



Univerza v Mariboru

Fakulteta za naravoslovje
in matematiko

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet:	Modeliranje rešitev družbeno-znanstvenih tem
Course title:	Modeling of the solutions of Socio-scientific issues

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Doktorski študij Ekološke znanosti, 3. stopnja		1. ali 2.; 1st or 2nd	1.- 4.; 1st-4th
Doctoral Study Ecological Sciences, 3rd degree			

Vrsta predmeta / Course type: Izbirni/Elective

Univerzitetna koda predmeta / University course code:

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Lab. vaje Laboratory work	Terenske vaje Field work	Samost. delo Individ. work	ECTS
4	26				150	6

Nosilec predmeta / Lecturer: Izr. prof. dr. Andrej Šorgo

Jeziki / Predavanja / Lectures: slovenski / Slovene
Languages: Vaje / Tutorial: slovenski / Slovene

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

osnovne spretnosti s področja raziskovalnega dela

Prerequisites:

basic research skills

Vsebina:

Teme, kjer je razlaga v naravoslovnih znanostih odločitve pa se sprejemajo na individualnem ali družbenem nivoju imenujemo družbeno-znanstvene teme. Številnih globalnih (npr. globalne klimatske spremembe, upad biodiverzitete, sproščanje gensko spremenjenih organizmov v okolje, izraba virov) in lokalnih (npr. ravnanje z odpadki, kmetijska praksa, onesnaževanje,

Content (Syllabus outline):

Topics, where explanations are in a domain of natural sciences and decisions are made on an individual or societal level are called socio-scientific issues. Many global (i.e. Global climate change, declining biodiversity, release of genetically modified organisms into the environment, use of resources) and local (e.g. waste, agricultural practices, pollution, management of protected areas) are all

gospodarjenje v zaščitenih območjih) okoljskih problemov pa ni mogoče razrešiti brez razumevanja soodvisnosti osebnih, družbenih, tehnoloških, naravnih in znanstvenih dejavnikov. Za razrešitev okoljskih problemov zato potrebujemo orodja s katerimi lahko oblikujemo modele za njihovo rešitev na tehnično-tehnološkem, strukturnem (npr. predpisi) in kognitivnem nivoju.

environmental problems what cannot be solved without understanding the interdependence personal, social, technological, natural and scientific factors. To resolve the environmental problems we need the tools to design models for their solutions at the technical and technological, structural (e. g. regulations) and cognitive levels.

Temeljni literatura in viri / Readings:

Byrne, B. M. (2016). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. Routledge.

Sadler, T. D. (2011). Socio-scientific issues-based education: What we know about science education in the context of SSI. In *Socio-scientific Issues in the Classroom* (pp. 355-369). Springer Netherlands.

Cilji in kompetence:

Temeljni cilji predmeta so usposobiti študente za:

- prepoznavo in opredelitev večplastnosti družbeno-znanstvenih problemov;
- uporabo metod za identifikacijo in opredelitev naravne, osebne in družbene dimenzije družbeno-znanstvenih tem;
- oblikovanje in ovrednotenje instrumentov, ki merijo različne nivoje družbeno-znanstvenih tem;
- oblikovanje in ovrednotenje modelov povezav različnih nivojev družbeno-znanstvenih tem;
- kvantitativno in kvalitativno evalvacijo modelov in rešitev družbeno-znanstvenih tem.

Objectives and competences:

The main objectives of the course are to enable students to:

- identify and define the complexity of socio-scientific issues;
- the use of methods for identification and characterization of natural, personal and social dimensions of socio-scientific topics;
- design and evaluation of instruments that measure the different levels of socio-scientific topics;
- design and evaluation of model linking the different levels of socio-scientific topics;
- quantitative and qualitative evaluation of models and solutions to socio-scientific topics.

Predvideni študijski rezultati:

Intended learning outcomes:

Znanje in razumevanje:

Po končanem kurzu in samostojnem delu bodo študentje pridobili znanja in spretnosti potrebne za samostojno raziskovalno delo na področjih družbeno-znanstvenih tem.

Prenesljive/ključne spretnosti in drugi atributi:

Sposobnost identifikacije, analize, presoje, ovrednotenja in predstavitve izbranega družbeno-znanstvenega problema.

Metode poučevanja in učenja:

- Predavanja, seminarsko delo, individualne konzultacije

Knowledge and understanding:

After completion of the course and independent work, students will gain the knowledge and skills necessary for independent research work in socio-scientific issues.

Transferable/Key Skills and other attributes:

Competence to identify, analyse, evaluate and present of chosen socio-scientific problem.

Learning and teaching methods:

- Lectures, seminaire work, individual consultations

Načini ocenjevanja:	Delež (v %) / Weight (in %)	Assessment:
Seminarsko delo Zagovor seminarskega dela	70 30	Semminaire work; Defence of seminaire work

Reference nosilca / Lecturer's references:

ŠORGO, Andrej, ŠPUR, Natalija, ŠKORNIK, Sonja. Public attitudes and opinions as dimensions of efficient management with extensive meadows in Natura 2000 area. *Journal of environmental management*, ISSN 0301-4797, 2016, vol. 183, part 3, str. 637-646,

ŠPUR, Natalija, POKORNY, Boštjan, ŠORGO, Andrej. Attitudes toward and acceptability of management strategies for a population of hooded crows (*Corvus cornix*) in Slovenia. *Anthrozoös*, ISSN 0892-7936, 2016, vol. 29, iss. 4, str. 669-682

ŠORGO, Andrej, JAUŠOVEC, Norbert, JAUŠOVEC, Ksenija, PUHEK, Miro. The influence of intelligence and emotions on the acceptability of genetically modified organisms. *Electronic Journal of Biotechnology*, ISSN 0717-3458, 2012, vol. 15, no. 1, str. 1-11,

BRATINA, Božidar, ŠORGO, Andrej, KRAMBERGER, Janez, AJDNIK, Urban, FRAS ZEMLIČ, Lidija, EKART, Janez, ŠAFARIČ, Riko. From municipal/industrial wastewater sludge and FOG to fertilizer : a proposal for economic sustainable sludge management. *Journal of environmental management*, ISSN 0301-4797, 1. Dec. 2016, vol. 183, part 3, str. 1009-1025.