

SYLLABUS

PHIL 222 – CONTEMPORARY ISSUES IN ETHICS **(REQUIRED)**

Course Catalog Description

This course is an introduction to contemporary ethical issues arising from the use of information technology in the modern information age. The course explores the moral, social, and ethical ramifications of the choices we make at the different stages of the data analysis process, starting from data collection and storage to the implications of certain learning and classification algorithms when applied to data about citizens and communities. Relying on case studies and class discussions, applied team projects, students will be introduced to the complexities of ethical decision-making in data science applications. Topics include an overview of the history of ethical dilemmas in scientific work and a study of the distinct challenges associated with ethics in modern data science.

Course Requirements

- **Pre-requisites:** None.
- **Co-requisite:** None.
- **Credit Hours:** 5 ECTS/TN (3 US)
- **Contact Hours:** CI: 45, TD: 30, Total: 75.
- **Program Outcomes (Compétences Programme) :** 18, 34, 52, 57, 60, 64.
- **ABET Student Outcomes :** 4, 7.

References

- **Textbook:**
 - **Required:** James Rachels (JR). *The Elements of Moral Philosophy*. Edition 5-7, McGraw Hill, 2012
 - **Required:** David Martens (DM). *Data Science Ethics: Concepts, Techniques, and Cautionary Tales*. Oxford University Press, 2022.
- **Others:**
 - Online guided course on MUST's learning platform.

Instructor/Course Coordinator

Instructor:

Office:

Course coordinator:

Email:

Office Hours:

Teaching Assistant:

Grading Policy

Assessment	Week	Weight
Midterm		30%
Homework assignments		30%
Final		40%

Course Learning Outcomes (CLOs)

<i>No.</i>	<i>CLOs</i>	<i>Assessment Methods</i>	<i>SOs</i>
CLO1.	Demonstrate an understanding of the moral and social ramifications of the application of data analytics in various fields.		4
CLO2.	Describe the ethical risks of the various stages of the data analysis process from data collection to the application of learning and prediction algorithms.		4
CLO3.	Describe the major ethical frameworks and their key principles.		4
CLO4.	Assess the risks to the privacy and to the wellbeing and interests of citizens and communities from the application of a particular data analysis solution.		4, 7
CLO5.	Describe the technical and legal mechanisms which can be applied to reduce the risks associated with using human data use in the context of particular data analytics applications.		4, 7

Topics

Topics	Chapter	Weeks
Introduction to moral philosophy: what is morality?	JR 1	1
The challenge of cultural relativism	JR 2	2
Subjectivism in ethics	JR 3	3
Utilitarianism	JR 7-8	4
Are there absolute ethical rules?	JR 9	5
Kant and the respect for person	JR 10	6
The ethics of virtue	JR 12	7
Review.: what would a satisfactory moral theory be like? Midterm.	JR 13	8
Introduction to Data Science Ethics	DM 1	9
Ethical Data Gathering	DM2	10
Ethical Data Preprocessing	DM3	11
Ethical Modelling	DM4	12
Ethical Evaluation	DM5	13
Ethical Deployment, data sharing and access to data	DM6	14
Final review.		15

Student Outcomes (SOs)

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3. An ability to communicate effectively with a range of audiences.
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6. An ability to develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions.
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Preparation and Approval

Prepared by: Ahmed Rebai

Signature:

Date: Sept 6 , 2024



Approved by the Dept.:

Signature

Date: