GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2024-2025

Mathematics and Society (C004546)

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

Credits 6.0 **Study time 180 h**

Course offerings and teaching methods in academic year 2024-2025

A (Year)	Dutch	Gent	group work	0.0h
			lecture	0.0h
			seminar	0.0h

Lecturers in academic year 2024-2025

Vernaeve, Hans	WE16	lecturer-in-charge

Offered in the following programmes in 2024-2025	**crdts**	**offering**
Master of Science in Teaching in Science and Technology(main subject Mathematics)	6	A
Master of Science in Mathematics	6	A

Teaching languages

Dutch

Keywords

Mathematics, society, sustainability, ethics

Position of the course

This course unit aims to make students aware of, and reflect on, the positive contribution the mathematician can make in addressing the societal challenges of the 21st century. In addition to cognitive skills, also students' communication skills are developed.

Contents

- Introductory classes (lectures + reflection moments in class) give an introduction to a number of social developments that graduate mathematicians are likely to encounter such as sustainability (climate change, planetary boundaries and other U.N. sustainable development goals, circular economy, ...), automation, artificial intelligence and big data, scientific integrity, algorithms in social media and their social implications (e.g., concerning privacy or polarization), financialization, teacher shortage and the perception of mathematics in our society, decentralized ledger technology (blockchain), ... (this list is not exhaustive).
- Students read some in-depth texts on some of these themes of their choice, and give one or two presentations about it in small groups to their fellow students, which is followed by a class discussion. The students who read up on a theme and gave a presentation help to give the class discussion more in-depth substance.
- Some mathematicians give a guest lecture on the contribution in their job to solving a problem in society.
- Some classes serve as preparation for the course unit *Internship*.
- Some classes are given on *Career management*.

Initial competences

None

Final competences

1 The student has a basic understanding of a number of problems in society, providing a starting point for taking action on them as a mathematician and making responsible and ethical choices in professional life.

2 The student is able to form informed opinions about a problem in society based on relevant sources.
3 The student can express that opinion in a presentation or conversation.

Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Group work, Seminar, Lecture

Study material

Type: Slides

Name: Mathematics and society (in Dutch)
Indicative price: Free or paid by faculty
Optional: no
Language : Dutch
Available on Ufora : Yes
Online Available : Yes
Available in the Library : No
Available through Student Association : No

References

Course content-related study coaching

The lecturer is available to answer individual questions, also beyond contact hours (after appointment).

Assessment moments

continuous assessment

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

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

Examination methods in case of permanent assessment

Participation, Presentation, Peer and/or self assessment

Possibilities of retake in case of permanent assessment

examination during the second examination period is possible

Extra information on the examination methods

Presentation of a group work. Participation to the presentations of the guest speakers is mandatory. Also participation to the presentations of fellow students (together with the ensuing discussion) is evaluated.
In the case of a second term examination, the student will be given the opportunity to give the presentation again, with the subsequent class discussion replaced by a discussion moment with the lecturer.

Calculation of the examination mark

The student must participate in all required activities to be attended in order to pass.
Marks will be given based on the presentation and on participation in the discussions following the presentations.