



OPIS PREDMETA / SUBJECT SPECIFICATION

Predmet: Subject Title:	Organizmi v spreminjajočem se okolju Organisms in changing environment
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Študijski program Study programme	Študijska smer Study field	Letnik Year	Semester Semester
<i>Izobraževalna biologija</i> , pedagoški dvopredmetni študijski program 2. stopnje		2	Zimski
<i>Educational Biology</i> , pedagogical two stream study, 2 nd. degree		2	Winter

Univerzitetna koda predmeta / University subject code:

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. vaje Lab. work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
30	30				120	6

Nosilec predmeta / Lecturer:

Jeziki / Languages:	Predavanja / Lecture: Vaje / Tutorial:	slovenski / Slovenian slovenski / Slovenian
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Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:

Prerequisites:

Ni zahtev

No prerequisites

Vsebina:

Contents (Syllabus outline):

Organizmi živijo v okolju, ki se v večji ali manjši meri ves čas spreminja. Medtem ko so bili vzrok sprememb v preteklosti naravni dejavniki, spremembe pa neusmerjene, je predvsem v zadnjih stoletjih povzročitelj sprememb v naravi človek. Spremembe, ki jih povzroča, so lahko ciljno naravnane (npr. pridobivanje kmetijskih zemljišč, zaježitve, ipd.) ali pa stranska posledica drugih dejavnosti (npr. onesnaženje, erozija). Organizmi so se v procesih evolucije prilagodili na razmere v značilnih okoljih in so na spremembe v teh okoljih bolj ali manj tolerantni. Nekateri se tudi prilagodijo na spremenjeno okolje in so lahko v njem celo zelo uspešni, za veliko večino pa so velike spremembe pogubne. Cilj predmeta je seznaniti bodoče učitelje z danes prepoznanimi negativnimi dejavniki okolja, katerih vzrok je človek, in jih pripraviti na angažirano in problemsko zastavljeno poučevanje o teh dogajanjih ter za vzpodbujanje pretehtanega poseganja v okolje na osnovi znanstvenih spoznanj in načelih trajnostnega razvoja.

Organisms are living in more or less changing environment. While in the past major causes of the changes were natural, and changes undirected, in the last centuries cause of the changes are human. Changes caused by human can be regarded as directed (gaining of arable land, dams, etc.) or as side effect of some other processes (pollution, erosion, etc.). Organisms have through processes of evolution developed mechanisms through which are more or less tolerant to the changes and are adapted to the environment. Some of them find changed environment even more favorable, but for most of them changes are lethal. The objective of the subject is to inform future teachers with recently known environmental problems and sustainable development, where cause is human and prepare them on problem-based teaching about environmental issues, based on scientific reasoning and fundamentals of sustainable development.

Temeljni študijski viri / Textbooks:

- Izbrane teme iz:
- Böhringer, C., Lange, A. (Eds.), 2005: Applied research in environmental economics. Environment, Development and Sustainability, Vol. 31.
- Kant, S., Berry, R.A. (Eds.), 2005: Economics, sustainability and natural resources – Economics of sustainable forest management. Environment, Development and Sustainability, Vol. 1.
- Millennium Ecosystem Assessment, 2003: Ecosystems and Human Well-being: A Framework for Assessment, Island Press.
- Millennium Ecosystem Assessment, 2005: Ecosystems and Human Well-being: Synthesis, Island Press.
- Millennium Ecosystem Assessment, 2005: posamezna poročila (biotska raznovrstnost, voda in mokrišča, privatni sektor, človekovo zdravje) na: <http://www.MAweb.org>
- NAS, 2003: Frontiers in Agricultural Research: Food, Health, Environment and Communities, National Research Council, National Academy of Sciences, National Academies Press, Washington, DC.
- Nelissen, N. et al, Eds. 1997: Classics in Environmental Studies, An Overview of Classic Texts in Environmental Studies, International Books.
- Taylor, P.W. 1989: Respect for Nature, A Theory of Environmental Ethics, Studies in Moral Political, and Legal Philosophy, Princeton University Press.

Izbrani članki iz revij/selected papers from the journals: Environment, Development and Sustainability; itd./etc.

#### Cilji:

##### Študenti:

- Razumejo principe Darwinistične evolucije;
- Poznajo in razumejo koncept homeostaze;
- razumejo pomen interakcij med organizmom in njegovim živim in neživim okoljem;
- Prepoznajo nivoje biotske pestrosti (biodiverzitete) in poznajo ukrepe za njeno zaščito;
- Povežejo vpliv človeka na okolje z njegovo biotsko evolucijo in razvojem materialne kulture;
- Poznajo potek evolucije človeka;
- Se seznanijo z biotskimi, socialnimi in kulturnimi značilnostmi človeške vrste;
- Poznajo osnovne principe delovanja človeštva na okolje;
- Spoznajo globlje vzroke za razkorak med družbeno ekonomiko in okoljskim ravnovesjem;
- Se podrobno seznanijo s pristopi, z ukrepi ter s planiranjem trajnostnega razvoja.

#### Objectives:

- Understand principles of Darwinian evolution;
- Understand concepts of homeostasis;
- Understand importance of interactions between an organism and its environment;
- Recognize levels of biodiversity and understand measures to protect biodiversity;
- Connect impact of human on environment and development of material cultures;
- Know about steps in human evolution;
- Know about biological, social and cultural specifics of human species;
- Understand basic principles of impact of human on environment.
- Recognize deeper causes for a gap between economics and environmental stability;
- Know about implementation and planning of decisions based on sustainable development.

#### Predvideni študijski rezultati:

##### Znanje in razumevanje:

Po končanem kurzu naj bi študent:

- Znal pojasniti evlucijske spremembe in odzive organizmov;
- poznal koncepte in procese, potrebne za opis povezave med evolucijo, homeostazo, spremembami v okolju in fiziološkim odzivom organizmov;

##### Knowledge and understanding

After the completed course student should:

- Be able to explain evolutionary changes and responses of the organisms;
- Know about concepts and processes, needed to describe connections between homeostasis, environmental changes and

- razumel vzroke za izumiranje organizmov in izgubo biotske pestrosti;
- razumel vlogo človeka kot dejavnika okolja;
- Analiziral vzroke in posledice glavnih človekovih dejavnosti na okolje;
- znal utemeljiti paradigmo trajnostnega razvoja;
- poznal najpomembnejše dejavnike ogrožanja okolja na lokalnem in globalnem nivoju;
- sposoben sprejemati odločitve o primernosti oziroma neprimernosti konkretnih posegov v okolje na osnovi racionalnega razmisleka.

**Prenesljive/ključne spretnosti in drugi atributi:**

- Zna prenašati pridobljena znanja drugim in sodelovati v okoljskih in naravovarstvenih razpravah;
- Zna primerjati obstoječe stanje s potencialnim optimalnim stanjem v konkretnem okolju;
- Zna se aktivno vključiti v interdisciplinarno iskanje rešitev za določene okoljske probleme

**Metode poučevanja in učenja:**

- Predavanja
- Seminar
- Individualno delo

physiological response of an organism.

- Understand causes of extinctions and lost of biodiversity;
- Understand role of the human as environmental factor;
- Analyse causes and effects of the main human activities on the environment;
- Explain paradigm of sustainable development;
- Understand most important environmental factors on local and global level;
- Be able to make decisions about suitability of environmental impacts based on rationale explanations.

**Transferable/Key Skills and other attributes:**

- To transfer knowledge to the others and cooperate in environmental and nature protection debates.
- To compare existing with potential and optimal state of the environment;
- Know how to active participate in interdisciplinary search of solutions of the environmental problems.

**Learning and teaching methods:**

- Lectures
- Seminar
- Individual work

**Načini ocenjevanja:**

Delež (v %) /  
Weight (in %)

**Assessment:**

- Seminarska naloga in zagovor
- Pisni izpit

50 %  
50 %

- Seminar essay and its defense
- Written exam

**Materialni pogoji za izvedbo predmeta :**

- *Multimedijska predavalnica*

**Material conditions for subject realization**

- *Lecture room with multimedia facilities*

**Obveznosti študentov:**

*(pisni, ustni izpit, naloge, projekti)*

- Seminarska naloga in zagovor
- Pisni izpit

**Students' commitments:**

*(written, oral examination, coursework, projects):*

- Seminar essay and its defense
- Written exam