

Research in Photonics (E030710)

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

Credits 6.0 **Study time** 150 h **Contact hrs** 15.0 h

Course offerings and teaching methods in academic year 2022-2023

| Offering | Language | Location | Teaching Method | Hours |
|----------------|----------|----------|------------------|--------|
| A (semester 1) | English | Gent | project | 15.0 h |
| B (semester 2) | English | Gent | research project | 15.0 h |
| O (semester 2) | English | Gent | | |

Lecturers in academic year 2022-2023

| | | |
|------------------|------|--------------------|
| Li, Yanlu | TW05 | lecturer-in-charge |
| Ottevaere, Heidi | VUB | co-lecturer |

Offered in the following programmes in 2022-2023

| Programme | crdts | offering |
|---|-------|----------|
| Bridging Programme Master of Science in Photonics Engineering | 6 | A, B |
| European Master of Science in Photonics | 6 | A, B |
| Master of Science in Photonics Engineering | 6 | A, B, O |

Teaching languages

English

Keywords

Research, photonics

Position of the course

The student performs a research project in a research group of the university. The subject of the training needs to be related to photonics. The training is concluded by a comprehensive report and presentation.

This course has two course offerings: course offering A = first term, course offering B = second term. Students may choose the most optimal course offering in relation to their research project (in accordance with the lecturer-in-charge and the project supervisor).

Contents

This course focuses on the research engineering activities of the student. The student is mastering the knowledge and possesses or acquires the technical skills needed to successfully accomplish a variety of tasks. The supervisor assigns a wide range of tasks to the trainee to broaden the student's experience and horizon. In a hands-on way, the student thus familiarizes him/herself with the research project. The student is a versatile researcher able to analyse problems and implement solutions. The student's communicative ability is well-developed and he/she can work in a bigger team. The student is a responsible person showing the necessary reliability, autonomy and initiative. The student can use all the above mentioned skills to

perform a research project and act as is expected from a young engineer/researcher.

Initial competences

Basic concepts of photonics

Final competences

- 1 Project planning: ability to formulate objectives, report efficiently, keep track of goals and progress of the project.
- 2 Ability to work in a team in a research environment
- 3 Report on technical or scientific subjects orally, in writing and in graphics.
- 4 Act in an ethical, professional and social way.
- 5 Show perseverance, drive for innovation and a sense for the creation of added value.
- 6 Master and apply advanced knowledge in the own field of engineering in case of complex problems.
- 7 Select and apply the proper models, methods and techniques.
- 8 Analyse own results and results of others in an objective and critical manner.
- 9 Flexibility to adapt to changing professional circumstances.
- 10 Master the complexity of technical systems by the use of system and process models.
- 11 Transform incomplete, contradictory or redundant data into useful information.
- 12 Insight in and awareness of the importance of research in society.

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

Project, research project

Learning materials and price

References

Course content-related study coaching

Evaluation methods

continuous assessment

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

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

Examination methods in case of permanent evaluation

Oral examination, report

Possibilities of retake in case of permanent evaluation

examination during the second examination period is possible in modified form

Calculation of the examination mark

The evaluation mark is based upon on the evaluation of the final report (25%) and presentation (25%), as well as feedback provided by the supervisor (50%).