



UČNI NAČRT PREDMETA / SUBJECT SPECIFICATION

Predmet:	Energetika in okolje
Subject Title:	Energetic and environment

Študijski program Study programme	Študijska smer Study field	Letnik Year	Semester Semester
Izobraževalna tehnika, pedagoški dvopredmetni študij, 2. stopnja		2	Zimski
Educational Design, pedagogical two stream study, 2 nd. degree		2	Winter

Univerzitetna koda predmeta / University subject code:

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. vaje Labor work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
30	15				45	3

Nosilec predmeta / Lecturer:

Jeziki / Predavanja / Lecture:
Languages: Vaje / Tutorial:

Pogoji za opravljanje študijskih obveznosti:

Osnovno znanja o energijah in energetiki.

Prerequisites:

Basic knowledge of energy and energy production.

Vsebina:

Predavanja:

- Energetika in njeni vplivi na okolje
- Konvencionalne in nekonvencionalne oblike pridobivanja energij;
- Energetika in okolje;
- usklajevanje želja, potreb in možnosti v energetske sektorju;
- Energetika v prihodnosti - scenariji;
- Energetika in transport;
- Energetika in planet zemlja.

Seminar:

Seminar aplikativno dopolnjuje vsebino predavanj z reševanjem praktičnih izzivov in problemov.

Content (Syllabus outline):

Lectures:

- Energetic and their influence on the environment
- Traditional and alternative way of energy production;
- Energy and surrounding;
- reconciliation of wish and possibilities at the energetic sector;
- Energy in future - scenarios;
- Energy and the transport;
- Energy and the planet Earth.

Seminar:

Seminar work supplements the lectures with the solutions of the practical problems.

Temeljni literatura in viri / Textbooks:

- Aberšek, B., *Energije in energetika*, Pedagoška fakulteta, Maribor, 1999
- Berinstein, P., *Alterantive Energy: facts, Statistic, and Issue*, Oryx Press, 2007
- Boyle, G., *Renewable Energy*, Oxford University Press, 2004

Cilji:

- podati znanja in informacij o sodobnih obnovljivih virih energije v tehnični praksi ter sodobnih tehnologijah, ki se danes vse pogosteje uporabljajo za pridobivanje in pretvarjanje in shranjevanje energij;
- prikazati praktično uporabo predhodno pridobljenih teoretičnih znanj na praktičnih primerih s posebnim poudarkom na varovanje okolja varnem in varčnem koriščenju energije;
- spodbujanje študentov k kreativnemu in samostojnemu razmišljanju in razvijanju sposobnosti za kreativno reševanje inženirskih problemov s področja energetike in ekologije.

Objectives:

- To present knowledge and information about new renewable energy sources used in technical praxes as modern technologies, used for production, transformation and accumulation of energies;
- to demonstrate practical use of previously accumulated theoretical knowledge on the practical examples with specially stress on the ecology and safe and economical use of energy;
- to encourage the students to creative and independent thinking for developing and solving different problems from power supplied and ecology.

Predvideni študijski rezultati:Znanje in razumevanje:

- poznavanje splošnih napotkov in pravil za izbiro energentov in ustreznih energetskih pretvornikov;
- poznavanje načinov za učinkovito načrtovanje energetskega procesa;
- poznavanje soodvisnosti med proizvodnjo energije in varovanjem okolja;
- razumevanje sovisnosti različnih znanj in postopkov ter pomena uporabe strokovne literature in računalniških sistemov za učinkovito reševanje praktičnih problemov.

Prenesljive/ključne spretnosti in drugi atributi:

- uporaba informacijske tehnologije: uporaba orodij za izdelavo predstavitve energetskih načrtov;
- reševanje problemov: ocenjevanje obstoječih in lastnih tehnoloških rešitev;
- kombinirana uporaba različnih znanj za reševanje praktičnih problemov;
- načrtovanje tehnologije za pridobivanje energij z uporabo sodobnih metod.

Intended learning outcomes:Knowledge and understanding:

- knowledge of general instructions and rules for selecting energy sources and suitable power technologies;
- knowledges for effective planning of power supplied technologies;
- knowledge about connection between energy production and environment prevention;
- understanding of relationships between different skills and procedures and importance of professional literature and computer systems for efficient solutions of practical problems.

Transferable/Key Skills and other attributes:

- use of information technology: use of tools for creating and designing technological power process;
- problem solving: evaluation of existing and proper program solutions;
- combined use of different skills for solution of practical problems;
- design of technology for production of energy using advanced approaches.

Metode poučevanja in učenja:

- frontalna predavanja,
- skupinsko delo;
- izdelava seminarske naloge,
- diskusije v elektronskem forumu,
- e-učenje.

Teaching and learning methods:

- frontal lectures,
- work in small groups;
- seminar work,
- discussion in electronic forums,
- e-learning.

Načini ocenjevanja:

- diskusije v elektronskem forumu,
- seminarske naloge,
- pisni izpit,
- ustni izpit

Delež (v %) /
Weight (in %)**Assessment methods:**

	20 %	• discussion in electronic forums,
	20 %	• seminar works,
	30 %	• written examination,
	30 %	• oral examination.