[Medicinski fakultet u Rijeci]

Curriculum
2023/2024

[Za kolegij]

Ethics and Artificial Intelligence

Study program:	**Medical Studies in English (R)** (elective) [Sveučilišni integrirani prijediplomski i diplomski studij]
Department:	**[Katedra za društvene i humanističke znanosti u medicini]**
Course coordinator:	**izv. prof. dr. sc. Horvat Saša**
Year of study:	**1**
ECTS:	**1.5**
Incentive ECTS:	**0 (0.00%)**
Foreign language:	**Possibility of teaching in a foreign language**

Course information:

Introduce participants with fundamental ethical issues related to the development and application of artificial intelligence.

List of assigned reading:

Lecture presentations.

Christoph Bartneck , Christoph Lütge , Alan Wagner , Sean Welsh, An Introduction to Ethics in Robotics and AI, Springer, 2021. Open access: https://link.springer.com/book/10.1007/978-3-030-51110-4

Silja Voeneky, Philipp Kellmeyer, Oliver Mueller, Wolfram Burgard, *The Cambridge Handbook of Responsible Artificial Intelligence: Interdisciplinary Perspectives*, Cambridge, 2022. (selected parts)

High-Level Expert Group on Artificial Intelligence (AI HLEG). *Ethics Guidelines for Trustworthy AI*, Brussels, 2019, available at: https://ec.europa.eu/futurium/en/ai-alliance-consultation.1.html (selected parts)

Niklas Lidströmer, Hutan Ashrafian (eds.), *Artificial Intelligence in Medicine*, Springer, 2022. (selected parts)

List of optional reading:

Manda Raz, Tam C. Nguyen, Erwin Loh (eds.), *Artificial Intelligence in Medicine. Applications, Limitations and Future Directions* , Springer, 2022. (selected parts)

Curriculum:

[Seminari] list (with titles and explanation):

Introduction to the topic

Students will be able to explain the fundamental concepts related to the topic of ethics of artificial intelligence.

Trust and Fairness in AI Systems

Students will be able to recognize and identify the key aspects of trust and fairness in AI Systems.

Responsibility and Liability in the Case of AI Systems

Students will be able to identify the main arguments concerning responsibility and liability in the case of AI systems.

Psychological Aspects of AI

Students will be able to recognize and identify main issues regarding psychological aspects of AI.

Privacy Issues of AI

Students will be able to describe and discuss fundamental elements of privacy issues of AI.

Application Areas of AI

Students will be able to identify the main concerns regarding application areas of AI.

Artificial Intelligence

Students will be able to recognize, describe and critically discuss the following topics related to AI: The Turing Test; Strong and Weak AI; Types of AI Systems; What Is Machine Learning?; What Is a Robot?; Sense-Plan-Act / System Integration. Necessary but Difficult; What Is Hard for AI; Science and Fiction of AI.

Ethical theories related to AI

Students will be able to describe and discuss fundamental elements of ethical theories related to AI, such as: Descriptive Ethics; Normative Ethics; Deontological Ethics; Consequentialist Ethics; Virtue Ethics; Meta-ethics; Applied Ethics; Relationship Between Ethics and Law; Machine Ethics / Machine Ethics Examples / Moral Diversity and Testing.

Presentations of students' essays on selected topics

Students critically analyze a selected topic related to ethics and artificial intelligence and showcase their depth of understanding and analytical skills.

[Predavanja] list (with titles and explanation):

Artificial Intelligence

Students will be able to recognize, describe and critically discuss the following topics related to AI: The Turing Test; Strong and Weak AI; Types of AI Systems; What Is Machine Learning?; What Is a Robot?; Sense-Plan-Act / System Integration. Necessary but Difficult; What Is Hard for AI; Science and Fiction of AI.

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Student obligations:

Regular attendance, written seminar paper and final examination.

Exam (exam taking, description of the written/oral/practical part of the exam, point distribution, grading criteria):

Assessment is carried out in accordance with the Rules of Assessment of the Faculty of Medicine, University of Rijeka: course attendance 54 (%), written seminar paper 23 (%), and final exam 23 (%).

Other notes (related to the course) important for students:

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COURSE HOURS 2023/2024

Ethics and Artificial Intelligence

[Predavanja] (Place and time or group)	**[Seminari]** (Place and time or group)
11.03.2024	

Artificial Intelligence:
• [Z-sala] (16:00 - 17:30) [1602]
  ○ EAAI
	Introduction to the topic:
	• [Z-sala] (17:30 - 18:15) [1602]
	  ○ EAAI

izv. prof. dr. sc. Horvat Saša [1602]	
14.03.2024	

	Ethical theories related to AI:
	• [Z-sala] (16:00 - 18:15) [1602]
	  ○ EAAI
	
	Trust and Fairness in AI Systems:
	• [Z-sala] (18:15 - 19:00) [1602]
	  ○ EAAI

izv. prof. dr. sc. Horvat Saša [1602]	
21.03.2024	

Ethical theories related to AI:
• [Z-sala] (16:00 - 17:30) [1602]
  ○ EAAI
	Privacy Issues of AI:
	• [Z-sala] (17:30 - 18:15) [1602]
	  ○ EAAI
	
	Application Areas of AI:
	• [Z-sala] (18:15 - 19:00) [1602]
	  ○ EAAI

izv. prof. dr. sc. Horvat Saša [1602]	
28.03.2024	
	Artificial Intelligence: • [ONLINE] (16:00 - 19:00) [1602] ○ EAAI
izv. prof. dr. sc. Horvat Saša [1602]	
15.04.2024	

Artificial Intelligence:
• [ONLINE] (17:00 - 17:45) [1602]
  ○ EAAI
	Trust and Fairness in AI Systems:
	• [ONLINE] (17:45 - 19:15) [1602]
	  ○ EAAI

izv. prof. dr. sc. Horvat Saša [1602]	
22.04.2024	
	Responsibility and Liability in the Case of AI Systems: • [ONLINE] (17:00 - 19:15) [1602] ○ EAAI
izv. prof. dr. sc. Horvat Saša [1602]	
02.05.2024	

	Psychological Aspects of AI:
	• [Z-sala] (13:30 - 14:15) [1602]
	  ○ EAAI
	
	Presentations of students' essays on selected topics:
	• [Z-sala] (14:15 - 16:30) [1602]
	  ○ EAAI

izv. prof. dr. sc. Horvat Saša [1602]	

List of lectures, seminars and practicals:

[PREDAVANJA] (TOPIC)	Number of hours	Location
Artificial Intelligence	3	[ONLINE] [Z-sala]
Ethical theories related to AI	2	[Z-sala]

[SEMINARI] (TOPIC)	Number of hours	Location
Introduction to the topic	1	[Z-sala]
Trust and Fairness in AI Systems	3	[ONLINE] [Z-sala]
Responsibility and Liability in the Case of AI Systems	3	[ONLINE]
Psychological Aspects of AI	1	[Z-sala]
Privacy Issues of AI	1	[Z-sala]
Application Areas of AI	1	[Z-sala]
Artificial Intelligence	4	[ONLINE]
Ethical theories related to AI	3	[Z-sala]
Presentations of students' essays on selected topics	3	[Z-sala]

EXAM DATES (final exam):