Univerza v Mariboru

Fakulteta za naravoslovje in matematiko

UČNI NAČRT PREDMETA / COURSE SYLLABUS	
Predmet:	Osnove šolske ergonomije
Course title:	Fundamental School Ergonomics

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Enovit magistrski študijski program Predmetni učitelj 2. stopnje	**Izobraževalna tehnika**	**3**	**6**
Five-year master's degree program Subject teacher	**Technical education**	**3**	**6**

Vrsta predmeta / Course type Izbirni / elective

Univerzitetna koda predmeta / University course code:

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Klinične vaje work	Druge oblike študija	Samost. delo Individ. work	ECTS
15	**15**	**15**			**45**	**3**

Nosilec predmeta / Lecturer: red. prof. dr. Samo Fošnarič

Jeziki / Languages:		
	Predavanja / Lectures:	**slovenski / slovene**
	Vaje / Tutorial:	**slovenski / slovene**

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

Ni posebnih pogojev.

Prerequisits:

No special prerequisites.

Vsebina:

Content (Syllabus outline):

- Ergonomsko – ekološke obremenitve pri pouku
- Antropometrija šolskih otrok,
- Učenčevo toplotno delovno okolje,
- Termoregulacija,
- Univerzalni toplotni indeksi, Zaščita predtoplotnimi obremenitvami,
- Učenčevo svetlobno delovno okolje
- Otroci, delo v šoli in hrup,
- Vpliv hrupa na nekatere človeške dejavnike,
- Nekateri bioenergetski dejavniki učenčevega organizma,
- Dimenzijsko načrtovanje delovnih mest pri praktičnem pouku,
- Ergonomski testi in ocenjevalne metode (OWAS, RULA,…)

Seminar:

Seminar dopolnjuje vsebino predavanj z izvedbo ene ocenjevalne metode delovnega mesta v neposredni pedagoški praksi .

- *Ergonomics-ecological pressures at lessons,*
- *Antropometrics of school children,*
- *Children thermal environment,*
- *Thermoregulation,*
- *Universal thermal index, Protection from thermalpressures.*
- *Children lighting environment,*
- *Children, school work and noise,*
- *Influence of noise on some human factors,*
- *Bioenergetics factors of human body,*
- *Dimensional planning of working places at practical work in school,*
- *Ergonomics tests, methods and analysis of working places. (OWAS, RULA,….)*

Seminar:

Seminar work supplements the lectures with the with the implementation of one job evaluation method in direct pedagogical practice.

Temeljni literatura in viri / Readings:

- BALANTIČ Z., POLAJNAR A. in JEVŠNIK S. (2016):Ergonomija v teoriji in praksi. Nacionalni inštitut za javno zdravje, Ljubljana.
- FOŠNARIČ, S. (2001): Učenci in šolsko delovno okolje (Nekateri uporabni vidiki ergonomije v vzgoji in izobraževanju), PeF, Maribor
- SUŠNIK J. (1992): Ergonomska fiziologija. Didakta. Radovljica.

Cilji in kompetence:

Cilj tega predmeta je seznaniti študente s temeljno ergonomijo in regulacijo šolskega interierja in eksterierja, pri čemer upoštevamo fiziološke vidike otrok.

Študentje bodo:

- znali pojasniti preprostejše raziskovalne rezultate na področju ergonomije v šoli;
- ponazorili in interpretirali določene kvantitativne ter kvalitativne raziskovalne podatke iz področja predmeta,
- uporabili pridobljena znanja v novih situacijah raziskovanja znotraj ergonomije;

Objectives and competences:

The objective of this course is to acquaint students with fundamental ergonomics and regulation of school interier and exterier, where we consider physiological aspects of children.

Students will:

• able to explain simpler research results in the field of ergonomics in school;
• illustrate and interpret certain quantitative and qualitative research data from the subject area,
• use acquired knowledge in new research situations within ergonomics;
• analyzed, classified and compared study resources and other elements from acquired databases in the field of education with an emphasis on ergonomics.

- analizirali, klasificirali in primerjali študijske vire in druge elemente iz pridobljenih baz podatkov na edukacijskem področju s poudarkom na ergonomiji.

Študentje bodo pridobili:

- kompetence usmerjene v razvoj sposobnosti uporabe raziskovalnih virov;
- kompetence usmerjene v razvoj sposobnosti reševanja problemov pri vrednotenju praktičnega dela učencev iz vidika uporabe ergonomskih testov.
- kompetence usmerjene v razvoj sposobnosti reševanja ergonomskih problemov v šoli z namenom razvijanja IKT in računske pismenosti.

Students will acquire:

• competences aimed at developing the ability to use research resources;
• competences aimed at developing the ability to solve problems in the evaluation of students' practical work from the point of view of the use of ergonomic tests.
• competences aimed at developing the ability to solve ergonomic problems at school with the aim of developing ICT and computational literacy.

Predvideni študijski rezultati:

Znanje in razumevanje:

Po zaključku tega predmeta bo študent sposoben:

- izkazati znanje in razumevanje izbranih rezultatov, ki jih ponujajo mednarodne raziskave in so namenjeni izboljšanju učnih praks;
- pokazati sposobnost kritičnega vrednotenja znanstvenih virov (periodike in monografij);
- izkazati znanje in razumevanje ergonomije kot znanstvene discipline;
- pokazati sposobnost kritičnega vrednotenja metod pasivnega ergonomskega raziskovanja;
- pokazati sposobnost samostojnega načrtovanja in organizacije različnih raziskovalnih strategij pouka s poudarkom na ergonomiji;
- izkazati razumevanje uporabe informacijsko komunikacijske tehnologije, vključno s socialnimi omrežji;
- izkazati znanje in razumevanje dejavnikov procesnega in učno ciljnega pristopa poučevanja relacije: »Učenje – ergonomija«;
- identificirati in rešiti probleme povezane z uporabo raziskovalnih ergonomskih prijemov na pedagoškem področju in jih smiselno uporabiti tudi na drugih področjih.

Intended learning outcomes:

Knowledge and understanding:

After completing this course, the student will be able to:

• demonstrate knowledge and understanding of selected results offered by international research and aimed at improving teaching practices;
• demonstrate the ability to critically evaluate scientific sources (periodicals and monographs);
• demonstrate knowledge and understanding of ergonomics as a scientific discipline;
• demonstrate the ability to critically evaluate methods of passive ergonomic research;
• demonstrate the ability to independently plan and organize various teaching research strategies with an emphasis on ergonomics;
• demonstrate an understanding of the use of information and communication technology, including social networks;
• demonstrate knowledge and understanding of the factors of the process and learning target approach to teaching the relationship: "Learning - ergonomics";
• to identify and solve problems related to the use of research ergonomic techniques in the pedagogical field and to apply them sensibly in other fields as well.

Metode poučevanja in učenja:	**Learning and teaching methods:**
• visokošolsko predavanje, • metoda razgovora, • metoda raziskovanja, • metoda primera, • metoda reševanja problemov, • kooperativno učenje, individualno učenje, • e-učenje.	• higher education lesson, • method of conversation, • method of research, • case study, • problem solving; • cooperative learning, individual learning. • e-learning.

Načini ocenjevanja:	Delež (v %) / Weight (in %)	**Assessment:**
Način (pisni izpit, ustno izpraševanje, naloge, projekt)		Type (examination, oral, coursework, project):
• pisni izpit • seminarska naloga	60 % 40 %	• written exam • seminar paper

Reference nosilca / Lecturer's references:

- Fošnarič, S., Lozinšek, P., & Dolenc, K. (2022). Production of practical products in the subjects of environmental studies and science and technology before and after the closure of primary schools due to the COVID 19 pandemic. V *Nutrition, physical activity and health in the field of education* (str. 7–31). Dr. Kovač.
- Fošnarič, S., Rizman Herga, N., & Kandrič, I. (2022). Objective and subjective perception of the school environment soundscape. V *Studies of environmental issues through the prism of integration into the wider environment* (str. 35–50). Verlag Dr. Kovač.
- Fošnarič, S., Rizman Herga, N., & Kandrič, I. (2022). Objective and subjective perception of the school environment soundscape. V *Studies of environmental issues through the prism of integration into the wider environment* (str. 35–50). Verlag Dr. Kovač.