, and denudation of metamorphic or plutonic rocks (including hydrothermal ore deposits) as well as sedimentary basin subsidence, inversion, and fault movements.

For further information, please contact the lecturer.

Proofs of academic achievement: Written examination

MARINE MICROPALAEONTOLOGY 1

Language: English

Department: Institut fuer Geologie, Mineralogie und Geophysik

Degree programme: Master

Module: n.s.

Course type: Lecture and exercises; 3 hours /week

Credit Points: 4

Teacher/Lecturer: Prof. Dr. Joerg Mutterlose

Requirements: BSc in Geosciences or Biology. A pre-requisite for this course is that the students have successfully attended basic courses in palaeontology or biology, stratigraphy and sedimentology

Room	Day, Time	Begin
n.s.	n.s.	n.s.

Course description:

The course covers the principles of marine micropalaeontology, introducing the most important groups of microfossils: Dinoflagellates, calcispheres, spores, pollen, calcareous nannofossils, diatoms, silicoflagellates, foraminifera, radiolarians, ostracods and conodonts. Special emphasis is paid to the palaeoecologic and oceanographic interpretations based on these groups. A second topic is the stratigraphic application in particular to oil industry related activities (bore hole dating, interpretation of sedimentary sequences etc.).

For further information, please contact the lecturer.

Proofs of academic achievement: Written exam at the end of the term

MARINE MICROPALAEONTOLOGY 2

Language: English

Department: Institut fuer Geologie, Mineralogie und Geophysik

Degree programme: Master

Module: n.s.

Course type: Lecture and exercises; field course, 3 days

Credit Points: 4

Teacher/Lecturer: Prof. Dr. Joerg Mutterlose

Requirements: The students must have attended the course "Micropalaeontology 1" successfully.

Room	Day, Time	Begin
n.s.	n.s.	n.s.

Course description:

During the field course several siliciclastic sequences will be logged lithologically. Bed-by-bed samples will be taken in the field for a future analyses by the participants. After preparation for micropalaeontological studies (washing) the samples will be analysed by the students with respect for their faunal contents. The palaeoecologic and stratigraphic implications of these observations will be discussed.

For further information, please contact the lecturer.

Proofs of academic achievement: Oral presentation and written report at the end of the term.

ORGANIC HYDROCHEMISTRY

Language: English

Department: Institut fuer Geologie, Mineralogie und Geophysik

Degree programme: Master

Module: n.s.

Course type: Lecture and exercise

Credit Points: 4

Teacher/Lecturer: Prof. Dr. Frank Wisotzky

Requirements: Knowledge about hydrogeology

Room	Day, Time	Begin
n.s.	n.s.	n.s.

Course description:

Behaviour of organic substances in aquifers, remediation

For further information, please contact the lecturer.

Proofs of academic achievement: Examination and handling of exercises

SEDIMENTARY SYSTEMS II - SEQUENCE STRATIGRAPHY

Language: English

Department: Institut fuer Geologie, Mineralogie und Geophysik

Degree programme: Master

Module: n.s.

Course type: Lecture and exercise

Credit Points: 3

Teacher/Lecturer: Prof. Dr. Adrian Immenhauser

Requirements: Generally: BSc in Geosciences or a related discipline. Specifically: candidates are required to contact the lecturer (adrian.immenhauser@rub.de) prior to admission to this course.

Room	Day, Time	Begin
n.s.	n.s.	n.s.

Course description:

This course deals with sequence stratigraphy of marine sedimentary rocks. After a general introduction to the topic, more specific classes will deal with a series of key issues that include amongst others sequence boundaries, systems tracts or parasequences. The topic of seismic stratigraphy is briefly covered.

For further information please contact the lecturer (adrian.immenhauser@rub.de).

Proofs of academic achievement: Oral presentation of selected topics and compilation of a short overview paper

STRATIGRAPHY

Language: English

Department: Institut fuer Geologie, Mineralogie und Geophysik

Degree programme: Master

Module: n.s.

Course type: Field course; 3 days

Credit Points: 2

Teacher/Lecturer: Prof. Dr. Vorname Nachname

Requirements: The students must have attended the course "Micropalaeontology 1" successfully.

Room	Day, Time	Begin
n.s.	n.s.	n.s.

Course description:

During the three day field course various outcrops exposing sediments of Triassic, Jurassic and Cretaceous age will be visited. And discussed with respect to their stratigraphy, lithology and palaeontology. Several siliciclastic sequences will be logged lithologically by each participant. Bed-by-bed samples will be taken in the field for a future analyses by the students.

For further information, please contact the lecturer.

Proofs of academic achievement: Written report at the end of the term

THEORETICAL GEOPHYSICS - SEISMIC WAVES

Language: English

Department: Institut fuer Geologie, Mineralogie und Geophysik

Degree programme: Master

Module: n.s.

Course type: Lecture and exercise

Credit Points: 5

Teacher/Lecturer: Prof. Dr. Wolfgang Friederich

Requirements: Generally: BSc in Geosciences or a related discipline. Specifically: candidates are required to contact the lecturer (wolfgang.friederich@rub.de) prior to admission to this course.

Room	Day, Time	Begin
n.s.	n.s.	n.s.

Course description:

The course gives an introduction to the theory of seismic waves and the description of seismic sources. Starting from the elastodynamic wave equation the course treats wave propagation in homogeneous acoustic and elastic media. Highlight is the propagation of seismic waves in a layered Earth model.

For further information, please contact the lecturer (wolfgang.friederich@rub.de).

Proofs of academic achievement: Written examination and exercises

COMPACT COURSE IN QUANTITATIVE FABRIC ANALYSIS

Language: English

Department: Institut fuer Geologie, Mineralogie und Geophysik

Degree programme: Master

Module: n.s.

Course type: exercise

Credit Points: 3

Teacher/Lecturer: n.s.

Requirements: Generally: BSc in Geosciences or a related discipline

Room	Day, Time	Begin
n.s.	n.s.	n.s.

Course description:

n.s.

Proofs of academic achievement: Written examination and exercises

SPECIAL METHODS IN STRUCTURAL GEOLOGY I

Language: English

Department: Institut fuer Geologie, Mineralogie und Geophysik

Degree programme: Master

Module: n.s.

Course type: exercise

Credit Points: 3

Teacher/Lecturer: Prof. Dr. C. Pascal

Requirements: Generally: BSc in Geosciences or a related discipline

Room	Day, Time	Begin
n.s.	n.s.	n.s.

Course description:

For further information, please contact the lecturer.

Proofs of academic achievement: Written examination and exercises

LECTURES IN FLUID PHASES IN THE EARTH'S CRUST

Language: English

Department: Institut fuer Geologie, Mineralogie und Geophysik

Degree programme: Master

Module: n.s.

Course type: lecture

Credit Points: 2

Teacher/Lecturer: Prof. Dr. B. Stöckhert

Requirements: Generally: BSc in Geosciences or a related discipline

Room	Day, Time	Begin
n.s.	n.s.	n.s.

Course description:

For further information, please contact the lecturer.

Proofs of academic achievement: Written examination and exercises

KINETICS

Language: English

Department: Institut fuer Geologie, Mineralogie und Geophysik

Degree programme: Master

Module: n.s.

Course type: lecture

Credit Points: 5

Teacher/Lecturer: Prof. Dr. S. Chakraborty

Requirements: Generally: BSc in Geosciences or a related discipline

Room	Day, Time	Begin
n.s.	n.s.	n.s.

Course description:

For further information, please contact the lecturer.

Proofs of academic achievement: Written examination and exercises

FLUID FLOW IN POROUS MEDIA AT HIGH TEMPERATURES

Language: English

Department: Institut fuer Geologie, Mineralogie und Geophysik

Degree programme: Master

Module: n.s.

Course type: lecture

Credit Points: 4

Teacher/Lecturer: Prof. Dr. S. Chakraborty/Prof. Dr. A. Willner

Requirements: Generally: BSc in Geosciences or a related discipline

Room	Day, Time	Begin
n.s.	n.s.	n.s.

Course description:

For further information, please contact the lecturer.

Proofs of academic achievement: Written examination and exercises

INTERDISCIPLINARY CENTRE OF ADVANCED MATERIALS SIMULATION (ICAMS)

Homepage: www.icams.de

Contact:

Name: Rebecca Janisch

Room: UHW 12/1209

Tel: 0234/32-29304

Email: rebecca.janisch@rub.de

Consultation hours: n.s.

MICROSTRUCTURE AND MECHANICAL PROPERTIES

Language: English

Department: Interdisciplinary Centre of Advanced Materials Simulation

Degree programme: Master

Module: microstructure and mechanical properties

Module taught entirely in English.

Course type: Lecture with exercises/seminar

Credit Points: 4

Teacher/Lecturer: Prof. Steinbach, Prof. Hartmaier

Requirements: Students must have completed the modules "Elements of microstructure" and "Introduction to statistical physics and thermodynamics" or equivalent.

Room	Day, Time	Begin
t.b.a.	Thursday, 14.00-16.30	05.04.2012

Course description:

In this course students learn the principles of microstructure evolution during materials processing, its dependence on the material composition and transport processes. They gain understanding of the correlation between microstructure and mechanical properties of materials by learning the microstructural mechanisms of deformation and failure. They develop the skills to apply this knowledge to materials science problems.

Proofs of academic achievement: written examination

This course is especially suitable for exchange students.

INTERFACES AND SURFACES

Language: English

Department: Interdisciplinary Centre of Advanced Materials Simulation

Degree programme: Master

Module: interfaces and surfaces

Module taught entirely in English

Course type: Lecture, practical exercises

Credit Points: 6

Teacher/Lecturer: Prof. Drautz, Dr. Hammerschmidt, Dr. Janisch, Dr. Rogal

Requirements: Students must have successfully completed module “Elements of Microstructure” and “Introduction to Quantum Mechanics in Solid State Physics” and “Assessment and Description of Material Properties” or equivalent.

Room	Day, Time	Begin
t.b.a	Monday 10.30-12.00, Thursday 10.00-11.30	02.04.2012

Course description:

The course shall provide an understanding of the relevance of surfaces and interfaces in materials science. The goals are gaining basic knowledge of experimental and computational techniques to characterize surfaces/interfaces as well as understanding the relationship between atomistic descriptions of interfaces/surfaces and macroscopic materials properties, especially thermodynamic and mechanical properties (interface/surface energies, adsorption, segregation, interface mobility, interaction with other defects). The students will develop the relevant skills to choose the most suited approaches for specific questions and to apply them to material science problems.

Proofs of academic achievement: oral exam

This course is especially suitable for exchange students.

QUANTUM MECHANICS IN MATERIALS SCIENCE

Language: English

Department: Interdisciplinary Centre of Advanced Materials Simulation

Degree programme: Master

Module: quantum mechanics in materials science

Module taught entirely in English

Course type: Lecture and seminar

Credit Points: 4

Teacher/Lecturer: Prof. Drautz

Requirements: Successful completion of “Introduction to Quantum Mechanics in Solid State Physics” or equivalent.

Room	Day, Time	Begin
t.b.a.	Monday, Thursday 8.30-10.00	02.04.2012

Course description:

The course shall provide a basic understanding of quantum mechanics in materials science, which enables the students to study the current research literature. Furthermore it provides the required knowledge of quantum mechanics as the basis of performing electronic-structure simulations. The students will learn to understand the basics of wave mechanics and their relation to the electronic structure of materials. Students will be able to transfer this knowledge in order to understand and use numerical methods for calculating the electronic structure of complex phases. They comprehend how the electronic structure influences the properties of materials.

Proofs of academic achievement: written examination

This course is especially suitable for exchange students.

APPLICATION AND IMPLEMENTATION OF ELECTRONIC STRUCTURE METHODS

Language: English

Department: Interdisciplinary Centre of Advanced Materials Simulation

Degree programme: Master

Module: application and implementation of electronic structure methods
Module taught entirely in English

Course type: Lecture, practical studies and group seminars

Credit Points: 6

Teacher/Lecturer: Prof. Drautz, Prof. Neugebauer, Dr. Madsen

Requirements: Same as "Quantum Mechanics in Materials Science".

Room	Day, Time	Begin
t.b.a.	Friday, 10.00-14.00	13.04.2012

Course description:

When the course is finished the successful participant is expected to be able to:

Choose the most appropriate electronic structure computational method for a given research project

Formulate and describe the foundation of density functional theory (DFT)

Describe the most common approximations employed in DFT

Contribute to the implementation of a DFT code

Proofs of academic achievement: practical studies, oral examination

This course is especially suitable for exchange students.

INSTITUTE FOR INTERNATIONAL LAW OF PEACE AND ARMED CONFLICT (IFHV)

<http://www.ifhv.de>

Contact:

Institute for International Law of Peace and Armed Conflict (IFHV)
 NA 02/33
 Tel: 0234 32 27366
 Email: Olga.Suveyzdis@rub.de
 Consultation hours: by arrangement

STANDARDS OF HUMANITARIAN ACTION

Language: English

Department: Institute for International Law of Peace and Armed Conflict (IFHV)

Degree programme: Master

Module: Standards of Humanitarian Action

Module taught entirely in English.

Course type: Seminar

Credit Points: 5

Teacher/Lecturer: Prof. Dr. Hans-Joachim Heintze, Dr. Markus Moke, Lisa Hilleke, M.A. Ojot Miru, M.A.

Requirements: admission to the NOHA programme

Room	Day, Time	Begin
NA 02/257	Monday – Friday 10.00-18.00	06/02/2012

Course description:

Current humanitarian action is characterised by a multitude of different actors of a varying nature. These actors mainly consist of relief agencies, donors and beneficiaries; and all three groups of actors comprise governmental as well as non-governmental agencies. Due to a variety of factors, all three groups are held accountable for a “good” humanitarian action: humanitarian action is required to be of a certain quality (and quantity), as well as to be effective, efficient, responsible, culturally sensitive, and professional – to name only a few criteria. Non-governmental as well as governmental relief agencies are held accountable by the general public, and in particular by the media, to perform “well” when they are engaged in humanitarian action. The public also expects governmental donors – as well as more and more private donors – to relate their funding and donations to the quality of performance in humanitarian action. And there is a growing tendency to evaluate governmental as well as individual beneficiaries according to effectiveness and efficiency in the use of resources provided in the framework of humanitarian action. In this environment, the evaluation of effectiveness and efficiency of humanitarian action often includes the capacity to diminish or even prevent the interference by state and non-state actors to divert humanitarian assistance for their own purposes.

In order to meet such challenges of quality, accountability and performance in humanitarian

action, the main actors have been developing international, inter-organisational and intra-organisational standards.

Proofs of academic achievement: written assignment

This course is suitable for exchange students admitted to the NOHA programme.

PROTECTING REFUGEES AND MINORITIES

Language: English

Department: Institute for International Law of Peace and Armend Conflict (IFHV)

Degree programme: Master

Module: Protecting Refugees and Minorities

Module taught entirely in English.

Course type: Seminar

Credit Points: 5

Teacher/Lecturer: Prof. Dr. Hans-Joachim Heintze

Requirements: admission to the NOHA programme

Room	Day, Time	Begin
NA 4/24	Friday 10.00 – 14.00	15/02/2012

Course description:

The aim of the Institution Building module is to introduce students to the institutionalization of appropriate international bodies for the protection of vulnerable groups. In particular, the focus will be on the protection of refugees and minorities in the context of tensions between State sovereignty and human rights.

The protection of vulnerable groups is one of the main goals of international human rights protection in crisis situations. It can only be reached by appropriate and effective mechanisms of international supervision which, however, respect State sovereignty. It is particularly important to remember that if a certain group is vulnerable, it is more likely to be the target of human rights violations. Both minorities and refugees constitute such groups.

Proofs of academic achievement: written paper / presentation

This course is suitable for exchange students admitted to the NOHA programme.

CHALLENGES OF POST-CONFLICT RECONSTRUCTION IN AFRICA

Language: English

Department: Institute for International Law of Peace and Armend Conflict (IFHV)

Degree programme: Master

Module: Challenges of Post-Conflict Reconstruction in Africa
Module taught entirely in English.

Course type: Seminar

Credit Points: 5

Teacher/Lecturer: Ojot Miru, M.A.

Requirements: admission to the NOHA programme

Room	Day, Time	Begin
NA 02/257	Tuesday 10.00 – 14.00	14/02/2012

Course description:

n.s.

Proofs of academic achievement: written paper / presentation

This course is suitable for exchange students admitted to the NOHA programme.

GENDER AND CONFLICT IN SUB-SAHARAN AFRICA

Language: English

Department: Institute for International Law of Peace and Armend Conflict (IFHV)

Degree programme: Master

Module: Gender and conflict in Sub Saharan Africa

Module taught entirely in English

Course type: Seminar

Credit Points: 5

Teacher/Lecturer: Dr. Rita Schäfer

Requirements: admission to the NOHA programme

Room	Day, Time	Begin
NA 4/175	Wednesday 10.00-14.00	15/02/2012

Course description:

The aim of the Institution Building module 324 is to give students an understanding of four interrelated issues basic for humanitarian assistance:

1. The institutionalisation of international norms and organisations focusing on gender issues on UN level (international conferences, international institutions)
2. Women's and human rights norms and their implementation in specific fields (humanitarian aid for refugees; peace-keeping and post-conflict reintegration)
3. Gendered violence in contrast to women's and human rights (international approaches against gender based violence and institutionalisation of these strategies on national level, particularly in African countries)

The processes of international setting and implementing of women's and human rights norms are analysed as one example for new international approaches for the empowerment of disadvantaged groups, non violence and conflict prevention/intervention. In this context, the

tensions between different human rights concepts and their implementation in crisis situations (war and post-conflict situations in African countries) are considered. This is relevant for intercultural teams who cooperate in projects to reflect these tensions.

Proofs of academic achievement: written paper / presentation

This course is suitable for exchange students admitted to the NOHA programme.

PROGRAMMING WATER AND HUMAN RIGHTS

Language: English

Department: Institute for International Law of Peace and Armed Conflict (IFHV)

Degree programme: Master

Module: Programming Water and Human Rights

Module taught entirely in English

Course type: Seminar

Credit Points: 5

Teacher/Lecturer: J. Prof. Dr. Pierre Thielbörger

Requirements: admission to the NOHA programme

Room	Day, Time	Begin
tba	tba	02/04/2012

Course description:

The course addresses one of the most pressing problems of our time: the dramatic shortage of global drinking water. NOHA-students will develop and elaborate two studies on countries particularly affected by this problem. The final product (two group papers) will be shared with the UN Special Rapporteur for the Human Right to Drinking Water and Sanitation, Mrs. Catarina de Albuquerque. The Special Rapporteur carries out country visits on a regular basis to monitor the water situation in specific countries. The aim of the final papers is to suggest to the Special Rapporteur countries for a future visit and to offer her background information to help prepare and carry out such visits.

Students will get the chance, if they wish so, to present their papers at the High-Level Conference on 'The Human Right to Water: 10 Years after General Comment No. 15' (working title), which will take place in Bochum end of 2012 or in early 2013, to which the Special Rapporteur has also tentatively confirmed her participation. Publication of the most innovative parts of the papers is planned in a 2013 special issue of the journal 'Humanitäres Völkerrecht: Informationsschriften' (HuV-I). NOHA-students are encouraged, if they wish so, to further elaborate parts of the final group papers ("spin-off projects") as their NOHA-Master papers in 2012, supervised by the instructor.

Proofs of academic achievement: written paper / presentation

This course is suitable for exchange students admitted to the NOHA programme.

PREVENTING CORRUPTION AND CRIME IN HUMANITARIAN ACTION

Language: English

Department: Institute for International Law of Peace and Armend Conflict (IFHV)

Degree programme: Master

Module: Preventing Corruption and Crime in Humanitarian Action

Module taught entirely in English.

Course type: Seminar

Credit Points: 5

Teacher/Lecturer: Prof. Dr. Joachim Wolf

Requirements: admission to the NOHA programme

Room	Day, Time	Begin
tba	tba	06/03/2012

Course description:

The course addresses one of the main issues damaging the effectiveness and efficiency in providing humanitarian assistance:

“Humanitarian assistance injects valuable resources into resource-poor and often insecure contexts with high levels of need. The complexity of humanitarian operations and their rapidly increasing budgets make addressing corruption absolutely essential for aid agencies” (Sarah Bailey, HPG Policy Brief 32)

The module is part of Station 3 of the Bochum learning sequence in the 3rd NOHA-component. The main goal of this station is to introduce and practice a widely acknowledged procedure of Project Circle Management (PCM): the design of a programme frame for concrete action. In the light of increasingly complex emergencies the number of actors ready and willing to step in with remedial action is increasing. This goes very often along with an increasing variety of donors and actors. Therefore co-ordination of their activities is a necessity. It will also teach the students how to incorporate a corruption and crime prevention framework into their professional activities. Participants will acquire a basic understanding of both theory and practice of corruption and crime prevention strategies within humanitarian programming.

The module programme progresses from general to specific topics:

- Basic Concepts of Corruption
- Application of a Corruption Prevention Framework to Programming in Humanitarian Assistance
- Skills for Putting the Framework into Practice
- The Way Ahead: Meeting the challenges face

Proofs of academic achievement: written paper / presentation

This course is suitable for exchange students admitted to the NOHA programme.

CONFLICT SENSITIVE PROGRAMMING

Language: English

Department: Institute for International Law of Peace and Armend Conflict (IFHV)

Degree programme: Master

Module: Conflict Sensitive Programming

Module taught entirely in English.

Course type: Semiar

Credit Points: 5

Teacher/Lecturer: Dr. Markus Moke

Requirements: admission to the NOHA programme

Room	Day, Time	Begin
tba	tba	06/03/2012

Course description:

This course will address the difficulties in programming within conflict and post-conflict environments where the absence of structural and political solutions constrains heavily the successful work of international aid organizations. Conflicts and post-conflict situations require a particular awareness and a specific approach from humanitarian organizations towards their program design.

The key to conflict sensitive planning is incorporating conflict analysis into the assessment process. (FEWER, International Alert and Saferworld, 2003)

Conflict-sensitivity has become a term and a concept that is widely used in NGO initiatives. The application and methods used by NGOs to develop a conflict-sensitive approach vary. These different approaches and interpretations of conflict-sensitive programming will be discussed in this module. Students then will have the opportunity to apply the concept of conflict-sensitive programming by designing a to the subject matter suitable program

Proofs of academic achievement: written paper / presentation

This course is suitable for exchange students admitted to the NOHA programme.

MAINSTREAMING DISASTER RISK REDUCTION AND CLIMATE CHANGE ADAPTATION

Language: English

Department: Institute for International Law of Peace and Armend Conflict (IFHV)

Degree programme: Master

Module: Mainstreaming Disaster Risk Reduction and Climate Change Adaptation

Module taught entirely in English.

Course type: Semiar

Credit Points: 5

Teacher/Lecturer: Karl-Otto Zentel, Dr. Thorsten Klose, Robert Grassmann

Requirements: admission to the NOHA programme

Room	Day, Time	Begin
tba	tba	06/03/2012

Course description:

Text text text

Proofs of academic achievement: written paper / presentation

This course is suitable for exchange students admitted to the NOHA programme.

BUILDING PEACE

Language: English

Department: Institute for International Law of Peace and Armend Conflict (IFHV)

Degree programme: Master

Module: Building Peace

Module taught entirely in English.

Course type: Semiar

Credit Points: 5

Teacher/Lecturer: Prof. Dr. Dennis Dijkzeul

Requirements: admission to the NOHA programme

Room	Day, Time	Begin
tba	tba	27/03/2012

Course description:

Making peacebuilding effective is one of the great challenges of our time. But while the concept sounds appealing, its implementation is extremely difficult. This course aims to familiarize students with the concepts and implementation of peacebuilding at the societal and organizational levels.

The term peacebuilding first gained wide currency with Boutros Ghali's "Agenda for Peace." He used peacebuilding as a term that was applicable to societies in conflict. In his approach, peacebuilding was carried out by UN peacekeepers in cooperation with diplomats and organizations at the international and national political levels. Since then, the interpretation of the concept has changed as humanitarian NGOs have begun to carry out their peacebuilding initiatives in conflict zones. Here peacebuilding often became a combination of reconciliation level and capacity building at the local, political, and international levels.

One of the main reasons why peacebuilding is so difficult is that it cannot address all aspects of a conflict. Addressing a civil conflict in its entirety can overwhelm NGOs and the UN alike. As a result, these organizations face hard questions as to which (parts of the) conflict(s) they should address and how. For humanitarian organizations, peacebuilding activities carry the additional

risk that their neutrality and impartiality will be – perceived to be – compromised, because they want to change the behaviour of warring factions and the population. In general, there is also considerable uncertainty about the question how to design, execute, and evaluate specific peacebuilding measures in a successful manner.

This course consists of three parts. Taking the Democratic Republic of the Congo as an example, the course first focuses on state breakdown and the political economy of conflict, because these set the parameters for peacebuilding. Second, the course defines peacebuilding and discusses specific examples of peace- and capacity building in the Congo, Guatemala, and elsewhere. Finally, students are expected to write a complete project proposal for a peacebuilding initiative in a selected crisis.

Proofs of academic achievement: written paper / presentation

This course is suitable for exchange students admitted to the NOHA programme.

WORKING WITH THE MEDIA IN HUMANITARIAN ACTION

Language: English

Department: Institute for International Law of Peace and Armend Conflict (IFHV)

Degree programme: Master

Module: Working with the Median in Humanitarian Action
Module taught entirely in English.

Course type: Seminar

Credit Points: 5

Teacher/Lecturer: Dr. Markus Moke

Requirements: admission to the NOHA programme

Room	Day, Time	Begin
tba	tba	27/03/2012

Course description:

While media can and often do contribute to the escalation of tensions and conflicts, they can also play a positive role. Although the media itself cannot create peace, it can support the process by which peace is achieved. The same holds true for humanitarian action: The media cannot bring relief, but it can help create a framework and an atmosphere conducive to emergency or rehabilitation operations. Better communication and an independent media are essential components of a society and an important tool in the management of humanitarian crisis.

Module 342 is one of the three modules on “Project design” in the 3rd NOHA component. The modules of this station aim to design projects for concrete action. The course will address a number of key issues underlying the understanding of the media’s role in humanitarian action, focus on the potentials of the media in transforming conflict situations. In decreasing order of relevance these are the main objectives and competencies to which the module makes a contribution.

Proofs of academic achievement: written paper / presentation

This course is suitable for exchange students admitted to the NOHA programme.

CONTAINING MEGACITIES

Language: English

Department: Institute for International law of Peace and Armend Conflict (IFHV)

Degree programme: Master

Module: Containing Megacities
Module taught entirely in English.

Course type: Seminar

Credit Points: 5

Teacher/Lecturer: Prof. Dr. Stefan Wohnlich

Requirements: admission to the NOHA programme

Room	Day, Time	Begin
tba	tba	27/03/2012

Course description:

The module 343 addresses problems for humanitarian action and human rights implementation in megacities. It makes available the existing knowledge on the structures, dynamics, problems and policies of megacities today and in the future. It identifies and assesses the governance problems resulting from the megacities environment and it concentrates on problems for humanitarian action and human rights implementation in the area of health, security and education (focus might change). Students are required to address one or more of these issues in a project developed in the format and content given for station 4 of the course.

Proofs of academic achievement: written paper / presentation

This course is suitable for exchange students admitted to the NOHA programme.

LEADERSHIP AND EVALUATION IN HUMANITARIAN ACTION

Language: English

Department: Institute for International law of Peace and Armend Conflict (IFHV)

Degree programme: Master

Module: Leadership and Evaluation in Humanitarian Action
Module taught entirely in English.

Course type: Seminar

Credit Points: 5

Teacher/Lecturer: Willi Scholl, Anna Heintze, Andreas Kling, Detlef Starck, Dr. K. Peter Schmitz, Ralf Otto

Requirements: admission to the NOHA programme

Room	Day, Time	Begin
tba	tba	02/05/2012

Course description:

The aim of this leadership module is to introduce students to leadership qualities. In particular, the focus will be on leadership, communication and co-ordination skills in a context where crucial issues/values are at stake.

Proofs of academic achievement: written assignments / presentations

This course is suitable for exchange students admitted to the NOHA programme.

SIMULATION EXERCISE

Language: English

Department: Institute for International law of Peace and Armend Conflict (IFHV)

Degree programme: Master

Module: Simulation Exercise

Module taught entirely in English.

Course type: Simulation

Credit Points: 5

Teacher/Lecturer: Prof. Dr. Dennis Dijkzeul, Prof. Dirk Salomons, Leonard van Duijn, Roy Williams

Requirements: admission to the NOHA programme

Room	Day, Time	Begin
NA 02/26	Monday – Friday 09.00 – 18.00	21/05/2012

Course description:

n.s.

Proofs of academic achievement: active participation / presentations

This course is suitable for exchange students admitted to the NOHA programme.

FACULTY OF LAW

Homepage: www.jura.ruhr-uni-bochum.de

Contact:

Name: Katrin Giesen

Room: GC8/38

Tel: 0234/32-27681

Email: katrin.giesen@rub.de

Consultation hours: by appointment

THINKING AND WRITING LIKE A LAWYER (SHOULD)

Language: English

Department: Dean of the Faculty of Law

Degree programme: Bachelor/Master

Module: n.s.

Module taught entirely in English.

Course type: lecture

Credit Points: 3

Teacher/Lecturer: Katrin Giesen

Requirements: proficient English

Room	Day, Time	Begin
GC8/39	Alternative dates:	10.04.2012
	Tue, 12:00 to 14:00	
	Tue, 14:00 to 18:00	
	Thu, 10:00 to 12:00	
	Thu, 14:00 to 16:00	

Course description:

It is the main objective of the course to improve the written and oral English skills of students.

During the course, students will learn how to express themselves in plain English language. The course will include drafting exercises (letter of advice to client, legal research memorandum to partner) and the improvement of oral skills (presentation skills, client interview and negotiation, introduction to mootings). The course will be taught by providing theoretical knowledge, and then practicing the acquired skills by way of drafting and oral presentations and discussions.

Proofs of academic achievement: Written assessment: drafting a client letter, plus oral assessment: a choice of negotiation or presentation in class

This course is especially suitable for exchange students.

INTRODUCTION AU DROIT PRIVÉ FRANÇAIS

Language: French

Department: The Dean of the Faculty of Law

Degree programme: Bachelor/Master

Module: n.s.

Module taught entirely in French.

Course type: Lecture

Credit Points: 3

Teacher/Lecturer: Dr. Henri Courivaud

Requirements: proficient French

Room	Day, Time	Begin
TBA	intensive week 17.9. to 21.9.2012	10:00

Course description:

This intensive unit introduces students to French Private Law and provides them with the French Legal terminology. In particular, it covers the history of French Civil Law and the law of obligations .

Proofs of academic achievement: written exam in French

This course is especially suitable for exchange students.

INTRODUCTION TO UK CONSTITUTIONAL LAW (INTENSIVE UNIT)

Language: English

Department: n.s.

Degree programme: Bachelor/Master

Module: n.s.

Module taught entirely in English.

Course type: lecture

Credit Points: 3

Teacher/Lecturer: Lisa Gow, LLB

Requirements: proficient English

Room	Day, Time	Begin
TBA	intensive unit, one week, 29.05 to 02.06.2012	10:00

Course description:

The objective of this course is to introduce students to the institutions, key concepts and recent developments in United Kingdom constitutional law. Unlike most modern democracies, such as Germany, the UK does not have a “written constitution”. British constitutional rules and doctrines have evolved over hundreds of years and are found in a number of different sources, rather than one single document. Students will first learn about the principal institutions of government and

the sources of UK constitutional law. The next stage of the course will focus on the fundamental constitutional doctrines of parliamentary sovereignty, the separation of powers and the rule of law, as well as the supervisory role of the courts. Towards the end of the course, we will discuss the constitutional significance of more recent developments, including membership of the European Union, devolution to Scotland, Northern Ireland and Wales and the Human Rights Act 1998.

Proofs of academic achievement: There will be two assessments: a two-hour written exam (in English) at the end of the course. The exam will consist of a series of short-answer questions. The second assignment will be a short essay (also in English), which will encourage students to reflect on a specific topic from the course. This will be submitted two weeks after the end of the course.

This course is especially suitable for exchange students.

INTRODUCTION TO TURKISH LAW OF EVIDENCE

Language: Turkish

Department: The Dean of the Faculty of Law

Degree programme: Bachelor/Master

Module: n.s.

Module taught entirely in Turkish.

Course type: lecture

Credit Points: 3

Teacher/Lecturer: Frau Prof. Nevhis Deren-Yildirim, Universität Istanbul

Requirements: proficient Turkish

Room	Day, Time	Begin
TBA	TBA, either last or second last week of September	TBA

Course description:

This intensive unit gives students an introduction to Turkish law, in particular the development of the Turkish law, introduction to procedure and enforcement of judgements, law of evidence, and injunctions.

Proofs of academic achievement: written exam in Turkish

This course is especially suitable for exchange students.

INTRODUCTION TO UK CONTRACT LAW

Language: English

Department: Faculty of Law

Degree programme: Bachelor/Master

Module: n.s.

Module taught entirely in English.

Course type: lecture

Credit Points: 3

Teacher/Lecturer: Lisa Gow, LLB

Requirements: proficient English

Room	Day, Time	Begin
TBA	TBA (2 or 3 parallel units)	first week of April

Course description:

This intensive unit gives students an introduction to UK law of contract, in particular formation, implementation and remedies for breach.

Proofs of academic achievement: written exam plus short oral presentation

This course is especially suitable for exchange students.

FACULTY OF MATHEMATICS

www.rub.de/ffm/en

Contact:

Dr. Eva Glasmachers
 NA 02/74
 Tel: 0234/32-23780
 Email: mathe-dekanat@rub.de
 Consultation hours: t.b.a

NUMERICAL METHODS AND STOCHASTICS

Language: English

Department: Mathematics

Degree programme: Master Course Computational Engineering

Module: Numerical Methods and Stochastics

Module taught entirely in English.

Course type: Lecture series

Credit Points: 6

Teacher/Lecturer: Prof. Dr. H. Dehling and Jun.Prof. Dr. C. Kreuzer

Requirements: Knowledge of Analysis, Numerics and Stochastics on the level of a bachelor in engineering science

Room	Day, Time	Begin
NA 6/99,	Mon. 15:15-17:00	02/04/2012
NA 01/99	Wed. 12:15-14:00	

Course description:

Numerics:

Two-point boundary value problems, prerequisites for finite element and finite volume methods, efficient solvers for large linear systems of equations, linear and non-linear optimization.

Stochastics:

- Fundamental concepts of probability and statistics: (multivariate) densities, extreme value distributions, descriptive statistics, parameter estimation and testing, confidence intervals, goodness of fit tests.
- Time series analysis: trend and seasonality, ARMA models, spectral density, parameter estimation, prediction.
- Multivariate statistics: correlation, principal component analysis, factoranalysis.
- Linear models: multiple linear regression, F-test for linear hypotheses, Analysis of Variance.

Proofs of academic achievement: 2 hours written exam

COMPUTATIONAL FLUID DYNAMICS

Language: English

Department: Mathematics

Degree programme: Master Course Computational Engineering**Module:** Computational Fluid Dynamics

Module taught entirely in English.

Course type: Lecture & Exercise**Credit Points:** 6**Teacher/Lecturer:** Prof. Dr. R. Verfürth**Requirements:** Basic knowledge about: partial differential equations and their variational formulation, finite element methods, numerical methods for the solution of large linear and non-linear systems of equations

Room	Day, Time	Begin
NA 2/24	Mon. 11-13	11/04/2012
NA 1/64	Wed. 15-17	

Course description:

Modelization 1. week

velocity, Lagrangian / Eulerian representation; transport theorem, Cauchy theorem; conservation of mass, momentum and energy; compressible Navier-Stokes / Euler equations; nonstationary incompressible Navier-Stokes equations; stationary incompressible Navier-Stokes equations; Stokes equations; boundary conditions

Notations and auxiliary results 2. week

differential operators; Sobolev spaces and their norms; properties of Sobolev spaces; finite element partitions and their properties; finite element spaces; nodal bases

Finite element discretization of the Stokes equations. 1st attempt 3. week

Stokes equations; variational formulation in $\{\text{div } u = 0\}$; non-existence of low-order finite element spaces in $\{\text{div } u = 0\}$; remedies

Mixed finite element discretization of the Stokes equations 4.-5. week

mixed variational formulation; general structure of finite element approximation; an example of an unstable low-order element; inf-sup condition; motivation via linear systems; catalogue of stable elements; error estimates; structure of discrete problem

Petrov-Galerkin stabilization 6. week

idea: consistent penalty term; general structure; catalogue of stabilizations; connection with bubble elements; structure of discrete problem; error estimates; choice of stabilization parameters

Non-conforming methods 7. week

idea; most important example; error estimates; local solenoidal bases

Streamline formulation 8. week

stream function; connection to bi-Laplacian; finite element discretizations

Numerical solution of the discrete problems 9. week

general structure and difficulty; Uzawa algorithm; improved version of Uzawa algorithm; multigrid; conjugate gradient variants

Adaptivity 10. week

aim of a posteriori error estimation and adaptivity; residual estimator; local Stokes problems; choice of refinement zones; refinement rules

Finite element discretization of the stationary incompressible Navier-Stokes equations 11. week
variational problem; finite elements discretization; error estimates; streamline-diffusion stabilization; upwinding

Solution of the algebraic equations 12. week

Newton iteration and its relatives; path tracking; non-linear Galerkin methods; multigrid

Adaptivity 13. week

error estimators; type of estimates; implementation

Finite element discretization of the instationary incompressible Navier-Stokes equations 14. week
variational problem; time-discretization; space discretization; numerical solution; projection schemes;
characteristics; adaptivity

Space-time adaptivity 14. week

Overview; residual a posteriori error estimator; time adaptivity; space adaptivity

Discretization of compressible and inviscid problems 14. week

Systems in divergence form; finite volume schemes; construction of the partitions; relation to finite
element methods; construction of numerical fluxes

Proofs of academic achievement: 2-hour closed book written exam

CLASS FIELD THEORY

Language: English

Department: Mathematics

Degree programme: Master Course

Module: Class field theory

Module taught entirely in English.

Course type: Lecture series

Credit Points: 4.5

Teacher/Lecturer: PD Dr. M. Szymik

Requirements: Knowledge of abstract algebra at the level of a standard university course.

Room	Day, Time	Begin
NA 1/64	Tue. 10:15-12:00	03/04/2012

Course description:

This is an advanced lecture course on number theory, which in this case means algebraic number theory. The aim of class field theory is the explicit description and construction of all abelian extensions of fields from their internal arithmetic. In addition to this particular aspect, this course will also serve the general mathematical education because many concepts used here are of independent interest.

The lectures will start with the axiomatic approach to class field theory based on the so-called class formations. Subsequently, the axioms will be verified in the local case where one concentrates at one prime a time.

The local reciprocity immediately follows. Then, the formal multiplications of Lubin and Tate will be treated, as will be Brauer groups. If time permits, we may discuss later approaches of Hazewinkel and Neukirch and geometric class field theory.

The assumed prior knowledge comes not so much from elementary number theory, but rather abstract algebra at the level of a standard university course. For example, we will need some familiarity with general field extensions and group theory. However, the Galois theory of field extensions will be briefly recapitulated. Further information is available beforehand from the instructor. The first session will also serve as an introduction.

Proofs of academic achievement: Oral examination.

FACULTY OF MEDICINE

NEUROPHYSIOLOGY

Homepage: www.rub.de/lmr

Contact:

Name: Prof. Dr. Denise Manahan-Vaughan
Room: MA 4/150
Tel: 0234/32-22042
Email: lmr@rub.de
Consultation hours: on demand

JOURNAL CLUB

Language: English

Department: Neurophysiologie

Degree programme: n.s.

Module: "Structure, Function & Plasticity of the Central Nervous System"

Module taught entirely in English.

Course type: analytical skills training in neurophysiology

Credit Points: n.s.

Teacher/Lecturer: Prof. Funke, Dr. Hagen, Dr. Fährmann, Dr. Klein, Dr. Aliane

Requirements: n.s.

Room	Day, Time	Begin
MA 2/150	Wednesday, 4.30 p.m.	04.04.2012

Course description:

n.s.

Proofs of academic achievement: n.s.

 INSTITUT FÜR PHYSIOLOGISCHE CHEMIE

<http://www.ruhr-uni-bochum.de/physiolchem/system/index.html>

Contact:

Name: Prof. Dr. Ralf Erdmann
 Room: MA 4/ 142
 Tel: 0234/32-24943
 Email: ralf.erdmann@rub.de
 Consultation hours: on demand

BIOGENESIS OF CELL ORGANELLES

Language: English

Department: Physiology Chemistry/ Systems Biochemistry

Degree programme: Master of Science Biochemistry

Module: Advanced Practical in the Focal Point Programme: “Molecular Medicine”

Module taught only partly in English.

Course type: Compact course

Credit Points: 7,5 (of15)

Teacher/Lecturer: Prof. Dr. Ralf Erdmann

Requirements: A five-week all-day practical lab course with a compulsory seminar presentation. Please note: A second Advanced Practical will have to be performed in the same semester to earn the full complement of 15 credits

Room	Day, Time	Begin
MA 4/ 142	on demand	

Course description:

Active participation, feedback during independently performed experiments, project discussions with the supervisor. After completion of the course, students will have acquired basic practical skills in biochemical, microbiological and molecular biological methods. The students will be able to cultivate pro- and eucaryotic cells, to isolate protein-complexes by affinity chromatography and to characterize these complexes according to their size (size-exclusion chromatography) and constituents (SDS-PAGE, immuno-blotting). Students will learn how state-of-the-art molecular cell biological methods are used to tackle the structure and function of cellular nanomachines. Communication and collaboration skills will be improved by working hand in hand with the advising members of the research laboratory together with other lab members. Presentation skills will be improved by learning how to present scientific data in talks and scientific discussions as well as in a written thesis.

Topics:

- Characterization of metabolite transport across the peroxisomal membrane
- Dissection of the peroxisomal protein import machinery
- Characterization of the fusion/fission machinery of peroxisomes
- Structure and function of the peroxisomal nano-machine complex Pex1p/Pex6p, two AAA-

ATPases.

- The biogenesis of Lipid-droplets in yeast
- Human cell-lines as a tool to study diseases caused by an affected peroxisomal biogenesis

Methods:

- Cultivation of Bakers yeast
- Cell culture of human fibroblasts cells
- Different techniques for cell breakage
- Cell fractionation and isolation of cellular membranes
- Separation of protein mixtures and protein complexes by SDS polyacrylamid gel electrophoresis
- Western blotting and immunodetection
- Size-exclusion chromatography
- (convocal) fluorescence microscopy
- Molecular biology (cloning, site-directed mutagenesis, gene disruption, gene replacement)
- Purification of recombinant proteins
- Protein-protein interaction assays

Proofs of academic achievement: Assessment of experimental skills during the practical (50%), a written project report (40%), and a seminar presentation of experimental results (10%).

CHARACTERIZATION OF PROTEINS ISOLATED FROM PEROXISOMES AND PEROXISOMAL MEMBRANES OF THE YEAST SACCHAROMYCES CEREVISIAE

Language: English

Department: Physiology Chemistry/ Systems Biochemistry

Degree programme: Master of Science Biochemistry

Module: Modular Advanced Practical and Seminar in the Focal Point Programme "Molecular Medicine"
Module taught entirely in English.

Course type: Compact course

Credit Points: 5,3

Teacher/Lecturer: Prof. Dr. Ralf Erdmann

Requirements: Two weeks advanced laboratory course with an intergrated seminar

Room	Day, Time	Begin
MA 4/ 142	on demand	

Course description:

Active participation in the laboratory tasks and seminar, feedback during the experiment, participation in laboratory seminars/scientific presentation.

After completion of the course, students will have aquired basic practical skills in biochemical, microbiological and molecular biological methods. The students will be able to isolate protein-complexes by affinity chromatography and to characterize these complexes according to their size (size-exclusion chromatography) and constituents (SDS-PAGE, immuno-blotting). Students will

learn how state-of-the-art molecular cell biological methods are used to tackle the structure and function of cellular nanomachines with the peroxisomal protein translocation apparatus as an example. Communication and collaboration skills will be improved by working in a small team of 2-3 students advised by members of the research laboratory. Presentation skills will be improved by learning how to present scientific data in talks and scientific discussions.

Topics:

- Characterization of metabolite transport across the peroxisomal membrane
- Dissection of the peroxisomal protein import machinery
- Structure and function of the peroxisomal nano-machine complex Pex1p/Pex6p, two AAA-ATPases.

Methods:

- Cultivation of Bakers yeast
- Different techniques for cell breakage
- Cell fractionation and isolation of cellular membranes
- Separation of protein mixtures and protein complexes by SDS polyacrylamid gel electrophoresis
- Western blotting and immunodetection
- Size-exclusion chromatography

Proofs of academic achievement: Assessment of active and successful participation in the practical (50%) and a written project report (50%)

ACTUELLE ISSUES AND METHODS OF MOLECULAR CELLBIOLOGY

Language: English

Department: Physiology Chemistry/ Systems Biochemistry

Degree programme: Bachelor/ Master/ Ph.D

Module: Journals Club

Module taught entirely in English.

Course type: Lecture

Credit Points: 1

Teacher/Lecturer: Prof. Dr. Ralf Erdmann

Requirements: n.s.

Room	Day, Time	Begin
MA 4/ 139	Friday 12:15 – 13:45 h	biweekly

Course description:

Presentation and discussion in english language

Proofs of academic achievement: no

ANATOMY AND MOLECULAR EMBRYOLOGY

<http://www.ruhr-uni-bochum.de/anat1/brand-saberi.html>

Contact:

Professor B. Brand-Saberi
 Ma Süd 5/158 (secretary's office)
 Tel: 0234 / 32 - 24556
 Email: Beate.Brand-Saberi@rub.de
 Consultation hours: by appointment only

STEM CELL PHYSIOLOGY II

Language: English

Department: Biochemie II – Molekulare Neurobiochemie; Zellmorphologie und molekulare Neurobiologie

Degree programme: M.Sc.

Module: Stem Cell Physiology II
 Module taught entirely in English.

Course type: Lecture and Seminar

Credit Points: n.s.

Teacher/Lecturer: Prof Dr. Heumann; Prof. Dr. Faissner

Requirements: Life science related Bachelor

Room	Day, Time	Begin
GC 6/134; NDEF 05/594	Mo-Fr 08:15-09:00	16.04.2012-11.05.2012

Course description:

In continuation of the Stem Cell Physiology I Course, the course introduces students to the concepts of controlling differentiation versus stem cell self-maintenance. Cell-to cell and ECM to cell signaling cascades as well as intracellular signaling mechanisms are discussed in detail.

Proofs of academic achievement: n.s.

STEM CELL LECTURE SERIES

Language: English

Department: organized by Biochemie II – Molekulare Neurobiochemie; various guest lecturers

Degree programme: M.Sc.

Module: Stem Cell Lecture Series
 Module taught entirely in foreign language: Yes

Course type: Scientific lectures presenting original research work, Blackboard support of the presentations, further reading recommendations

Credit Points: 5 each semester/ total 10

Teacher/Lecturer: various, including guest lecturers

Requirements: Life science related Bachelor

Room	Day, Time	Begin
NC 5/174	Friday 13:00-14:00	13.04.2012

Course description:

Acquisition of an overview about views, problems and current topics in stem cell research, introduced by various researchers. A comprehensive list the guest lecturers and given talks will be made available beforehand.

Proofs of academic achievement: written examination

MOLECULAR GENETIC METHODS

Language: English

Department: Biochemie, Molekulare Zellbiochemie; Zell- und Entwicklungsbiologie MPI Münster

Degree programme: M.Sc.

Module: Molecular Genetic Methods
Module taught entirely in English.

Course type: Lecture: 2 hours per week; exercises: 1 hour per week.

Credit Points: 5

Teacher/Lecturer: Prof Dr. Bernhard Hovemann, Dr. Holm Zaehres

Requirements: Life science related Bachelor

Room	Day, Time	Begin
Preliminary meeting held in MA 5/61; changes will be announced	Thu and Fr 08:00-10:00	05.04.2012

Course description:

Students will acquire skills in gene and genome analysis, skills in cloning of gene constructs, cell and animal manipulation, protein expression

Proofs of academic achievement: n.s.

MOLECULAR TRACING METHODS

Language: English

Department: RUBION; Uni-Klinik Abtl. f. Strahlentherapie; Medizinische Fakultät Abtl. Anatomie und mol. Embryologie

Degree programme: M.Sc.

Module: Molecular Tracing Methods

Module taught entirely in English.

Course type: Seminar: 4×90 minutes Practical course: 8×180 minutes Compact course: "Radiation protection & radioactivemethods" (1 week, 8h/day)

Credit Points: 5

Teacher/Lecturer: Prof. Dr. Adamietz, Dr. Bühler, PD. Dr. Theiss, PD Dr. Meijer, Dr. Happel

Requirements: Life science related Bachelor

Room	Day, Time	Begin
Preliminary talk in MA	Tuesday 09:00-11:00	01.05.2012
5/61; changes will be announced	Tuesday 11:00-14:00 (Pract.)	

Course description:

Knowledge:

The module gives both an introduction into modern microscopic techniques and their application in stem cell biology and life sciences in general as well as chances and limitations of techniques using ionizing radiation in stem cell biology, life sciences and medicine.

Proofs of academic achievement: Written abstracts/printed powerpoint slides

BIOTECHNOLOGY AND TISSUE ENGINEERING

Language: English

Department: Inst. f. Transplantationsdiagnostik und Zelltherapeutik Düsseldorf; Chirurgische Forschung Klinik Bergmannsheil; Hornhautbank Essen; Mol. Tumorpathologie Klinik Bergmannsheil; Abteilung Neurotraumatologie und Rückenmarkverletzte Klinik Bergmannsheil; Molekulare Onkologie Klinik Bergmannsheil; Zell- und Entwicklungsbiologie MPI Münster, Anatomie und Molekulare Embryologie medizinische Fakultät Ruhr-Universität Bochum

Degree programme: M.Sc.

Module: Biotechnology and Tissue Engineering

Module taught entirely in English.

Course type: Lecture: 2 hours Power point presentation, Blackboard

Credit Points: 5

Teacher/Lecturer: Kögler, Köller, Meller, Mirmohammadsadegh, Schildhauer, Steinsträsser, Zähres, Balakrishnan-Renuka, Chankiewicz E., Wang

Requirements: Life science related Bachelor

Room	Day, Time	Begin
MA 5/61; or seminar room of the dep. of plastic surgery, Bergmannsheil Klinik	Tuesday 14:00-16:00	04.02.2012

Course description:

Macroscopic and microscopic anatomy and function of organ systems. Cell-based therapies and gene therapies for tissue-specific replacement.

The students will be taught principles of tissue culture and of “Good medical practice” (GMP) as a general preparation for practical modules.

Proofs of academic achievement: written examination (multiple choice)

LAB ROTATION

Language: English

Department: various

Degree programme: M.Sc.

Module: Lab Rotation

Module taught entirely in foreign language: Yes

Course type: Practical

Credit Points: 5

Teacher/Lecturer: N.N., All PIs from the associated labs

Requirements: Life science related Bachelor

Room	Day, Time	Begin
n/a	Announced by the individual supervisor	02/04/2012

Course description:

Learning specialized methods related to stem cell research, depending on the lab visited.

Proofs of academic achievement: written laboratory report

INSTITUT FÜR NEUROINFORMATIK

Homepage: www.ini.ruhr-universitaet.bochum.de

Contact:

Name: Dr. Rolf Würtz

Room: NB 3/66

Tel: 0234/32-27994

Email: Rolf.Wuertz@ini.rub.de

Consultation hours: 11:00 - 15:00 h

AUTONOMOUS ROBOTICS: ACTION, PERCEPTION, AND COGNITION

Language: English

Department: Angewandte Informatik/Institut für Neuroinformatik

Degree programme: Master

Module: n.s.

Module taught entirely in English.

Course type: Lecture + Tutorial

Credit Points: 5

Teacher/Lecturer: Prof. Dr. Gregor Schöner

Requirements: none

Room	Day, Time	Begin
NB 3/57	Thursday, 14.15-16.00	05.04.2012 (Lecture)
NB 3/57	Thursday, 16.15-17.00	05.04.2012 (Tutorial)

Course description:

Neuroinformatics is concerned with the discovery of new solutions to technical problems of information processing. These solutions are sought based on analogies with nervous systems and the behavior of organisms. This course focusses on three exemplary problems to illustrate this approach:

- a) Artificial action (autonomous robotics)
- b) Artificial perception (robot vision)
- c) Artificial cognition (simplest cognitive capabilities of autonomous robots such as decision making, memory, behavioral organization)

The main methodological emphasis is on nonlinear dynamical systems' approaches and dynamic (neural) fields.

Proofs of academic achievement: written examination

MATHEMATICS FOR MODELING AND DATA ANALYSIS

Language: English

Department: Angewandte Informatik/Institut für Neuroinformatik

Degree programme: Bachelor

Module: n.s.

Module taught entirely in English

Course type: Lecture and Tutorial

Credit Points: 2 (Lecture), 4 (Tutorial)

Teacher/Lecturer: Prof. Dr. Laurenz Wiskott

Requirements: basic knowledge of linear algebra and calculus

Room	Day, Time	Begin
NA 01/99	Thursday, 12.15-13.45	05.04.2012 (Lecture)
NB 3/57	Thursday, 10.30-12.00	12.04.2012 (Tutorial)

Course description:

This course covers mathematical methods that are relevant for modeling and data analysis. Particular emphasis will be put on an intuitive understanding as is required for a creative command of mathematics. The following topics will be covered: functions, qualitative analysis of nonlinear differential equations, Bayes theory, multiple integrals.

Proofs of academic achievement: written examination

COMPUTATIONAL NEUROSCIENCE: VISION AND MEMORY

Language: English

Department: Angewandte Informatik/Institut für Neuroinformatik

Degree programme: Master

Module: Name

Module taught entirely in foreign language: yes

Course type: Lecture and Tutorial

Credit Points: 2 (Lecture), 4 (Tutorial)

Teacher/Lecturer: Prof. Dr. Laurenz Wiskott

Requirements: The mathematical level of the course is mixed. There are some lectures that require almost no math and others that require a lot. The tutorial is almost entirely mathematical. Mathematics required include calculus (functions, derivatives, integrals, differential equations, ...), linear algebra (vectors, matrices, inner product, orthogonal vectors, basis systems, ...), and a bit of probability theory (probabilities, probability densities, Bayes' theorem, ...).

Room	Day, Time	Begin
NB 3/57	Tuesday, 12.15-13.45	03.04.2012 (Lecture)

NB 3/57

Tuesday, 10.30-12.00

10.04.2012 (Tutorial)

Course description:

This computational neuroscience course covers models and theoretical concepts of vision and memory, such as visual receptive fields, neural map formation, visual invariances, attention, and associative memories.

Proofs of academic achievement: written examination

MACHINE LEARNING - SUPERVISED METHODS

Language: English

Department: Angewandte Informatik/Institut für Neuroinformatik

Degree programme: Master

Module: n.s.

Module taught entirely in English.

Course type: Lecture and Tutorial

Credit Points: 3 (Lecture), 3 (Tutorial)

Teacher/Lecturer: Jun.-Prof. Dr. Tobias Glasmachers

Requirements: n.s.

Room	Day, Time	Begin
NB 3/57	Monday, 12.15-14.00	02.04.2012

Course description:

The field of machine learning constitutes a modern approach to artificial intelligence. It is situated in between neuroscience, statistics, robotics, and areas of application ranging all over science and engineering, medicine, economics, and many more. Machine learning algorithms automate the process of learning, thus allowing prediction and decision making machines to improve with experience.

This lecture will cover different state-of-the-art methods in the domain of "supervised learning". Topics include classical statistical methods, neural networks, support vector machines, and nearest neighbour models. The lecture covers algorithmic as well as learning theoretical aspects.

Proofs of academic achievement: n.s.

FACULTY OF PHILOLOGY

ENGLISH DEPARTMENT

<http://ww.rub.de/anglistik>

Contact:

Room: GB 6/133

Tel: 0234/32 - 22589

Email: anglistik@rub.de

Consultation hours: Monday – Friday: 9 – 13 pm

Apart from a few exceptions all courses offered by the English Department are taught in English.

The different courses cover topics in the field of **American Cultural Studies, British Cultural Studies, American Literature, British Literature** and **Linguistics**.

Topics which could be particularly useful and interesting for exchange students are provided in courses of the modules **Language Practice** (i.e. Translation, Communication, Grammar) and **English for Special Purposes** (i.e. Legal English or Business English).

A complete list can be found on the departmental homepage:

<http://www.es.rub.de/vorlesungsverzeichnis.html>

INSTITUTE FOR ORIENTAL AND ISLAMIC STUDIES

<http://www.rub.de/orient>

Contact:

Name: Prof. Dr. Stefan Reichmuth

Room: GB 2/38m

Tel: 0234/32-28125 or -25125

Email: stefan.reichmuth@rub.de

Consultation hours: Thursday 10 - 13 h (every 14 days, acc. to separate announcement)

THE FIRST WORLD WAR AND ITS CONSEQUENCES FOR MUSLIM STATES AND SOCIETIES

Language: English

Department: Institute for Oriental and Islamic Studies

Degree programme: B.A., M.A.

Module: G, WPV, I-2, O-1, O-2

Module taught entirely in foreign language: Yes

Course type: Lecture

Credit Points: 2

Teacher/Lecturer: Prof.Dr. Stefan Reichmuth

Requirements: regular and active attendance, preparation, examination

Room	Day, Time	Begin
HGB 20	Tuesday 12.15-13.45	10/04/2012

Course description:

Text text text

Proofs of academic achievement: written examination

This course is credited for „Optionalbereich“.

This course is especially suitable for exchange students.

FACULTY OF PHILOSOPHY AND EDUCATIONAL SCIENCE

PHILOSOPHY DEPARTMENT

Homepage: <http://www.ruhr-uni-bochum.de/philosophy/>

Contact:

Name: Dr. Michael Flacke
 Room: GA 3/142
 Tel: 0234/32-22725
 Email: philosophy@rub.de
 Consultation hours: Mi 14-16

EPISTEMOLOGY AND SCIENCE: THE PROJECT OF NATURALIZATION

Language: English

Department: Philosophy Department

Degree programme: Master

Module: n.s.

Module taught entirely in English.

Course type: Seminar

Credit Points: 6 CP

Teacher/Lecturer: Dr. Markus Eronen, Prof. Dr. Albert Newen

Requirements: Knowledge in philosophy of cognition

Room	Day, Time	Begin
GABF 04/609	Monday, 12-14	April 2, 2012

Course description:

Can we know anything for sure? Maybe this is not possible with everyday information but what about the information in science? Can we characterize it as a clear case of knowledge? The relation between epistemology and science is a controversial one. Traditionally, epistemology has been concerned with analyzing the concept of knowledge and replying to skeptical arguments that purport to show that knowledge is not possible. Science has had little or no influence on this project. However, at least since the 1960s and the publication of Quine's celebrated paper "Epistemology Naturalized", this traditional approach to epistemology has been questioned. Many philosophers have argued that empirical results from science are essential for resolving traditional epistemological questions, or even that epistemology should be replaced by empirical psychology. In this seminar, we discuss the role of science in epistemology. How should epistemology take science into account? Does science provide help in replying to skeptical arguments? Are there epistemological issues that cannot be answered by science?

The literature will be arranged in form of a reader that we offer in blackboard.

Proofs of academic achievement: The 'unbenoteter Schein' is based on a presentation and a written summary. The 'benoteter Schein' is based on a presentation in combination with a final paper.

PLOTINUS' TREATISE AGAINST THE GNOSTICS (ENNEAD II.9)

Language: English

Department: Philosophy Department

Degree programme: Master

Module: n.s.

Module taught entirely in English.

Course type: Seminar

Credit Points: 6 CP

Teacher/Lecturer: Prof. Dr. James Wilberding

Requirements: Knowledge in Ancient Philosophy

Room	Day, Time	Begin
GA 3/143	Tuesday, 16-18	April 3, 2012

Course description:

Plotinus (210 - 270 A.D.), the founder of the Neoplatonic movement, had first-hand experience of Gnostic philosophy. Indeed, he even counted some Gnostics among his friends. Yet, he vigorously rejected Gnostic doctrines and argued at length in this treatise, which together with Ennead III.8 [30], V.8 [31] and V.5 [32] forms the so-called Grossschrift, that Gnosticism is not only untraditional but also irrational, blasphemous and immoral. Much of the treatise is focused on the nature and value of the sensible world and its creator, as an alternative title (provided by Plotinus' student and editor Porphyry in his *Life of Plotinus*) illustrates: Against those who say that the make of the universe is evil and the universe is evil. In this seminar we will read this short (ca. 35 pages) treatise very carefully in order to assess the Gnostic positions under fire, Plotinus' arguments against the Gnostics as well as Plotinus' own views on the nature of the universe. This seminar is in English.

Knowledge of ancient Greek is not required. The primary reading will be an English translation of Ennead II.9 that I am currently preparing for Cambridge University Press. Students with some Greek are encouraged to read the original text as well, and students without any Greek are encouraged to compare critically this translation with others listed below.

Proofs of academic achievement: The 'unbenoteter Schein' is based on a presentation and a written summary. The 'benoteter Schein' is based on a presentation in combination with a final paper.

LANGUAGE AND COMMUNICATION: FROM INTERPRETATION TO INFERENCE

Language: English

Department: Philosophy Department

Degree programme: Bachelor

Module: n.s.

Module taught only partly in English.

Course type: Seminar

Credit Points: 2 CP

Teacher/Lecturer: M.A. Maria Spsychalska

Requirements: The seminar has an introductory character and does not require any background knowledge from students.

Room	Day, Time	Begin
GA 04/187	Tuesday, 16-18	April 03, 2012

Course description:

The seminar focuses on communication aspect of natural languages: how information is exchanged in discourse, and what makes argumentation and reasoning valid. We start with classical texts by H. P. Grice, D. Sperber & D. Wilson, B. Partee. We discuss the basic problems in the semantic-pragmatics interface focusing on implicatures, presuppositions, and their relation to logical inference. Finally, we have a brief look on how those problems are handled by both formally and empirically oriented researchers.

Proofs of academic achievement:

Grade based on:

- presentations of texts,
- written assignments
- mini-exams

This course is credited for „Optionalbereich“. yes

This course is especially suitable for exchange students. The course is especially relevant for students in: linguistics, psychology, communication studies, cognitive science and other humanistic disciplines.

LOGIK-ONLINE-SEMINAR

Language: English

Department: Philosophy of Mind

Degree programme: Bachelor of Arts

Module: WM Ia

Module taught entirely in English.

Course type: Online-seminar

Credit Points: 4

Teacher/Lecturer: Dr. Raphael van Riel

Requirements: none, open also for non-philosophers

Room	Day, Time	Begin
GA 3/143	05.04.2012; 07.06.2012; 12.07.2012	Logik

Course description:

Studying logics, we study formal rules of inferences and thus the core instrument of science. These rules are important for reasoning not only in philosophy but in any scientific discipline; they can also be used for the reconstruction and analysis of arguments of others. Thus, logic and theory of argumentation figure among fundamental philosophical sub-disciplines. The main goal of this course is to give a systematic

introduction to logic, mainly focusing on propositional logic and (first order) predicate logic. Formal methods will be explained and applied – the main goal being to use logic for other philosophical targets and to highlight some aspects of logic that are of philosophical significance themselves.

There will be three sessions (in the room mentioned above): 5.4.2012, 7.6., and 12.7 (written examination). The online-course has weekly online-material that the students should read. Then there are weekly online-tutorials to answer open questions and to prepare the weekly online-tests. The course is credited when the weekly online-tests as well as the written examination are passed.

Proofs of academic achievement: written examination

This course is especially suitable for exchange students.

EPISTEMOLOGY AND SCIENCE: THE PROJECT OF NATURALIZATION

Language: English

Department: Philosophy of Mind

Degree programme: Master of Arts

Module: WM IIIc

Module taught entirely in English.

Course type: Seminar

Credit Points: 6

Teacher/Lecturer: Prof. Dr. Albert Newen, Markus Eronen

Requirements: Bachelor Degree

Room	Day, Time	Begin
GABF 04/609	Monday,12-14h	02/04/2012

Course description:

Can we know anything for sure? Maybe this is not possible with everyday information but what about the information in science? Can we characterize it as a clear case of knowledge? The relation between epistemology and science is a controversial one. Traditionally, epistemology has been concerned with analyzing the concept of knowledge and replying to skeptical arguments that purport to show that knowledge is not possible. Science has had little or no influence on this project. However, at least since the 1960s and the publication of Quine's celebrated paper "Epistemology Naturalized", this traditional approach to epistemology has been questioned. Many philosophers have argued that empirical results from science are essential for resolving traditional epistemological questions, or even that epistemology should be replaced by empirical psychology. In this seminar, we discuss the role of science in epistemology. How should epistemology take science into account? Does science provide help in replying to skeptical arguments? Are there epistemological issues that cannot be answered by science?

The literature will be arranged in form of a reader that we offer in blackboard.

Proofs of academic achievement: Presentations of articles in the seminar, essays or oral examinations

This course is especially suitable for exchange students.

INSTITUTE FOR EDUCATIONAL RESEARCH

Contact:

Dr. Ute Lange
 GA 1/133
 Tel: 0234/32-2498
 Email: ute.lange@rub.de
 Consultation hours: Tuesdays and Thursdays, 4-6 o'clock p. m.

EDUCATIONAL DEVELOPMENTS IN COMPARATIVE PERSPECTIVES

Language: English

Department: Chair of Comparative Education

Degree programme: Bachelor of Arts (B.A.)/Master of Educational (M.Ed.)

Module: A5: Internationale Bildungsentwicklungen und Interkulturelle Pädagogik
 Module taught only partly in English

Course type: Hauptseminar

Credit Points: 4 CP (+ 3 CP for extended course paper)

Teacher/Lecturer: Prof. Dr. Christel Adick

Requirements: Basic knowledge in Educational Sciences

Room	Day, Time	Begin
GA 2/41	Monday 14.15 – 15.45	02/04/2012

Course description:

The main aims of the seminar are: (a) to raise awareness of some educational topics which are commonly debated around the world, and (b) to introduce research-oriented learning methods for enquiries on global developments in education.

In the first part some internationally debated issues will be discussed, such as peace education, discrimination in education in the European Union, teacher training, global models of education, etc. (Articles will be available in Blackboard). Participants will have to write and present a summary of one of these articles, also distributing their summary (3-5 pp.) in class to a group of fellow-students (peer instruction), which will then be followed by a plenary discussion of the respective article.

In the second part of the course the websites of the UNESCO will be screened for general information on Education for All (EFA), definitions of empirical indicators (e.g. Gender Parity Index, Education Development Index) and available data on educational enrolments in practically all the countries of the world. Participants will be asked to bring their laptops, if available, in order to conduct online research in class. Our research will then concentrate on educational developments in the newly emerging countries, the so-called "BRIC" countries (Brazil, Russia, India and China), which are the four largest economies outside the OECD, comprising more than 40% of the world's population. Groups will be formed who have the task to write country profiles by using the data of the yearly Global Monitoring Reports (available online and also in print in the library of the Institute of Education) OECD data and other sources. The country profiles will then be presented and discussed in plenary (presentation by powerpoint/handouts).

Proofs of academic achievement: The proof of academic achievement ('Kleine Studienleistung'/4 CP) requires the written summary of one of the articles and the preparation of one of the country profiles. Topics for an extended course paper (Hausarbeit, 3 CP) will be discussed individually. Assignments may be written and presented either in English or in German.

This course is especially suitable for exchange students.

FACULTY OF PHYSICS AND ASTRONOMY

<http://www.physik.rub.de>

Contact:

Anke Pappert

Tel: 0234/32-23445

Email: dekanat@physik.rub.de

The Faculty of Physics and Astronomy offers a broad range of courses in English. Detailed information can be found at www.physik.rub.de/studium/vorlesungsverzeichnis. Please have a look at the notice board at NB 02 Nord for changes and dates.

Courses start at the next possible date after lectures start in sommer semester (02/04/2012).

Details concerning exercises will be fixed during the corresponding lectures.

Solid-State Physics

Course Nr	Course Title	Day, Time	Room	Language	Lecturer
160 309	Exploring Condensed Matter via x-rays and Neutrons	Thu. 8.30-10.00	NB 4/158	English	Zabel
160 310	Exercise Exploring Condensed Matter via x-rays and Neutrons	Thu. 10-12.00	NB 4/158	English	Zabel
160 311	Laser Spectroscopy	n.s.	n.s.	English	Eremin, Polyakov
160 313	Application and Implementation of Electronic Structure Methods	Fri. 10-14.00	NB 7/173	English	Drautz, Neugebauer, Madsen
160 315	Interfaces and surfaces	Thu. 10-12.00	n.s	English	Drautz, Janisch, Rogal, Hammerschmidt
160 316	Stochastische Prozesse	n.s	n.s	English	Spatschek
160 317	Exercise Stochastische Prozesse	n.s	n.s	English	Spatschek
160 324	Seminar: "Methods of quantum field theory in solid state and high-energy physics"	Fri. 16-18.00	NB 6/73	English	Polyakov, Eremin

Nuclei and particle physics

Course Nr	Course Title	Day, Time	Room	Language	Lecturer
160 425	Seminar: Methods of quantum field theory in solid state and high energy physics	Fri. 16- 18.00	NB 6/73	English	Polyakov, Eremin

Plasma and atomic physics

Course Nr.	Course Title	Day, Time	Room	Language	Lecturer
160 501	Thin Films and Nanomaterials II	Thu 14-16.00	NB 5/158	English	de los Arcos
160 505	Plasma chemistry	Mon. 15.15-17.00	NB 5/158	English	Benedikt
160 506	Exercise Plasma chemistry	Mon. 17.15-18.00	NB 5/158		Benedikt
160 508	Blockkurs: Quantentheorie des Lichts II	By appointment	NB 2/170	German, English or French	Rosmej
160 509	Production and investigation of highly charged ions <i>dates possibly compressed into fewer days</i>	Fri. 14.15-16.00	NB 3/99	German or English	Träbert
160 510	Plasma-Wand-Wechselwirkung in Fusionsplasmen	Tue. 12-14.00	NB 5/158	German or English	Unterberg
160 511	Grundlagen der Kernfusions-Technologie	Wed. 14.30-16.00	NB 5/158	German or English	Biel
160 512	Exercise Grundlagen der Kernfusions-Technologie	Wed. 16.15-17.30	NB 5/158	German or English	Biel
160 520	European School on Low Temperature Plasma Physics: Basics and Applications <i>Registration at http://www.plasma-school.org</i>	06.- 13.10.2012	Physik-zentrum Bad Honnef		Winter, Böke
160 521	European School on Low Temperature Plasma Physics: Master Class on hot topics <i>Registration at http://www.plasma-school.org</i>	06.- 13.10.2012	Physik-zentrum Bad Honnef		Winter, Böke
160 526	Seminar zur Theoretischen Plasmaphysik	Tue. 14-16.00	n.s.	English	Shukla, Eliasson

FACULTY OF PSYCHOLOGY

Homepage: <http://www.psy.ruhr-uni-bochum.de/>

Contact:

Name: Ingrid Tanach

Room: GAFO 04/623

Tel: 0234/32-22447

Email: Ingrid.Tanach@rub.de

Consultation hours: Wednesday 9-11/Thursday 14-15

BASIC NEURAL SIMULATION

Language: english

Department: Psychology

Degree programme: Bachelor

Module: n.s.

Module taught only partly in English.

Course type: Seminar

Credit Points: 3

Teacher/Lecturer: Prof. Dr. Yoshida

Requirements: n.s.

Room	Day, Time	Begin
GAFO 04/615	Thursday 14 - 16	

Course description:

The goal of this seminar is 1) to understand basic electrophysiological properties of neurons and 2) to learn how to implement this knowledge into a computational model of a neuron. First, students will learn basic electrophysiological properties such as the maintenance of the resting membrane potential and the generation of an action potential through lectures. Students will then build their own neuron model using a programming environment called Matlab. Simulation using computers will not only help solidify the students' understanding of electrophysiological properties but also will allow them to use this knowledge in the future research. Acquiring this technique will enable students for example to estimate the consequence of a malfunction of certain ionic channel in a disease or to estimate the specific character of specific neuron types of their interest. Advanced students will have the opportunity to expand this single neuron model to a neural network model to simulate a role of a brain region of their interest. This course will also provide necessary skills regarding computational simulation but do not require previous experience in modeling or programming. Basic knowledge about electric circuit would be of advantage.

Proofs of academic achievement: One report

THEORIE UND PRAXIS INTERKULTURELLER TRAININGS / COACHINGS

Language: english

Department: Psychology

Degree programme: Master

Module: n.s.

Module taught entirely in English.

Course type: Seminar

Credit Points: 3

Teacher/Lecturer: Vinita Samarasinghe

Requirements: n.s.

Room	Day, Time	Begin
GAFO 03/252	Di 12.00-16.00,	03.04.-17.07.2012
GAFO 04/271	Mi 08.00 – 10.00,	02.05.2012

Course description:

This seminar is conducted over the course of two semesters. The first semester provides a practical background in areas such as: cultural questions in business, applying psychology to enculturation, intercultural competence, and conducting of trainings. In addition the participants will embark on their search for an institution, in the business sector, where they can conduct an intercultural training in the winter semester. In the winter semester the trainings will be realized and reflection upon the experience will occur.

The purpose of the seminar is to strengthen the personal, social competence in ntercultural situations. This is done by focusing on a few main factors such as ambiguity tolerance, frustration tolerance, intercultural empathy and openness.

The primary language of instruction will be English. For those students for whom this would be a problem we will try as much as possible to provide a translator and to accommodate their needs.

Proofs of academic achievement: n.s.

SPATIAL NAVIGATION AND MEMORY

Language: english

Department: Psychology

Degree programme: Master

Module: n.s.

Course type: Seminar

Credit Points: 3

Teacher/Lecturer: Prof. Dr. Yoshida

Requirements: n.s.

Room	Day, Time	Begin
GA 04/187	Do 10.00-12.00	

Course description:

This seminar focuses on the function of the medial temporal lobe (MTL) in spatial navigation. Single unit recordings from areas in the MTL such as the hippocampus and the entorhinal cortex during spatial tasks have been providing vast amount of insight to the function of the MTL. ‘Place cells’ in the hippocampus fire dependent on the location of an animal in an environment, ‘head direction cells’ in the presubiculum fire dependent on the direction of animal’s head, and ‘grid cells’ in the entorhinal cortex fire at many locations to form a hexagonal grid that covers each 2D environment. The fact that neurons from different subregions of the MTL provide different types of navigational representation suggests a functional segregation within the MTL. ‘Theta phase precession’ of the place cells and the grid cells provides evidences for phase coding and an optimized firing pattern for synaptic plasticity. The ‘replay’ of activity of place cells during sleep provides evidences for the possible role of the MTL in memory consolidation. Finally, we will study the underlying mechanism for place representation with an overview of computational models. This course will take the form of a journal club but some background knowledge will be provided during lecture.

Proofs of academic achievement: Presentation

LAB COURSE: NEURAL SUBSTRATES OF MEMORY FUNCTION

Language: english

Department: Psychology

Degree programme: Master

Module: n.s.

Course type: Seminar

Credit Points: 10

Teacher/Lecturer: Prof. Dr. Sauvage, magdalena.sauvage@rub.de

Requirements: n.s.

Room	Day, Time	Begin
GA 04/042		

Course description:

The unit focuses on the identification of the brain areas that support memory function in healthy subjects, aging and model of amnesia. Several aspects of memory are studied: familiarity versus recollection, memory for single items versus pairs, memory for space versus time. We use a multidisciplinary approach of memory function that includes behavioral, lesion and neuroanatomical imaging techniques in rats and mice. The focus of the project is the study of the functional segregation of the medial temporal lobe, a brain structure damaged in aging and amnesic patients, which leads to severe memory impairments. The project involves the

combination of behavioral and molecular imaging techniques. No previous experience is required, highly motivated candidates will be considered.

Proofs of academic achievement: Written Lab Report, Paper presentation

MEMORY FUNCTION: NOVEL BEHAVIOURAL, MOLECULAR AND IMAGING TECHNIQUES

Language: English

Department: Functional Architecture of Memory

Degree programme: Master

Module: n.s.

Module taught entirely in English

Course type: Seminar

Credit Points: 3

Teacher/Lecturer: Prof. Dr. Magdalena Sauvage

Requirements: None

Room	Day, Time	Begin
GA 04/42	Wednesdays 16:00-18:00	04/04/2012

Course description:

This seminar is methodology-oriented. It focuses on the latest generation of behavioural, molecular and imaging techniques developed: inducible and region specific brain mutagenesis, molecular brain imaging based on the detection of immediate-early genes (by immunocytochemistry and in-situ hybridization), diffusion tensor imaging, optogenetics (light-activated channels) and behavioural translational paradigms (standard human tasks adapted to animals). These methods, which go beyond the spatial and temporal resolution of standard techniques, led to important new findings in memory research, for example through the study of the functional segregation of the medial temporal lobe (MTL), a structure altered in aging and amnesic patients, in terms of the contribution of each MTL areas to a distinct memory type (spatial/non-spatial, recollection versus familiarity etc). However, these techniques can be applied to all fields of research. Background on each technique is provided during the class, advantages and limits of these new techniques are contrasted with those of the standard techniques and an example of how each technique is applied is given through the presentation of a related scientific article (journal club).

Proofs of academic achievement: short tests and presentations

This course is credited for „Optionalbereich“.

FACULTY OF SOCIAL SCIENCE

Homepage: <http://www.sowi.rub.de>

Contact:

Name: Malte Pfau
 Room: GC 03 / 325 (in the Social Science Library)
 Tel: 0234/32-22966
 Email: international-services@sowi.rub.de
 Consultation hours: Tu. 12 - 14

For providing International Students a broad variety of course offers in English the Faculty of Social Science cooperates with the Faculty of Humanitarian Sciences of the University Duisburg-Essen. Both Universities are located within 20 minutes and exceptionally well connected by local public transport system. International guest students who wish to spend part of their degree in Bochum or Duisburg can choose courses from both universities at Bachelor- or Masterlevel in the field of social science. For successful studies in English speaking courses, a high standard of English language skills are required. In individual cases this must be verified by the Departmental Coordinator of your host university (see contact details below).

The Faculty of Social Science at the Ruhr-University Bochum pursues a modern interdisciplinary approach of Social Science. The central characteristic of the Faculty is the linking between the five on par disciplines Political Science, Sociology, Social Psychology and Social Anthropology, Social Policy and Social Economy as well as Social Science Methodology and Statistics.

The Faculty of Humanitarian Sciences in Duisburg/Essen offers a wide range of courses in the field of political science and sociology. In Particular students with a high interest in International Relations, Governance, Development Politics, Migration and East Asian Studies can advance their professional competences within these fields.

ORGANISATION OF INTERVENTIONS IN HUMANITARIAN CRISIS

Language: English

Department: Sociology

Degree programme: Bachelor

Module: Module taught only partly in English

Course type: Seminar

Credit Points: 3 or 5 depends on the proofs of academic achievement (see below)

Teacher/Lecturer: Dijkzeul, Heintze, Moke

Requirements: No. Maximum number of participants: 20.

Room	Day, Time	Begin
Campus Bochum GBCF 04/611	Wed 10.15 - 11.45	04/04/2012

Course description:

This seminar gives an introduction and general view about organizations as active actors in humanitarian crisis. The first part of the seminar introduces to the concepts and basics of Humanitarian Studies. At the second part the participants take a closer look at the role of humanitarian organizations and other related actors in humanitarian crisis. A case-based consideration of a humanitarian intervention – the primary health care at the crisis in the East-Congo – will be taken at the third part of the seminar. The Congo undergoes one of the most direful humanitarian crisis since the end of World War Second. According to estimations by the International Rescue Committee (IRC) 5.4 Mio. Congolese died through direct or indirect consequences of the continuing violence.

Proofs of academic achievement: Attendance, active participation and presentation for a "Studiennachweis" (ungraded, 3 CP). For a "Leistungsnachweis" (graded, 5 CP): The final grade consists of a Referat (small presentation) and a Klausur (take-home exam). Each Friday before 14:00 h., all students should formulate two questions concerning the teaching notes and literature from the last class. Each student is free to indicate further questions s/he still has or other points s/he would like to discuss. The students should send their two questions to their professor, who will then select two questions and send them to the person who will hold the Referat. During their Referat students should briefly summarize the main points of the last class and the assigned literature. Ideally, they should explain whether and how the topics treated are related to theories used in (other courses of) the module(s) or their study program. Klausur (take-home exam) will be handed out at the end of class and will consist of several questions. It needs to be handed in four weeks after the end of class.

WOMEN'S MOVEMENTS IN GERMANY AND TURKEY IN INTERNATIONAL PERSPECTIVE

Language: English

Department: Sociology

Degree programme: Master

Module: Module taught only partly in English

Course type: Seminar

Credit Points: 3 or 6 depends on the proofs of academic achievement (see below)

Teacher/Lecturer: Prof. Dr. Ilse Lenz, Prof. Ayşe Gül Altınay (Sabancı University, Istanbul)

Requirements: n.s.

Room	Day, Time	Begin
Campus Bochum GBCF 04/614	Wed 10.15 - 11.45,	04/04/2012

Course description:

The Feminist Movements effected along with other factors a fundamental social change in Germany and Turkey. The Feminist Movements claimed equality and self-determination of the woman and her body. The first part of the seminar deals with conceptual approaches to Feminist Movements and Social Movements within the globalization as the multilevel (governance) system.

Especially the UN-Decade of the woman, the EU-gender equality politics as well as global women networks are releasing important impulses for these movements. The second part of the seminar considers the Feminist Movements in Germany and in Turkey and draws a comparison. The key aspects are:

- the relation between Feminist Movements and gender studies
- New Feminist Movements and Intersektionalität (movements of female migrants in Germany, the Kurdish Feminist Movement in Turkey)
- Action against Violence within the gender ratio
- Sexuality and sexual politics (under comprehension of the LGBT-movement in Germany and in Turkey)
- Peace, militarism, nationalism

Comparative case-based studies of Feminist Movements in other countries (EU, East-Asia, USA) are possible.

Proofs of academic achievement: Attendance is a general precondition for a proof of academic achievement.

"Studiennachweis" (ungraded, 3 CP): Presentation.

"Leistungsnachweis" (graded, 6 CP): Presentation and term-paper.

DRIFTING APART? INTERESTS AND IDEAS IN US-EUROPEAN RELATIONS

Language: English

Department: Political Science

Degree programme: Master

Module: Module taught only partly in English

Course type: Seminar

Credit Points: 3 or 6 depends on the proofs of academic achievement (see below)

Teacher/Lecturer: Prof. Dr. Stefan Schirm

Requirements: Successful completion of a lecture in "International Relations" or an equivalent. Synopses (1 site per text) to the below-mentioned literature until the third lecture.

Room	Day, Time	Begin
GCFW 04/304	Th. 12.15 - 13.45	05/04/2012

Course description:

The United States and continental Europe have been at odds on an increasing range of issues in the last decade. Controversies between the long-lasting partners range from the invasion in Irak 2003 over the International Criminal Court and the Kypoto Protocoll to open divergencies over financial market regulation in the G20 and the policy towards Russia. Especially Germany has often disagreed with the old hegemon USA over issues such as Irak, Russia, Kyoto, Lybia and the Financial Transaction Tax. Focussing on security and economy, the seminar will use theories of international relations and international political economy to analyse whether transatlantic interests and ideas are growing apart

Proofs of academic achievement: Synopses (see above) and a presentation with handout for a "Studiennachweis" (ungraded, 3 CP) or Synopses, presentation with handout and a term paper (graded, 6 CP) for a "Leistungsnachweis".

SOCIOLOGY OF LABOUR REGULATION

Language: English

Department: Sociology

Degree programme: Master

Module: Module taught only partly in English

Course type: Seminar

Credit Points: 3 or 6 depends on the proofs of academic achievement (see below)

Teacher/Lecturer: Prof. Dr. Ludger Pries

Requirements: Completed Bachelor Degree

Room	Day, Time	Begin
Campus Bochum GBCF 04/614	Tu. 14.15 - 16.15	03/04/2012

Course description:

This seminar deals with the dimensions and institutions of labour regulation within social change. Theoretical models and empirical findings referring to Industrial Relations and Labour Regulation will be discussed in a comparative perspective.

Important analysis-dimensions are the prerequisites, forms und impacts of participation and interest-regulation for employees, corporations and society. Central aspects of the seminar are actors, processes and institutions of labour-relation, manifestation and change of forms of industrial interest-regulation, participation and codetermination in industrial core-sectors and key areas of high-qualified knowledge-work as well as structures and practices of transnational labour regulation.

1. Introduction: Basics of labour regulation
2. The dual-system of labour regulation in Germany
3. Trends of labour regulation in Germany
4. Labour regulation in comparative perspective

By general request a visitation is possible. This seminar will be held in English (if requested). In this case the literature will be adjusted (to English literature) after the first lection.

Proofs of academic achievement: Active participation and attendance is a general precondition for a proof of academic achievement.

"Studiennachweis" (ungraded, 3 CP): Presentation and handout.

"Leistungsnachweis" (graded, 6 CP): Presentation, handout and term-paper.

CONFLICT RESOLUTION: THEORIES, STRATEGIES, CASE STUDIES

Language: English

Department: Political Science, University of Duisburg-Essen

Degree programme: Master

Module: Module taught only partly in English

Course type: Seminar

Credit Points: 6

Teacher/Lecturer: Peter J. Croll

Requirements: n.s.

Room	Day, Time	Begin
Campus Duisburg, SG 158	Wed. 15.30 - 19.00, every two weeks	02/05/2012

Course description:

The aim of the course is to familiarize students with core issues and concepts of conflict resolution. Conflict resolution is shaped by a broad variety of different theoretical approaches, a number of crucial key terms and rather different outcomes. For clarifying this complicated network the course will focus on theories and strategies of conflict resolution. In the last part of the course students will focus on applied research and work on three case studies for becoming familiar with the empirical dimension of conflict resolution. Thus the students will be able to understand current trends of actual conflict resolution.

Proofs of academic achievement: Active participation and attendance is a general precondition for a proof of academic achievement.

Leistungsnachweis: presentation, handout, seminar paper.

MACRO-POLITICAL REGULATION OF CONFLICT

Language: English

Department: Political Science, University of Duisburg-Essen

Degree programme: Master

Module: Name

Module taught entirely in foreign language:

Course type: Seminar

Credit Points: 6

Teacher/Lecturer: Prof. Dr. Christof Hartmann

Requirements: n.s.

Room	Day, Time	Begin
Campus Duisburg, LK 063	Mo. 14.00 - 16.00	16/04/2012

Course description:

Political scientists have a long tradition of thinking about a set of appropriate political institutions to prevent or manage violent conflict. In this course we want to discuss a number of these strategies both at the level of the organization of the state (federalism, decentralization, autonomy, secession, citizenship), and at the level of the regime type (system of government, elections, party systems). Using both theoretical literature and empirical case studies and cross-country comparison we will investigate to what extent and in which circumstances these strategies can make a difference.

Proofs of academic achievement: Active participation and attendance is a general precondition for a proof of academic achievement.

Leistungsnachweis: presentation, handout, seminar paper.

POLITICS IN AFRICA

Language: English

Department: Political Science, University of Duisburg-Essen

Degree programme: Master

Module: Module taught only partly in English

Course type: Lecture

Credit Points: 4

Teacher/Lecturer: Prof. Dr. Christof Hartmann

Requirements: n.s.

Room	Day, Time	Begin
Campus Duisburg, LK 062	Thu. 10.00 - 12.00	12/04/2012

Course description:

The lecture aims at giving a comprehensive overview on the political dynamics of the 47 states in Sub-Saharan Africa in the period since their political independence. We will both stress the common structural context which has been shaping political processes in Africa, and the varying actor constellations, institutions, and ideologies specific to countries.

The course is organised around a number of broad themes (state, governance, elections and parties, social groups and ethnicity, culture and religion) that are analysed in their general relevance by using general comparative politics concepts and methods and also discussed more specifically for selected African countries.

Proofs of academic achievement: Active participation and attendance is a general precondition for a proof of academic achievement.

Written Exam.

POLITIK UND GESELLSCHAFT IN EUROPA (EUROPEAN POLITICS)

Language: English

Department: Political Science, University of Duisburg-Essen

Degree programme: Master

Module: n.s.

Course type: Lecture

Credit Points: 4

Teacher/Lecturer: Prof. Dr. Heinz-Jürgen Axt

Requirements: n.s.

Room	Day, Time	Begin
Campus Duisburg, LK 062	Mo. 16.00 - 18.00 c.t.	16/04/2012

Course description:

The lecture discusses the historical implications of European integration. Security as well as welfare is interpreted as main target from the early 1950ies till today. European integration is understood as the cornerstone of new modes of governance. That is why alternative theoretical approaches are introduced to understand the distinctiveness of integration. The lecture provides an understanding why enlarging and deepening of integration have been crucial and sometimes conflictive elements. As it is a common saying that the European Union is an economic giant but a political dwarf it will be analysed to which extent this assumption holds true after the European Union has developed its foreign and security policy.

Proofs of academic achievement: Active participation and attendance is a general precondition for a proof of academic achievement.

Written Exam.

STATE AND SOCIETY IN CHINA

Language: English

Department: Political Science, University of Duisburg-Essen

Degree programme: Master

Module: n.s.

Course type: Seminar

Credit Points: 4

Teacher/Lecturer: Magnus Dau, M.A.

Requirements: n.s.

Room	Day, Time	Begin
Campus Duisburg, LK 053	Thu. 18.00 - 19.30 s.t.	05/04/2012

Course description:

Having completed this course, students will have gained a profound insight into the structure and the processes of the Chinese political system as well as relevant policy issues. This first part of the course assesses the impact of economic reform on state and society and introduces students to formal and informal modes of decision making at the government level as well as societal influence on Chinese politics.

The second part of the course will gain students an understanding of China's social structure, the urban-rural gap and government attempts to bridge the developmental gap between urban and rural areas. Finally, students will be made familiar with the interdependence between economic, social and political development.

Proofs of academic achievement: Active participation and attendance is a general precondition for a proof of academic achievement.

Written or oral exam.

INTRODUCTION TO MODEL UNITED NATIONS (DUEMUN 2012)

Language: English

Department: Political Science, University of Duisburg-Essen

Degree programme: Bachelor / Master

Module: n.s.

Course type: Seminar

Credit Points: 3

Teacher/Lecturer: Susanne Schäfer, M.A., Christian Pohlmann, M.A.

Requirements: n.s.

Room	Day, Time	Begin
Campus Duisburg, SG 135	Mo. 18.00 - 20.00 s.t.	16/04/2012

Course description:

The seminar will introduce you to the institutions and topics that will be simulated at the VIII DuEMUN conference as well as prepare you in negation skills. On Model United Nations (MUNs) students simulate the process of decision making in international institutions. To take part in the conference and the seminar you first have to apply for a delegation at www.duemun.de.

The seminar will take place at Campus Duisburg SG 135 (Aula Geibelstraße) on Monday evening, 6 pm - 7.30 pm plus the DuEMUN conference.

To earn credit points you have to attend all sessions of the seminar, write a position paper for the country you represent concerning the topics of the institution you will be part of, and participate in the VII DuEMUN conference.

Necessary information as well as literature to the institutions and topics will be available at the Moodle server. Keyword and link will be announced at the first session of the seminar.

All participants of VIII DuEMUN conference are required to pay a conference fee of 50 Euros (This fee covers materials, badges and placards. Snacks and drinks for the duration of the simulation are included in this fee.) Attendants of the DuEMUN conference fulfill the condition to participate and apply for the DuEMUN delegation at the following NMUN (New York Model United Nations).

More information: www.duemun.de

Proofs of academic achievement: Active participation and attendance is a general precondition for a proof of academic achievement.

Position paper.

FACULTY OF SPORT SCIENCES

<http://www.sportwissenschaft.rub.de>

Contact:

Dr. Mechthild Schütte
 UHW 203
 Tel: 0234 32- 23813
 Email: Mechthild.Schuette@rub.de
 Consultation hours: Wed 09:00 - 10:00 Uhr and by appointment

TRAINING AND TESTING IN INTERMITTENT SPORTS

Language: English

Department: Training and Exercise Science Unit

Degree programme: Master of Science

Module: Module 1: Optionale Studien

Module taught entirely in English.

Course type: Compact Seminar

Credit Points: 3

Teacher/Lecturer: Dr. Jaime Fernandez-Fernandez

Requirements: Bachelor Degree in Sports Science; Attendance to the compact seminar entitled “New issues in physical conditioning applied to intermittent sports” (Module 1: Optionale Studien – 1st semester)

Room	Day, Time	Begin
To determine	Mo-Fri, 9 to 14h	28 th May to 1 st June

Course description:

The performance of a top-class athlete can be improved by appropriate training. The fitness training should be closely related to the activities of the athlete during competition. Furthermore, the capacity of the athlete should be known. For that purpose, field tests can be used since they have been shown to be sensitive and to give valid measures of performance in many sports. The fitness training can be divided into aerobic, anaerobic and specific muscle training. Each type of training has a number of subcategories, which allows for a precise execution of the training when the aim of the training is known. A critical factor when training elite athletes is when to do what, i.e. to plan the training. In this seminar, the cardiovascular and muscular adaptations with regard to training or inactivity are addressed and the various components of fitness training are presented. The value of using field tests to evaluate the performance of athletes is also described. Finally, how to prioritize the training of top athletes is discussed.

Proofs of academic achievement: Oral presentation

SOCIETY AND SPORT

Language: English

Department: Institute of Sportmanagement & Sportsociology

Degree programme: Bachelor

Module: Society and Sport

Module taught entirely in English.

Course type: Compact Seminar

Credit Points: 3

Teacher/Lecturer: Dr. Michael Heine (University of Western Ontario, London/Canada)

Requirements: n.s.

Room	Day, Time	Begin
UHW SR 2	Friday 11.05. 09-17, Saturday 12.05. 09-17, Sunday 13.05. 09-14	Friday 11.05.

Course description:

This course provides an introduction to the study of media representations of sports in Canada. Proceeding from a discussion of certain foundational concepts, we will examine several specific core areas: the media representation of gender and masculinity; of Canadian national identity; and of ethnic identity. Excerpts from Canadian sports broadcasts and movies, and sports advertisements will be used as case examples to study the representational effects of such media productions.

(Course will be taught in English)

Proofs of academic achievement: regular Participation

INSTITUTE FOR MEDICAL ETHICS AND HISTORY OF MEDICINE

Homepage: http://www.ruhr-uni-bochum.de/malakow/index_en.html

Contact:

Name: Prof. Dr. Dr. Jochen Vollmann

Room: MALA (Malakowturm - Markstr. 258a)

Tel.: 0234/32-23394

Email: wiss-sekr-med-ethik@ruhr-uni-bochum.de

RESEARCH COLLOQUIUM - INSTITUTE FOR MEDICAL ETHICS AND HISTORY OF MEDICINE

Language: English

Department: Institute for Medical Ethics and History of Medicine

Course type: lecture / colloquium

Room	Day, Time	Lecturer	Title
Malakowturm Markstr. 258a Sem.R. 7 th floor	Monday 07.05.2012 18:15 – 19:45	Dr. med. Joaquín Barutta (Buenos Aires / Bochum)	Emergence and challenges of Advance Directives in Latin America
Malakowturm Markstr. 258a Sem.R. 7 th floor	Monday 14.05.2012 18:15 – 19:45	Adrian Viens (Bochum)	Paternalism, Public Health and Restrictive Measures

LANGUAGE COURSES

CENTER FOR FOREIGN LANGUAGE TRAINING

www.rub.de/zfa

Contact:

Ms. Jennifer Wenderoth

Tel: 0234/32- 28182

Email: zfa@rub.de

a) Language Courses

The Centre for Foreign Language Training (Zentrum für Fremdsprachenausbildung -ZFA) provides courses aimed at specialist and non-specialist language learners with a particular focus on the key attributes of developing cultural awareness and intercultural communicative competence in an academic setting. Classes take place during the semester and- in the form of intensive courses- during the semester break.

The Language Centre currently offers classes for 20 different languages, such as:

Arabian, Chinese, Danish, Dutch, English, French, Hungarian, Italian, Japanese, Croatian/Bosnian/Serbian, Greek, Norwegian, Polish, Portuguese, Russian, Swedish, Spanish and Turkish.

b) German as a Foreign Language

In addition to the language courses listed above, there are numerous offers for German as a Foreign language. In addition to preparatory courses there are a lot of courses that may be taken during the semester in addition to regular studies. These courses are designed for the special needs of foreign students, doctorals and guest researchers.

c) Certification

In some of the courses for the languages listed above there is the possibility to achieve special certificates:

TestDaF (Deutsch als Fremdsprache – German as a Foreign Language)

UNICert® (English, French, Italian, Polish, Russian, Swedish, Spanish)

DELE (Spanish)

CNaVT (Dutch)

Swedex (Swedish)

d) Individual Learning

The ZFA also provides various opportunities for individual learning and offers support via counselling individual assistance:

- Tandem (Partners with different mother tongue that exchange and support one another in learning the other language)
- Centre for self- organized learning
- Language- learning counselling

Impressum**Edited and Published by:**

International Office
Dezernat 2
Ruhr-Universität Bochum
Forum Nord Ost (FNO) 01 / 02
Universitätsstrasse 150
D-44780 Bochum

Print run:

1000 copies

Printed in March 2012