SEA-EU Module description

Module offers for the SEA-EU 'Virtual Modules'

General Information

Module/Course Name	Climate Change Economics	
Module/Course Code	VWLmifiClim-01a	
Field of Education	Generic programmes and qualifications	☐
	Education	☐
	Arts and humanities	☐
	Social sciences, journalism and information	☐
	Business, administration and law	☒
	Natural sciences, mathematics and statistics	☐
	Information and Communication Technologies	☐
	Engineering, manufacturing and construction	☐
	Agriculture, forestry, fisheries and veterinary	☐
	Health and welfare	☐
	Services	☐
Study programme	Economics, Socio-Economics	
Number of ECTS and total student workload	5 ECTS, and 150 hours	
Contact hours and Independent study hours	45 contact hours, 105 independent study hours	
Typology of contact hours	Contact during weekly lectures and tutorials	
Academic Year	2025/2026	
Semester / Specific period	Summer term 2026	
Teaching Language	English	
Delivery mode	Hybrid	
Responsible Lecturer	Name: Ulrike Kornek E-Mail: kornek@economics.uni-kiel.de	
Other lecturers	Name: Anke Jacksohn	

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Learning outcomes	After completing this course, students can explain how climate change emerges from greenhouse gas emissions. They know climate change impacts and understand how these lead to benefits of abatement. Students understand technological options to abate and how they lead to abatement costs. Based on these functions they can derive optimal climate change mitigation, also in an intertemporal context. Students can further determine cost-effective implementation of temperature targets. For both conceps, they derive how the abatement levels are implemented with different policy instruments. Lastly, students know what Nash-equilibria are and can apply this concept to different games, to derive free-riding incentives in public-good-like games.
Course contents	The course introduces students to the main concept of climate change economics. Student learn about the basics of climate physics and climate change impacts. The main part of the course teaches decision making in climate change with optimal mitigation, cost-effective mitigation, and international incentives to provide the public good of climate change mitigation. Students also learn about policy instruments to implement decisions. Outline: 1. The basics of climate physics 2. Climate change impacts 3. Cost-benefit analysis in climate change: (marginal) abatement costs, (marginal) benefits of abatement 4. Intertemporal cost-benefit analysis in climate change 5. Mitigating climate change until 2100: cost-effective mitigation, technological options 6. National climate policy: emission taxes, emission permits, subsidies, technological standards 7. International climate policy: game-theoretic free-ridings incentives, Nash-equilibria in public good provision, International environmental agreements
Prerequisites and/or recommended academic background	Background: Main classes in economics, i.e. microeconomics, macroeconomics, and econometrics Please note that the module is only open to master students who have not previously taken courses in environmental economics and whose home university does not offer a comparable course.

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Assessment	Grades are exclusively based on the written exam at the end of the class. Students from other universities than CAU Kiel need to find a supervisor for the exam time at their home university.
Main bibliography	Tietenberg, Lewis: Environmental and Natural Resource Economics Stern Review: http://mudancasclimaticas.cptec.inpe.br/~rmclima/pdfs/destaques/sternreview_report_complete.pdf Tol, R: Climate Economics: Economic Analysis of Climate, Climate Change and Climate Policy, Elgar

Organisational Information

Maximum number of SEA-EU participants
10
Learning Management System
OpenOLAT
Course schedule (date and time)
Lecture: Mondays from 10:15-11:45 Tutorial: Wednesdays from 16:15-17:45 Lectures and tutorials start in the week of April 13th and are done by July 8th.
Application deadline
08.03.2026

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