Data Science and Ethics

Is part of the next programmes:

- M0012004 Master of Computer Science: Software Engineering

- M0012005 Master of Computer Science: Data Science and Artificial Intelligence

- M0012006 Master of Computer Science: Computer Networks

- M0025000 Master of Applied Economics: Business Economics

- M0025000 Master of Applied Economics: Business Economics

- M0048004 Master of Computer Science: Software Engineering

- M0048005 Master of Computer Science: Data Science and Artificial Intelligence

- M0048006 Master of Computer Science: Computer Networks

- M0095000 Master of Business Economics

- M0095000 Master of Business Economics

- M0089001 Master of Teaching in Economics: Business Economics

- M0089001 Master of Teaching in Economics: Business Economics

- M0096001 Master of Business Engineering: Financial Engineering

- M0096001 Master of Business Engineering: Financial Engineering

- M0097000 Master of Business Engineering: Management Information Systems

- M0097000 Master of Business Engineering: Management Information Systems

- M0113001 Master of Business Engineering: Financial Engineering

- M0113001 Master of Business Engineering: Financial Engineering

- M0119000 Master of Digital Business Engineering

- M0119000 Master of Digital Business Engineering

- M0119000 Master of Digital Business Engineering

- M0096002 Master of Business Engineering: Sustainability Engineering

- M0096002 Master of Business Engineering: Sustainability Engineering

- M0096003 Master of Business Engineering: Supply Chain Engineering

- M0096003 Master of Business Engineering: Supply Chain Engineering

- M0113002 Master of Business Engineering: Sustainability Engineering

- M0113002 Master of Business Engineering: Sustainability Engineering

- M0113002 Master of Business Engineering: Sustainability Engineering

- U0001005 Exchange programme Business and Economics

Course Code:	2104TEWDAS
Study Domain:	Computer Science
Semester:	1E SEM

Sequentiality:	The student must have followed the course, or it must be included in the study programme: 'Data mining' or 'Machine learning' or 'Python for machine learning'
Contact Hours:	30
Credits:	3
Study Load (hours):	84
Contract Restrictions:	No contract restriction
Language of Instructions:	ENG
Lecturer(s):	T David Martens
Examperiod:	exam in the 1st semester

1. Prerequisites *

speaking and writing of:

- English

general notion of the basic concepts of

- Good knowledge of data mining concepts and techniques

2. Learning outcomes *

- Analyst: You are able to process relevant literature

- Coordinator: You can formulate the pros and contras of data science technologies with regard to ethics
- Strategist: You can reflect on the ethical implications of data science technologies
- Strategist: You can integrate ethical behaviour within data science technologies

3. Course contents *

Ethics tell us about right and wrong. The course will provide an overview of key (1) concepts, related to privacy, discrimination, transparency and explainability, (2) techniques to assess and improve on these aspects, and (3) cautionary tales that motivate the improtance thereof. The consideration of data science ethics is crucial for any data-driven company, as will be motivated by the ample cautionary tales. With a wide range of cases, the large implications of new data science technologies on ethics will be discussed. These include online tracking, medical records, Facebook data, Internet censorship, big data, privacy engineering, and Artificial Intelligence. Data scientists and business managers are not inherently unethical, but at the same time not trained to think this through neither. This course aims to address this important gap

4. International dimension *

- This course stimulates international and intercultural competences.
- Students use course materials in a foreign language.
- Students give presentations in a foreign language.

5. Teaching method and planned learning activities

5.1 Used teaching methods *

Class contact teaching

- Lectures

Personal work

5.2 Planned learning activities and teaching methods

5.3 Facilities for working students *

6. Assessment method and criteria *

6.1 Used assessment methods *

Examination

- Written examination without oral presentation

- - Closed book

- - Open-question

Other assessment methods

- Presentation (no second assessment period)

6.2 Assessment criteria *

A group presentation on the course content is to be given, which builds further on the content seen in the lecture before. For the second assessment period, one can choose to keep the grade of the first assessment period, or to write a paper on the topic. The presentation accounts for 20% of your final grade.
Feedback on the results of the exam can be obtained after making an apointment only, at specific date(s) that will be communicated through blackboard.

7. Study material

7.1 Required reading *

Book: Data Science Ethics: Concepts, Techniques and Cautionary Tales by David Martens (2022), published by Oxford University Press. Available at Acco and Amazon.com. Price ranges between 35 and 45 Euro.
Presentations + additional information that is made available through blackboard

7.2 Optional reading

The following study material can be studied voluntarily :

Additional study material and references that are provided during the course can be studied voluntarily.

8. Contact information *

Please contact david.martens@uantwerp.be

9. Tutoring