GHENT UNIVERSITY

Course Specifications

From the academic year 2021-2022 up to and including the academic year

Display Technology (E032411)

Due to Covid 19, the education and assessment methods may vary from the information displayed in the schedules and course details. Any changes will be communicated on Ufora.

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

Credits 6.0 **Study time 180 h** **Contact hrs** 30.0h

Course offerings and teaching methods in academic year 2021-2022

A (semester 1)	English	Gent	lecture	22.5h
			seminar	7.5h
B (semester 1)	English	Gent		
C (semester 1)	Dutch	Gent		
O (semester 1)	English	Gent		

Lecturers in academic year 2021-2022

Neyts, Kristiaan	TW06	lecturer-in-charge
Strubbe, Filip	TW06	co-lecturer

Offered in the following programmes in 2021-2022	**crdts**	**offering**
Bridging Programme Master of Science in Photonics Engineering	4	B
Master of Science in Electrical Engineering (main subject Electronic Circuits and Systems)	6	A
Master of Science in Photonics Engineering	4	C
Master of Science in Photonics Engineering	4	B, O

Teaching languages

English, Dutch

Keywords

human vision, liquid crystal displays, OLED displays, projection displays, 3D-displays, e-ink displays

Position of the course

Explaining the principles of the most important technologies for the visualisation of information, the principles of visual perception and the characterisation of visualisation devices.
The course includes writing a paper on a particular display topic (only for the course of 6 credits, not for the partim of 4 credits).

Contents

- Introduction
- Visual perception: physics and physiology of the eye, colorimetry, contrast
- Liquid crystal displays: liquid crystals, modes, addressing, display system
- OLED displays
- Projection displays: fundamentals, components, projector lay-outs, diffractive modulators
- electronic paper displays
- 3D-displays
- Written and oral report on a particular display technology (only for the course of 6 credits, not for the partim of 4 credits).

Initial competences

Knowledge of the basic principles of the calculus (differential equations), of physics (electromagnetic waves, polarization).

Final competences

1 INSIGHTS: basic principles and limitations of emissive and modulating display technologies
2 INSIGHTS:basic understanding of projection systems

3 INSIGHTS: basic principles and limitations of the human visual system
4 PROFICIENCIES: basic calculations in colorimetry
5 PROFICIENCIES: calculation of transmission of liquid crystal structures

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

Seminar, Lecture, Self-reliant study activities

Extra information on the teaching methods

individual tasks:
- solving exercises
- Written and oral report on a litarature study (only for the course of 6 credits, not for the partim of 4 credits).

Learning materials and price

Syllabus (cost in the order of 10 euro)

References

Course content-related study coaching

The teachers are available before and after lectures or after making an appointment.

Assessment moments

end-of-term and continuous assessment

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

Oral examination, Open book examination

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

Oral examination, Open book examination

Examination methods in case of permanent assessment

Report, Assignment

Possibilities of retake in case of permanent assessment

examination during the second examination period is not possible

Extra information on the examination methods

- During examination period:
  - theory: oral examination with written preparation;
  - problem-solving: written open-book exam.
- During semester: evaluation of homework assignments;
- reporting on a literature study (only for the course of 6 credits, not for the partim of 4 credits).

Calculation of the examination mark

The score is determined as the average of two (4 credit course) or three (6 credit course) scores with equal weight:
- Theory-exam
- Average of the homework assignments and the problem solving exam
- Oral and written report on a literature study (only for the course of 6 credits, not for the partim of 4 credits).