



## [Medicinski fakultet u Rijeci]

# **Curriculum 2024/2025**

[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:**

#### [Predavanja] list (with titles and explanation):

#### **Artificial Intelligence**

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

#### Ethical theories related to Al

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.

#### Introduction to the topic

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

#### [Seminari] list (with titles and explanation):

#### **Trust and Fairness in AI Systems**

Students will be able to recognize and identify the key aspects of trust and fairness in Al 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 Al

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 Al.

#### **Application Areas of Al**

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

#### **Artificial Intelligence**

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

#### 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.

#### 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:

### **COURSE HOURS 2024/2025**

Ethics and Artificial Intelligence

[Predavanja] (Place and time or group)	[Seminari] (Place and time or group)
14.03.2025	
Introduction to the topic: • [Z5] (09:00 - 09:45) [1602] • EAAI	
Artificial Intelligence: • [Z5] (09:45 - 11:15) <sup>[1602]</sup> • EAAI	
izv. prof. dr. sc. Horvat Saša <sup>[1602]</sup>	
21.03.2025	
Ethical theories related to AI: • [ONLINE] (10:30 - 12:00) [1602] • EAAI	Ethical theories related to AI: • [ONLINE] (12:00 - 13:30) [1602] • EAAI
izv. prof. dr. sc. Horvat Saša <sup>[1602]</sup>	
04.04.2025	
	Ethical theories related to AI:  • [P03 - INFORMATIČKA UČIONICA] (12:30 - 13:15) [1602]  · EAAI
	Artificial Intelligence: • [P03 - INFORMATIČKA UČIONICA] (13:15 - 15:30) [1602]  • EAAI
izv. prof. dr. sc. Horvat Saša <sup>[1602]</sup>	
25.04.2025	
	Artificial Intelligence: • [ONLINE] (16:30 - 17:15) [1602]  · EAAI
	Psychological Aspects of AI: • [ONLINE] (17:15 - 18:00) [1602] • EAAI
	Trust and Fairness in Al Systems: • [ONLINE] (18:15 - 20:30) [1602]  • EAAI
izv. prof. dr. sc. Horvat Saša <sup>[1602]</sup>	
30.04.2025	
	Responsibility and Liability in the Case of Al Systems:  • [ONLINE] (16:30 - 18:45) [1602]  · EAAI
	Privacy Issues of AI: • [ONLINE] (18:45 - 20:15) [1602]  · EAAI
izv. prof. dr. sc. Horvat Saša <sup>[1602]</sup>	
15.05.2025	

	Application Areas of AI: • [Z-sala] (08:30 - 09:15) [1602] • EAAI
	Presentations of students' essays on selected topics:  • [Z-sala] (09:20 - 11:45) [1602]  · EAAI
izv. prof. dr. sc. Horvat Saša <sup>[1602]</sup>	

## List of lectures, seminars and practicals:

[PREDAVANJA] (TOPIC)	Number of hours	Location
Artificial Intelligence	2	[Z5]
Ethical theories related to Al	2	[ONLINE]
Introduction to the topic	1	[Z5]

[SEMINARI] (TOPIC)	Number of hours	Location
Trust and Fairness in Al Systems	3	[ONLINE]
Responsibility and Liability in the Case of Al Systems	3	[ONLINE]
Psychological Aspects of Al	1	[ONLINE]
Privacy Issues of AI	2	[ONLINE]
Application Areas of Al	1	[Z-sala]
Artificial Intelligence	4	[ONLINE] [P03 - INFORMATIČKA UČIONICA]
Ethical theories related to Al	3	[ONLINE] [P03 - INFORMATIČKA UČIONICA]
Presentations of students' essays on selected topics		[Z-sala]

## **EXAM DATES (final exam):**

1.	02.06.2025.
2.	10.06.2025.
3.	10.07.2025.
4.	04.09.2025.