

# Winter semester 2022/23

## Regional Geography, 8 CP

170171 **Regionale Geographie: Puerto Natales – Ecosystem Services in Southern Patagonia (Puerto Natales)**  
 Seminar Registration 30.05.-03.06.2022 via internet on GI page ("News") *Inostroza, Luis*  
 4 SWS

Description:

- 1. Preliminary meeting: Jun 13th 2022, 16:00-18:00, IA 01/131
- 2. Preliminary meeting: October 2022
- Preparatory seminar: 2-day block December 2022 or at the beginning of January 2023, by arrangement
- Excursion: 14 days during February-March 2023, probably Feb. 20th to Mar 05th, 2023

WiSe 2022/23: Puerto Natales – Ecosystem Services in Southern Patagonia (Puerto Natales)		
<b>Course ID</b> 170171	<b>Time, place</b> 1. Preliminary meeting: Jun 13th 2022, 16:00-18:00, IA 01/131 2. Preliminary meeting: October 2022, 10:00-12:00, Room TBD Preparatory seminar: 2-day block December 2022 or at the beginning of January 2023, by arrangement, 10:00-16:00, Room TBD Excursion: 14 days during February-March 2023, probably Feb 20th, to Mar 5th, 2023	<b>Lecturer</b> Luis Inostroza
<b>Course type</b> Seminar and 14 days excursion	<b>Registration</b> Registration 30.05.-03.06.2022 via internet on GI page ("News")	<b>Form of examination</b> Oral presentation and group report
<b>Prerequisites</b> Successful completion of the "Introduction to Scientific Work" (EWA). Interest in Ecosystem Services mapping and urban planning Costs: Flight tickets from Bochum to Punta Arenas have to be afforded by students Accommodation in Puerto Natales will be provided by the Municipality for the 2 weeks Local transport will be also provided for the general needs of the excursion. Individual needs have to be covered by each student Full cost information will be provided during the preparatory meeting		
<b>Target group</b> BSc and BA students with a broad interest in Ecosystem Services (ES) and planning: both physical-geography (provisioning and regulating ES) and human-geography (cultural ES) topics will be covered in this excursion.		
<b>Goals</b> After successfully participating in the seminar and excursion, students will have:		

### WiSe 2022/23: Puerto Natales – Ecosystem Services in Southern Patagonia (Puerto Natales)

- Gained an understanding of ES identification in urban and natural settings;
  - Gained an understanding of the different techniques available for assessing and mapping ES;
  - Gained an overview of the spatial planning system in Chile highlighting the interaction of processes, actors and tools across planning levels to support the integration of ES in Puerto Natales;
  - Developed first-hand insights into the new Puerto Natales city master plan and its challenges;
- Enjoyed the possibility of presenting their work to and interacting with local actors from academia and practice involved in the planning of this city.

#### Contents

Puerto Natales is a small town (18.000 inhabitants) located in one of Chile's most beautiful and natural regions of Chile: Magallanes, southern Patagonia. The town is currently preparing its master plan to guide urban development for the next 20 years. The technical planning department is interested in incorporating the concept of ES into the urban planning of the city. In this context, the municipality is fully supporting this excursion.

The assessments developed for this excursion will be a first insight for the municipality to understand the challenges and opportunities that ES science can offer to urban planning.

The preparatory seminars will consist of two parts: (1) a conceptual introduction to ES science and to the Chilean planning system, and (2) a review of the main assessment methods for ES mapping.

The excursion will include a full site visit to the city of Puerto Natales, focusing on particular ecosystems such as wetlands and the sea coast.

#### Structure

It consists of a preliminary meeting (middle of October 2022), a two-day block seminar (December 2022 or January 2023 TBD), and a 14-days excursion (February/March 2023 TBD). The two-day block seminar will serve as an excursion preparation seminar. The date will be set after the preliminary meeting in October. The seminar will start at 10 a.m. and end at 4 p.m. in room TBD. Participation is compulsory.

The participants will present a paper (20 minutes lecture + abstract/handout; no written elaboration), which will be discussed afterwards. The focus of the presentation will be on two topics: (i) comparative analysis of Swedish vs German Planning Systems and (ii) application of the urban greening concept in the Stockholm region.

The excursion will offer the chance for a 3 days trip to the Torres del Paine National Park. Details of this possibility will be discussed during the preliminary meeting.

#### Accommodation:

Puerto Natales: TBD.

#### Start of excursion:

Meeting point at Municipality of Puerto Natales on date TBD. at 09:00.

#### End of excursion:

Exact date TBD approx. 17:00 pm at the Municipality of Puerto Natales.

Please note: If you book a return flight, please take a departure time from Punta Arenas the day after.

#### Performance requirements:

- Active participation and collaboration in the excursion and preparatory seminar
- A presentation of the main results during the excursion
- Full excursion report (4,000-6.000 words; contents of the excursion must be explained by its course; deadline for submission: Beginning of April 2023)

#### Literature

**WiSe 2022/23: Puerto Natales – Ecosystem Services in Southern Patagonia (Puerto Natales)**

Aldana-Domínguez J, Palomo I, Angonese JG, et al (2019) Assessing the effects of past and future land cover changes in ecosystem services, disservices and biodiversity: A case study in Barranquilla Metropolitan Area (BMA), Colombia. *Ecosyst Serv* 37:100915. <https://doi.org/10.1016/j.ecoser.2019.100915>

Burkhard B, Kroll F, Nedkov S, Müller F (2012) Mapping ecosystem service supply, demand and budgets. *Ecol Indic* 21:17–29. <https://doi.org/10.1016/j.ecolind.2011.06.019>

Burkhard B, Maes J (2017) *Mapping Ecosystem Services*, 1st edn. PENSOFTE Publishers, Sofia

Montoya-Tangarife C, Barrera F De, Salazar A, et al (2017) Monitoring the effects of land cover change on the supply of ecosystem services in an urban region: A study of Santiago-Valparaíso Chile. *PLoS One* 12:1–22. <https://doi.org/10.1371/journal.pone.0188117>

Zepp H, Falke M, Guenther F, et al (2021) China's Ecosystem Services Planning: Will Shanghai Lead the Way? *Erdkunde* 75:271–293. <https://doi.org/https://doi.org/10.3112/erdkunde.2021.04.02>

Zepp H, Inostroza L (2021) Who Pays the Bill? Assessing Ecosystem Services Losses in an Urban Planning Context. *Land* 10:369. <https://doi.org/10.3390/land10040369>

## Bachelor (Elective Modules, 6 CP)

170151 **Geospatial Analysis with Python**  
 Seminar  
 2 SWS  
 Registration 30.05.-03.06.2022 via internet on GI page ("News") *Sismanidis, Panagiotis*

Description:

Block seminar 27.-31.03.2023, 9-17:00, IA 6/171

170156 **DigiGeo**  
 Seminar  
 3 SWS  
 Registration 30.05.-03.06.2022 via internet on GI page ("News") and via mail  
 carsten(dot)juergens(at)rub(dot)de *Jürgens,  
 Carsten  
 Moos, Nicolai  
 Redecker,  
 Andreas.P.*

Description:

5 participants  
 Virtual Exchange Lessons starting 02/2023 and Summerschool 23.- 28.04.2023 in  
 Olomouc, CZ

170165 **Using Nature to reduce Risk from Natural Hazards**  
 Seminar  
 3 SWS  
 Registration 30.05.-03.06.2022 via internet on GI page ("News") *Anderson, Carl*

Description:

1-day seminar for preparation in October; 2 block days 5. and 6. January  
 End of January/beginning of February excursion to Bonn

### WiSe 2022/23: Geospatial Analysis with Python

Course ID	Time, place	Lecturer
170151	Block event 27-31.03.2023, IA 6/171	Panagiotis Sismanidis
Course type	Registration	Form of examination
Block	Registration 30.05.-03.06.2022 via internet on GI page ("News")	Final Project
<b>Prerequisites</b>		
Good understanding of basic geospatial analysis methods. Successful completion of the "Introduction to Programming and Applied Statistics" course.		
<b>Target group</b>		
Undergraduate students with basic experience in programming that want to strengthen their skills in geospatial analysis and harness the power of large datasets. Students who want to specialise in climatology are strongly recommended to take this course!		
<b>Goals</b>		
Manage, analyse, and visualize vector and raster data using Python. Introduce key Python modules like geopandas and rasterio. Automatize basic geometric operations and create efficient workflows for manipulating large volumes of data. Create simple interactive web-maps.		

**WiSe 2022/23: Geospatial Analysis with Python**

**Goals**

This one-week block course focuses on geospatial analysis with Python. Python can be used as a highly efficient alternative to traditional GIS software like QGIS and ArcGIS. It can be used to create sophisticated workflows that enable large scale analysis covering many cities, climates, or ecosystems. Python offers modules for processing and analysing vector and raster data, dealing with different map projections, and creating beautiful interactive web-maps and plots. This course aims to introduce key Python modules, like geopandas and rasterio, and provide hands-on training. The topics covered include reading and writing spatial data (e.g., shapefiles, geojsons, netcds, and geotiffs); reprojections; geometric operations and overlay analysis; basic image processing (clipping, masking, and warping); and data visualization.

**Structure**

One-week of daily lectures and hands-on training.

**Literature**

1. The Coder's Apprentice: Learning programming with Python 3: <http://www.spronck.net/pythonbook/pythonbook.pdf>
2. Geographic Data Science with Python: <https://geographicdata.science/book/intro.html>

**WiSe 2022/23: DigiGeo**

<p><b>Course ID</b> 170156</p>	<p><b>Time, place</b> Preliminary discussion: TBA Virtual Lectures: TBA Summerschool: 23.-28.04.2023</p>	<p><b>Lecturer</b> Carsten Jürgend Nicolai Moos Andreas Redecker</p>
<p><b>Course type</b> Virtuelles Seminar, Summerschool</p>	<p><b>Registration</b> Registration 30.05.-03.06.2022 via internet on GI page ("News") AND via mail carsten.juergens(at)rub(dot)de</p>	<p><b>Form of examination</b> Project work</p>

**Prerequisites**

Adequate English language skills and students' personal motivation are prerequisites for participation in this course. Basic knowledge and skills in geomatics/GIS, cartography/geovisualisation, geography, geography teaching (future geography teachers)  
Das Seminar wird im Rahmen des ERASMUS+ Programmes finanziell gefördert.  
Maximale Teilnehmer:innenzahl 4 Studierende.

**Target group**

Elective module B.Sc. and B.A. from 4th semester on and M.Sc./Ph.D.

**Goals**

The goals of Virtual exchange and summerschool are:

- 1) to educate participants about ways of transferring contact, technology- and field-based education to digital in the sense of methods and tools for geosciences training; to reinforce the quality of contact-based training in fully digital environments,
- 2) to equip students with cutting-edge skills and knowledge in the field, which accelerates their readiness and preparedness for the upcoming digital era in Geosciences education, and consequently at the European labour market,
- 3) to give students a chance to experience digital education at selected hosting institution (from the consortium) by active participation on lectures and practices,

## WiSe 2022/23: DigiGeo

- 4) to reflect on experiences from virtual exchanges, share them with national participants and start discussions about it to stimulate their creativity,
- 5) to organise the Summerschool where all participants meet in-person to share their experiences from the previous virtual part (students will work in international teams at the Summer school) and conduct activities 5), 6) and 7),
- 6) to establish international teams to work on the selected topic for virtual lecture designs by a mix of their specialisation. These digital lecture designs will be consulted with staff members and reviewed/tested by another team. This will require team-to-staff and team-to-team collaboration and discussions,
- 7) to introduce (by staff) and practically test (by students) already pre-developed digital lecture designs by staff members. Lecture-testing will engage students in the activity and help them to "tune" their mindsets into a creative atmosphere of their own lecture designs,
- 8) to transform students experiences, knowledge, skills and ideas about Geosciences digital education into a specific and "tangible" new lecture designs (mutually "playtested"). Creative process of lecture designs is envisioned to be intensive (small "hackaton") to keep students engaged. These new lecture designs will be packed as versatile workbooks (in unified formatting and style).

### Contents

From the blended learning perspective - first, there will be virtual exchanges part (at least three "visits" per student) covering abovementioned points 3) and 4). Students will reflect on their experiences within national teams under the supervision of local staff member. Later, at the beginning of the Summerschool, students will collectively share their experiences with all DigiGeo participants. The physical mobility part represents a 5-days course - Summerschool (April 2022). This is a key activity of the project since the students will have a chance to meet in person, share their experiences and skills, establish international teams, absorb new knowledge from staff lectures and workshops, absorb and adopt cutting-edge technological skills and finally develop their own new lecture designs for Geosciences digital education

### Selection Procedure:

To participate in the course, students are required to register for the Geography Department elective week (Dec. 13-17, 2021) and submit an

Register for the course and submit an individual application. Applications will be accepted in the form of a PDF file via email beginning immediately. These should include the following documents:

- Letter of motivation
- curriculum vitae
- Information on the progress of studies (Transcript of Records, if necessary supplemented by modules whose assessment is still pending).

Deadline for applications is 03.06.2022 at 23:59.

Applications should be sent to:

Prof. Dr. Carsten Jürgens (carsten.juergens@rub.de)

### Structure

3x online/virtual exchange, 5-day summer school in Olomouc

The Summerschool schedule will be as follows:

Day 1 – welcoming part - introduction of the Summerschool and collective discussions about the virtual exchanges (half day); lectures&methodological workshops on pedagogy and geoinformation technologies (UTU, UPOL, half day)

Day 2– lectures&methodological workshops on geography, its equipment and visualisation (RUB, TUW, half day); and technology & VR (NTNU, half day)

Day 3 – intensive teamworks/hackaton - lecture designs creation (with staff "drop-ins") & debriefings

Day 4 – intensive teamworks/hackaton - lecture designs creation (half day); mutual testing of lecture designs & reflection (half day)

**WiSe 2022/23: DigiGeo**

Day 5 –finalising the lecture design workbooks templates (half day); feedback, open discussion, brainstorming & closure (half day)

**Literature**

Will be announced in the seminar

**WiSe 2022/23: Using Nature to reduce Risk from Natural Hazards**

<p><b>Course ID</b> 170165</p>	<p><b>Time, place</b> Synchronous in person. One preliminary meeting in October 2022; 2-day block seminar on January 05 and 06 2023; final meeting and trip to Bonn in January/ February 2023</p>	<p><b>Lecturer</b> Carl Anderson</p>
<p><b>Course type</b> Seminar</p>	<p><b>Registration</b> Registration 30.05.-03.06.2022 via internet on GI page ("News")</p>	<p><b>Form of examination</b> Written report (accepted in English or German as preferred by students)</p>

**Prerequisites**

No formal requirements.

Interest in how society can address risk using green and sustainable measures and the related interactions among hazards, nature, and people.

We will take time to introduce concepts, therefore background knowledge on these themes is not needed.

**Target group**

B.Sc. students

**Goals**

Students will gain an understanding of how we can use nature to address some of the world’s most important issues, with an emphasis on reducing risk from natural hazards in a changing climate.

The topical concept of nature-based solutions will be introduced. Central to the course will be to develop a critical perspective that recognizes the complexity of addressing risk using nature-based solutions, from local to global scales.

Combining basic theories of risk with a practice-oriented understanding of nature-based solutions, students will be able to apply their knowledge to real world case studies.

Finally, through an excursion to Bonn, students will be introduced to actors promoting nature-based solutions and working to address global risk. From this, students will gain an overview of the range of actors, including their perspectives on interrelated issues, with implications for how risk can be addressed using nature-based solutions.

**Goals**

We will start from a historical perspective, discussing basic concepts of risk in the context of human-nature relations. A critical overview of modern global efforts to address risk from natural hazards will be central to this discussion. Two key concepts converge to introduce nature-based solutions: 1) “natural” disasters as *social* phenomena, and 2) the benefits

**WiSe 2022/23: Using Nature to reduce Risk from Natural Hazards**

society gets from nature (i.e., *ecosystem services*). Along with concepts, key terms relevant to the field of research will be introduced and applied, providing a basis for deeper understanding of the material.

We will primarily use a case study approach to explore how risk develops and how nature-based solutions can (potentially) address its root causes while also providing co-benefits to society. For this, taking a global perspective will illustrate the role of social and ecological systems and allow us to position ourselves within our own regional, national, and local context.

Finally, we will go on a field excursion to Bonn - home of the United Nations headquarters in Germany and a wide range of institutions working to reduce global risk and promote nature-based solutions (UNDRR, UNU-EHS, IPBES, GIZ, DIE, DeVAL, etc.). Following the theme of 'complex challenges and complex solutions', a familiarity with international and German organizations will demonstrate the range of perspectives on the issue of global risk and the use of nature-based solutions.

Students will work in groups to prepare for the excursion. Additionally, group presentations will be developed to apply the basic theories from the course to a case study of their choice. This will provide space for developing their interests in relation to types of hazards, global landscapes, different benefits humans derive from nature, and different types of nature-based solutions.

**Structure**

See above

**Literature**

Will be included in the syllabus distributed before the beginning of the course.



## Master (Elective Modules, 6 CP)

170096	<b>Microeconomics of Competitiveness: Firms, Clusters and Economic Development</b>		
Seminar 3 SWS	Tue 09:00-12:00 elective module M.Sc. registration: M.Sc. students Geography central: from 30.05.-03.06.2022 internet-based via internet (news); for other subjects decentralized: mail to Matthias.Kiese(at)rub(dot)de until 30.09.2022.		<i>Kiese, Matthias Rohde, Simon</i>
	Further information: <a href="https://www.geographie.ruhr-uni-bochum.de/studium/moc/">https://www.geographie.ruhr-uni-bochum.de/studium/moc/</a>		
	<u>Description:</u>		
	virtual exchange module		
170097	<b>BISTUS XII: Strategic planning for urban regions: from visions to changes on the ground</b>		
Seminar 2 SWS	12 to 16 December 2022, 16:30 to 19:00 hrs CET, IA 02/111 Registration: Please contact Luis.Inostroza(at)rub(dot)de stating name, matriculation number, and study program. Registration closing October 31, 2022. Places will be allocated on a first come, first serv basis. Please stay informed here: <a href="http://www.geographie.ruhr-uni-bochum.de/studium/bistus">http://www.geographie.ruhr-uni-bochum.de/studium/bistus</a>		<i>Gradinaru, Simona</i>
170149	<b>Research Factory</b>		
Seminar	Registration individually via mail		all lecturers in the MSc. program
	<u>Description:</u>		
	Termine: individually If you are interested in conducting your own project, please contact the lecturer of your choice directly via e-mail. More information can be found on the website (see Modulbeschreibung)		
170156	<b>DigiGeo</b>		
Seminar 3 SWS	Registration 30.05.-03.06.2022 via internet on GI page ("News") and via mail <a href="mailto:carsten(dot)juergens(at)rub(dot)de">carsten(dot)juergens(at)rub(dot)de</a>		<i>Jürgens, Carsten Moos, Nicolai Redecker, Andreas.P.</i>
	<u>Description:</u>		
	5 participants Virtual Exchange Lessons starting 02/2023 and Summerschool 23. - 28.04.2023 in Olomouc, CZ		
170162	<b>Environmental Urban Planning</b>		
Seminar 3 SWS	Mo 14:00-16:00, virtual exchange Registration 30.05.-03.06.2022 via internet on GI page ("News")		<i>Adem Esmail, Blal Albert, Christian</i>
	<u>Description:</u>		
	Virtual exchange Also creditable for TUL - students		

<b>WiSe 2022/23: Microeconomics of Competitiveness: Firms, Clusters and Economic Development</b>		
<b>Course ID</b> 170096	<b>Time, place</b> Tue 9-12, digital synchronous	<b>Lecturer</b> Matthias Kiese Simon Rohde
<b>Course type</b> Seminar	<b>Registration</b> Registration 30.05.-03.06.2022 via internet on GI page ("News") for other subjects decentralized: mail to Matthias.Kiese(at)rub(dot)de until 30.09.2022	<b>Form of examination</b> Term paper
<b>Prerequisites</b> Fluency in English		
<b>Target group</b> Graduate and PhD students		
<p><b>Goals</b></p> <p>Microeconomics of Competitiveness (MOC) is a graduate course created in a multiyear development effort by Professor Michael E. Porter and the staff and affiliates of the Institute for Strategy and Competitiveness at Harvard Business School. The MOC course explores the determinants of competitiveness and successful economic development viewed from a bottom-up, microeconomic perspective. While sound macroeconomic policies, stable legal and political institutions, and improving social conditions create the potential for competitiveness, wealth is actually created at the microeconomic level. The sophistication and productivity of firms, the vitality of clusters, and the quality of the business environment in which competition takes place, are the ultimate determinants of a nation or region's productivity.</p>		
<p><b>Content</b></p> <p>The course has been designed not only for students at Harvard but as a platform that can be taught at universities throughout the world. The course platform consists of case studies and other written materials plus an extensive library of video content that can be used in class including lectures by Prof. Porter for all sessions and videotapes of case protagonists including heads of state, senior ministers, governors, and others.</p> <p>Following Harvard's tradition, the course is based on case studies only. Each session deals with a particular company, region or country case investigating the drivers of competitiveness. As preparation for each session, all students are required to read the respective case of approx. 15 pages. A three-hour session will typically include case discussions in small and large groups, audio-visual inputs featuring Prof Porter and case protagonists, as well as a brief lecture input introducing the key theoretical concept illustrated by the case. As coursework, groups of up to four students prepare a case study analysing the competitiveness of a cluster of their own choice. The best paper will be submitted for a competition with student papers from 120 universities world-wide teaching the MOC course.</p> <p>-</p> <p>For further information, see <a href="http://www.geographie.ruhr-uni-bochum.de/studium/moc">http://www.geographie.ruhr-uni-bochum.de/studium/moc</a></p>		
<p><b>Structure</b></p> <ul style="list-style-type: none"> <li>• Competitiveness: Overall Framework</li> <li>• Competing Across Locations &amp; Global Strategies for Multinational Corporations</li> <li>• The Diamond Model of Competitive Advantage</li> </ul>		

**WiSe 2022/23: Microeconomics of Competitiveness: Firms, Clusters and Economic Development**

- Clusters and Cluster Development
- Institutions for Collaboration
- Economic Strategy for Countries at Different Levels of Development, Regions and Cities
- Creating Shared Value (CSV): The Corporate Role in Social and Economic Development
- Team Project Presentations
- The Process of Economic Development
- Putting Porter into Perspective: Criticism and Alternative Perspectives on Competitiveness

**Literature**

Porter, M. E., 2008: On Competition. (=The Harvard Business Review Book Series). Boston: The Harvard Business School Publishing.

Porter, M.E.; Kramer, M.R., 2011: Creating Shared Value. In: Harvard Business Review, 89(1), S. 62-77.

Porter, M.E.; Takeuchi, H.; Sakakibara, M., 2000: Can Japan Compete? Basingstoke: Macmillan.

**WiSe 2022/2023: (BISTUS XII): Strategic planning of urban regions: from vision to changes on the ground**

<b>Course ID</b> 170097	<b>Time, place</b> Block seminar 12 Dec – 16 Dec, 4:30 pm – 7:00 pm, IA 02/111	<b>Lecturer</b> Dr. Simona R. Gradinaru
<b>Course type</b> Interdisciplinary seminar	<b>Registration</b> Please contact Luis.Inostroza(at)rub(dot)de stating name, matriculation number, and study program. Registration closing <b>31.10.2022.</b> Places will be allocated on a first come, first served basis.	<b>Form of Examination</b> Written (seminar paper)
<b>Prerequisites</b> Basic spatial planning and landscape ecological knowledge		
<b>Target group</b> Master and PhD students		
<b>Goals</b> Understand the role of spatial planning in shaping urban regions. Get to know the strategic planning process, its steps and the actors involved. Get inspired about the mobilizing capacities of spatial concepts. Understand the role of green infrastructures in shaping cities and get an overview of their use in European urban regions. Understand the challenges of managing development in light of the No Net Land Take objective. Get familiar with planning instruments for managing the development and understand the context sensitivity of their efficacy.		

WiSe 2022/2023: (BISTUS XII): Strategic planning of urban regions: from vision to changes on the ground	
<p><b>Contents</b></p> <ol style="list-style-type: none"> <li>1) Role of strategic spatial planning in shaping cities – an overview</li> <li>2) The power of spatial concepts in setting development visions</li> <li>3) Green infrastructures in European urban regions</li> <li>4) Conflicting interests in managing development</li> <li>5) Reaching the No Net Land Take objective – instruments and efficacy</li> </ol>	
<p><b>Structure</b></p> <p>Preparatory reading                      Introductory and deepening lectures                      Group work on selected questions                      Seminar/ group work presentations                      Post-course written seminar paper on selected topic</p>	
<p><b>Literature</b></p> <ul style="list-style-type: none"> <li>○ Hersperger, A. M., Oliveira, E., Pagliarin, S., Palka, G., Verburg, P., Bolliger, J., &amp; Grădinaru, S. (2018). Urban land-use change: The role of strategic spatial planning. <i>Global Environmental Change</i>, 51, 32-42.</li> <li>○ Hersperger, A. M., Grădinaru, S., Oliveira, E., Pagliarin, S., &amp; Palka, G. (2019). Understanding strategic spatial planning to effectively guide development of urban regions. <i>Cities</i>, 94, 96-105.</li> <li>○ Van Duinen, L. (2013). Mainport and corridor: Exploring the mobilizing capacities of Dutch spatial concepts. <i>Planning Theory &amp; Practice</i>, 14(2), 211-232.</li> <li>○ Grădinaru, S. R., &amp; Hersperger, A. M. (2019). Green infrastructure in strategic spatial plans: Evidence from European urban regions. <i>Urban forestry &amp; urban greening</i>, 40, 17-28.</li> </ul>	

WiSe 2022/23: Research factory		
<b>Course ID</b> 170149	<b>Time, place</b> individually	<b>Lecturer</b> all lecturers of GI
<b>Course type</b> SWS: 4 CP: 6	<b>Registration</b> Individual with participating faculty, can be done throughout the semester	<b>Form of examination</b> individually
<b>Prerequisites</b> Special interest in inquiry-based and independent learning under guidance		
<b>Target group</b> Master's students		
<p><b>Goals</b></p> <p>The research workshop at the GI is intended to enable students to work on research projects both individually and in small groups, not bound to a seminar, or to initiate their own small projects outside of a project seminar. The projects can be carried out in a wide variety of subject areas, take place regionally or internationally, be purely geographical but preferably interdisciplinary.</p> <p>Involving students in research practice as early as possible provides them with both a broader and deeper horizon of learning and experience, which will have a positive impact on both the choice of a topic for the master's thesis and later career decisions. The practice of self-organization, independent work and the assumption of responsibility are important goals that should lead to a higher motivation and a stronger commitment to the study and geography.</p>		

## WiSe 2022/23: Research factory

### Content

#### Offered by Andreas Pflitsch:

For the winter semester we offer the following topics:

#### Urban and Terrain Climatology in Germany.

In the context of urban and terrain climatological research, a wide variety of phenomena can be studied, such as measurements of cold air flows, the effect of open spaces for cold air formation or on surrounding buildings, inversion formation in valley areas, the climatic appearance of waste rock piles, the guiding effect of street canyons for air flows, the expression of the urban heat island, and much more.

- Schellenberg ice cave
- Lava caves in Hawaii

In the context of cave research, several projects are currently underway or under construction. Unfortunately, the Schellenberg Ice Cave is only suitable for the winter semester in October. Otherwise gladly again in the SoSe 2023.

For the lava caves on Hawaii the period February/March 2023 would also be suitable.

#### The investigations are about the following topics:

Microclimatology like, air and rock temperatures, humidity, wind currents. Furthermore, the recording and assessment of microorganisms (microbiology) as well as cave surveying by means of laser scanners are concerned. These projects are carried out in cooperation with the University of New Mexico, the Nuremberg University of Applied Sciences, and the local caving associations.

#### Own project idea:

Do you have your own project idea anywhere on this earth? You are also welcome to present it and discuss it with me to check its feasibility.

#### Costs Hawaii:

Accommodation and meals will be provided at the science camp "Akeakamai" in Ocean View on the Big Island. The price includes meals (half board).

The costs for e.g. 8 days for one person will be about € 775 (plus flights). If there are several students who can use a rental car together, for example, this amount will be reduced (students under 25 years of age may incur additional costs). Also, depending on the project, there may be individual changes, but these can be clarified during a preparatory project meeting.

**The price includes:** Meals (half board), own rental car, gasoline (one tank of gas), accommodation, equipment (helmet, knee and elbow pads).

**Not included are:** additional equipment such as sleeping bag and sleeping pad, activities planned by students, and a personal follow-up program in Hawaii or the mainland.

### Structure

If you are interested, please contact the respective lecturer personally and discuss the further procedure individually.

**WiSe 2022/23: Research factory****Literature**

To be announced by the lecturers.

**WiSe 2022/23: DigiGeo**

<b>Course ID</b> 170156	<b>Time, place</b> Preliminary discussion: TBA Virtual Lectures: TBA Summerschool: 23.-28.04.2023	<b>Lecturer</b> Carsten Jürgens Nicolai Moos Andreas Redecker
<b>Course type</b> Virtuelles Seminar, Summerschool	<b>Registration</b> Registration 30.05.-03.06.2022 via internet on GI page ("News") AND via mail carsten.juergens(at)rub(dot)de	<b>Form of examination</b> Project work
<b>Prerequisites</b> Adequate English language skills and students' personal motivation are prerequisites for participation in this course. Basic knowledge and skills in geomatics/GIS, cartography/geovisualisation, geography, geography teaching (future geography teachers) Das Seminar wird im Rahmen des ERASMUS+ Programmes finanziell gefördert. Maximale Teilnehmer:innenzahl 4 Studierende.		
<b>Target group</b> Elective module B.Sc. and B.A. from 4th semester on and M.Sc./Ph.D.		
<b>Goals</b> The goals of Virtual exchange and summerschool are: 1) to educate participants about ways of transferring contact, technology- and field-based education to digital in the sense of methods and tools for geosciences training; to reinforce the quality of contact-based training in fully digital environments, 2) to equip students with cutting-edge skills and knowledge in the field, which accelerates their readiness and preparedness for the upcoming digital era in Geosciences education, and consequently at the European labour market, 3) to give students a chance to experience digital education at selected hosting institution (from the consortium) by active participation on lectures and practices, 4) to reflect on experiences from virtual exchanges, share them with national participants and start discussions about it to stimulate their creativity, 5) to organise the Summerschool where all participants meet in-person to share their experiences from the previous virtual part (students will work in international teams at the Summer school) and conduct activities 5), 6) and 7), 6) to establish international teams to work on the selected topic for virtual lecture designs by a mix of their specialisation. These digital lecture designs will be consulted with staff members and reviewed/tested by another team. This will require team-to-staff and team-to-team collaboration and discussions,		

**WiSe 2022/23: DigiGeo**

7) to introduce (by staff) and practically test (by students) already pre-developed digital lectures designs by staff members. Lecture-testing will engage students in the activity and help them to “tune” their mindsets into a creative atmosphere of their own lecture designs,

8) to transform students experiences, knowledge, skills and ideas about Geosciences digital education into a specific and "tangible" new lecture designs (mutually "playtested"). Creative process of lecture designs is envisioned to be intensive (small "hackaton") to keep students engaged. These new lecture designs will be packed as versatile workbooks (in unified formatting and style).

**Contents**

From the blended learning perspective - first, there will be virtual exchanges part (at least three "visits" per student) covering abovementioned points 3) and 4). Students will reflect on their experiences within national teams under the supervision of local staff member. Later, at the beginning of the Summerschool, students will collectively share their experiences with all DigiGeo participants. The physical mobility part represents a 5-days course - Summerschool (April 2022). This is a key activity of the project since the students will have a chance to meet in person, share their experiences and skills, establish international teams, absorb new knowledge from staff lectures and workshops, absorb and adopt cutting-edge technological skills and finally develop their own new lecture designs for Geosciences digital education

**Selection Procedure:**

To participate in the course, students are required to register for the Geography Department elective week (Dec. 13-17, 2021) and submit an

Register for the course and submit an individual application. Applications will be accepted in the form of a PDF file via email beginning immediately. These should include the following documents:

- Letter of motivation
- curriculum vitae
- Information on the progress of studies (Transcript of Records, if necessary supplemented by modules whose assessment is still pending).

Deadline for applications is 03.06.2022 at 23:59.

Applications should be sent to:

Prof. Dr. Carsten Jürgens (carsten.juergens@rub.de)

**Structure**

3x online/virtual exchange, 5-day summer school in Olomouc

The Summerschool schedule will be as follows:

Day 1 – welcoming part - introduction of the Summerschool and collective discussions about the virtual exchanges (half day); lectures&methodological workshops on pedagogy and geoinformation technologies (UTU, UPOL, half day)

Day 2– lectures&methodological workshops on geography, its equipment and visualisation (RUB, TUW, half day); and technology & VR (NTNU, half day)

Day 3 – intensive teamworks/hackaton - lecture designs creation (with staff “drop-ins”) & debriefings

Day 4 – intensive teamworks/hackaton - lecture designs creation (half day); mutual testing of lecture designs & reflection (half day)

Day 5 –finalising the lecture design workbooks templates (half day); feedback, open discussion, brainstorming & closure (half day)

**Literature**

Will be announced in the seminar

<b>WiSe 2022/23: Environmental Urban Planning</b>		
<b>Course ID</b> 170162	<b>Time, place</b> Mon 14-16:00, virtual exchange	<b>Lecturer</b> Blal Adem Esmail Christian Albert
<b>Course type</b> Seminar	<b>Registration</b> Registration 30.05.-03.06.2022 via internet on GI page ("News")	<b>Form of examination</b> A written report
<b>Prerequisites</b> No formal requirements. Some prior understanding of spatial planning is advantageous		
<b>Target group</b> Students at MSc. level or equivalent		
<b>Goals</b> The learning objective of the course is to gain an understanding of interdisciplinary perspectives on the options, methods and implications of <b>environmental planning in urban contexts</b> . The course will expose students to the state of knowledge of research and practice around environmental planning, with a specific focus on ecosystem services, and actively engage them in discussions of current literature and emerging ideas. In addition, through a case study application, students will gain hands-on experience on planning for ecosystem services to address specific societal challenges.  Having successfully passed the module, the students <ul style="list-style-type: none"> <li>• have gained a critical understanding of key concepts of environmental urban planning,</li> <li>• have a knowledge of the tasks and structure of landscape and spatial planning in Germany and Europe, with some perspectives from outside Europe,</li> <li>• comprehend how environmental urban planning can contribute to the conservation and sustainable use of biodiversity and ecosystem services,</li> <li>• are familiar with important instruments of landscape and environmental planning,</li> <li>• have gained some hands-on experience in a small collaborative spatial planning exercise.</li> </ul>		
<b>Content</b> The course will cover a range of issues in the field of environmental urban planning, including <ul style="list-style-type: none"> <li>• Definitions of landscape and environment</li> <li>• Systems, theory and methods of spatial and environmental planning</li> <li>• Instruments for proactive and reactive environmental planning</li> <li>• Options of environmental urban planning for biodiversity and ecosystem services</li> <li>• Practical applications of collaborative urban planning</li> </ul>		
<b>Structure</b> Lectures, group discussions, hands-on planning sessions		
<b>Literature</b> Will be announced at the beginning of the event.		