| UČNI NAČRT KREDITNO OVREDNOTENE OBŠTUDIJSKE DEJAVNOSTI / EXTRACURRICULAR COURSE SYLLABUS WITH CREDITS | |
|---|---|
| **Ime Predmeta:** | Etično-moralne dileme izobraževanja in umetne inteligence v Družbi 5.0 (Industriji 4.0) |
| **Course Title:** | Ethical-moral dilemma of education and artificial intelligence in Society 5.0 (Industry 4.0) |

| **Študijski program in stopnja**<br>**Study programme and cycle** | **Študijska smer**<br>**Study option** | **Letnik**<br>**Year of study** | **Semester**<br>**Semester** |
|---|---|---|---|
| Obštudijske dejavnosti | | | letni |
| Extracurricular activities | | | summer |

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| **Vrste predmeta (obvezni/izbirni)**<br>**Course type (compulsory or elected)** | obštudijska dejavnost<br>Extracurricular activity |

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| **Univerzitetna koda predmeta / University subject code:** | |

| **Predavanja**<br>**Lectures** | **Seminar**<br>**Seminar** | **Vaje**<br>**Tutorial** | | | **Lab. vaje**<br>**Labor work** | **Druge oblike študija**<br>**Others forms of study** | **Samost. delo**<br>**Individual work** | **ECTS** |
|---|---|---|---|---|---|---|---|---|
| | | **AV** | **LV** | **RV** | | | | |
| 15 | 15 | | | | | | 60 | **3** |

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| **Nosilec predmeta / Courss coordinator:** | Boris Aberšek, Andrej Flogie |

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| **Jeziki / Languages:** | **Predavanja / Lecture:** | Slovenščina / Slovene |
| | **Vaje / Tutorial:** | Slovenščina / Slovene |

| **Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:** | **Prerequisites for enrolling in the course or for performing study obligations:** |
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| Brez posebnih zahtev | Without particular requirements |

| **Vsebina:** | **Content (Syllabus outline):** |
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| Predavanja:<br>• Družba 5.0 in relacvije družba-posameznik-umetna inteligenca<br>• Industrija 4.0, in vloga človeka v povezavi z umetno inteligenco<br>• Filozofija tehnologije in filozofija umetne inteligence<br>• Etika in morala in relacije etika posameznika, družbene norme in strojno vedenje<br>• Vloga in pomen posameznika v Družbi 5.0<br>• Vloga in pomen umetne inteligence v Družbi 5.0<br>• Družbene spremembe v povezavbi z prevlado umetne inteligence<br>• Konsekvence uvajanja umetne inteligence v družbo in izobraževanje | Lectures:<br>• Society 5.0 and relation society-individual-artificial intelligence<br>• Industry 4.0, and the role of human in relation to artificial intelligence<br>• Philosophy of technology and philosophy of artificial intelligence<br>• Ethics and morality and relationships of ethics of individual, social norms and machine behavior<br>• Role and importance of the individual in Society 5.0<br>• The role and importance of AI in Society 5.0<br>• Social changes in links with the dominance of artificial intelligence<br>• Consequences accounts of the introduction of artificial intelligence in society and in education<br>• Education and artificial intelligence - possible scenarios |

- Izobraževanje in umetna inteligenca - možni scenarji

Seminar:
Seminar aplikativno dopolnjuje vsebino predavanj z reševanjem praktičnih problemov.

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

**Temeljni literatura in viri / Reading materials:**

ABERŠEK, Boris. *Filozofska analiza mehanizmov naravnega mišljenja in umetne inteligence : doktorskega [i. e. doktorska] disertacija*. Maribor: [B. Aberšek], 2014. 319 str., ilustr. https://dk.um.si/IzpisGradiva.php?id=44854. [COBISS.SI-ID 275935488]

FLOGIE, Andrej, ABERŠEK, Boris. *The impact of innovative ICT education and AI on the pedagogical paradigm*. Newcastle upon Tyne: Cambridge Scholars Publishing, 2019. XIV, 157 str., ilustr. ISBN 978-1-5275-3196-3. ISBN 1-5275-3196-1. [COBISS.SI-ID 24512520]

ABERŠEK, Boris, BORSTNER, Bojan, BREGANT, Janez. *Virtual teacher: cognitive approach to e-learning material*. Newcastle upon Tyne: Cambridge Scholars Publishing, 2014. XI, 289 str., ilustr. ISBN 1-4438-6524-9. ISBN 978-1-4438-6524-1. [COBISS.SI-ID 20951304]

**Cilji in kompetence:**

- podati znanja in informacij in njihovo razumevanje o sodobnih tehnologijah, ki se danes vse pogosteje uporabljajo za spreminjanje odnosov v družbi;
- razumevanje potrebe po upoštevanju etičnih in moralnih norm v družbi;
- prikazati praktično uporabo predhodno pridobljenih teoretičnih znanj na praktičnih primerih s posebnim poudarkom na razumevanju in vrednotenju vplivov in posledic uvajanja sodobnih tehnologij v družbo;
- spodbujanje študentov h kreativnemu in samostojnemu razmišljanju pri reševanju problemov in razvijanju kritičnega mišljanja in presojanja.
- zavedanje vloge posameznika in zavedanje njegovega vpliva na družbo prihodnosti.

**Objectives and competences:**

- To present knowledge and information and their understanding about new contemporary technical praxes as modern technologies, used for changes in contemporary society;
- understanding of the need to respect ethical and moral norms in society;
- to demonstrate practical use of previously accumulated theoretical knowledge on the practical examples with specially stress on the understanding and evaluation of influences and consequences of introduction contemporary technologies in society;
- to encourage the students to creative and independent thinking for developing and solving different problems and developing critical thinking and judgment;
- awareness of the role of the individual and awareness of his/her impact on the society of the future.

**Predvideni študijski rezultati:**

Znanje in razumevanje:

- razumevanje splošnih etičnih in moralnih norm pri kreiranju in uporabi aplikacij umetne inteligence in vpliv tega na celotno družbo;
- razumevanje različnih načinov za učinkovito načrtovanje sodobnih tehnoloških procesov;
- razumevanje soodvisnosti med tehnologijo in družbo;
- razumevanje potrebne evalvacije sovisnosti različnih znanj in postopkov ter njihov potrencialni vpliv na sodobno družbo in reševanje praktičnih problemov v njej.

**Intended learning outcomes:**

Knowledge and understanding:

- understanding of general ethical and moral norms in the creation and use of AI applications and the impact of this on society as a whole;
- understanding different ways for effective planning of contemporary technological process;
- understanding of the interdependence between technology and society;
- understanding the necessary evaluation of the interdependence of different knowledge and procedures and their potential impact on modern society and solving practical problems therein.

| Prenosljive/ključne spretnosti in drugi atributi: | Transferable/Key Skills and other attributes: |
|---|---|
| • razumevanje uporabe informacijske tehnologije in uporabe orodij za izdelavo sodobnih tehnoloških rešitev;<br>• reševanje problemov: ocenjevanje obstoječih in lastnih tehnoloških rešitev;<br>• načrtovanje tehnologije za ustvarjanje različnih tehnoloških rešitev ob uportabi etičnih in moralnih norm. | • understanding the use of information technology and the use of different tools to produce modern technological solutions;<br>• problem solving assessing existing and own technological solutions;<br>• design technology to create a variety of technological solutions in the event of a revolt of ethical and moral norms. |

| **Metode poučevanja in učenja:** | **Teaching and learning methods:** |
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| • frontalna predavanja,<br>• skupinsko delo;<br>• izdelava seminarske naloge,<br>• diskusije v elektronskem forumu,<br>• e-učenje. | • frontal lectures,<br>• work in small groups;<br>• seminar work,<br>• discussion in electronic forums,<br>• e-learning. |

| **Načini ocenjevanja:** | Delež (v %) / Weight (in %) | **Assessment methods:** |
|---|---|---|
| Način (pisni izpit, ustno izpraševanje, naloge, projekt):<br>•seminarske naloge in diskusije<br><br>Predmet je ocenjen s končno opisno oceno "je opravil", če je kandidat uspešno opravil predvidene obveznosti. | **100%** | Type (examination, oral, coursework, project):<br>• seminar works and discussions.<br><br>The course is rated with the final descriptive assessment "has passed" if the candidate has successfully completed prescribed obligations. |

**Reference nosilcev / Course coordinators references:**

KORDIGEL ABERŠEK, Metka, ABERŠEK, Boris. *Society 5.0 and literacy 4.0 for the 21st century*, (Media and communications - technologies, policies and challenges). New York: Nova Science Publishers, cop. 2020. IX, 298 str., Tabele, graf. prikazi. ISBN 978-1-53617-133-4. [COBISS.SI-ID 13527043]
kategorija: 2A (Z, A'', A', A1/2)

FLOGIE, Andrej, ABERŠEK, Boris. *The impact of innovative ICT education and AI on the pedagogical paradigm*. Newcastle upon Tyne: Cambridge Scholars Publishing, 2019. XIV, 157 str., ilustr. ISBN 978-1-5275-3196-3. ISBN 1-5275-3196-1. [COBISS.SI-ID 24512520]
kategorija: 2A (Z, A'', A', A1/2)

ABERŠEK, Boris. *Problem-based learning and proprioception*. Newcastle upon Tyne: Cambridge Scholars Publishing, 2018. IX, 215 str., ilustr. ISBN 1-5275-1133-2. ISBN 978-1-5275-1133-0. [COBISS.SI-ID 23894536]
kategorija: 2A (Z, A'', A', A1/2);

FLOGIE, Andrej, ABERŠEK, Boris, PESEK, Igor. The impact of innovative learning environments on social competences of youth. *Research in learning technology*, ISSN 2156-7069, 2019, vol. 27, str. 1-14, doi: 10.25304/rlt.v27.2214. [COBISS.SI-ID 24743944], [SNIP, WoS do 25. 10. 2019:
1A2 (Z, A', A1/2);

FLOGIE, Andrej, BARLE LAKOTA, Andreja, ABERŠEK, Boris. The psychosocial and cognitive influence of ICT on competences of STEM students. *Journal of Baltic science education*, ISSN 1648-3898, 2018, vol. 17, no. 2, str. 267-276
kategorija: 1A2 (Z, A', A1/2)