

Level: PhD				
Course title: Methods for mitigating climate change				
Status: elective				
ECTS: 15				
Requirements: none				
Learning objectives Advancement of knowledge in the field of climate change caused by anthropogenic activities (global warming caused by emissions of greenhouse gases), and ways to mitigate those changes through technical means.				
Learning outcomes Qualification of students for independent scientific work in the study of climate change, the impact of these changes on the economy and society, and mastering the technical approaches to climate change mitigation.				
Syllabus <i>Theoretical instruction:</i> Climate change (scale problem). Energy resources and energy consumption. Carbon cycle. Environmental consequences from the use of fossil fuels (climate change caused by the so-called greenhouse gases, primarily carbon dioxide (CO ₂)). Ways to mitigate climate change: (a) reducing the generation of greenhouse gases, changes in processes in which these gases occur – the concept of zero emissions (changes in production technologies in industry, thermal power plants, transportation, management areas), (b) reducing emissions of greenhouse gases by replacing energy from fossil fuels with alternative energy sources (wind energy, water, solar energy, geothermal energy, nuclear energy, hydrogen, biogas, bioethanol, biodiesel, etc.), (c) carbon sequestration (mainly as CO ₂) from the carbon cycle (overview of carbon capture and storage, separation and storage methods: disposal in oceans, underground disposal; uptake the life cycle of biomass, etc.) Policy easing global governance of climate change (Kyoto Protocol, and the like.). Economic aspects of measures (technical approach) for the mitigation of climate change. <i>Practical instruction:</i> Development of projects (case studies) on selected topics from the curriculum.				
Weekly teaching load				Other:
Lectures: 5 (75)	Exercises:	Other forms of teaching:	Student research: 5 (75)	