



## Course and Examination Fact Sheet: Spring Semester 2024

### 6,318: Economics of Climate Change

ECTS credits: 4

#### Overview examination/s

(binding regulations see below)

decentral - Analog written examination, Analog, Individual work individual grade (70%, 90 mins.)

Examination time: Term time

decentral - Presentation, Digital, Group work group grade (30%)

Examination time: Term time

#### Attached courses

Timetable -- Language -- Lecturer

[6,318,1.00 Economics of Climate Change](#) -- English -- [Eisenbarth Sabrina](#)

#### Course information

#### Course prerequisites

A good command of microeconomics (Microeconomics II) is strongly recommended. The course "Quantitative Methods" (or "Quantitative Methoden") is a prerequisite and students must have completed this course before they can attend Economics of Climate Change.

#### Learning objectives

In this course, we will learn about climate change impacts and the economic cost associated with these impacts. We will learn how economists assess the economic cost of climate change. The course will teach you to

- Apply economics tools to understand climate impacts and the economic costs associated with climate change impacts.
- Design and evaluate public policies for the mitigation of greenhouse gas emissions
- Use game theory to understand international pollution problems and the formation of treaties designed to address those problems.

#### Course content

Content includes:

1. Impacts of climate change
2. Economic costs of climate change impacts
3. Options for greenhouse gas abatement and abatement costs
4. Design and evaluation of climate mitigation policies (including carbon taxes, emission trading schemes, and policies to conserve forests)
5. Time permitting: International Environmental Agreements

This course applies economic tools to our understanding of climate change.

First, we will learn how the climate system might change and how this affects ecosystems, humans and the economy. We will learn about the economic costs associated with climate change impacts.



Next, we will look at options for greenhouse gas emissions abatement, their economic costs, and their abatement potential.

This knowledge will be used to think about climate mitigation targets and the optimal design of climate policy. We will see how carbon taxes or emission trading schemes can generate incentives to abate emissions. Deforestation and land-use change are also large sources of greenhouse gas emissions, and we use economic tools to evaluate policies to reduce reforestation.

Time permitting, we will use game theory to think about the formation of international climate agreements and/or climate adaptation.

## Course structure and indications of the learning and teaching design

This course consists of two lectures per week. Students will be given problem sets and case studies to work on in their spare time. We will use several hours of lecture time to discuss these problem sets and case studies.

## Course literature

The literature in this course is mainly based on journal articles and selected newspaper articles, which will be available on Canvas.

Selected chapters of the following textbooks can be additional useful references:

Perman, R., Ma, Y., Common, M., Maddison, D., & McGilvray, J. (2011). *Natural Resources and Environmental Economics* (4th ed.). Harlow, England: Pearson Education Limited.

Tietenberg, T., & Lewis, L. (2018). *Environmental and Natural Resource Economics* (11th ed.). New York: Routledge.

## Additional course information

Sabrina Eisenbarth is Associate Professor of Environmental Economics at the University of St. Gallen. Her research focuses on solutions to environmental problems in a globalized world. As such, her work incorporates insights from international trade into environmental economics. Moreover, she studies how to sustainably manage fisheries and communal forests. She is a co-investigator in the multi-million UKRI-funded [NetZeroPlus](#) project. NetZeroPlus investigates how planting of woodlands can best support the UK Government's commitment to achieving 'net zero' greenhouse gas emissions by 2050. Her work combines economic theory with empirical data analysis using micro-econometric methods, randomized control trials and lab experiments.

## Examination information

### Examination sub part/s

#### 1. Examination sub part (1/2)

##### Examination modalities

Examination type	Analog written examination
Responsible for organisation	decentral
Examination form	Written exam
Examination mode	Analog
Time of examination	Term time
Examination execution	Synchronous
Examination location	On Campus
Grading type	Individual work individual grade
Weighting	70%
Duration	90 mins.

##### Examination languages

Question language: English



Answer language: English

## Remark

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## Examination-aid rule

Closed Book

The use of aids is prohibited as a matter of principle, with the exception of pocket calculator models of the Texas Instruments TI-30 series and, in case of non-language exams, bilingual dictionaries without any handwritten notes. Any other aids that are admissible must be explicitly listed by faculty members in the paragraph entitled "Supplementary aids" of the course and examination fact sheet; this list is exhaustive.

Procuring any aids, as well as ensuring their working order, is the exclusive responsibility of students.

## Supplementary aids

None.

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## 2. Examination sub part (2/2)

### Examination modalities

Examination type	Presentation
Responsible for organisation	decentral
Examination form	Oral examination
Examination mode	Digital
Time of examination	Term time
Examination execution	Asynchronous
Examination location	Off Campus
Grading type	Group work group grade
Weighting	30%
Duration	--

### Examination languages

Question language: English

Answer language: English

## Remark

Narrated power point presentation

## Examination-aid rule

Free aids provision

Basically, students are free to choose aids. Any restrictions are defined by the faculty members in charge of the examination under supplementary aids.

## Supplementary aids

Textbook chapters, research articles and newspaper articles relevant to the topic of the presentation. The presentation should be based on the content covered in the course but also draw on additional reading. Students should search for additional research articles and newspaper articles relevant to the topic of the presentation. All literature will have to be cited using APA referencing.

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## Examination content

- All material covered in class, i.e. any lecture slides, lecture notes, problem sets, solutions to problem sets and case studies.
- This includes application of economics tools to explain climate impacts and the economic costs associated with climate



change impacts, designing and evaluating public policies for the mitigation of greenhouse gas emissions, as well as the application of game theory to illustrate international pollution problems and the formation of treaties designed to address those problems.

- For the recorded presentation, students should search for additional research articles and newspaper articles relevant to the topic of the presentation.

## Examination relevant literature

Lecture content (slides, lecture notes, case studies, problem sets and solutions)

Selected journal, newspaper articles and webpages, as indicated on Canvas (before the end of the lecture period).

Selected textbook chapters from the following two textbooks, as indicated on Canvas (before the end of the lecture period).

- Perman, R., Ma, Y., Common, M., Maddison, D., & McGilvray, J. (2011). *Natural Resources and Environmental Economics* (4th ed.). Harlow, England: Pearson Education Limited.
- Tietenberg, T., & Lewis, L. (2018). *Environmental and Natural Resource Economics* (11th ed.). New York: Routledge.

For the recorded presentation, students should search for additional research articles and newspaper articles relevant to the topic of the presentation.

## Please note

Please note that only this fact sheet and the examination schedule published at the time of bidding are binding and takes precedence over other information, such as information on StudyNet (Canvas), on lecturers' websites and information in lectures etc.

Any references and links to third-party content within the fact sheet are only of a supplementary, informative nature and lie outside the area of responsibility of the University of St.Gallen.

Documents and materials are only relevant for central examinations if they are available by the end of the lecture period (CW21) at the latest. In the case of centrally organised mid-term examinations, the documents and materials up to CW 13 are relevant for testing.

Binding nature of the fact sheets:

- Course information as well as examination date (organised centrally/decentrally) and form of examination: from bidding start in CW 04 (Thursday, 25 January 2024);
- Examination information (supplementary aids, examination contents, examination literature) for decentralised examinations: in CW 12 (Monday, 18 March 2024);
- Examination information (supplementary aids, examination contents, examination literature) for centrally organised mid-term examinations: in CW 13 (Monday, 25 March 2024);
- Examination information (regulations on aids, examination contents, examination literature) for centrally organised examinations: Starting with de-registration period in CW 15 (Monday, 08 April 2024).