

Bioethics (I003067)

Course size *(nominal values; actual values may depend on programme)*

Credits 3.0 **Study time 75 h**

Course offerings in academic year 2026-2027

A (semester 1) English Gent

Lecturers in academic year 2026-2027

De Proost, Michiel LW01 lecturer-in-charge

Offered in the following programmes in 2026-2027

| | crdts | offering |
|--|-------|----------|
| Master of Science in Bioscience Engineering: Agricultural Sciences | 3 | A |
| Master of Science in Bioscience Engineering: Chemistry and Bioprocess Technology | 3 | A |
| Master of Science in Bioscience Engineering: Land, Water and Climate | 3 | A |
| Cross-Disciplinary Elective Set for Bioscience Engineers | 3 | A |

Teaching languages

English

Keywords

Ethics, bioethics

Position of the course

The aim of this course is to introduce fundamental ethical approaches and common arguments in bioethical debate, and to encourage students to critically approach ethical questions related to bioscience engineering.

Contents

Introduction to the main ethical theories.

Introduction to critical thinking and ethical argumentation.

Illustrative classes on the ethical aspects of different topics related to bioscience engineering:

- stem cell research
- the dual use dilemma
- genetically modified organisms and/or climate
- animal experimentation
- longevity
- genomics
- neuromodulation and bio-enhancement
- deontological codes for engineers
- responsibility of the engineer towards employer and society

Students will be encouraged to think critically about ethical issues and to develop well argued positions.

Part of the course will involve discussion on recent bioethical issues. The discussions provide an opportunity for the students to further develop a critical and in-depth understanding of the knowledge that is provided during the lectures.

Initial competences

- Good knowledge of English (the study materials and classes are in English)
- Analysing both abstract and concrete problems
- Taking a stance regarding a problem
- Reflecting critically about the engineering profession

- Analysing societal consequences of new developments within the field of engineering or related fields
- Being conscious about the role of engineers in society

Final competences

- 1 Constructing a coherent ethical argument regarding a theme that is related to bioscience engineering
- 2 Describing, recognizing and distinguishing the main theories in normative ethics
- 3 Understanding the specific ethical issues relating to the themes that are discussed
- 4 Articulating the main aspects incorporated in deontological codes for engineers
- 5 Understanding the responsibility of engineers towards their employers and society
- 6 Understand and reflect on ethical challenges that are relevant to the professional field of the bio-engineer
- 7 Integrating social responsibility and commitment in the practice of engineering

Conditions for credit contract

Access to this course unit via a credit contract is unrestricted: the student takes into consideration the conditions mentioned in 'Starting Competences'

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Seminar, Lecture, Independent work

Extra information on the teaching methods

Introduction in normative ethics and its application to different actual themes will be provided in the lectures and a seminar; active participation of the students is expected in discussions about the different arguments, and may require individual preparation.

Study material

Type: Reader

Name: Bio-ethics

Indicative price: € 5

Optional: no

Language : English

Additional information: The cost is optional, if the student wants to print the reader

References

Course content-related study coaching

By the responsible lecturers

Assessment moments

end-of-term assessment

Examination methods in case of periodic assessment during the first examination period

Written assessment with open-ended questions

Examination methods in case of periodic assessment during the second examination period

Written assessment with open-ended questions

Examination methods in case of permanent assessment

Possibilities of retake in case of permanent assessment

not applicable

Extra information on the examination methods

The assessment tests to what extent the student has mastered the final competencies. The student can achieve a good final score if he answers the questions pertinently, correctly and completely and demonstrates insight into the subject matter. He must also be able to correctly and insightfully apply theoretical concepts to practical cases. The student is also expected to present his answer in a well-structured and clear manner.

Calculation of the examination mark

Students who eschew period aligned and/or non-period aligned evaluations for this course unit may be failed by the examiner.