

## Display Technology (E032411)

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

**Credits 6.0**

**Study time 180 h**

**Course offerings in academic year 2025-2026**

**Lecturers in academic year 2025-2026**

**Offered in the following programmes in 2025-2026**

**crdts**

**offering**

### 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, Independent work

**Extra information on the teaching methods**

individual tasks:

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

**Study material**

Type: Syllabus

Name: Display Technology

Indicative price: Free or paid by faculty

Optional: no

Number of Pages : 182

Oldest Usable Edition : 2023

Available on Ufora : Yes

Online Available : Yes

Available in the Library : No

Available through Student Association : No

**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 assessment, Written assessment open-book

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

Oral assessment, Written assessment open-book

**Examination methods in case of permanent assessment**

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).