

Programme jointly offered by Ghent University, KU Leuven

Master of Science in Smart Operations and Maintenance in Industry

Campus: Courtray

Language of instruction: English

Programme version 1

## 1 General Courses 30 credits

| Nr | Course   | CRDT | Ref | MT1 | Session | Study |
|----|--|------|-----|-----|---------|-------|
| 1  | E680030 Operations Management Strategies<br><i>UGent - KU Leuven Opleiding, Liliane Pintelon -- KU Leuven</i>  | 6    |     | 1   | A:1     | 180   |
| 2  | E680010 Digital Twin<br><i>UGent - KU Leuven Opleiding, Jeroen De Koning -- Department of Electromechanical, Systems and Metal Engineering</i>                             | 6    |     | 1   | A:1     | 180   |
| 3  | E680020 Monitoring and Prognostics<br><i>UGent - KU Leuven Opleiding</i>   | 6    |     | 1   | A:1     | 180   |
| 4  | E680050 Managing Innovation and Transformation<br><i>UGent - KU Leuven Opleiding, Francesca Ostuzzi -- Department of Industrial Systems Engineering and Product Design</i> | 6    |     | 1   | A:1     | 180   |
| 5  | E680040 Smart Factory Design<br><i>UGent - KU Leuven Opleiding, Johannes Cottyn -- Department of Industrial Systems Engineering and Product Design</i>                     | 6    |     | 1   | A:2     | 180   |

## 2 Elective Courses 12 credits

Subscribe to 1 elective track from the following list. Subject to approval by the faculty.

### 2.1 Factory Track

| Nr | Course   | CRDT | Ref | MT1 | Session | Study |
|----|--|------|-----|-----|---------|-------|
| 1  | E680130 Safe and Secure System Integration<br><i>UGent - KU Leuven Opleiding</i>   | 4    |     | 1   | A:2     | 120   |
| 2  | E680120 Reconfigurable Manufacturing Systems<br><i>UGent - KU Leuven Opleiding, Johannes Cottyn -- Department of Industrial Systems Engineering and Product Design</i> | 4    |     | 1   | A:2     | 120   |
| 3  | E680060 Digital Twins Deployment in the Manufacturing Industry<br><i>UGent - KU Leuven Opleiding</i>   | 4    |     | 1   | A:2     | 120   |

### 2.2 Operations Track

| Nr | Course   | CRDT | Ref | MT1 | Session | Study |
|----|--|------|-----|-----|---------|-------|
| 1  | E680110 Human-Centered Manufacturing<br><i>UGent - KU Leuven Opleiding, Johannes Cottyn -- Department of Industrial Systems Engineering and Product Design</i>             | 4    |     | 1   | A:2     | 120   |
| 2  | E680090 Decision Support for Maintenance Logistics<br><i>UGent - KU Leuven Opleiding, Dieter Claeys -- Department of Industrial Systems Engineering and Product Design</i> | 4    |     | 1   | A:2     | 120   |
| 3  | E680060 Digital Twins Deployment in the Manufacturing Industry<br><i>UGent - KU Leuven Opleiding</i>   | 4    |     | 1   | A:2     | 120   |

### 2.3 Machine Track

| Nr | Course   | CRDT | Ref | MT1 | Session | Study |
|----|--|------|-----|-----|---------|-------|
| 1  | E680080 Upgradable Design and Retrofitting of Machines<br><i>UGent - KU Leuven Opleiding</i>         | 4    |     | 1   | A:2     | 120   |
| 2  | E680070 Smart Sensing Technologies<br><i>UGent - KU Leuven Opleiding</i>                             | 4    |     | 1   | A:2     | 120   |
| 3  | E680060 Digital Twins Deployment in the Manufacturing Industry<br><i>UGent - KU Leuven Opleiding</i> | 4    |     | 1   | A:2     | 120   |

## 3 Master's Dissertation 18 credits

| Nr | Course | CRDT | Ref | MT1 | Session | Study |
|----|--------|------|-----|-----|---------|-------|
|----|--------|------|-----|-----|---------|-------|

### Teaching

When a course is not taught (solely) in the programme's language of instruction, the effectively used languages are indicated in square brackets following the course name, using the following ISO codes:

|               |             |             |               |                |                      |             |
|---------------|-------------|-------------|---------------|----------------|----------------------|-------------|
| bg: Bulgarian | de: German  | es: Spanish | ja: Japanese  | pl: Polish     | sh: Croatian/Serbian | zh: Chinese |
| cs: Czech     | el: Greek   | fr: French  | nl: Dutch     | pt: Portuguese | sl: Slovene          |             |
| da: Danish    | en: English | it: Italian | no: Norwegian | ru: Russian    | sv: Swedish          |             |

### Semester

Semesters are indicated by their number (1 or 2); semester 3 represents the summer period and J indicates a course spanning semesters 1 and 2. When a capital letter precedes a semester number, the course has multiple offerings. The letter indicates the offering concerned.

When a semester is shown in brackets, the course is not offered this year in the specific offering.

The offering frequency and first year of offering are indicated by the following codes:

|                 |                                 |                                 |                                 |
|-----------------|---------------------------------|---------------------------------|---------------------------------|
| a: bi-annually  | c: annually, from 2025-2026     | f: annually, from 2026-2027     | i: annually, from 2027-2028     |
| b: tri-annually | d: bi-annually, from 2025-2026  | g: bi-annually, from 2026-2027  | j: bi-annually, from 2027-2028  |
|                 | e: tri-annually, from 2025-2026 | h: tri-annually, from 2026-2027 | k: tri-annually, from 2027-2028 |