



Course and Examination Fact Sheet: Spring Semester 2023

6,318: Economics of Climate Change

ECTS credits: 4

Overview examination/s

(binding regulations see below)

Central - Written examination (70%, 90 mins.)

Examination time: inter-term break

Decentral - Presentation (in groups - all given the same grades) (30%)

Examination time: term time

Attached courses

Timetable -- Language -- Lecturer

[6.318.1.00 Economics of Climate Change](#) -- Englisch -- [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
6. Time permitting: Climate adaptation

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, the economic costs of those different options 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 time and form

Central - Written examination (70%, 90 mins.)

Examination time: inter-term break

Remark

Final exam

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

Nature of examination

analog

Examination languages

Question language: English

Answer language: English

2. Examination sub part (2/2)

Examination time and form

Decentral - Presentation (in groups - all given the same grades) (30%)

Examination time: term time

Remark

Recorded group 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

Students are required to prepare a presentation on a specific topic in groups and submit a recording of the presentation (e.g. a narrated PowerPoint presentation). The presentations should be based on the content covered in the lectures and additional reading. The topic and time limit for presentations will be specified on Canvas.

Students should search for additional research articles and newspaper articles relevant to the topic of the presentation. Those articles should be cited using APA referencing.

Nature of examination

analog

Examination languages

Question language: English

Answer language: English

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.

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 12 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, 26 January 2023);
- Examination information (regulations on aids, examination contents, examination literature) for decentralised examinations: in CW 12 (Monday, 20 March 2023);
- Examination information (regulations on aids, examination contents, examination literature) for centrally organised mid-term examinations: in CW 12 (Monday, 20 March 2023);
- Examination information (regulations on aids, examination contents, examination literature) for centrally organised examinations: two weeks before the end of the de-registration period in CW 15 (Monday, 10 April 2023).