MSc Environmental Governance
Faculty of Environment and Natural Resources

Module Handbook

Winter Semester 23/24 & Summer Semester 2024

Albert-Ludwigs-Universität Freiburg

UNI FREIBURG

MEG | M. Sc. Environmental Governance

Albert-Ludwig-University Freiburg

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Programme Overview

The M.Sc. -programme Environmental Governance (MEG) was established in 2005 to train leaders to be able to reconcile different social perspectives with regard to the sustainable use of environmental resources as a basis for sustainable development - for any development, at any scale from local to global, and in any context worldwide. The Programme targets future leaders with grand, innovative ideas about environmental governance arrangements beyond the traditional functional, structural and territorial boundaries ('sustainability designers'). The ideal MEGgie embraces and understands the complexities of sustainable development, but is also capable of finding ways to implement solutions in organisations, enterprises and administrations in a context-sensitive manner ('sustainability facilitators').

MEG is accredited in accordance with international standards for higher education and in 2006, the German Academic Exchange Service (DAAD) acknowledged the programme as a *Development-Related Postgraduate Course* and thus offers a limited number of DAAD/EPOS scholarships.

Aim

The MEG Programme aims at:

Realizing - The development of a sound knowledge base of the most pressing environmental issues facing the planet and their underlying societal causes;

Understanding - The reflection on human-environment interactions from a wide spectrum of disciplines, approaches, and world-views;

Managing - The provision of methodological knowledge and skills for the context-sensitive design and management of environmental governance processes.

Structure

The MEG study programme is designed as a two-year (4 semesters), full-time programme. In total, 120 credits are required for the successful completion of the programme. An internship of at least seven weeks and a master thesis are also incorporated into the curriculum.

The university of Freiburg runs its programmes in a semester system of winter (begin October 1st) and summer (begin April 1st): in the winter semesters, each module on offer in MEG runs the entire semester long and meets weekly for lectures and other scheduled group works. The summer semester consists of a sequence of intensive 3-week block modules.

All modules include some form of assessment (project, presentation, oral examination, written exam or paper or a combination there of). The advantage of the varied modular structure is that it offers a great deal of space for tailored-to-content learning and teaching. An important feature of

the modularised course system is that the students play an active role at all levels, including teaching and research. The course system not only conveys specialised knowledge, but also trains students to handle scientific methods with confidence. Key qualifications are supported through a number of techniques, such as discussions, presentations, working groups and written assignments. Students earn 5 ECTS (European Credit Transfer System) credits upon successful completion of each module. The modules are classified as either core or elective.

A typical week of a module consists of approximately 25 hours of lectures. It is expected that students spend about the same amount of time on work related to the course outside of the normal lecture hours. The yearly workload is 1800 hours.

Internship

An internship (10 ECTS) of a minimum duration of 7 weeks (full time) is mandatory for successful completion of the program. It is usually completed during the lecture-free periods between the second and third semester, but can also be carried out flexibly at another time, if required. The internship should provide students with a first insight into potential employment sectors; in all sectors this is primarily achieved by practical work. Students should experience typical work processes and the human interactions in the organization ('everyday work experiences'). Additionally, students should become familiar with the structures within an organization, as well as the interconnections with external systems. Furthermore, the expert knowledge gained in the course of the studies should be intensified and, to a certain degree, applied during the practical training. Students are highly encouraged to spend their internship abroad. More information, guidelines, and necessary documents can be found under this link and a short module description on page 40 of this hand book.

Master Thesis

Many people see the writing of an M.Sc.-thesis (30 ECTS) as the coronation of higher academic education. And indeed, the importance of the thesis work is also reflected by the prominent role it takes within the whole M.Sc.-programme. After completing core and elective subjects in the educational programme, the M.Sc.-thesis offers the challenge to set up and to carry out a scientific research project in an almost fully self-responsible manner, but under the guidance of an experienced supervisor. The Master's Thesis is completed in a set time-period of six months and can be started after 70 ECTS have been earned. More information, guidelines, and necessary documents can be found under this link and a short module description on page 65 of this hand book.
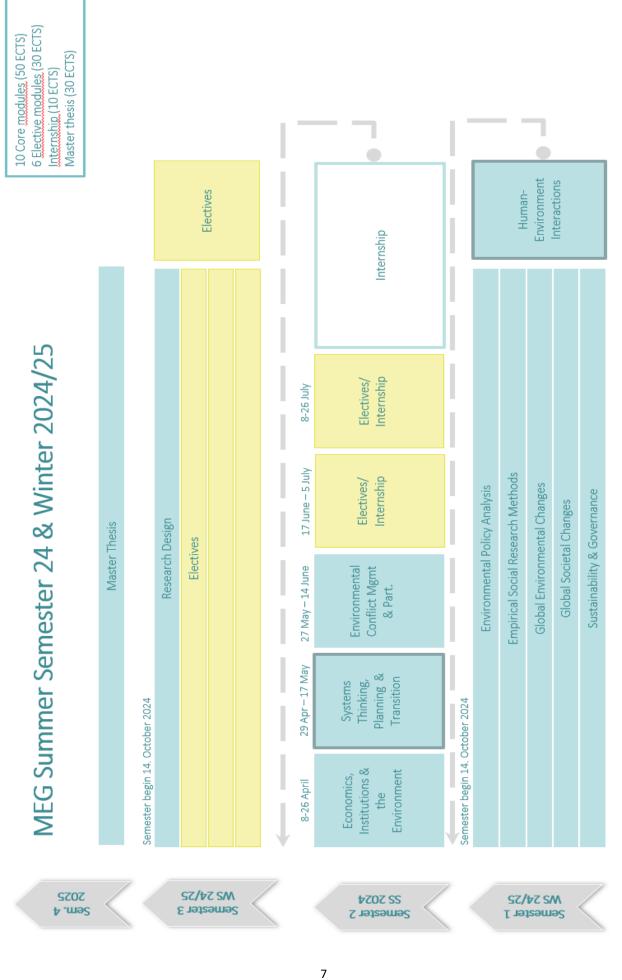
Language

The programme and its core and elective modules are taught entirely in English. For admission into an elective module from another programme, proof of a C1 language level in the Common European Framework is required. Native speakers are exempt from this obligation. Participation in core modules is reserved for those students admitted to the MSc Environmental Governance programme.

Module Descriptions

In the following module descriptions, *learning goals and qualifications* are classified into a common categorization. This classification builds on a taxonomy of educational objectives, most commonly known as *Bloom's Taxonomy*, which was developed by a group of measurement specialists under the coordination of Benjamin S. Bloom in the 1950s. Here, a revised taxonomy of educational objectives (following Anderson & Krathwohl, 2001) is applied. This classification comprises the following categories:

1   *Remember*:   retrieving relevant knowledge from long-term memory

2   *Understand*:   determining the meaning of instructional messages (interpreting, exemplifying, summarizing…)

3   *Apply*:   carrying out or using a procedure in a given situation

4   *Analyze*:   breaking material into its constituent parts and detecting how the parts relate to one another and to an overall structure or purpose

5   *Evaluate*:   making judgment based on criteria and standards

6   *Create:*   putting elements together to form a novel, coherent whole or make an original product

MEG Summer Semester 24 & Winter 2024/25

10 Core modules (50 ECTS)
6 Elective modules (30 ECTS)
Internship (10 ECTS)
Master thesis (30 ECTS)

Sem. 4 2025

Master Thesis

Semester 3 WS 24/25

Semester begin 14. October 2024

Research Design

Electives

Electives

Semester 2 SS 2024

8-26 April

Economics, Institutions & the Environment

29 Apr – 17 May

Systems Thinking, Planning & Transition

27 May – 14 June

Environmental Conflict Mgmt & Part.

17 June – 5 July

Electives/ Internship

8-26 July

Electives/ Internship

Internship

Semester 1 WS 24/25

Semester begin 14. October 2024

Environmental Policy Analysis

Empirical Social Research Methods

Global Environmental Changes

Global Societal Changes

Sustainability & Governance

Human-Environment Interactions

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Albert Ludwig University Freiburg

Winter Semester 2024
1. Semester

Time of day	Mondays	Tuesdays	Wednesdays	Thursdays	Fridays	3 Week Module 19. February - 8. March 2024
Mornings 8-12	Global Environmental Changes Orth R100	Empirical Social Research Methods Espinosa R400	Reserved for course/group work & excursions	Environmental Policy Assessment Kruse R102	Reserved for course/group work & excursions	Human-Environmental Interactions Pregernig HH5
Afternoons 14-18	Reserved for course/group work & excursions	Global Societal Changes Fünfgeld R400	Reserved for course/group work & excursions	Sustainability & Governance Pregernig/Schanz R102	Reserved for course/group work & excursions	

MEG Core Module

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Winter Semester 2023/24
3. Semester

Time of day	Mondays	Tuesdays	Wednesdays	Thursdays	Fridays		3 Week Module 19. February – 8. March 2024
Mornings 8-12	Environmental Conflict Management & Participation — Pregernig — R400 — Start 6. November 2023	Reserved for course/group work & excursions	Forest & Rural Development* — Schmidt-Vogt — R400 — Start 8.November 2023	Decolonizing Climate Change — John — R210 — Start 9. November 2023	Introduction to Sustainability Transitions — Bauknecht — R200 — Start 20. October 2023		Technology Assessment — Späth — R310
Afternoons 14-18	Reserved for course/group work & excursions	Life Cycle Management — Pauliuk — R100 — Start 17. October 2023	Reserved for course/group work & excursions	Research Design** — Schäpke — R102 — Start 6. November 2023	Reserved for course/group work & excursions		Environmental Energy Transition Law — Zengerling — R200; Carbon Forestry — Bauhus/Reinecke

MEG Core Module   **MEG Elective Module**

*The course Regulation & Assessment of the Energy Transition is also available in this block to those that do not need the core module FRD. Please inquire with the MEG Coord.

** It is encouraged that all MEGs take the Research Design module. The module Economics of Biodiversity & Ecosystem Services is also available in this block. Please inquire with the MEG Coord.

Summer Semester 2024

2. Semester MSc Environmental Governance (MEG)

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Core Block 1: 8.-26.04.2024	Core Block 2: 29.4-17.05.2024	Core Block 3: 27.5-14.06.2024	Elective Block 1: 17.6-05.07.2024	Elective Block 2: 08.-26.7.2024
Economics, Institutions and the Environment Baumgärtner	Systems Thinking, Planning & Transitions Schanz	Environmental Conflict Management & Participation Pregernig	Ecosystem Management Pregernig/de Jong Sustainability Law & Transformation Zengerling Intersectional Lessons for Sustainable Futures Mölders	Environmental Psychology & Sociology Espinosa/Henn Global Sustainability Transitions in Local Contexts Zengerling/Schmidt Theory & Practice of Transformation Roehl/Adam
R400	R100	R100		

MEG Core Module

MEG Elective Module

It is possible for MEGs from generations previous to MEG 19 to take the newly designated Systems Thinking and Environmental Conflict Management modules as electives.

1st Semester

Winter Term 23/24

Module number	Module name
94115	Sustainability and Governance

Course of study	Type of course	Semester / Rotation
M.Sc. Environmental Governance	Core module	1st / Winter Term

Teaching methods	Prerequisites for attendance	Language
Lecture, excursions, group work "Corona provision": mostly "in physical presence", if possible; otherwise, party as hybrid format	None	English

Type of examination (Final Grade Composition) PL Individual poster (20%) PL Short answer written exercise (80%), 90 minutes	ECTS-LP (Workload) 5 (150h, of this 60 contact hrs.)

Module coordinator Prof. Dr. H. Schanz, e-mail: heiner.schanz@envgov.uni-freiburg.de	SWS 4

Additional teachers involved

Prof. Dr. U. Schmidt, e-mail: uwe.e.schmidt@ifp.uni-freiburg.de;

Prof. Dr. M. Pregernig, e-mail: michael.pregernig@envgov.uni-freiburg.de

Syllabus

'Sustainable development' is an ambivalent term: it stands out both for its strong political appeal and its high degree of analytical vagueness. Based on a historical overview of natural resource conservation efforts, students become familiarized with the cultural roots of the concept and major shifts in its meaning. Today, sustainable development is a concept used in many different forms in at least as many different contexts. The module highlights the importance of the concept in local, national and international political processes. It critically assesses the opportunities, as well as the challenges, of operationalizing sustainable development, *inter alia,* by means of criteria, indicators and application of the 'Sustainability Matrix' approach. Different approaches to sustainable development are illustrated using examples of urban development, natural resource conservation, and development cooperation.

Sustainable development requires adequate *governance* processes. Although governance has received increasing attention as a research object from many disciplines, no simple understanding of the term has evolved yet. Students will be introduced to different meanings, modes and theoretical approaches to the concept of governance. Their respective promises and pitfalls in relation to the conservation of natural resources and sustainable development will be elaborated based on case studies from different regions of the world.

The key topics of this module will be imparted by means of interactive lectures ('Socratic teaching'), guided reading exercises, excursions, and the preparation and presentation of cases in groups.

Learning goals and qualifications

In this module students learn to:

– describe the history of natural resource conservation efforts and their link to sustainable development (1);

– understand the interests and world views that have influenced the discourse on 'Sustainable Development' in the various phases of its diffusion (2);

– identify challenges of assessing sustainability by means of indicators, and develop the capacity to deal with conflicts that may result from trade-offs and diverging priorities (3);

– identify and interpret the different meanings, modes and theoretical approaches of the governance concept (2);

- understand the changing roles of governments, private sector actors, and civil society in the governance of human-environment interactions (2);
- apply basic literature and internet research skills (3);
- demonstrate basic presentation skills (3).

Classification of cognitive skills following Bloom (1956):

1 = *Knowledge*: recalling facts, terms, basic concepts and answers; 2 = *Comprehension*: understanding something; 3 = *Application*: using a general concept to solve problems in a particular situation; 4 = *Analysis*: breaking something down into its parts; 5 = *Synthesis*: creating something new by putting parts of different ideas together to make a whole; 6 = *Evaluation*: judging the value of material or methods.

Core readings

A list of relevant texts will be made available at the start of the course; obligatory readings (and part of the voluntary readings) will be made available online in electronic form.

Agrawal, Arun & Lemos, Maria C. (2007): A Greener Revolution in the Making? Environmental Governance in the 21st Century, Environment: Science and Policy for Sustainable Development, 49/5: 36-45.

Dryzek, J.S. (2005): Environmentally Benign Growth: Sustainable Development. The Politics of the Earth: Environmental Discourses. J. S. Dryzek. Oxford, Oxford University Press: 145-152.

Schmidt, U.E. (2002): Der Wald in Deutschland im 18. und 19. Jahrhundert. Saarbrücken: Conte. (excerpts translated into English)

Module number	Module name	
94135	Global Societal Change	

Course of study	Type of course	Semester / Rotation
M.Sc. Environmental Governance	Core module	1st / Winter Term

Teaching methods	Prerequisites for attendance	Language
Lectures, group work, excursion	None	English

Type of examination (Final Grade Composition)	ECTS-LP (Workload)
SL Group presentation (not graded)	5 (150h, of this 60 contact hrs.)
PL Written Group work (20%)	
PL Written exam (80%), 120 minutes	

Module coordinator	SWS
Hartmut Fünfgeld: hartmut.fuenfgeld@geographie.uni-freiburg.de	4

Additional teachers involved

Various guest experts

Syllabus

Increasing attention has been paid to global environmental issues in the last decades. However, a deeper understanding of material and physical phenomena requires looking at emerging global societal trends.

In this module, students are introduced to the theoretical and practical dimensions of global societal change as processes encompassing transformations in social, political and economic structures that shape and interact with environmental changes. Major societal trends explored include globalization, technological changes, geopolitics, economic (de)growth and structural change, demography, including urbanization and migration as well as consumption patterns. Overall, students are invited to reflect on the current global patterns of production and consumption in a context constrained by environmental problems and inter- and intra-generational inequalities. They are required to apply concepts and theories to case studies presented in class.

Learning goals and qualifications:

In this module students learn to:

- Understand key trends of global societal change, their interactions and role as drivers of global environmental change in a system dynamics perspective (2);
- Compare the effects of global societal changes on different social groups and regions, considering their historic origins and persistent power imbalances (2);
- Evaluate different theoretical approaches and explanatory frameworks that attempt to give account of global societal change (5);
- Analyse case studies transferring scientific concepts to applied problems and present findings (6);
- Exemplify theoretical constructs with real life examples (2);
- Comprehend applied engagement and work in the area of global societal change (6).

Classification of cognitive skills following Bloom (1956):

1 = *Knowledge*: recalling facts, terms, basic concepts and answers; 2 = *Comprehension*: understanding something; 3 = *Application*: using a general concept to solve problems in a particular situation; 4 = *Analysis*: breaking something down into its parts; 5 = *Synthesis*: creating something new by putting parts of different ideas together to make a whole; 6 = *Evaluation*: judging the value of material or methods.

Core readings:

A list of relevant texts will be made available at the start of the course; obligatory readings (and part of the voluntary readings) will be made available online in electronic form. The following are some of the preliminary readings:

Castells, Manuel (2000): Towards a sociology of the network society. In: Contemporary Sociology, 29, 5, p. 693-699.

Johnston, R.J. et al. (Eds.) (2002): Geographies of global change: Remapping the World. Oxford, Second Edition, Part I and III.

Knox, P.L./ Marston, S. (2004): Places and regions in global context : human geography. 3rd. Ed. Prentice Hall.

Senge, P.M. (2010): The Fifth Discipline: The Art and Practice of the Learning Organization. Cornerstone.

Bojer, M.M., Roehl, H. et al. (2008): Mapping Dialogue: Essential Tools for Social Change. Chagrin Falls, OH: Taos.

Module number	Module name	
94125	Global Environmental Changes	

Course of study	Type of course	Semester / Rotation
M.Sc. Environmental Governance	Core module	1st / Winter Term

Teaching methods	Prerequisites for attendance	Language
Lectures, question & discussion sessions with lecturers, exercises and group workshops with short presentations	None, but exercises and group workshop attendance is highly recommended as they are direct practice for exams	English

Type of examination (Final Grade Composition)	ECTS-LP (Workload)
Poster presentations each 50 % of the final grade	5 (150h, of this 50 contact hrs.)

Module coordinator	SWS
Rene Orth, e-mail: rene.orth@ecoclim.uni-freiburg.de	4

Additional teachers involved

Josephin Kroll, e-mail: josephin.kroll@ecoclim.uni-freiburg.de

Syllabus

The course will provide an introduction into the most important global environmental change issues, such as global warming, associated climatic disasters, land use change, water scarcity and quality deterioration, pollution, soil and ecosystem degradation, forest loss, and others. The module aims to familiarize students with the biophysical processes of selected environmental changes and the research approaches employed to detect and investigate them. Students will be learn how to gather and judge information about climatic and environmental change research results and the social relevance of the changes in different regions around the world. Focus will lie on critical assessment of scientific information for mitigation and adaptation options. Students will be able to critically review derived statements and concerted international assessments on the future state of the environment and understand the sources of uncertainties from different research methods in climate and environmental sciences.

This competence will be applied in several different exercises that take advantage of the experience from students who have lived in different climate zones and environments around the world. Exemplary questions addressed will include:

1. Which climatic trends and changes are present in a region? Which environmental sectors are affected? How (well) are they studied and what information/evidence do we have? How uncertain/reliable is the available information?

2. What are the dimensions of these problems? How do they affect humans and society? Who is vulnerable and relevant is it in different regions? Are there adaptation options? Which feedbacks, which hurdles may need to be considered?

Against this background, the quality and reliability of scientific information, research ethics, and the role of concerted assessments are discussed.

Learning goals and qualifications

In this module students learn to:

- understand the most pressing global environmental issues (2);
- understand how these issues are studied and assessed
- the important models and assumptions used to predict future environmental conditions, and the uncertainties associated with them (3);
- develop the capacity to assess scientific information critically (5);
- reflect on the role of science in society (4, 5).

Classification of cognitive skills following Bloom (1956):

1 = *Knowledge*: recalling facts, terms, basic concepts and answers; 2 = *Comprehension*: understanding something; 3 = *Application*: using a general concept to solve problems in a particular situation; 4 = *Analysis*: breaking something down into its parts; 5 = *Synthesis*: creating something new by putting parts of different ideas together to make a whole; 6 = *Evaluation*: judging the value of material or methods.

Development of the following qualifications is supported through:

- literature research, reading/assessing
- exercises of environmental data scrutinization and interpretation
- debating scientific results and synthesis documents

Core readings

A list of relevant texts will be made available at the start of the course; obligatory readings (and part of the voluntary readings) will be made available online in electronic form.

Module number	Module name		
94165	Empirical Social Research Methods		
Course of study		Type of course	Semester / Rotation
M.Sc. Environmental Governance		Core module	1st / Winter Term
Teaching methods		Prerequisites for attendance	Language
Lectures, workshop, group work		None	English
Type of examination (Final Grade Composition)			ECTS-LP (Workload)
PL Multiple individual written assignments (40%) PL Research Report ca. 1000 words (30%) PL Group presentations (30%)			5 (150h, of this 60 contact hrs.)
Module coordinator			SWS
Dr. Cristina Espinosa, e-mail: cristina.espinosa@envgov.uni-freiburg.de			4

Additional teachers involved

 Dr. Thomas Falk and t.b.a.

Syllabus Due to their inherent complexity, empirical social research has become decisive for generating data that helps to identify, describe, and explain socio-environmental problems to multiple actors and developing corresponding solutions. This course aims at deepening participants' knowledge of empirical social research practices, as well as at providing them opportunities for a hands-on-application of methods of data collection, analysis and reporting.

The course starts by posing key questions such as: "Why do we need empirical social research?", "How do social scientist go about their craft?" and "What factors influence their social scientific praxis?". After exploring central concepts and strategies of empirical social research, course participants delve into widely used research methods of data collection and analysis. These methods include quantitative surveys and expert interviewing. Students learn how to design, test and implement a survey and develop the skills to analyze the obtained data. Likewise, students acquire key competences for conducting qualitative interviews. They further become familiar with strategies for managing interview materials, such as transcription techniques and memo writing, and learn to analyze these materials systematically.

Because one of the main stages in an empirical social research project is writing, throughout this course, participants sharpen their academic writing. They practice how to formulate a clear analytical edge, how to maintain a stringent line of argumentation, and how to use proper scientific language. Special attention is given to the *coherence* of scientific texts (i.e. overall structure, logic and content), *cohesion* (i.e. the links within the text, including signposting, conjunctions and relative pronouns, in written English), *register* (i.e. the degree of formality), and *flow* (i.e. writing in a clear academic style that helps the reader to move through the text and grasp the main ideas without undue effort). Students apply these skills in written assignments.

Learning goals and qualifications:

In this module students will learn to:

- – appraise central considerations influencing the design and implementation of empirical social research (2);
- – design, conduct and analyze quantitative surveys and qualitative interviews(2, 3, 4);
- – convey findings of social scientific research in written and oral formats (5)
- – understand common expectations and conventions of academic writing and apply them to written assignments (2, 3).

Classification of cognitive skills following Bloom (1956):

1 = *Knowledge*: recalling facts, terms, basic concepts and answers; 2 = *Comprehension*: understanding something; 3 = *Application*: using a general concept to solve problems in a particular situation; 4 = *Analysis*:

breaking something down into its parts; 5 = *Synthesis*: creating something new by putting parts of different ideas together to make a whole; 6 = *Evaluation*: judging the value of material or methods.

Core readings

Bryman, A. (2015). "The nature of quantitative research". *Social Research Methods*. Oxford: Oxford University Press, pp.148-169.

Flick, U. (2022). Interviewing experts and elites. *Doing Interview Research. The Essential How To Guide* (pp. 199-218). Thousand Oaks; London; New Dehli; Singapore: SAGE.

Swales, J. and C. B. Feak (2012). *Academic writing for graduate students: essential tasks and skills.* Ann Arbor: University of Michigan Press.

Module number 942255	Module name Environmental Policy Analysis		
Course of study M.Sc. Environmental Governance		Type of course Core module	Semester / Rotation 1st / Winter Term
Teaching methods Lecture, group work		Prerequisites for attendance None	Language English
Type of examination (Final Grade Composition) Literature Seminar individual critical paper analysis (10%) Case study Poster Group Presentation (%50) Individual Written Assignment (40%)			ECTS-LP (Workload) 5 (150h, of this 60 contact hrs.)
Module coordinator Dr. Sylvia Kruse, E-mail: sylvia.kruse@ifp.uni-freiburg.de			SWS 4
Additional teachers involved			

Syllabus

In the first part of the course, we will critically review classical and contemporary theories of political sciences and their application in environmental policy analysis. We will start with an introduction to policy analysis delivering both an overview of different theoretical and analytical approaches to public policy analysis as well as a detailed examination of the policy cycle. Building on this we will work our way through selected theoretical frameworks that range from positivistic and rational approaches to theories that seek to give account for the role of ideas and beliefs. Both in the literature seminars and in real case applications we practice and critically reflect how policy analysis approaches help to understand environmental policy processes and policy change.

The second part of the course focuses on the practical application of the knowledge that you gained in the previous weeks and your critical analytical skills. In a team, you will work on a real-life case study of your choice and operationalize one theoretical approach to analyze it.

You will engage with other teams during the process to exchange ideas and receive feedback. You will present your results with a poster and a short poster pitch presentation at the end of the semester. By applying your theoretical knowledge and your skills in scientific argumentation, you will further train your analytical and critical capacities by writing a short reflective essay on the application of public policy theories in the analysis environmental policy processes building on the cases studied in the course. We finish the course with a wrap-up and evaluation session.

Learning goals and qualifications:

In this course, you will learn how to analyse environmental policy and governance arrangements as well as environmental conflicts from a public policy perspective. In particular, you will be able to differentiate basic concepts of political science and assess their usefulness for policy analysis and

environmental governance;

evaluate political theories, concepts, perspectives and approaches of public and environmental policy analysis;

operationalize and apply one theoretical approach to analyse a real-life case study

understand the elements affecting the processes of environmental policymaking in case study research;

critically reflect on environmental policy analysis research.

Core readings

A list of relevant texts will be made available at the start of the course.

Module number	Module name
94145	Human-Environment Interactions

Course of study	Type of course	Semester / Rotation
MSc Environmental Governance	Core module	1st / Winter Term
MSc Forest Sciences	Elective module	3rd / Winter Term
MSc Environmental Sciences	Elective module	3rd / Winter Term

Teaching methods	Prerequisites for attendance	Language
lecture, group work	None	English

Type of examination (Final Grade Composition)	ECTS-LP (Workload)
PL Group work poster and presentation (50%) PL Written exam (50%), 90 minutes	5 (150h, of this 60 contact hrs.)

Module coordinator	SWS
Prof. Dr. M. Pregernig, e-mail: michael.pregernig@envgov.uni-freiburg.de	4

Additional teachers involved
Prof. Dr. M. Shannon

Syllabus

All people live within an environmental context and all societies have developed ways of managing their interactions with their environment. This course explores the various ways in which societies organize and manage relationships with their environmental context, and their use and appreciation of natural resources. Social institutions can take many forms: rituals, traditions, informal practices, and formalized procedures.

In the first part, this course will focus on key concepts to understand human-environment interactions (incl. property, resources and institutions); in the second part, it will deal with various conceptual frameworks of environmental management. Throughout the course, experienced scholars and PhD students will present and discuss integrated case studies.

Students will have a core set of readings to introduce them to the main institutions for managing human environment interactions. Student teams will chose a real-world case study of problematic human-environment interactions and will analyze this case study based on the concepts introduced and discussed in class. In general, classes will be a mix of lecture and discussion for which students have prepared the readings in advance.

Learning goals and qualifications:

In this module students learn to:

- – understand of the ways in which societies organize and manage human-environment relationships (2);
- – recognize the necessity of an interdisciplinary approach to manage human-environment systems (2);
- – develop the capacity to assess institutional arrangements (5);
- – reflect on approaches to manage human-environment interactions (5);
- – improve problem solving skills and time management (3);
- – demonstrate a high level of creativity during group work (3).

Classification of cognitive skills following Bloom (1956):

1 = *Knowledge*: recalling facts, terms, basic concepts and answers; 2 = *Comprehension*: understanding something; 3 = *Application*: using a general concept to solve problems in a particular situation; 4 = *Analysis*: breaking something down into its parts; 5 = *Synthesis*: creating something new by putting parts of different ideas together to make a whole; 6 = *Evaluation*: judging the value of material or methods.

Core readings

A list of relevant texts will be made available at the start of the course; obligatory readings (and part of the voluntary readings) will be made available online in electronic form.

McKean, Margaret A. (2000): Common Property: What Is It, What Is It Good For, and What Makes It Work? In: Gibson, Clark, McKean, Margaret A. & Ostrom, Elinor (eds) People and Forests: Communities, Institutions, and Governance. Cambridge, MA: MIT Press. 27–56.

Holling, C.S. (2001): Understanding the Complexity of Economic, Ecological, and Social Systems. Ecosystems, 4/5, 390-405.

Robbins, Paul (2012): Political Ecology: A Critical Introduction [2nd ed.]. Chichester; Malden, MA: J. Wiley & Sons.

2nd Semester

Summer Term 2024

Module number	Module name
94250	Economics, Institutions, and the Environment

Course of study	Type of course	Semester / Rotation
M.Sc. Environmental Governance	Core module	2nd / Summer Term

Teaching methods	Prerequisites for attendance	Language
Lectures, group work, tutorial	None	English

Type of examination (duration)	ECTS-LP (Workload)
Exam (90 min)	5 (150h, incl. 55 attendance)

Module coordinator
Prof. Dr. Stefan Baumgärtner, e-mail: stefan.baumgaertner@ere.uni-freiburg.de

Additional teachers involved
Nora Felber, MSc, e-mail: nora.felber@ere.uni-freiburg.de

Syllabus

In this module, students will learn how to view and analyze environmental governance from an economic perspective and employ economic methods. A core idea of economics is that resources that are scarce and have alternative uses should be allocated efficiently with regard to achieving societal objectives, such as the maximization of welfare, social justice, and sustainability. Hence, students will learn and critically discuss a number of principles of economics as applied to problems of environmental governance.

Furthermore, students will learn theoretical concepts and methods of environmental and institutional economics. These concepts and methods will be employed to analyze economy-environment systems.
Topics to be covered include the following: public environmental goods, common-pool-resources, and environmental externalities. A particular focus is on the role of institutions and environmental policies, and how to design them such that they work efficiently in solving environmental problems.

Overall, this module is about the interrelationship between individuals, society, and nature. The guiding questions are: What is the outcome if self-centered individuals act independently and in their own interest (such as when trading on competitive markets)? How can institutions help achieve societal allocations that maximize social welfare (through top-down government by the state, as well as through fostering and mediating bottom-up social interactions)? And who bears responsibility for what, and to what extent, when the objective is sustainable development?

Learning qualifications

- Knowing what constitutes economics as a scientific discipline, and environmental economics in particular
- Understanding how economists explain the emergence of environmental and resource problems
- Understanding and explaining the standard solutions economists recommend in order to address environmental problems
- Being able to apply the economic framework and the economic tool-set to the analysis of environmental and resource problems
- Critically assessing the economic approach to environmental governance, and grasping its potential as well as its limits

Core readings

A list of relevant texts will be made available online in electronic form at the beginning of the course.

Module number	Module name
94903	Elective: Environmental Conflict Management and Participation

Course of study	Type of course	Semester / Rotation
MSc Environmental Governance	Elective module	3rd / Winter Term

Teaching methods	Prerequisites for attendance	Language
Lecture, group work, excursion	None	English

Type of examination (Final Grade Composition)	ECTS-LP (Workload)
PL Group presentations of case study (50%)	5 (150h, of this 60 contact hrs.)
PL Individual reflexive essay based on group case study (3000 words) (50%)	

Module coordinator	SWS
Prof. Dr. M. Pregernig, e-mail: michael.pregernig@envgov.uni-freiburg.de	4

Additional teachers involved
Dr. Julia Gorricho, Zabrina Welter and other guest lecturers

Syllabus

Conflicting interests and rivaling activities of heterogeneous parties accompany the use and protection of natural resources and landscapes. Conflicts are among the important driving forces in environmental policy. Today, in addition to traditional litigation, a range of alternative methods are used for dispute resolution. These include facilitation, mediation, or conflict assessment, which are expected to allow involved stakeholders to reach a mutually satisfactory agreement on their own terms.

In this module, students are introduced to the conceptualization and assessment of environmental conflicts. The course includes both an overview of relevant *conflict theory*, as well as *practical experiences* in conflict management. Students are assisted in understanding theoretical frameworks explaining environmental conflicts, and in evaluating conflict resolution and conflict management techniques. Several case studies of conflict analysis and management are presented. In a one-day excursion, students will learn about specific conflict resolution techniques as applied in a rural wind-mill construction project.

The module puts special emphasis on *participatory* forms of conflict resolution. Based on theoretical literature, students evaluate the advantages of participation, as well as its limits and dangers. Students discuss the foundations of participation in (different) theories of democracy, and they get familiarized with various methods of participatory conflict resolution. Guest lecturers will present practical case experiences.

In a small research project, student groups will work on real-world conflicts, providing a brief description of the conflict setting, and an analysis of the key stakeholders and their interests. They then design ideal-type conflict management or participation techniques. Students' projects are presented and discussed in class.

Learning goals and qualifications

In this module students learn to:

- develop an understanding of the social and political functions of conflicts (2);
- understand the genesis and escalation of environmental conflicts (2);
- understand and apply techniques to manage environmental conflicts (3);
- develop the capacity to evaluate (participatory) conflict resolution and management (5);
- apply research methods (analysis of literature, interview techniques etc.) (3).

Classification of cognitive skills following Bloom (1956):
1 = *Knowledge*: recalling facts, terms, basic concepts and answers; 2 = *Comprehension*: understanding

something; 3 = *Application*: using a general concept to solve problems in a particular situation; 4 = *Analysis*: breaking something down into its parts; 5 = *Synthesis*: creating something new by putting parts of different ideas together to make a whole; 6 = *Evaluation*: judging the value of material or methods.

Core readings

A list of relevant texts will be made available at the start of the course; obligatory readings (and part of the voluntary readings) will be made available online in electronic form.

Bobbio, Luigi (2019): Designing effective public participation. Policy and Society, 38/1, 41-57

Johnson, M. F., Rodríguez, L. A., & Quijano Hoyos, M. (2021). Intrastate environmental peacebuilding: A review of the literature. World Development.

Lederach, John Paul (2003, updated 2017): Conflict Transformation, In: Burgess, Guy & Burgess, Heidi (eds): Beyond Intractability. Boulder, CO: Conflict Information Consortium.

Moore, Christopher W. (2014): The Mediation Process: Practical Strategies for Resolving Conflict [4th ed.]. San Francisco: Jossey-Bass.

Renn, Ortwin & Schweizer, Pia-Johanna (2020): Inclusive governance for energy policy making: conceptual foundations, applications, and lessons learned. In: Renn, Ortwin, Ulmer, Frank & Deckert, Anna (eds) The Role of Public Participation in Energy Transitions. Cambridge, MA: Academic Press. 39-79.

Module number	Module name	
94265	Ecosystem Management	

Course of study	Type of course	Semester / Rotation
M.Sc. Environmental Governance	Core module	2nd / Summer Term
M.Sc. Forest Sciences		
M.Sc. Environmental Sciences		
MSc Geographie des Globalen Wandels	Elective	

Teaching methods	Prerequisites for attendance	Language
Lectures, excursions, group work, tutorials, independent learning	Students should be vaccinated against ticks and tetanus	English

Type of examination (weighting)	ECTS-LP (Workload)
PL Written Report (100%), ca.2000 words	5 (150h, of this 60 contact hrs.)

Module coordinator	SWS
Prof. Dr. M. Pregernig, michael.pregernig@envgov.uni-freiburg.de	4

Additional teachers involved

Syllabus:

In the 1990s, the concept of Ecosystem Management emerged as a new paradigm for the management of natural resources. It is based on the objectives of sustainable use and conservation of natural resources, as well as fair and equitable sharing of benefits from ecosystem goods and services. Underpinning this approach are explicit objectives for the management of natural resources that can be translated into measurable goals, and subsequent monitoring. Ecosystem management recognizes that ecosystems are complex and interconnected, and function on a range of spatial and temporal scales. While management should be based on sound ecological models and aimed at maintenance of ecosystem integrity, the approach acknowledges that ecosystem knowledge is limited, and paradigms are provisional and likely to change. Consequently, management approaches are viewed as hypotheses, which require testing through systematic research and monitoring, resulting in adaptive management. In this module, students will be introduced to the concepts underpinning the Ecosystem Management approach, enabling them to critically evaluate its strengths and limitations. The module comprises an excursion of approximately one-week duration to a landscape setting, which serves as a case study through which to examine the approach. In the last phase of the module, the students discuss their field experiences, and, based on that, write a report in which they assess the feasibility, potential and limitations of the approach.

Learning goals and qualifications
In this module students learn to:
- understand basic ecological principles (2);
- identify and analyze the importance of ecosystem functions (1, 4);
- interpret the main concepts underpinning the Ecosystem Management Approach (2);
- recognize the necessity to integrate social and natural science knowledge for effective ecosystem management (2);
- evaluate the strengths and limitations of the Ecosystem Management approach using a case study of a forested landscape in Central Europe (5);
- produce a framework for Ecosystem Management, recombining concepts and principles learned during the course (6).

Classification of cognitive skills following Bloom (1956):

1 = *Knowledge*: recalling facts, terms, basic concepts and answers; 2 = *Comprehension*: understanding something; 3 = *Application*: using a general concept to solve problems in a particular situation; 4 = *Analysis*: breaking something down into its parts; 5 = *Synthesis*: creating something new by putting parts of different

ideas together to make a whole; 6 = *Evaluation*: judging the value of material or methods.

Core Readings:

Bundesamt für Naturschutz 2008. Landscape Planning. The basis of sustainable landscape development. BfN, Bonn. (pages 8-17)

Christensen et al. 1996. The report of the Ecological Society of America Committee on the scientific basis for ecosystem management. Ecological Application 6(3), 665-691.

Cortner, H.J. and Moote, M.A. 1999. The politics of ecosystem management. Washington, DC: Island Press. Chapters 3+4 (pp. 37-72)

Noon, B.R. & J.A. Blakesley (2006): Conservation of the Northern Spotted Owl under the Northwest Forest Plan. Conservation Biology 20 (2): 288-296

Additionally, a list of relevant texts will be made available at the start of the course

Module number 10LE07S-M.95992 10LE08S-M.91804	Module name Elective: Sustainability Law and Transformation	
Course of study MSc Renewable Energy Management MSc Environmental Governance MSc Environmental Sciences/SAT	Type of course Elective MEG Core module SAT	Semester / Rotation 2nd / Summer Term
Teaching methods lectures, thematic seminar sessions, guided reading and assignments, group work and discussions	Prerequisites for attendance None	Language English
Type of examination (Final Grade Composition) PL Presentation PL Individual essay		ECTS-LP (Workload) 5 (150h, of this 60 contact hrs.)
Module coordinator Dr. Catherin Zengerling, e-mail: cathrin.zengerling@enrlaw.uni- freiburg.de		SWS 4
Additional teachers involved		

Students will be familiarised with the fundamentals of law and in particular the role of law in sustainability transformations. They have a basic knowledge of the fundamentals of law in an international context, including law-making, implementation and enforcement. Students understand how the concept of sustainable development is (or is not) translated into legislation from the international to the local level. Students gain a basic knowledge of legal frameworks in areas such as energy and land transitions, circular economy and supply chain regulation. They are able to integrate perspectives of environmental law, human rights, economic/trade and labour law. Students are able to identify links between sustainability assessments and law-making, implementation and enforcement. Students can apply theories of transition and transformation to legal processes in the context of sustainability law. In addition, they are able to identify and analyse opportunities and barriers to sustainability transformations through a lens of critical legal theory.

Learning goals and qualifications

The course introduces into and discusses the role of law in sustainability transformations. The following core content will be covered:

- Introduction to the basics of law, including law-making, implementation and enforcement
- Characteristics of sustainability transformations and frictions with the functions of law
- Law from local to global scales in a context of decolonization
- Reflection of the concept of sustainable development in laws and institutions, including shortcomings
- Introduction of legal frameworks in key areas of sustainability transformations (energy transition, land transition, circular economy, supply chain regulation, etc.)
- Fragmentation and linkages between environmental, human rights, labour, economic and trade law
- The role of sustainability assessments in law-making, implementation and enforcement
- Introduction to theories and concepts of transformation and transition and their application of these theories and concepts to legal processes
- Introduction to critical legal theory and its application to legal processes in the context of sustainability transformations

Students will have the opportunity to focus their term papers on topics of their own choice in the context of the course.

Core readings

A list of relevant texts will be made available at the start of the course; obligatory readings (and part of the voluntary readings) will be made available online in electronic form. The following are some examples of texts we will be reading in the course:

- Kraas, F., Leggewie, C., Lemke, P., Matthies, E., Messner, D., Nakicenovic, N., ... & Butsch, C. (2016). Humanity on the move: Unlocking the transformative power of cities. WBGU-German Advisory Council on Global Change.
- Reading material will be provided during the course via the e-learning platform ILIAS.

Module number	Module name
	Elective: Rethinking societal relations to nature: Intersectional-feminist lessons for sustainable futures

Course of study	Type of course	Semester / Rotation
MSc Environmental Governance	Elective module	2nd / Summer Term

Teaching methods	Prerequisites for attendance	Language
Lectures, guided reading, discussion sessions with group work and short presentations	None	English

Type of examination (Final Grade Composition)	ECTS-LP (Workload)
PL Oral presentations (30%) PL Individual essay (70%)	5 (150h, of this 60 contact hrs.)

Module coordinator	SWS
Miriam Kienesberger, MA MA, e-mail: miriam.kienesberger@upt.uni-freibug.de	4

Additional teachers involved
Prof. Dr. Tanja Mölders, e-mail: tanja.moelders@upt.uni-freiburg.de

Syllabus

In coining the term *intersectionality*, Kimberlé Crenshaw (1989) gave a name to the long-standing tradition of Black feminist thought, which understands distinct systems of oppression such as patriarchy, racism, classism, colonialism, homophobia, and ableism as intertwined. This idea is now increasingly being taken up in socio-ecological research to provide a more nuanced understanding of societal relations to nature. But what makes socio-ecological conceptualizations and analysis truly intersectional?

In this elective module, we will explore the interconnectedness of complex and entangled power relations with the escalating ecological crisis to engage with the question raised above. Through reading key literature, we will trace the origins of intersectionality as well as current feminist debates revolving around it and identify key reasons for applying the concept to socio-ecological issues. To complete the picture, we will also delve into selected feminist perspectives on society-nature relations associated with an intersectional approach (Ecofeminisms, Feminist Political Ecologies, and Posthuman Feminisms). By mapping out which social categories these perspectives focus on and how they conceptualize the interplay between each of them in relation to ecological issues, we will reconstruct their theoretical potentials to critique current conditions and envision sustainable futures. Engaging with this plurality of approaches will enable us to better understand how intersectional ways of thinking can then be applied.

In addition to short introductory lectures, the elective module will offer plenty of room for methodologically guided discussions of the core readings and critical reflections of one's own positionality as a student/researcher. At the end of the module, participants will submit the results of their personal learning process in the form of an individual essay.

Learning goals and qualifications

In this module participants learn to:

- engage with conceptual debates around intersectionality;
- develop an understanding of the interconnectedness of societal power relations and ecological crises;

- identify and discuss the strengths and blind spots of socio-ecological research approaches;
- critically reflect on their personal and theoretical positionality.

Core readings

A list of relevant texts will be made available at the start of the course; obligatory readings (and part of the voluntary readings) will be made available online in electronic form.

Crenshaw, Kimberle (1989): Demarginalizing the Intersection of Race and Sex. A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory and Antiracist Politics. In *University of Chicago Legal Forum* (1), Article 8, pp. 139-167. Available online at https://chicagounbound.uchicago.edu/uclf/vol1989/iss1/8/.

Bilge, Sirma (2013): Intersectionality Undone. In *Du Bois Rev.* 10 (2), pp. 405–424. DOI: 10.1017/S1742058X13000283.

Kaijser, Anna; Kronsell, Annica (2014): Climate change through the lens of intersectionality. In *Environmental Politics* 23 (3), pp. 417–433. DOI: 10.1080/09644016.2013.835203

Mikulewicz, Michael; Caretta, Martina Angela; Sultana, Farhana; J. W. Crawford, Neil (2023): Intersectionality & Climate Justice: A call for synergy in climate change scholarship. In: *Environmental Politics*, S. 1–12. DOI: 10.1080/09644016.2023.2172869

Module number	Module name
94260	Environmental Psychology and Sociology

Course of study	Type of course	Semester / Rotation
M.Sc. Environmental Governance	Core module/ Elective	2nd / Summer Term

Teaching methods	Prerequisites for attendance	Language
Lecture, group work	None	English

Type of examination (Final Grade Composition)	ECTS-LP (Workload)
PL Assignments (67%) PL Written exam (33%)	5 (150h, of this 60 contact hrs.)

Module coordinator	SWS
Dr. Cristina Espinosa, e-mail: cristina.espinosa@envgov.uni-freiburg.de	4

Additional teachers involved

Dr. Laura Henn (Environmental Psychology), e-mail: laura.henn@uni-hohenheim.de

Syllabus

Environmental psychology and sociology examine how humans interact with their biophysical environments. Environmental psychology studies human-environment interactions from the perspective of *individuals*, while environmental sociology takes the perspective of *collective actors* (groups, organizations, societies). The module is split in two parts according to this disciplinary distinction:

(1) *Environmental Sociology:* The sub-module draws theoretical insights mainly from Social Movement Studies and focuses on the youth climate movement active in different parts of the world. Students develop a detailed understanding of the climate activism of young people through readings, small research assignments, presentations, and discussions. Central aspects of contemporary youth climate activism addressed include: origins, development, organization, leadership, tactics, collective action frames, collective identities, and the impact of the contemporary youth climate movement in specific contexts.

(2) *Environmental Psychology:* The sub-module lays the theoretical grounds for individual environmental behavior by describing a well-known behavioral architecture. The role of incentives, environmental awareness, perceived behavioral control and group influences will be addressed. Furthermore, students will learn about how environmental risks are constructed and perceived, taking into account the intrinsic complexity of social and environmental systems through which they evolve and take shape. Finally, decision support systems will be discussed with respect to their impact on individual as well as institutional decision-making and behavior.

Learning goals and qualifications

In this module students learn to:

- apply theoretical concepts to the study of contemporary youth climate activism (3);
- appraise the social dynamics in which youth climate social movements operate (6);
- interpret primary and secondary sources and create research outputs which use those sources as appropriate for support (4, 5);
- evaluate the role of incentives, environmental awareness, and group influence in environmental conservation (5);
- assess the psychological dimensions of environmental risks and their effect on decision making and policy implementation (2).

Classification of cognitive skills following Bloom (1956):

1 = *Knowledge*: recalling facts, terms, basic concepts and answers; 2 = *Comprehension*: understanding

something; 3 = *Application*: using a general concept to solve problems in a particular situation; 4 = *Analysis*: breaking something down into its parts; 5 = *Synthesis*: creating something new by putting parts of different ideas together to make a whole; 6 = *Evaluation*: judging the value of material or methods.

Core readings

A list of relevant texts will be made available at the start of the course; obligatory readings (and part of the voluntary readings) will be made available online in electronic form. Preliminary readings:

O'Brien, K., Selboe, E., & Hayward, B. M. (2018). Exploring youth activism on climate change: dutiful, disruptive, and dangerous dissent. Ecology and Society, 23(3). https://www.jstor.org/stable/26799169

Gardner, G.T. & Stern, P. (2nd ed. 2000). Environmental problems and human behavior. Boston: Allyn and Bacon.

Module number 10LE07S-M.95992 10LE08S-M.91804	Module name Elective: Global Sustainability Transformations in Local Contexts	

Course of study Msc Renewable Energy Management MSc Environmental Governance MSc Geographie des Globalen Wandels MSc Environmental Sciences	Type of course Elective	Semester / Rotation 2nd / Summer Term
Teaching methods lectures, thematic seminar sessions, guided reading and assignments, group work and discussions	Prerequisites for attendance None	Language English
Type of examination (Final Grade Composition) PL Group presentation (30%), 15 minutes PL Individual essay (40%), ca. 2000 words PL Group Case Study (30%), ca. 3000 words		ECTS-LP (Workload) 5 (150h, of this 60 contact hrs.)
Module coordinator Dr. Catherin Zengerling, e-mail: cathrin.zengerling@enrlaw.uni-freiburg.de		SWS 4

Additional teachers involved

Dr. Benedikt Schmid, e-mail: benedikt.schmid@geographie.uni-freiburg.de

Cities consume about 75% of global energy and material flows and are home to more than half of the global population – with a rising tendency. They are an increasingly visible actor in emerging polycentric environmental governance, engage in international legal regimes such as the Paris Agreement and transnational municipal networks (TMNs). Infrastructures and lifestyles in local systems are crucial for people's well-being within planetary boundaries. Many processes of sustainability transformations around energy, mobility, food, housing, and consumer goods are rooted in local systems. They offer room for experiments and niches and allow for first steps in diffusion and upscaling. Local governments can be closer to people and more responsive to specific local needs and conditions than higher levels of government. Local economies play a key role in value creation and capture.

In this module, students learn about cities and municipalities as actors in an emerging system of polycentric environmental governance. They gain knowledge on the role of local governments within the Paris Agreement, TMNs as well as national state hierarchies in different legal systems and the respective local scope of action. We explore different modes of governing processes of transformation across different sectors (energy, mobility, food, housing and others) as well as scales (neighbourhood, city, translocal) in international case studies in the global north and south. The key forms of local decision-making (including referendums), formal as well as informal steering instruments including land use plans, urban development contracts and climate action plans are introduced. Students also get insights into the relationship and forms of cooperation between urban and (surrounding) rural areas in the context of the (energy) transition. With regard to local and community economies, students learn about (re)municipalisation, eco-social enterprises and community initiatives. We discuss alternative forms of ownership such as cooperatives and sharing schemes, in particular in the context of alternative economies and degrowth.

The course is taught in an interactive manner. We will kick off our joint work with an explorative zero carbon walk in a Freiburg neighbourhood. Throughout the course, we present and discuss international case studies and students get the chance to deepen their knowledge in their main fields of interest. The course also encompasses an excursion to the new low carbon urban development project Dietenbach and discussions with representatives of the urban planning department.

Learning goals and qualifications

In this module students learn to:

- develop a critical understanding of contemporary processes of urban sustainability transformations with a main focus on the sectors of energy, mobility, housing and food (1,2);
- understand the role of cities in emerging polycentric environmental governance, varying local scopes of action and key formal and informal steering instruments of urban governance (2,3);
- discuss and reflect upon the role of law and planning in urban sustainability transformations, (2,4);
- analyse academic publications, legal and policy documents and other planning-related materials (3,4);
- apply their knowledge to case studies of contemporary urban transformation processes in their field of interest (3,4,5);
- compare, contrast, and transfer their knowledge to other cases (5, 6).

Classification of cognitive skills following Bloom (1956):

1 = *Knowledge*: recalling facts, terms, basic concepts and answers; 2 = *Comprehension*: understanding something; 3 = *Application*: using a general concept to solve problems in a particular situation; 4 = *Analysis*: breaking something down into its parts; 5 = *Synthesis*: creating something new by putting parts of different ideas together to make a whole; 6 = *Evaluation*: judging the value of material or methods.

Core readings

A list of relevant texts will be made available at the start of the course; obligatory readings (and part of the voluntary readings) will be made available online in electronic form. The following are some examples of texts we will be reading in the course:

- Kraas, F., Leggewie, C., Lemke, P., Matthies, E., Messner, D., Nakicenovic, N., ... & Butsch, C. (2016). Humanity on the move: Unlocking the transformative power of cities. WBGU-German Advisory Council on Global Change.
- Reading material will be provided during the course via the e-learning platform ILIAS.

Module number	Module name
	Elective: Theory and Practice of Transformation: Leadership, Organizations, and the Individual

Course of study	Type of course	Semester / Rotation
MSc Environmental Governance	Elective module	2nd / Summer Term

Teaching methods	Prerequisites for attendance	Language
Socratic Lecture, group work	None	English

Type of examination (Final Grade Composition)	ECTS-LP (Workload)
PL Group Assignment PL Short written exam	5 (150h, of this 60 contact hrs.)

Module coordinator	SWS
Prof. Dr. H. Roehl, e-mail: hr@heikoroehl.de	4

Additional teachers involved
Björn Adam, e-mail: mail@bjoernadam.de

Syllabus
The course will focus on Organizational Transformation with its implications for the individual. A variety of organizational transformation models and methodologies will be presented, experience, and discussed. Special attention will be given to Transformational Leadership and Self-Leadership. Heiko Roehl is co-founder and managing partner of Kessel & Kessel GmbH in Berlin. His work focuses on supporting organizations undergoing profound change. He has successfully developed and implemented change strategies for a wide range of industries and companies. Heiko Roehl was responsible for major change programs in various management functions for almost two decades, including five years in futurology at Daimler-Benz AG in Berlin and Palo Alto/USA. There he worked on various aspects of organized value creation: cooperation, trust, strategy work, organizational learning and organizational development. He then spent five years setting up the Nelson Mandela Foundation in Johannesburg/South Africa on behalf of the German Federal Ministry for Economic Cooperation and Development. He then spent five years with global responsibility for corporate organization and development in the Corporate Development Unit of the Deutsche Gesellschaft für internationale Zusammenarbeit (GIZ). In the following two years, he established and headed the Global Leadership Academy of the German Federal Ministry for Economic Cooperation and Development (BMZ). Heiko Roehl studied psychology, business administration and sociology in Berlin, Bologna and Bielefeld and holds a degree in psychology and a doctorate in sociology. His dissertation was awarded the scientific prize of the German Systemic Society. He is the author of numerous publications in the field of organization/change management and co-editor of the journal Organizational Development, the leading German-language publication for corporate development and change management (Handelsblatt Verlag). Björn Adam is a Senior Partner at Kessel & Kessel GmbH. He is a speaker and coach for agile and goal-oriented transformation in organizations. With his multi-entrepreneurial background and his deep knowledge of organizational development from a systems perspective, he has been advising people and organizations in agile transformation and innovation processes for ten years. He supports clients from large international corporations as well as medium-sized organizations, managing directors and executives from start-ups. Björn Adam's strength and expertise lies in the transdisciplinary combination of different approaches to agile transformation, methods of organizational development and the psychological dynamics of people and teams. He brings unusual and diverse perspectives from his mandates and leadership roles to new projects and uses

his experience as a serial entrepreneur and current managing director of the social education company "beWirken".

In addition, Björn Adam is co-founder of the innovation agency Blue Milk, which is itself an example of agile working in network organizations and advises teams and organizations on new work and new leadership approaches. His current mandates focus on the strategic challenges of managing directors and executives in agile and digital transformation in various sectors such as media, automotive, industry, energy, mobility and digital services.

Björn Adam studied Business Law (LL.B.) and Management & Business Development (M.A.) at Leuphana University in Lüneburg and Bifröst University in Iceland. He has worked intensively on the scientific question of social systems and the effectiveness of leadership interventions.

Module number	Module name	
6900	Obligatory Internship	

Course of study	Type of course	Semester / Rotation
M.Sc. Environmental Governance	Core module	

Teaching methods	Prerequisites for attendance	Language
Self-procured internship	None	-

Type of examination (Final Grade Composition)	ECTS-LP (Workload)
Pre-approved internship of a duration of at least 7 weeks, full-time hours (275 hrs).	10 (300h)

Module coordinator	SWS
Seirra Römmermann, MSc e-mail: meg.coordinator@envgov.uni-freiburg.de	-

Additional teachers involved
-

Syllabus
The MEG Internship Guidelines provide an orientation in internship-related-matters. Please note that only the exam regulations (§5) of your study programme are a legally binding. It is suggested to have your intended internship pre-approved by the MEG Internship Coordinator, Seirra Römmermann meg.coordinator@envgov.uni-freiburg.de.

Duration
According to the exam regulations of your MSc programme you are required to complete an internship of at least seven weeks. Upon successful completion, you will earn 10 ECTS credits. It is recommended that the internship take place between the 2nd and 3rd semesters.

Working hours
The internship should be on a full-time basis (in total 275 hours). Part-time contracts are possible upon consultation and under the condition that you work at least half-days and a minimum 3 days a week.

Interruptions
The internship should only be interrupted for urgent reasons and with the consent of the Internship Coordinator. Any hours lost through absence must be made up for within the internship period. Similarly, hours/days missed due to illness should be made up for if they exceed 5 working days.

Internship Provider
The internship can take place in Germany or abroad.
Your internship must be in a field relevant to your MSc programme. The institution, organisation or company needs to be directed by a person with a university degree. Exceptions may be possible after consultation. The supervision of your internship lies solely with the responsible person at your Internship Provider. |

3rd Semester

Winter Term 23/24

Module number	Module name
94903	Elective: Environmental Conflict Management and Participation

Course of study	Type of course	Semester / Rotation
MSc Environmental Governance	Elective module	3rd / Winter Term

Teaching methods	Prerequisites for attendance	Language
Lecture, group work, excursion	None	English

Type of examination (Final Grade Composition)	ECTS-LP (Workload)
PL Group presentations of case study (50%)	5 (150h, of this 60 contact hrs.)
PL Individual reflexive essay based on group case study (3000 words) (50%)	

Module coordinator	SWS
Prof. Dr. M. Pregernig, e-mail: michael.pregernig@envgov.uni-freiburg.de	4

Additional teachers involved

Dr. Julia Gorricho, Zabrina Welter and other guest lecturers

Syllabus

Conflicting interests and rivaling activities of heterogeneous parties accompany the use and protection of natural resources and landscapes. Conflicts are among the important driving forces in environmental policy. Today, in addition to traditional litigation, a range of alternative methods are used for dispute resolution. These include facilitation, mediation, or conflict assessment, which are expected to allow involved stakeholders to reach a mutually satisfactory agreement on their own terms.

In this module, students are introduced to the conceptualization and assessment of environmental conflicts. The course includes both an overview of relevant *conflict theory*, as well as *practical experiences* in conflict management. Students are assisted in understanding theoretical frameworks explaining environmental conflicts, and in evaluating conflict resolution and conflict management techniques. Several case studies of conflict analysis and management are presented. In a one-day excursion, students will learn about specific conflict resolution techniques as applied in a rural wind-mill construction project.

The module puts special emphasis on *participatory* forms of conflict resolution. Based on theoretical literature, students evaluate the advantages of participation, as well as its limits and dangers. Students discuss the foundations of participation in (different) theories of democracy, and they get familiarized with various methods of participatory conflict resolution. Guest lecturers will present practical case experiences.

In a small research project, student groups will work on real-world conflicts, providing a brief description of the conflict setting, and an analysis of the key stakeholders and their interests. They then design ideal-type conflict management or participation techniques. Students' projects are presented and discussed in class.

Learning goals and qualifications

In this module students learn to:

- develop an understanding of the social and political functions of conflicts (2);
- understand the genesis and escalation of environmental conflicts (2);
- understand and apply techniques to manage environmental conflicts (3);
- develop the capacity to evaluate (participatory) conflict resolution and management (5);
- apply research methods (analysis of literature, interview techniques etc.) (3).

Classification of cognitive skills following Bloom (1956):
1 = *Knowledge*: recalling facts, terms, basic concepts and answers; 2 = *Comprehension*: understanding

something; 3 = *Application*: using a general concept to solve problems in a particular situation; 4 = *Analysis*: breaking something down into its parts; 5 = *Synthesis*: creating something new by putting parts of different ideas together to make a whole; 6 = *Evaluation*: judging the value of material or methods.

Core readings

A list of relevant texts will be made available at the start of the course; obligatory readings (and part of the voluntary readings) will be made available online in electronic form.

Bobbio, Luigi (2019): Designing effective public participation. Policy and Society, 38/1, 41-57

Johnson, M. F., Rodríguez, L. A., & Quijano Hoyos, M. (2021). Intrastate environmental peacebuilding: A review of the literature. World Development.

Lederach, John Paul (2003, updated 2017): Conflict Transformation, In: Burgess, Guy & Burgess, Heidi (eds): Beyond Intractability. Boulder, CO: Conflict Information Consortium.

Moore, Christopher W. (2014): The Mediation Process: Practical Strategies for Resolving Conflict [4th ed.]. San Francisco: Jossey-Bass.

Renn, Ortwin & Schweizer, Pia-Johanna (2020): Inclusive governance for energy policy making: conceptual foundations, applications, and lessons learned. In: Renn, Ortwin, Ulmer, Frank & Deckert, Anna (eds) The Role of Public Participation in Energy Transitions. Cambridge, MA: Academic Press. 39-79.

Module number	Module name
94380	Elective: Decolonizing climate change

Course of study	Type of course	Semester / Rotation
M.Sc. Environmental Governance	Elective module	3rd / Winter Term

Teaching methods	Prerequisites for attendance	Language
Lectures, group work, speaker series	None	English

Type of examination (Final Grade Composition)	ECTS-LP (Workload)
PL Written reflection (100%)	5 (150h, of this 60 contact hrs.)

Module coordinator	SWS
Robert John, e-mail: robert.john@envgov.uni-freiburg.de	4

Syllabus

This summer has been one of the hottest and driest years on record – we've seen droughts and subsequent hunger, wildfires and the continued melting of glaciers, successive sea level rise and species loss. Although climate change is gaining wider societal attention, creating political friction and protest, the uneven distribution of its causes and effects is not well reflected and openly discussed. Meanwhile, diverse social groups around the world marginalized for their race, class, gender, and ethnicity have been disproportionately impacted, despite being historically and geographically the least contributors to climate change. Beyond these intersectional discriminations, scholars and activists have increasingly linked climate change to colonial legacies. While colonialism manifests quite differently depending on its context, it is driven by the violent exploitation and dispossession of lands, resources, and peoples – an ongoing process that has been blurred and accelerated under the recent dynamics of capitalist expansion. These colonial structures and systems of power, exclusion and exploitation remain as main barriers to addressing the current climate crisis.

In this elective module, we will reflect on the linkages between colonialism and climate, learning about how climate change partly emerges from and reinforces historically inequitable power relations established and upheld by colonial regimes globally and understand the importance of decolonizing its causes and effects. Towards the end of the module, we will discuss realistic and desirable futures – imagining climate justice and reparations, as motivations for change.

To do so, we will engage with literature of diverse non-western authors, which integrate international, interdisciplinary, and intersectional perspectives to understand the multiple interlocking systems of colonial oppression and social and environmental inequities. Additionally, a speaker series will offer participants the perspectives of decolonial activists, advocates and scholars working on understanding and revealing the complex histories and ongoing entanglements of colonialism and climate change, bringing to life different theories and practices of resistance and change. Throughout the course everyone is encouraged to think critically about their own subjective positions, immersing themselves in a personal learning experience centered on reflecting on the colonialization of our minds, daily lives and political systems. For this purpose, participants are actively encouraged to put themselves in the picture, sharing their own experiences in class discussion and through their written reflection. For that purpose the participants will write a Reflective Learning Diary, which will be submitted as assessment by the end of week three. Everyone is encouraged to reflect on their individual learning experience, recording reactions to class readings, discussions, visiting scholars and activist, connecting their everyday lives with the class content.

Learning goals and qualifications:

In this module students learn to:

- apply decolonial theories and thinking
- draw connections between colonial histories, ongoing colonial practices, and climate change

- engage with non-western knowledge, de-centering Eurocentric canons of thought
- scrutinize alternative forms of knowledge and climate activism
- reflect on their own positionality and subjectification (performing whiteness)

Core readings:

A list of relevant texts will be made available before the start of the course; obligatory readings (and part of the voluntary readings) will be made available online in electronic form. The following are some more extensive readings, which are at the core of the course, but cannot be covered in a three-week module. Feel free to engage with these sources for preparation:

- Mignolo, W.D. & Walsh, C. E. (2018): On Decoloniality: Concepts, Analytics, Praxis. Combined Academic Publ.

→ Introduction to colonialism its origination, transformation, and current presence, as well as to the resistance and re-existence of decolonial ways of living and thinking

- Ghosh, A. (2021): The Nutmeg's Curse: Parables for a Planet in Crisis. University of Chicago Press.

→ Presents an alternative history of the climate crisis, originating from Western colonialism's violent exploitation of human life and the natural environment

- Liboiron, M. (2021): Pollution is Colonialism. Duke University Press.

→ Engaging with the colonial roots of science and knowledge

Module number	Module name
95991	Elective: Environmental Social Movements & NGOs

Course of study	Type of course	Semester / Rotation
M.Sc. Environmental Governance	Elective Module	3rd/ Winter Term

Teaching methods	Pre-requisites for attendance	Language
Blended learning with presence and/or synchronous on-line teaching; flipped classroom components; self-study; group work; tutorials	Good knowledge of Social Sciences; Proficiency in academic writing	English

Type of examination (Final Grade Composition)	ECTS-LP (Workload)
PL Written Assignments* (ca. 2,500 - 4,000 words) 40% PL Case Study Presentations* (ca 20 - 25 minutes) 50% PL Moderation of Discussion* (ca 20-30 minutes) 10% *to be specified as either individual or group contribution depending on number of module participants	5 (150h, of this 60 contact hrs.)

Module coordinator	SWS
Dr. Cristina Espinosa Email: cristina.espinosa@envgov.uni-freiburg.de	4

Additional teachers involved

Syllabus

More and more, civil society groups, organizations, movements and networks are occupying public spaces, raising critical voices with regard to the political, economic and technological trajectories developed by governments, corporate actors and science. They draw attention to pressing environmental problems and demand actions that align with ideals of sustainability and justice. From local to global scales, environmental movements and non-governmental organizations (NGOs) are skilled campaigners and service providers for various organizations, as well as watchdogs and policy consultants. Positive appraisals and hope permeate public perspectives on organized civil society and their role in environmental governance. Yet, while some scholars consider environmental movements and NGOs as an expression of a democratic civil society, others question their representativeness and see them as an outcome of neoliberal globalization. Bridging theories with real-life examples, this module critically examines the implications of the increasing relevance of organized civil society in environmental governance. Covered topics include tactics, strategies, transnational networks and impacts of environmental movements and NGOs, as well as the engagement of civil society actors with states, corporations and science.

Learning goals and qualifications

In this module students learn to:
- Explain the distinctions and overlaps between non-state actors engaged in environmental governance and the common challenges they face;
- Appraise different mechanisms through which environmental social movements and NGOs influence and participate in environmental governance;
- Apply theoretical perspectives to study an empirical case connected to an environmental social movement or NGO
- Synthesize research findings
- Deploy moderation techniques

Classification of cognitive skills following Bloom (1956):

1 = *Knowledge*: recalling facts, terms, basic concepts and answers; 2 = *Comprehension*: understanding something; 3 = *Application*: using a general concept to solve problems in a particular situation; 4 = *Analysis*: breaking something down into its parts; 5 = *Synthesis*: creating something new by putting parts of different ideas together to make a whole; 6 = *Evaluation*: judging the value of material or methods.

Core readings

A list of relevant texts will be made available at the start of the course; obligatory readings (and part of the voluntary readings) will be made available online in electronic form. Before the module starts, participants might want to read this publication:

Bäckstrand, K. (2015). Civil Society. Encyclopedia of Global Environmental Governance and Politics. P. H. Pattberg and F. Zelli, Edward Elgar Publishing: 185-192.

Module number	Module name	
94360	Forests and Rural Development	

Course of study	Type of course	Semester / Rotation
M.Sc. Environmental Governance	Core	3rd/ Winter Term

Teaching methods	Prerequisites for attendance	Language
Lecture, group work	None	English

Type of examination (Final Grade Composition)	ECTS-LP (Workload)
PL written exam (80%) PL Written Concept Note (20%), ca. 2000 words plus	5 (150h, of this 60 contact hrs.)

Module coordinator	SWS
Prof. Dr. D. Schmidt-Vogt, e-mail: dietrich.schmidt-vogt@waldbau.uni-freiburg.de	4

Additional teachers involved
Dr. Mélanie Feurer and other invited experts

Syllabus
Forests and trees play an important role in rural landscapes of the Tropics as habitat and as providers of ecosystem services and of usable products. This is especially true for forest-agriculture frontiers which can be highly dynamic in terms of deforestation, forest degradation or forest transition processes. Recognition of the importance of forests in the rural tropics has led to a plethora of policy and development approaches such as community forestry, agroforestry, forest restoration etc. The dynamics affecting the relations of forests with other land uses are driven by many factors - economic, demographic, societal, political and others – and can result in negative impacts such environmental degradation and marginalization of people on the one hand, and of environmental restoration, livelihood diversification on the other. Development approaches to these dynamics and their impacts range from classical nature conservation to unrestrained economic development. Against this backdrop, the module intends to analyze the drivers, mechanisms and impacts of land use dynamics, and to critically reflect on approaches to development in rural forest landscapes of the Tropics. Discussion of scientific articles will provide orientation for students to navigate the complexity of environmental conditions, multi-stakeholder situations, multiple objectives and convoluted dynamics in such landscapes and to reflect upon concepts of development, and the potential and limitations of different approaches and instruments. Exploring options for development in rural forest landscapes will provide students with an opportunity to apply lessons learned in this module.

Learning goals and qualifications

In this module students learn to:
   – develop an understanding of the options of forest-based development in the context of rural tropics (2);
   – recognize the complexity and dynamism of socio-ecological systems and identify mechanisms to cope with this complexity (2, 4);
   – apply skills to design research projects and policy recommendations (3);
   – critically reflect on the implications of development paradigms (5);
   – engage in interdisciplinary teamwork to formulate holistic development concepts for a case study in rural tropics (3, 6).
Classification of cognitive skills following Bloom (1956):
1 = *Knowledge*: recalling facts, terms, basic concepts and answers; 2 = *Comprehension*: understanding

something; 3 = *Application*: using a general concept to solve problems in a particular situation; 4 = *Analysis*: breaking something down into its parts; 5 = *Synthesis*: creating something new by putting parts of different ideas together to make a whole; 6 = *Evaluation*: judging the value of material or methods.

Core readings

Ahrends, A., Hollingsworth, P.M., Ziegler, A.D., Fox, J.M., Chen, H., Su, Y., Xu, J. 2015. Current trends of rubber plantation expansion may threaten biodiversity and livelihoods. Global Environmental Change 34, 48-58.

Feurer, M., Grillen, D., Thann, M.M. 2018. Community forestry for livelihoods: benefitting from Myanmar´s mangroves. Forests 9 (3)

Feurer, M., Heinimann, A., Schneider, F., Jurt, C., Myint, W., Zaehringer, J.G. 2019. Local perspectives on ecosystem trade-offs in a forest land scape in Myanmar. Land 8 (3)

Geist, H.J., Lambin, E.F. 2002. Proximate causes and underlying drivers of tropical deforestation. Bioscience 52, 143.

Pearce D., F.E. Putz, J.K. Vanclay 2001. Sustainable forestry in the tropics: panacea or folly? Forest Ecology and Management 172, 229-247.

Pokorny B., Scholz I. and De Jong W. 2013. REDD+ for the poor or the poor for REDD+? About the limitations of environmental policies in the Amazon and the potential of achieving environmental goals through pro-poor policies. Ecology and Society 18(2): 3.

Sayer J.A. and B. Campbell. 2001. Research to integrate productivity enhancement, environmental protection, and human development. Conservation Ecology 5(2): 32.

Van Vlieth, N., Mertz, O,.....Ziegler, A. 2012. Trends, drivers and impacts of changes in swidden cultivation in tropical forest-agriculture frontiers: a global assessment. Global Environmental Change 22.

Verma, A., Schmidt-Vogt, D., De Alban, J.D.T, Lim, C.L., Webb, E.L. 2021. Drivers and mechanisms of forest change in the Himalayas. Global Environmental Change 68, 102244

Wunder S. 2001. Poverty Alleviation and Tropical Forests – What scope for synergies. World Development 19 (11), 1817-1833

Module number	Module name
95990	Elective: Technology Assessment – Theory and Practice

Course of study	Type of course	Semester / Rotation
M.Sc. Environmental Governance	Elective	3rd/ Winter Term

Teaching methods	Prerequisites for attendance	Language
lectures, plenary discussions, group work	None	English

Type of examination (Final Grade Composition)	ECTS-LP (Workload)
1) PL Literature Review (Individual assessment of a self-chosen TA study along guiding questions), max. 2500 words (4 pages) (50%) 2) PL Group Research Report, 15-40 pages (50%) *Participation in discussions & presentations is obligatory; not graded	5 (150h)

Module coordinator	SWS
Prof. Dr. Philipp Späth, Email: spaeth@envgov.uni-freiburg.de	4

Additional teachers involved

Additional faculty and external experts on various topics will be involved.

Syllabus

As environmental limitations of current economic regimes and lifestyles are increasingly recognized, hope is often directed towards technological innovations (e.g. resource efficiency, 'green' technologies). Assumptions about the 'superiority' of certain technologies are a precondition for any attempt to accelerate the development and diffusion of these technologies by means of science, technology and innovation governance. However, to what extent particular technological innovations can in fact alleviate pressure on natural resources is hard to assess, particularly in the early stages of their development.

We study the promises, methods and practices involved in systematic Technology Assessments (TA) and their role in problematizing the potentials and risks involved in technological change. Starting from an overview of approaches, institutions and methods of TA, we aim to understand the dilemmas of such endeavors and how people tried to overcome them. You will first evaluate a self-chosen TA study that has been published by a recognized TA institution against common criteria. The second and third week of the module are dedicated to the development of your own technology assessment of a specific aspect important to an international hydrogen economy as promoted by the previous German Government: https://www.bmbf.de/bmbf/en/home/_documents/west-africa-can-become-the-cli-energy-powerhouse-of-the-world.html .

You will develop a TA study on a self-chosen aspect of a future hydrogen economy in a team of three to sixteen students. On the way, you will gain insights into how parliamentarian TA is conducted by the German TAB (which has been commissioned with a study on opportunities and risks of hydrogen partnerships and technologies in developing countries, too: https://www.tab-beim-bundestag.de/english/projects_opportunities-and-risks-of-hydrogen-partnerships-and-technologies-in-developing-countries.php).

Learning goals and qualifications

In this module students learn to:

- describe various objectives and institutional forms of technology assessment (1, 4);
- understand the assumptions and world views that influenced various approaches to TA (2, 4);
- be fluent with TA terminology and practices (3);
- identify different challenges and dilemmas of expertise or consensus-oriented methods for TA (5);
- evaluate and criticize TA studies of various scopes (6);
- apply research methods (analysis of literature, interview techniques etc.) (3);
- position themselves with regard to different approaches to technology assessment (6);
- assess the potentials and risks potentially involved in various forms of urban food production (3-6).

Classification of cognitive skills following Bloom (1956):

1 = *Knowledge*: recalling facts, terms, basic concepts and answers; 2 = *Comprehension*: understanding something; 3 = *Application*: using a general concept to solve problems in a particular situation; 4 = *Analysis*: breaking something down into its parts; 5 = *Synthesis*: creating something new by putting parts of different ideas together to make a whole; 6 = *Evaluation*: judging the value of material or methods.

Core readings

A list of relevant texts will be made available at the start of the course; readings themselves will be made available online via Ilias. Introductory reading (pdf available on request):

Grunwald, A. (2019). "Technology assessment in practice and theory". Oxford, Routledge. pp. 1-12.

Module number	Module name
10LE07-M.640009	Elective: Environmental and Energy Transition Law

Course of study	Type of course	Semester / Rotation
MSc Renewable Energy Management M.Sc. Environmental Governance MSc Environmental Sciences MSc Forest Sciences	Elective	3rd/ Winter Term

Teaching methods	Prerequisites for attendance	Language
Socratic lectures, group and individual work, presentations, discussions	None	English

Type of examination (Final Grade Composition)	ECTS-LP (Workload)
SL Written assignment (pass/fail) PL Written assignment (30%, 60 min.), PL Written individual report (3000 words) OR group presentation and report (60 min. / group and 750 words / person, 70%)	5 (150h, of this 60 contact hrs.)

Module coordinator	SWS
Dr. Cathrin Zengerling, e-mail: cathrin.zengerling@enrlaw.uni-freiburg.de Prof. Dr. Errol Meidinger, email: eemeid@buffalo.edu	4

Additional teachers involved

Invited experts from the private and public sector

Syllabus

In this module students gain fundamental knowledge of environmental and energy transition law from multi-level governance and international comparative perspectives. They acquire sector-specific knowledge of environmental law in the fields of climate change, air pollution, water, oceans, biodiversity, nature protection, chemicals and waste/circular economy law. With regard to energy transition law, students become familiar with energy and planning law directed to energy efficiency and the switch from fossil fuel based to renewable energy in the sectors of electricity, heating/cooling and mobility.

Throughout the course, students learn about different legal instruments and their strengths and weaknesses in reaching regulatory goals. Both, public and private law perspectives as well as different legal traditions such as common and civil law approaches are covered. Students also get insights into the role of environmental protection and the energy transition in other international legal regimes such as world trade, investment and human rights law.

The course is taught interactively and active participation of students is encouraged. Students become familiar with various primary legal documents such as (excerpts of) international treaties, European directives, constitutions, national laws, administrative permits, land use plans as well as decisions of the judiciary, and learn how to work with them. Students apply and deepen their knowledge under guidance of the instructors in their specific fields of interest via case studies. Throughout the course, various soft skills such as debating in socratic discussions, scientific writing, interdisciplinary and intercultural teamwork are imparted.

Learning goals and qualifications

In this module students learn to:
- identify the main types and instruments of environmental and energy transition law and their distinctive characteristics (1)(2);
- understand interactions and conflicts between different types, sources and instruments of environmental and energy transition law (2);

- assess the inherent strengths and limitations of environmental and energy transition law for environmental and energy governance (5);
- realize that there are alternative ways of structuring environmental and energy transition responsibilities and powers through law (2)(4);
- formulate legal and policy arguments relevant to future environmental and energy transition law development (6);
- critically and intelligently evaluate arguments for legal change (4);
- understand the relationship between scientific knowledge, social movements, and environmental/ energy transition law (2);
- apply basic skills of legal research and legal arguments to relevant case studies (3)(6).

Classification of cognitive skills following Bloom (1956):

1 = *Knowledge*: recalling facts, terms, basic concepts and answers; 2 = *Comprehension*: understanding something; 3 = *Application*: using a general concept to solve problems in a particular situation; 4 = *Analysis*: breaking something down into its parts; 5 = *Synthesis*: creating something new by putting parts of different ideas together to make a whole; 6 = *Evaluation*: judging the value of material or methods.

Core readings

Sands, P., & Peel, J. (2018). *Principles of international environmental law*. Cambridge University Press.

Meidinger, Errol (2008), "Property Law for Development Policy and Institutional Theory: Problems of Structure, Choice and Change." In David Mark, Barry Smith, and Isaac Ehrlich, *The Mystery of Capital and the New Philosophy of Social Reality*. Chicago: Open Court Publishing, pp.193-227.

Reading material will be provided during the course via the e-learning platform ILIAS.

Module number	Module name	
64087	Elective: Life Cycle Management	

Course of study	Type of course	Semester / Rotation
MSc Renewable Energy MSc Environmental Governance MSc Forest & Environmental Sciences	Elective Module	3rd / Winter Term

Teaching methods	Prerequisites for attendance	Language
Lectures, exercises, group work	Calculations with Excel, Basic knowledge on vectors, matrices, matrix multiplication and matrix inversion	English

Type of examination (Final Grade Composition)	ECTS-LP (Workload)
PL Written exercise(s) (33%), PL Term paper + group work (67%), ca. 4000 words	5 (150h, of this 60 contact hrs.)

Module coordinator	SWS
Stefan Pauliuk, PhD (stefan.pauliuk@indecol.uni-freiburg.de)	4

Additional teachers involved
Prof. Dr. Rainer Grießhammer, MSc Kavya Madhu, Martin Möller, Öko-Institut: M.Moeller@oeko.de, Johan Velez

Syllabus
The course enables participants to conduct, interpret, document, and present life cycle assessment studies of products or technical installations using state-of-the-art tools and databases. **Content** During the first half of the course, the motivation behind and theory of life cycle assessment, including the modelling of life cycle inventories and life cycle impact assessment, is presented. The participants conduct exercises and study the relevant literature. During the second half, the participants learn how to conduct and document a life cycle assessment study that meets both ISO and scientific standards. The participants form small groups of 2-3, chose a product or installation, and perform a life cycle management case study. The final report on the case study is due at the end of the module. It will be graded and the result will account for two thirds of the final grade of the course. During the second half, background lectures and discussions on the potential, limits, applications, and future development of life cycle management will be held. A written exam (1.5 hours), the result of which accounts for one third of the final grade, will be held at the end of the course. The module is interactive and encourages strong student participation.

Learning goals and qualifications

- Basic knowledge of quantitative systems analysis of human-environment systems, basics of material and energy flow analysis (1);
- Detailed knowledge about the state of the art, the software, and databases of life cycle assessment according to the standards ISO 14040 and 14044 (1,3,4);
- Basic knowledge of life cycle impact assessment methods (1, 2, 3);
- Soft skills: discussion, scientific writing skills, capacity for team work (2);
- At the end of the course, the successful participant will be able to conduct, interpret, document, and present life cycle assessment studies of products or technical installations using state-of-the-art tools and databases (1-6).

Classification of cognitive skills following Bloom (1956):

- 1 = *Knowledge*: recalling facts, terms, basic concepts and answers; 2 = *Comprehension*: understanding something; 3 = *Application*: using a general concept to solve problems in a particular situation; 4 = *Analysis*: breaking something down into its parts; 5 = *Synthesis*: creating something new by putting parts of different ideas together to make a whole; 6 = *Evaluation*: judging the value of material or methods.

Recommended reading

LCA Textbook: http://www.lcatextbook.com/. Much of the basic material of the course will be based on this book.

OpenLCA tutorials (http://www.openlca.org/videos).

Manual of the ReCiPe impact assessment method (http://www.lcia-recipe.net/file-cabinet/ReCiPe_main_report_MAY_2013.pdf).

Important:

This course requires each participant to work on her/his own laptop with the openLCA software (http://www.openlca.org/) and the ecoinvent database installed. openLCA is freeware. A copy of the ecoinvent database will be provided at the beginning of the course.

Module number	Module name
95995	Elective: Research Design in Environmental Governance

Course of study	Type of course	Semester / Rotation
M.Sc. Environmental Governance	Elective	3rd/ Winter Term

Teaching methods	Prerequisites for attendance	Language
Lectures, group work, research assignments	None	English

Type of examination (Final Grade Composition)	ECTS-LP (Workload)
PL Individual research poster (100%)	5 (150h, of this 60 contact hrs.)

Module coordinator	SWS
Dr. Niko Schäpke, Email: niko.schaepke@envgov.uni-freiburg.de	4

Additional teachers involved

Leonard Frank, MA, MSc, leonard.frank@envgov.uni-freiburg.de

Syllabus

The overall goal of this module is to introduce the logic of social scientific inquiry in environmental governance and to offer students an opportunity to practice skills required for designing and conducting research projects, including a Master's thesis project. Accordingly, in Week 1 is focused on the theory and logic of social research. Weeks 2 and 3 focus on developing a research proposal and a research poster. During the first week of the module, students study philosophical foundations of social research, discuss the logic of social inquiry, review types of research design and research methods, and analyze exemplary cases of social research in environmental governance. The first week's class includes intensive reading, interactive lectures and guided seminars. At the end of this module part, students are required to take a written test (non-graded). The goal of the second part of the module is to apply competences acquired during the first week. Students develop their own research project proposals and present them in the form of a research poster.

Importantly, the developed research proposal is not a master's thesis proposal. It can, however be further developed into one following the end of the course. Thus, the course is not designed to guide students in writing a master thesis proposal. Nonetheless, the skills gained in this course will prepare students for writing the actual thesis proposal. We encourage students to elaborate and test their first ideas for a thesis project in this module. It is an opportunity to practice key elements of a thesis proposal, receive feedback on ideas and develop a basis for a 'real' thesis research proposal. Students develop their proposals in close cooperation with course lecturers and receive feedback. If a concrete master thesis topic and related supervisor are already known, students are requested to contact Niko Schäpke prior to enrolling in the course to clarify their participation.

Learning goals and qualifications

In this module students learn to:
- distinguish between different philosophical perspectives underlying qualitative, quantitative and mixed methods methodologies in the social science research (2);
- identify and understand different social science research designs and research processes (1, 2);
- assess the applicability of qualitative and quantitative research methods to specific research problems and questions (4, 5);
- design research projects on the basis of appropriate research questions and hypotheses that contribute to an increase of knowledge in their field of study (6);
- elaborate research project proposals and research posters based on proposals (6).

Classification of cognitive skills following Bloom (1956):

- 1 = *Knowledge*: recalling facts, terms, basic concepts and answers; 2 = *Comprehension*: understanding something; 3 = *Application*: using a general concept to solve problems in a particular situation; 4 = *Analysis*: breaking something down into its parts; 5 = *Synthesis*: creating something new by putting parts of different ideas together to make a whole; 6 = *Evaluation*: judging the value of material or methods.

Core readings

A list of relevant texts will be made available at the start of the course; obligatory readings (and part of the voluntary readings) will be made available online in electronic form. Preliminary readings:

Flick, U. (202). *Introducing Research Methodology - A Beginner's Guide to Doing a Research Project*. 3rd edition, SAGE Publications, London.

MEG Guidelines for MSc Theses, available at https://www.meg.uni-freiburg.de/Filelist/Current%20Students/guidelines_master_thesis__2015_neu.pdf)

Moon, K., & Blackman, D. (2014). A Guide to Understanding Social Science Research for Natural Scientists. Conservation Biology, 28(5), 1167-1177.

Course		
M.Sc. Renewable Energy Engineering and Management		

Availability to other courses	Instruction Language
----	English

Module No.	Module name	Semester/return
97025	Elective: Regulation and Assessment of the Systemic Aspects of the Energy Transition	3rd Sem. / annual

Workload/presence	Prerequisite module(s)	Follow-up module(s)	No. of participants
5 ECTS-P (150h/60h)		---	Max. 25

Teaching form	Examination form	Start date	Locations
Socratic lectures, group work, presentations	Written assignment, group work	30.01.2023	Online

Module coordinator: Prof. Dr. Dierk Bauknecht

Additional teaching staff: Guests t.b.a.

Syllabus

In this module students gain fundamental knowledge of the system implications of renewable energies that result from the main characteristics of electricity generation from renewables, such as their variability, their low marginal costs and the changing geographical distribution. This includes three main steps:

- First, the module explores what the various system implications of renewables are and which options are available and developments take place to adapt the system accordingly.
- Second, it deals with the assessment of these options from various perspectives, especially economic and social perspectives, how this is reflected in stakeholder positions and how such an assessment can be used to inform policy-making.
- Third, the module covers policy and regulatory options to address these system implications. Which regulatory options exist, what are their pros and cons and how are they implemented in different constituencies?

The focus is not on system implications in a narrow engineering sense, but the module takes a broader look at how the power and energy system does transform and needs to transform in order to implement a system based on renewables. This includes the following aspects: Grid infrastructure; flexibility requirements; various forms of centralisation and decentralisation of power systems, sector integration; market design.

The module applies an interdisciplinary approach. It is not based on a any specific methodological approach, but rather explores what instruments are needed and useful for dealing with the above questions. The module also introduces system transformation thinking.

The module will introduce these issues at a general level and with a focus on Germany in a European context as a specific case. Students will then apply the insights to other countries or to specific system options. Active participation of students is expected throughout the course.

Learning goals and qualifications

In this module acquire knowledge on three levels:

1) Energy system knowledge: What are key system implications of renewables, options to deal with them and related regulatory approaches? What are the implications of system transformation? This includes technical, economic, social and policy knowledge.
2) How can the various options available be assessed and what needs to be taken into account for that purpose in a real-world and policy context? How can assessments made by different stakeholders be judged?

Recommended reading
IEA-RETD (2015) Integration of Variable Renewables (RE-integration), [A. Conway; Mott MacDonald] IEA Implementing Agreement for Renewable Energy Technology Deployment (IEA-RETD), Utrecht, Netherlands http://iea-retd.org/archives/publications/re-integration Bauknecht, D., Heinemann, C., Seebach, D., Vogel, M., 2020. Behind and beyond the meter: what's in it for the system?, in: Sioshansi, F. (Ed.), Behind and beyond the meter: Digitalization, Aggregation, Optimization, Monetization. ELSEVIER ACADEMIC PRESS, [S.l.]. Reading material will be provided during the course via the e-learning platform ILIAS.
Course prerequisites
-

Module number	Module name
64084	Elective: Economics of Ecosystem Services and Biodiversity

Course of study	Type of course	Semester / Rotation
M.Sc. Environmental Sciences M.Sc. Forest Sciences M.Sc. Environmental Governance	Elective module	3rd / Winter Term

Teaching methods	Prerequisites for attendance	Language
Lectures, discussions, homework, tutorial, group work, student presentations	Intermediate economics level environmental economics: see separate detailed specification algebra and calculus: see separate detailed specification willingness and capability for interdisciplinary work in economics good commandment of English	English

Type of examination (Final Grade Composition)	ECTS-LP (Workload)
PL **Portfolio (homework written exercises, presentation)** 100%	5 (150h, of this 60 contact hrs.)

Module coordinator	SWS
Prof. Dr. S. Baumgärtner, e-mail: stefan.baumgaertner@ere.uni-freiburg.de	4

Additional teachers involved
Dr. Stephanie Armbruster (stephanie.armbruster@ere.uni-freiburg.de)

Syllabus
In this course, students will study biodiversity and ecosystem services from an economic perspective. Biodiversity is understood here as 'the variability among living organisms from all sources ... and the ecological complexes of which they are part' (United Nations Convention on Biodiversity 1992). Ecosystem services are "the benefits people obtain from ecosystems" (Millennium Ecosystem Assessment 2005). This includes provisioning services (e.g. the provision of food, fiber, fuels or clean drinking water), regulating services (e.g. climate regulation, erosion control, or the regulation of pests and diseases), and cultural services (e.g. aesthetic satisfaction, education, recreation, or spiritual fulfillment). While biodiversity is an issue of biology and ecology in the first place, the economic perspective can add valuable insights into why we are currently loosing biodiversity and ecosystem services at unusually high rates, why this is a problem that we should be concerned about, and what we can do in order to conserve and sustainably use biodiversity and ecosystem services in an efficient manner. To this end, students in this course will learn advanced concepts and methods from environmental and resource economics, and integrate them in an interdisciplinary manner with concepts and methods from ecology, to gain an encompassing and methodologically sound economic understanding of biodiversity and ecosystem services.

Learning goals and qualifications
In this module students learn to: – understand advanced theories, methods and empirical findings of economic environmental studies with respect to biodiversity and ecosystem services, and are able to reproduce them (1)

- critically reflect upon the economic approach to analyze the natural environment as well as its preconditions, limitations, and are able to reproduce and explain this to others (2)
- apply advanced theories and methods of economic environmental studies to smaller problems of biodiversity and ecosystem services autonomously (3)
- analyze reciprocal correlations between economic and environmental variables systematically and on an advanced professional level (4)

Core readings

There is no single textbook for this course. References to books and journal articles for each chapter will be given in class. References to start with are:

– The Economics of Ecosystems and Biodiversity (www.teebweb.org):
- Mainstreaming the Economics of Nature: Synthesis of the Approach, Conclusions and Recommendations (2010)
- Summary for Policy Makers: Responding to the Value of Nature (2009) and the talk of Dr. Pavan Sukhdev on *The Invisible Economy* on http://bankofnaturalcapital.com/2010/10/04/dr-pavan-sukhdev-on-the-invisible-economy/

References to books and journal articles for further reading will be given in class.

Course			
M.Sc. Environmental Governance / MSc Renewable Energies			

Availability to other courses			Instruction Language
RFM			English

Module No.		Module name	Semester/return
95996		Elective: Introduction to Sustainability Transitions	3rd Sem. / annual

Workload/presence	Prerequisite module(s)	Follow-up module(s)	No. of participants
5 ECTS-P (150h/60h)	---	---	Max. 25

Teaching form	Examination form	Start date	Location
Socratic lectures, group work, presentations	Written assignment, group work	20.02.2023	Hörsaal Herman-Herder-Str. 5

Module coordinator: Prof. Dr. Dierk Bauknecht

Additional teaching staff
Sarah Olbrich

Syllabus
Today we face a variety of environmental and societal challenges such as climate change or environmental pollution. These challenges are wicked problems: they are normative both in terms of problem- and solutions-defining, characterised by a high degree of complexity and uncertainty, value-laden and highly-contested, and they are context-dependent (Markard et al. 2012; Köhler et al. 2019). To solve those problems, systemic changes are necessary that alter our ways of producing and consuming, go beyond technological fixes, and include changes on multiple dimensions. This is true for a number of socio-technical systems such as the energy system.
In recent years, Sustainability Transition Studies evolved as a new research agenda and multidisciplinary research community to contribute to solving these challenges. It has two main aims: (1) gaining a better understanding of transition dynamics, and (2) generating an impact for today's transitions in process (governance of transitions).
This seminar introduces the field of Sustainability Transitions. We will learn about main concepts and frameworks for systemic change. We will mainly use the example of the energy transition to discuss and apply theoretical insights, but other sectors and a comparison between sectors will be discussed as well. Moreover, we will evaluate in how far theory can inform and help practitioners and decision-makers to guide and govern (energy) transitions in the making.

Learning goals and qualifications

- Getting familiar with the field of sustainability transitions
- Understanding prominent concepts and frameworks in the field of socio-technical sustainability transitions
- Applying these concepts to transitions in the making
- Evaluating on how theoretical insights can inform practitioners and policy-makers

Recommended reading

Köhler, Jonathan; Geels, Frank W.; Kern, Florian; Markard, Jochen; Onsongo, Elsie; Wieczorek, Anna et al. (2019): An agenda for sustainability transitions research: State of the art and future directions. In: *Environmental Innovation and Societal Transitions* 31, S. 1–32. DOI: 10.1016/j.eist.2019.01.004.

Markard, Jochen; Raven, Rob; Truffer, Bernhard (2012): Sustainability transitions: An emerging field of research and its prospects. In: *Research Policy* 41 (6), S. 955–967. DOI: 10.1016/j.respol.2012.02.013.

Reading material will be provided during the course via the e-learning platform ILIAS.

Course prerequisites

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4th Semester

Summer Term

Module number	Module name	
8000	Master Thesis	

Course of study	Type of course	Semester / Rotation
M.Sc. Environmental Governance	Core module	-

Teaching methods	Prerequisites for attendance	Language
	70 ECTS must have been earned	English

Type of examination (Final Grade Composition)	ECTS-LP (Workload)
Submission of Master Thesis	30 (900h)

Module coordinator	SWS
Seirra Römmermann, MSc E-mail: meg.coordinator(at)envgov.uni-freiburg.de	

Additional teachers involved

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Syllabus

Many people see the writing of an MSc-thesis as the coronation of higher academic education. And indeed, the importance of the thesis work is also reflected by the prominent role it takes within the whole MSc-programme. After completing core and elective subjects in the educational programme the MSc-thesis offers the challenge to set up and to carry out a scientific research project in an almost fully self-responsible manner, but under the guidance of an experienced supervisor.

 More information can be found on the MEG Website and under the following direct links:

Administrative Guidelines: Administrative matters to start writing a thesis (Choosing a supervisor, registration, deadline, etc)

Guidelines on how to write a Master Thesis: How to prepare for a master thesis what are the steps to write one (necessary skills, selecting a topic, looking for literature, grading, etc).

Learning goals and qualifications

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Core readings

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Room Plans

Modules usually take place in „Herderbau":
Tennenbacher Str. 4
79106 Freiburg

Look for the individual floor-maps available on each level of the building (e.g. R 100 is on the 1st floor, R 310 is in the 3rd floor)

MEG Programme Contacts

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