

UČNI NAČRT PREDMETA / SUBJECT SPECIFICATION

Predmet:	Podnebne spremembe
Subject Title:	Climate Change

Študijski program Study programme	Letnik Year	Semester Semester
Varstvo okolja in ekotehnologije	2	2 ali 3

Predavanja Lectures	Sem. vaje Tutorial	Lab. vaje Lab. work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
20	15	15		130	6

Nosilec predmeta / Lecturer: doc. dr. Peter Frantar / Peter Frantar, Ph.D., Assist. Prof.

Jeziki / SL/EN **Predavanja / Lectures:** 20
Languages: SL/EN **Vaje / Tutorial:** 30

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:

Osnovno znanje kemije in angleščine.

Prerequisites

Fundamental knowledge in chemistry and English.

Vsebina:

1. Globalno ogrevanje in klimatske spremembe
2. Učinek tople grede in toplogredni plini
3. Klima v preteklosti
4. Modeliranje klime
5. Globalna družba in politika klimatskih sprememb
6. Globalni učinki klimatskih sprememb
- a) kompleksna mreža sprememb
- b) vpliv na obalna območja
- c) vpliv na kmetijstvo in oskrbo hrano
- d) naraščanje človeške rabe pitne vode
- e) vpliv na ekosisteme
- f) vpliv na zdravje ljudi
- g) prilagajanje na klimatske spremembe
- h) stroški
7. Učinki klimatskih sprememb v Sloveniji
8. Pravičnost – medgeneracijska in mednarodna
9. Od energetske rabe fosilnih virov k rabi obnovljivih virov
10. Tehnologije in davki
11. Energija in transport
12. Revščina in rast prebivalstva

Content (Syllabus outline):

1. Global warming and climate change
2. The greenhouse effect and the greenhouse gases
3. Climates of the past
4. Modelling the climate
5. Global society and politics of climate change
6. The global impacts of climate change
- a) A complex network of changes
- b) Impacts in coastal areas
- c) Impact on agriculture and food supply
- d) Increasing human use of fresh water resources
- e) The impact on ecosystems
- f) The impact on human health
- g) Adaptation to climate change
- h) costs
7. The impact of climate change in Slovenia
8. Equity – intergenerational and international
9. From energy use of fossil sources to use of renewables
10. Technologies and taxes

13. Klimatska konvencija
 - a) Okvirna konvencija OZN
 - b) Montrealski protokol
 - c) Kyotski protokol
14. Mednarodna pogajanja, EU in trgovanje z ogljikom
15. Geopolitika klimatskih sprememb

11. Energy and transportation
12. Poverty and population growth
13. The Climate Convention
 - a) The UN Framework Conventional
 - b) The Montreal Protocol
 - c) The Kyoto Protocol
14. International negotiations, the EU and carbon markets
15. The geopolitics of climate change

Temeljni literatura in viri / Textbooks:

Houghton, John. (2009). Global Warming. Cambridge: Cambridge University Press.
 Giddens, Anthony. (2009). The Politics of Climate Change. Cambridge: Polity Press.
 Burroughs, William James. Climate Change. A Multidisciplinary Approach. (2007). Cambridge: Cambridge University Press.
 Hulme, Mike. (2009). Why We Disagree About Climate Change. Cambridge: Cambridge University Press.
[Kajfež-Bogataj, Lučka. \(1999\). Ocena ranljivosti in strategija prilagoditve ekosistemov na spremembo podnebja v Sloveniji. Ljubljana: Biotehniška fakulteta et al.](#)

Cilji:

Študente seznaniti z globalnim segrevanjem in klimatskimi spremembami z vidika različnih znanstvenih disciplin in z njihovimi naravnimi in družbenimi vzroki. Usposobiti jih za zbiranje podatkov o klimatskih spremembah in za odkrivanje in uvajanje tehničnih in družbenih ukrepov za preprečevanje njihovega nastanka in škodnih posledic.

Objectives:

To acquaint students with global warming and global change from the point of view of different scientific disciplines and with its ecological and social causes. To qualify them to be able to collect data on climate change and to be able to introduce technical and social measurements to prevent its appearances and its harmful impacts.

Predvideni študijski rezultati:

Znanje in razumevanje:

Študent bo ob zaključku tega predmeta sposoben izkazati znanje o vzrokih in posledicah klimatskih sprememb, napisati poročila in članke o njih, sestaviti numerične atmosferske modele in urejati podatke o njihovih geografskih, zdravstvenih in biodiverzitetnih učinkih. Sposoben bo izkazati razumevanje in identificiranje družbenih procesov, ki so povezani z njihovim nastankom in razložiti njihove posamezne in lokalne fenomene v globalnih procesih. Sposoben bo tudi uporabiti različne znanstvene modele napovedovanja klimatskih sprememb in oceniti njihove učinke na različnih področjih ekosistemov in kvalitete življenja ljudi. Sposoben bo analizirati, primerjati in ovrednotiti proces klimatskih sprememb glede na zbrane podatke in delati zaključke ter načrtovati potrebne ukrepe.

Intended learning outcomes:

Knowledge and Understanding:
 The student will be at the completion of this course able to demonstrate knowledge of causes and consequences of climate change, to write reports and articles about it, to set up numerical atmospheric models and to arrange data on its geographic, health and biodiversity impacts.
 He/she will be able to demonstrate understanding and to identify social processes, connected with its appearance and to break down its different impacts on local and global level.
 He/she will be able to set up different scientific models of predicting climate change and to assess their impacts on ecosystems and on quality of people's life.
 He/she will be able to analyse, to summarise and to evaluate the process of climate change regarding to collected data and to conclude and to plan necessary

Prenesljive/ključne spretnosti in drugi atributi:

Študent pridobi pri predmetu konkretno strokovno znanje in razumevanje klimatskih sprememb, modeliranja kompleksnih numeričnih podatkov, ki ga lahko uporablja tudi pri drugih okoljskih in družbenih procesih. Pridobi spretnost uporabe domače in tuje literature ter internetnih virov, pisnega in ustnega poročanja, identificiranja in reševanja problemov, uvajanja novih tehničnih in družbenih postopkov ter uveljavljanja družbene transparentnosti v teh postopkih. Usposobi se za kritično analizo in sintezo pridobljenega znanja, za refleksijo zbranih podatkov in prebrane literature ter za kooperativno delo v timu in za vodenje projektnih timov.

measurements.

Transferable/Key Skills and other attributes:

The student will acquire practical professional knowledge and understanding of the climate change, ability to do modelling complex numerical data, the way modelling is useful in other environmental and social processes as well. He/she will acquire skill to use national and international literature on the subject and internet sources, to write and to report verbally, to identify and to solve problems, to introduce new technical and institutional processes and to put into effect public transparency of these processes. He/she will acquire the ability to analyse critically and to synthesize the knowledge gained, to reconsider the collected data and the read literature and to work efficacious in a team and to be able to run a project team.

Metode poučevanja in učenja:

Predavanja, vaje, projektno delo, laboratorijske vaje, delo na terenu, seminarska naloga.

Learning and teaching methods:

Lectures, tutorial, field work, lab work, project, project assignments.

Načini ocenjevanja:**Način (pisni izpit, ustno izpraševanje, naloge, projekt)**

Sodelovanje pri predavanjih in vajah 25%
Seminarska naloga 25%
Kolokviji 25%
Ustni izpit 25%

Delež (v %) /

Weight (in %)

Assessment:

Type (examination, oral, coursework, project):
Collaboration in lectures and tutorials 25%
Project paper 25%
Test exams 25%
Oral examination 25%

Materialni pogoji za izvedbo predmeta :

Predavalnica z multimedijско opremo, laboratorij s specificirano laboratorijsko opremo, knjižnica.

Material conditions for subject realization:

Classroom with the multimedia equipment, laboratory with specified lab equipment, library.

Obveznosti študentov:

(pisni, ustni izpit, naloge, projekti)

Izdelana seminarska naloga in opravljeni kolokviji, ustni izpit.

Student's commitments:

(written, oral examination, coursework, projects):

Written project work, passed test exams, oral examination.