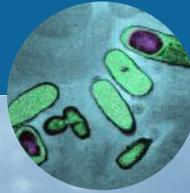


WADDEN SEA

DYNAMIC SYSTEM AND NATURAL HERITAGE

An international Programme for
Erasmus+ exchange students



Environmental sciences and coastal management



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Germany

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Welcome



In coastal areas marine and terrestrial ecosystems blur into one. Due to a large tidal range and the daily cycle of low and high tide, wadden sea ecosystems are extremely fascinating. We, at the Carl von Ossietzky University in Oldenburg, have such a wadden sea ecosystem, declared as a UNESCO World Natural Heritage Site, right in front of our door step. We are looking very much forward to welcome international students from all over Europe to learn about this ecosystem from different perspectives.

Our programme consist of lectures, seminars, and plenty of field work and experiments to get really good hands on experience on the ecosystem science and management. Oldenburg is a lovely, medium size city in the northwest of Germany with a good student life, offering plenty of sportive and cultural leisure activities to ensure you will have a beneficial and pleasant Erasmus+ semester. With this brochure we want to provide you with all the necessary information for a stay with us.

The only thing left to say is
“Moin!” und **“Herzlich Willkommen bei uns!”**

Your programme coordination team

WADDEN SEA DYNAMIC SYSTEM AND NATURAL HERITAGE

If you are interested in getting to know a unique and fascinating marine as well as terrestrial ecosystem, the Erasmus+ exchange programme Wadden Sea is the right thing for you! Covering one semester (April-September), this programme covers different aspects of oceanography, microbiology and biodiversity of this very special coastal area influenced by a large tidal range. The Wadden Sea will also be studied in respect to nature conservation, anthropogenic pressures and ecosystem based management. With broad expertise in interdisciplinary studies and transdisciplinary projects, the University of Oldenburg, is an excellent place to study the ecology and the sustainable management of ecosystems – close to the sea!

Programme Overview

For whom

The programme starts every summer semester in April. All courses are given in English. The programme is tailored to Master students of environmental or marine sciences or of an environmental management related Master programme at one of our Erasmus+ partner universities. Advanced Bachelor students are also welcome to apply!



View to the Island of Spiekeroog

Compulsory modules

M1: Wadden Sea Programme Introduction
- 6 ECTS

M2: Dynamics of the Wadden Sea World Heritage Site
- 6 ECTS

Specialization modules (select up to 3 modules)

M3: Ecology of Marine Microbial Communities
- 6 ECTS

M4: Microbial Ecology of Marine Sediments
- 9 ECTS

M5: Marine Biodiversity Change
- 9 ECTS

M6: Functional Ecology
- 6 ECTS

M7: Coastal Management
- 6 ECTS

M8: Environmental Management
- 6 ECTS

Transcript of records with up to 30 ECTS

Content

The programme contains a diverse ecosystem (compulsory 6 ECTS) and multidisciplinary set of compulsory and elective modules. The student can select the modules that fit best to his or her personal interest and academic emphasis. The programme starts off with an introduction week on the Island of Spiekeroog in the midst of the Wadden Sea to welcome the students directly to this unique ecosystem (compulsory 6 ECTS). This is followed by a module providing all the background information students need to understand the Wadden Sea ecosystem (compulsory 6 ECTS). Then, students are free to build their own curriculum choosing up to three modules (up to 18 ECTS) of a module selection covering the areas of microbiology, biodiversity and ecosystem management. The students will benefit from inspiring lectures, participating seminars, and hands on experience during field work and experiments, as well as from the modern research and teaching infrastructure, and our team of competent scientists.

Aim

After successfully finishing the Wadden Sea Erasmus+ programme, students will have gained specific skills based on their module selection additional to the following general competences:

- Knowledge on complex coastal ecosystems
- Ability for interdisciplinary research and experimental work
- Understanding of to the ecosystem-based management of protected areas
- Scientific communication within an international group
- Broadening of the personal, intercultural competences by living and studying in a foreign country and interacting with a local and international community.



Take your sample...



... go back to the mainland...



and analyse it in the lab

Host University

The Carl von Ossietzky University Oldenburg is located in the northwestern part of Germany. It is not far to the well-known cities of Hamburg, Hannover and Bremen. The

relaxed, informal atmosphere invites students to stay

university was established in 1973, and is among the youngest universities in Germany. With around 200

the next course work. Fully equipped libraries and cafés provide the necessary space and atmosphere for that. All students can use the university athletic facilities (sport courses, running tracks and swimming pool) as well as the cultural offers. The city centre is not far away.

The university is named after the Nobel Peace Prize winner Carl von Ossietzky (1889 – 1938), who was among the most distinguished journalists of the Weimar Republic.

biodiversity, modelling and marine sensory systems. The working groups collaborate extensively within the ICBM, as well as on projects with other local, regional and international institutes. The Institute for Biology and Environmental Science (IBU) focuses on biodiversity and evolution, landscape ecology, microbiology and neurobiology. The work by the IBU covers terrestrial and marine ecosystems as well as flora and fauna. Especially the landscape ecologists



Haarentor campus



Wechloy campus

professors and about 15,000 students, the university is a modern, dynamic institution spread over two campuses. The natural sciences and medicine are located at the “Wechloy” campus close to the greens of the countryside. All other faculties can be found at the main “Haarentor” campus. The two locations are just about a kilometer apart and can easily be reached by bike or public transport. The student canteens offer plenty of lunches, snacks and coffee, all from organic production. Free wireless internet access all over the campus helps to stay in touch with others, or to prepare

The Wadden Sea ecosystem is a role model, where different disciplines collaborate, benefiting from the others expertise, to study, analyze, and manage this unique place under multiple viewpoints.

The Wadden Sea programme is organised by the following institutes: The Institute for Chemistry and Biology of the Marine Environment (ICBM) is an interdisciplinary research institute dealing with fundamental and applied topics in marine and environmental research. The ICBM comprises working groups in the field of geochemistry, geocology, microbiology,

with their expertise in nature conservation and environmental planning will contribute to the Wadden Sea programme. Several working groups and institutions of the university, sharing the same interest in environmental sciences and management, have come together to form the Centre for Environmental and Sustainability Research (COAST). The Department of Business Administration, Economics, and Law at the university covers the economical and legal aspects of nature conservation, as well as management strategies.

Unique Wadden Sea Ecosystem

The Wadden Sea is an area that is revealed due to the tidal cycle – covered by water during high tide and accessible during low tide. The North Sea is very flat, therefore the tidal hub exposes a huge area of sea bottom. In fact, with an area of 450 km in length and 40 km in width, the Wadden Sea of the North Sea is the world's largest tidal flat coast! It extends from the Netherlands across Germany to Denmark, hence several countries are involved in the management of this unique ecosystem.

The Wadden Sea is one of the most biologically diverse ecosystems, enfolding marine and terrestrial flora and fauna: from algae to sea grass, from mirco organisms to large mega fauna like birds and marine mammals,

and from benthos over nekton to flying organisms. The Wadden Sea is known for being the world's most important feeding and nesting area for migrating birds!

UNESCO World Natural Heritage Site

Since the early 20th century parts of the Wadden Sea have been designated for different forms of nature protection (including bird sanctuaries and nature reserves) due to its ecological value. At the end of the 1980s the vast majority of the German section of the Wadden Sea was designated as a national park. Simultaneously the area was dedicated the status of a Biosphere

Reserve. More recently, on top of the already existing protection status, the Wadden Sea has been declared as an UNESCO World Natural Heritage Site.

Despite its natural uniqueness and outstanding ecological importance, the Wadden Sea faces serious threats caused by the numerous economic activities located in the area. International shipping, harbor industries, renewable energy production, tourism and agriculture are among the most visible human impacts on the Wadden Sea, which often conflict with its protective status. Therefore arise the needs for an integrated coastal zone management seeking to balance the different forms of land-use and stakeholder's shares in order to avoid conflicts in the area.



Having a look from the salt marsh at the intertidal zone

Key Lecturers

The modules within the interdisciplinary, international Programme *Wadden Sea – Dynamic System and Natural Heritage* are organised by scientists of the following institutes of the Carl von Ossietzky University: the Institute for Chemistry and Biology of the Marine Environment (ICBM), the Institute for Biology and Environmental Science (IBU), the Centre for Environmental and Sustainability Research (COAST) and the Master programme Sustainability Economics and Management (SEM).

Key lecturers are listed in alphabetical order:

- Prof. Dr. Heribert Cypionka – Paleomicrobiologist – ICBM
- Dr. Ferdinand Esser – Biologist and scientific manager – ICBM
- PD Dr. Bert Engelen – Paleomicrobiologist – ICBM
- PD Dr. Holger Freund – Geologist and paleoecologist – ICBM
- Prof. Dr. Luise Giani – Soil scientist – IBU
- Prof. Dr. Helmut Hillebrand – Biodiversity ecologist – ICBM
- Dr. Birte Junge – Soil scientist and scientific manager – ICBM
- Dr. Thomas Klenke – Geoscientist and coastal management – COAST
- Prof. Dr. Gudrun Massmann – Hydrogeologist – IBU
- Dr. Stefanie Moorthi – Biodiversity biologist – ICBM
- Prof. Dr. Ingo Mose – Applied geographer and environmental planner – IBU
- Prof. Dr. Meinhard Simon – Microbiologist – ICBM
- Prof. Dr. Bernd Siebenhüner – Ecological economist – SEM



Application Information



Wadden Sea experience

Participants

This Erasmus+ exchange programme is designed for students with a background in marine or environmental sciences or related disciplines. The courses are on the academic level of Master students, however advanced Bachelor students are welcome to apply, too.

Language

The language of the course is English. Good English skills are required and a certification (Level B2 of the European framework of references for languages) must be included in the application. German skills will ease the everyday's life outside of the university.

Time line

The programme will take part in the summer term (April – September) of the university. A semester includes 14 weeks of lectures, seminars or practical courses. If your semester at your home university finishes earlier, you can use the time up to April to work and earn money, or for practical experiences during an internship. Based on your module selection, you might be finished with the courses before September.

Required documents

- 1.) Application form for registration as an Erasmus+ student with proof of registration at your university (e.g. a copy of your student ID card)
- 2.) Application form for accommodation (if required)

**Application deadline:
January 15th**

Number of participants

The number of participants is limited to 15 students due to limited space in laboratories and during field excursions.

Application

First, you need to be accepted as an Erasmus+ exchange student at your home institution. Then, you can send your application by mail to the International Student Office at the Carl von Ossietzky University:

exchange@uol.de

Please check the information on:

www.uol.de/en/iso/studieren/

to download the required application form. Further, the application must include a CV (1-2 pages) and a letter of motivation (1-2 page), describing your scientific background and interest in this Erasmus+ programme.

After the application deadline and after receiving your application, the International Student Office will send you your letter of admission together with additional information by mail.



Sampling in the field

Costs and Accommodation

Getting around

The courses will take place on both campuses in Oldenburg. Therefore you should find accommodation within Oldenburg. Oldenburg is a bike-friendly city and most students just get around by bike.

All students receive a ticket ("semester ticket") to allow free usage of all public transport (bus and train) within the city and most public transport networks in the surrounding. With this ticket it is easy to visit places along the coast, as well as the bigger cities Bremen, Hannover and Hamburg.

Monthly expenses

- Accommodation: €180 - €375
- Food: €150 - €200
- Miscellaneous expenses (e.g. books, materials, leisure, etc.)

Additional expenses (once)

- Semester fee: €275,10
- Module 1 costs: €180



Island of Spiekeroog

Costs

In Germany, students are not required to pay a tuition fee. However, the University of Oldenburg charges a material fee as well as the accommodation semester fee that all students need to pay. This fee of approximately €275,10 (€350,10 if your university is not one of our Erasmus partners) includes the semester ticket, a contribution to the student union and to a DIY bicycle repair workshop. Additional to the semester fee, Erasmus+ exchange students need to pay €180 for the compulsory introduction-week module, which will take place on the Island of

Accommodation

The International Student Office at the University of Oldenburg has a comprehensive advisory service for exchange students and can help with finding a place to live. For example the "Studentenwerk Oldenburg" offers inexpensive accommodation in student residences and helps students to find private accommodation. Exchange students in need of accommodation should fill out the application form for accommodation and send it directly to the International Student Office along with their application for the Erasmus+ programme. You can find more information on their web page:

www.uol.de/en/iso/studieren/



City palace of Oldenburg

Programme Structure

Compulsory modules

M1: Wadden Sea Programme Introduction
– 6 ECTS

M2: Dynamics of the Wadden Sea World Heritage Site
– 6 ECTS

Specialization modules (select up to 3 modules)

M3: Ecology of Marine Microbial Communities
– 6 ECTS

M4: Microbial Ecology of Marine Sediments
– 9 ECTS

M5: Marine Biodiversity Change
– 9 ECTS

M6: Functional Ecology
– 6 ECTS

M7: Coastal Management
– 6 ECTS

M8: Environmental Management
– 6 ECTS

Transcript of records with up to 30 ECTS

The Erasmus+ programme consists of two compulsory modules (1 & 2) with 6 ECTS each. Then, each student can build his or her own curriculum containing up to three modules with 6-9 ECTS each. The selection can be made out of a set of modules on microbiology, biodiversity and ecosystem management.

At the end, you can fulfill this programme with up to 30 ECTS, if you need less credit points for your home university, you can choose less than three of the selective modules.

More information on the content and learning outcomes of the modules can be found in the module handbook.

The curriculum may be subject to change.

Module 1 – Wadden Sea introduction (compulsory)

1st part: Wadden Sea – programme introduction (at the beginning of the programme)

- Excursion to the Wadden Sea Island Spiekeroog – Excursion – 1 ECTS
Get to know each other and the programme
- German language course – Lecture – 2 ECTS

2nd part: Wadden Sea – programme synopsis (at the end of the programme)

- Wadden Sea – Review and reflection of results – Seminar – 3 ECTS

Module 2 – Dynamics of the Wadden Sea World Heritage Site (compulsory)

- Wadden Sea – World Natural Heritage Site – Lecture – 1 ECTS
- Wadden Sea biotopes and nature conservation – Seminar – 2 ECTS
- Regional oceanography – Lecture – 3 ECTS

Module Description

Module 3 – Ecology of Marine Microbial Communities - (elective)

- | | | |
|---|-----------|----------|
| • Biological significance of suspended matter | – Lecture | – 3 ECTS |
| • Microbial ecology | – Lecture | – 3 ECTS |

Module 4 – Microbial Ecology of Marine Sediments - (elective)

- | | | |
|---|-------------|----------|
| • Sediment microbiology | – Lecture | – 3 ECTS |
| • Microbial ecology of marine sediments | – Practical | – 6 ECTS |

Module 5 – Marine Biodiversity Change - (elective)

- | | | |
|---|-------------|----------|
| • Functional consequences of marine biodiversity change | – Seminar | – 3 ECTS |
| • Functional consequences of marine biodiversity change | – Practical | – 6 ECTS |

Module 6 – Functional Ecology - (elective)

- | | | |
|--|-----------|----------|
| • Coastal and regional biotope types | – Lecture | – 3 ECTS |
| • Functional ecology of communities in spatiotemporally heterogeneous landscapes | – Seminar | – 3 ECTS |

Module 7 – Coastal Management - (elective)

- | | | |
|--|-------------|----------|
| • Protected areas and regional development | – Seminar | – 3 ECTS |
| • Integrated coastal zone management | – Excursion | – 3 ECTS |

Module 8 – Environmental Management - (elective)

- | | | |
|--|-----------|----------|
| • Economics and climate change | – Seminar | – 3 ECTS |
| • International environmental governance | – Seminar | – 3 ECTS |

Contact Information



Dr. Ferdinand Esser

Scientific coordinator of the PhD Research Training Groups of the CRC Roseobacter, and EcoMol "The Ecology of Molecules", and of the PhD programme 'Environmental Sciences and Biodiversity'; Departmental Erasmus+ Coordinator

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Dr. Thomas Klenke

Managing coordinator of COAST

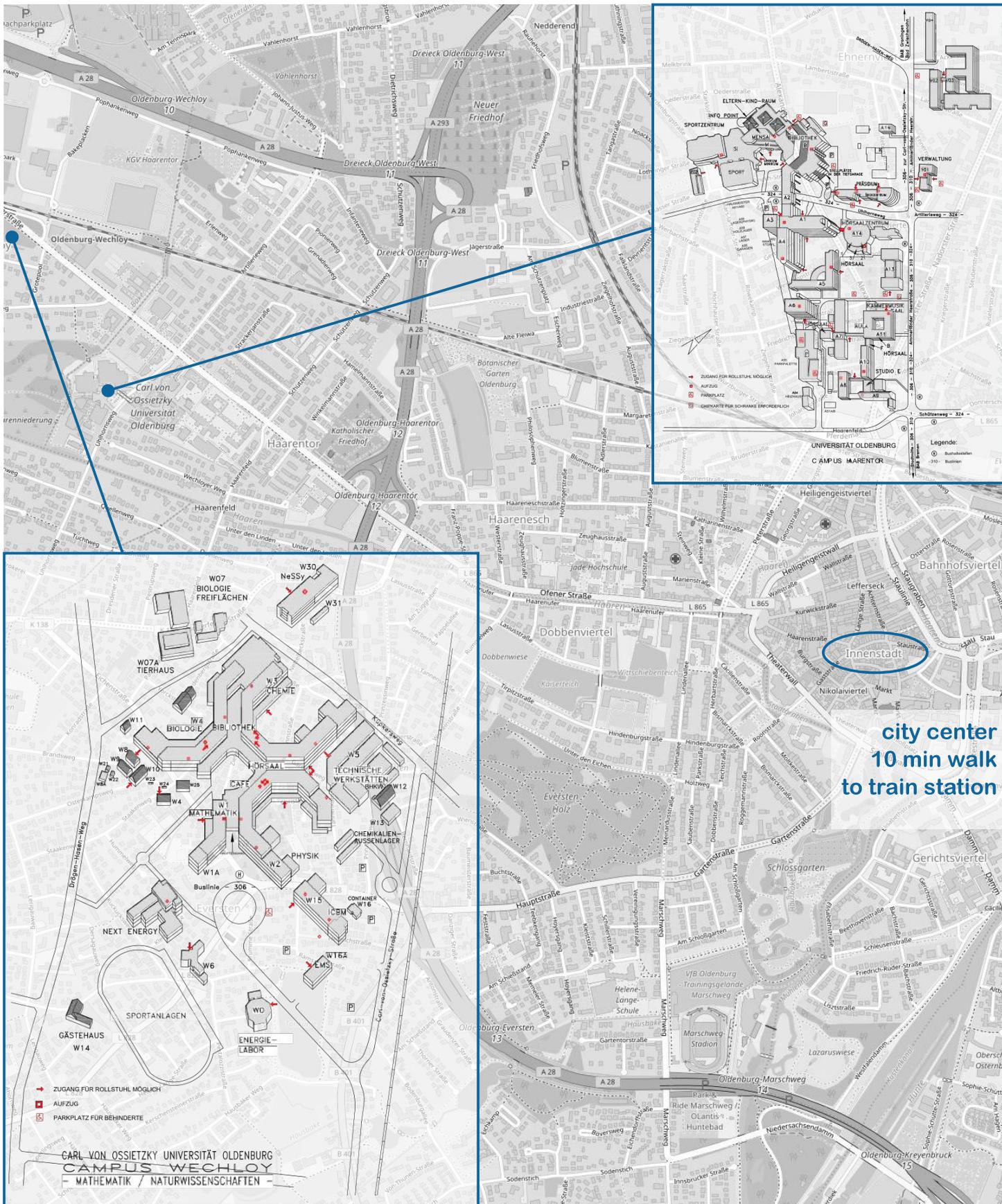
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Campus Map



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