



COURSE DATASHEET

Semester:	2015/16/1
Course:	Global climate change: causes and consequences
Code:	VEMKFTM113G
Responsible department:	Department of Earth and Environmental Sciences
Department code:	MKFT
Responsible instructor:	dr. András Gelencsér

Course objectives:

The objective of the course is to demonstrate the extreme complexity of the climate system, the plethora of controlling factors, the knowledge gaps regarding climate change and anthropogenic contributions, difficulties in forecasts and all related social-economic aspects

Course content:

Greenhouse effect

Human influence on the global biogeochemical cycling of carbon

Human influence on atmospheric concentrations of methane, nitrous oxide, ozone and other GHGs

Climate effects of aerosols including black carbon

Recent changes in the cryosphere

Recent land use changes and effects of climate change on the biosphere

Climate-induced changes in the oceans

Recent changes in the global energy balance of the Earth

Paleoclimatology: relevant climate changes in geological times

Future emissions from conventional fossil fuels, reserves and limitations

Options for geoengineering

Acceptance of climate change in the society, climate skepticism

Requirements, evaluation and grading:

After a half an hour's preparation the examinee gives an oral presentation on the topic for about 20-25 minutes.

Fail (1) when the examinee is unable to prove either the definition of the basic notions or the short scheme of things connected with the topic.

Pass (2) when the examinee is able to interpret the basic notions of the topic.

Satisfactory (3) when the examinee is well-versed in the basic notions of the topic and is able to present their logic connections - with the help of the examiner.



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Requirements, evaluation and grading:

Good (4) when the examinee provides a logic, well - structured presentation with all the important facts and connections but he does not know or partly knows the required reading material connected with the topic.

Very good (5) when the examinee gives a logic, excellent, well-structured, perfect in details oral presentation that completely reveals the connection of the concepts within the topic.

Required and recommended readings:

Houghton, J. T. et al. (Eds.) Climate Change 2001: The Scientific Basis. Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, Cambridge, United Kingdom and New York, Ny, USA, 2001.

Seinfeld, J. H. and Pandis, S. N. Atmospheric Chemistry and Physics, from Air Pollution to Climate Change, John Wiley, New York, 1998

<http://www.copenhagendiagnosis.org/>

IPCC Fourth Assessment Reports http://www.ipcc.ch/publications_and_data/publications_and_data_reports.shtml#1