

# POSTGRADUATE CERTIFICATE SMART OPERATIONS AND MAINTENANCE IN INDUSTRY

PROGRAMME JOINTLY OFFERED BY GHEENT UNIVERSITY, CATHOLIC UNIVERSITY OF LEUVEN, KU LEUVEN

24 ECTS CREDITS - LANGUAGE: ENGLISH

## WHAT

Industry is digitally transforming, and actionable intelligence is key to implement the right technologies in a broader transformation strategy. This postgraduate programme is jointly organised by Ghent University and KU Leuven. It focuses on the most relevant and essential industry 4.0 (I4.0) technologies and concepts related to operations and maintenance, for an industrial production context. 'Operational excellence' is an omnipresent objective in industry and is especially relevant for operationally intensive sectors, such as the manufacturing industry. They are subject to the I4.0 transformation, because operations in particular lend themselves to (flexible) automation. Operations are inextricably linked to the maintenance phase. Maintenance is aimed at allowing operational processes to run as smoothly and undisturbed as possible by ensuring that all equipment and infrastructure required for production is always working 100% efficiently. This programme teaches how both operational and maintenance processes can be optimised by making them 'smart', using new (I4.0) technologies, such as robotics, big-data analytics, digital twins, cloud computing, etc. The programme covers technologies that facilitate an advanced digitalisation of product and process information (e.g., smart sensors), technologies that are used in production and maintenance (e.g., cobots), and technologies that connect production equipment/assets and people (e.g., Industrial IoT platforms). The postgraduate programme stands firmly on its own, but also opens the door to more. The programme forms an integral part of the upcoming Advanced Master of Science in Smart Operations and Maintenance in Industry (expected in 2023), in which students are able to register for one of three in-depth and hands-on elective tracks, and further improve themselves as Smart O&M specialists. Participants who successfully complete the courses in the postgraduate programme will be granted exemptions in pursuing the homonymous advanced master's degree.

## STRUCTURE

The one year postgraduate programme consists of four courses of 6 ECTS, 24 ECTS in total, spread evenly over two semesters.

## LABOUR MARKET

Graduates are qualified to take up different roles in different (industrial) sectors, ranging from SMEs to international Captains of Industry. The skills developed, and the knowledge obtained will be more widely applicable than in the manufacturing industry alone. All operationally intensive sectors, including for example the food and pharmaceutical sector are eager to recruit engineers with a solid background in Smart O&M who can be the foundation of and an advisor in their digital transformation process.

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## TOELATINGSVOORWAARDEN VOOR HOUDERS VAN EEN VLAAMS DIPLOMA

### 1 Rechtstreeks:

- Joint Master's degree in Sustainable Automotive Engineering
- Master in de industriële wetenschappen: elektromechanica
- Master in de industriële wetenschappen: elektronica-ICT
- Master in de industriële wetenschappen: elektrotechniek
- Master in de industriële wetenschappen: energie
- Master in de industriële wetenschappen: machine- en productieautomatisering
- Master in de ingenieurswetenschappen: bedrijfskundige systeemtechnieken en operationeel onderzoek
- Master in de ingenieurswetenschappen: elektronica en informatietechnologie
- Master in de ingenieurswetenschappen: elektrotechniek
- Master in de ingenieurswetenschappen: energie
- Master in de ingenieurswetenschappen: mobiliteit en supply chain
- Master in de ingenieurswetenschappen: werktuigkunde
- Master in de ingenieurswetenschappen: werktuigkunde-elektrotechniek
- Master in Energy (EIT-KIC)
- Master of Electrical Engineering
- Master of Electromechanical Engineering
- Master of Electronics and ICT Engineering Technology
- Master of Engineering: Energy
- Master of Industrial Engineering and Operations Research
- Master of Mechanical Engineering
- Master of Mobility and Supply Chain Engineering

### 2 Na onderzoek van de bekwaamheid van de student om de opleiding te volgen:

- Een diploma van een masteropleiding aansluitend op een bacheloropleiding
- Een diploma van een masteropleiding die volgt op een andere masteropleiding

The postgraduate programme Smart O&M focuses on the higher technical profiles and aims at three types of students:

- 1 recent graduates;
- 2 international students; and
- 3 professionals.

Immediate admission is granted to those holding a master's degree in Engineering or Industrial Engineering with majors in Mechanical Engineering, Electrical Engineering, Electromechanics, Machine and Production Automation, Electronics-ICT, Energy, and Business Systems Engineering and Operations Research.

If you do not hold one of the aforementioned master's degrees, or if you hold a degree in an entirely different field of study, your application will still be considered if you can demonstrate the necessary academic requirements, equal to having a solid engineering background, through a CV and letter of motivation. The interuniversity programme committee will assess your application.

## LANGUAGE REQUIREMENTS

Language requirements Dutch: no language requirements

**English:** more info on <https://smart-om.eu/requirements/>

## PRACTICAL INFORMATION

### Study programme

[studiekiezer.ugent.be/postgraduate-certificate-smart-operations-and-maintenance-in-industry-en/programma](https://studiekiezer.ugent.be/postgraduate-certificate-smart-operations-and-maintenance-in-industry-en/programma)

### Information sessions

#### Graduation Fair

[afstudeerbeurs.gent/en/students/further-studies](https://afstudeerbeurs.gent/en/students/further-studies)

### Enrolling institution

KU Leuven

Information on enrolment:  
[www.kuleuven.be/inschrijven](https://www.kuleuven.be/inschrijven)  
[www.ugent.be/gaststudentugent](https://www.ugent.be/gaststudentugent)

## ADMISSION REQUIREMENTS FOR INTERNATIONAL DEGREE STUDENTS

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## Application Deadline (for International degree students)

For students who **need a visa**: 1st of April

For students who **do not need a visa**: 1st of June

[Read more](#)

## Tuition fee

More information is to be found on: [www.ugent.be/tuitionfee](http://www.ugent.be/tuitionfee)

## Contact

[info@smart-om.eu](mailto:info@smart-om.eu)

<https://smart-om.eu/>