COURSE DESCRIPTION (Group C)

Course code	Course group	Volume in ECTS credits	Course valid from	Course valid to
KOM5042	C	6	2020/2021	2022/2023

Course type (compulsory or optional)	Compulsory
Course level (study cycle)	Post-graduate
Semester the course is delivered	Autumn Semester
Face-to-face, distance or blended studies	Mixed mode (blended studies: lecture and workshop sessions combined with distance learning and self-study options)

Course title in Lithuanian

Dirbtinis intelektas ir duomenų vizualizavimas

Course title in English

Artificial Intelligence and Data Visualization

Short course annotation in Lithuanian (up to 500 characters)

Dirbtinis intelektas (DI) yra sparčiai besivystanti ir viena iš labiausiai žmonių gyvenimus keičiančių sričių. Todėl yra labai svarbu suvokti, kaip jis veikia, kas tai yra ir kaip tai gali paveikti mūsų gyvenimus. Šiame kurse nagrinėjama, koks yra dirbtinio intelekto ir duomenų vizualizavimo potencialas, apribojimai, jo įtaka įvairioms pramonės šakoms ir įprasto gyvenimo veikloms. Bus aptartos ir pristatytos pažangiausios DI technologijos, duomenų analizės ir vizualizavimo metodai ir priemonės, duomenų parengimo mašininiam/ giliajam mokymui specifika ir problematika, bus eksperimentuojama su skirtingais metodais ir priemonėmis. Be to, bus nagrinėjami DI technologijų taikymo etika ir galimos rizikos, jų santykis su žmogaus teisėmis.

Short course annotation in English (up to 500 characters)

Artificial Intelligence (AI) is an emerging technology that changes the world and the way we live. Hence, it is important learn how it works and what are its limitations. In this course we are going to fill this gap, namely, discuss AI and data visualization potential and its limitations, its impact on different industries as well as our daily lives. We will discuss technologies behind AI, experiment with different methods and tools, and train models. Moreover, we will discuss ethics and potential risks of the technology in the context of human rights based approaches.

Prerequisites for entering the course

Bachelor diploma, English language B2 level.

Course aim

Course aims to show students how to employ Artificial Intelligence and Data Science methods while working with data sources, and how to apply these techniques in daily news reporting and content production.

Links among study program outcomes, course outcomes, content, study and assessment methods

Program outcomes	Course outcomes	Content (topics)	Study methods	Assessment methods

1. Conceptual and theoretical knowledge and competences: 1.1. To explore and analyze developmental trends identified within contemporary journalism and emerging media ecosystems; to review those in a broader transnational and political, economic, socio-cultural and historical perspective. 1.3. To evaluate transformations of contemporary media ecosystems in the context of accelerated globalization and mediatization, analyzing content, audiences, technologies and organizations.	Students gain knowledge and understanding of Artificial intelligence and its technologies; they also learn about the history of its development, genesis, general and specialized evaluation of state-of-the-art situation.	**Lecture topics and issues for focused analysis:** • Introduction and definition of AI.: Definition of artificial intelligence and its terminology • What is data and how to prepare it for AI applications: Strategies for Solving Business Problems with data analysis and visualization • Data visualization: methods and their application: Storytelling with the Data – enhanced data visualization • Selected AI methods and tools – hands-on experience: Theoretical and practical applications of AI technologies, state-of-the-art and future tendencies • Trends of AI and its applications: Common benefits of Artificial Intelligence technologies and their application in various fields • Ethics of AI.: Risks and advantages of artificial intelligence	Lectures, interactive workshops, self-study sessions	Lectures, interactive workshops, self-study sessions
3. Professional competences and skills: 3.2. To apply techniques and methods of gathering, selecting, evaluating, writing and editing news, while using different types and sources of information, given the media users and different channels; 3.3. To experiment and critically explore how art and content creation in contemporary journalism are related to affordancies offered by emerging media technologies (text, audio-visual, VR, AI).	Students gain experience in data collection, analysis and data visualization; they also learn how to generate graphically inventive and resourceful Big Data analysis and visualization technics: for such purposes they learn how to parallelize, extract representative samples etc.			Collaborative working, in-class discussions

	Students experience how to practically apply AI technologies in real-life situations and for media needs.		Lectures, interactive workshops, self-study sessions	Collaborative working, in-class discussions
5. Personal skills: 5.1. To demonstrate critical and analytical thinking skills, news and media literacy competences.	Students gain critical awareness and understanding of AI related ethical and human rights issues and risks.			Creative questioning, in-class discussions

Criteria of learning achievement evaluation

Analytical thinking, idea and research questions generation, authentic solutions, creative product design, in-class participation

Distribution of workload for students (contact and individual work hours)

Study forms	**Hours in face-to-face studies**	**Hours in online (remote) studies**
Lectures	15	15
Seminars	15	0
Laboratory work	0	0
Practical assignments	0	15
Consultations	0	10
Individual student work	0	90
Total:	160	

Structure of cumulative score and value of its constituent parts

Final Grade (FG, 100%) = HW1 (opinion piece, 20%) + MT (test, 30%) + E (50%)

Recommended reference materials

No	**Publication year**	**Authors and title of publication (e-source)**	**Number of copies in University libraries or link to e-source**
		Basic materials	
1.	2020	Europos Komisija. Baltoji knyga. Dirbtinis intelektas. Europos požiūris į kompetenciją ir pasitikėjimą	
2.	2019	Europos Komisijos dokumentas. Patikimo Dirbtinio intelekto etikos gairės	https://ec.europa.eu/digital-single-market/en/news/ethics-guidelines-trustworthy-ai
3.	2009	Stuart J. Russell and Peter Norvig. *Artificial intelligence: a modern approach* (3rd edition)	Pearson (VDU L.Donskio biblioteka, V. Čepinskio biblioteka)
4.	2009	Nils J. Nilsson, *The Quest for Artificial Intelligence. A History of Ideas and Achievements.*	http://ai.stanford.edu/~nilsson/QAI/qai.pdf
5.	2017	David L. Poole, Alan K. Mackworth, *Artificial Intelligence: foundation of computational Agent.*	https://artint.info/2e/html/ArtInt2e.html
6.	2021	J. Dougherty, I. Ilyankou. *Hands-On Data Visualization: Interactive Storytelling from Spreadsheets to Code*.	https://handsondataviz.org
7.	2008	C. Chen, W.Hardle, A. Unwin. *Handbook of Data Visualization.*	**1**
8.	2008	G. Dzemyda, O. Kurasova, J. Žilinskas. Daugiamačių duomenų vizualizavimo metodai.	http://web.vu.lt/ mii/j.zilinskas/DzemydaKurasov aZilinskasDDV

			M.pdf
Supplementary materials			
An extensive list of additional readings and independent study support materials is provided in the designated course area on Moodle platform.			

Course description designed by

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