

| MSc Industrial Engineering and Management Programme 2022-2023 |                                       |            |  |  |  |                         |                                       |                                       |                                      |
|---|---------------------------------------|------------|--|--|--|-------------------------|---------------------------------------|---------------------------------------|--------------------------------------|
| <b>MSc IEM Structure</b>                                      |                                       | <b>EC</b>  | <b>Specialisations</b>   |  |  |                         |                                       |                                       |                                      |
| Mandatory IEM   |                                       | 45         | <table border="1"> <tr> <td>PLM</td> <td>Production and Logistics Management</td> </tr> <tr> <td>HCTM</td> <td>Health Care Technology and Management</td> </tr> <tr> <td>FEM</td> <td>Financial Engineering and Management</td> </tr> </table>   | PLM  | Production and Logistics Management        | HCTM                    | Health Care Technology and Management | FEM                                   | Financial Engineering and Management |
| PLM   | Production and Logistics Management   |            |  |  |  |                         |                                       |                                       |                                      |
| HCTM  | Health Care Technology and Management |            |  |  |  |                         |                                       |                                       |                                      |
| FEM   | Financial Engineering and Management  |            |  |  |  |                         |                                       |                                       |                                      |
| Mandatory per Specialisation                                  |                                       | 15         |  |  |  |                         |                                       |                                       |                                      |
| Mandatory per Orientation                                     |                                       | 15         |  |  |  |                         |                                       |                                       |                                      |
| (Recommended) Electives                                       |                                       | 45         |  |  |  |                         |                                       |                                       |                                      |
| <b>Total EC's</b>   |                                       | <b>120</b> | <b>Orientations</b>  |  |  |                         |                                       |                                       |                                      |
| QRT   | Quartile                              |            | <table border="1"> <tr> <td>Service Logistics and Maintenance Management</td> </tr> <tr> <td>Supply Chain and Transportation Management</td> </tr> <tr> <td>Manufacturing Logistics</td> </tr> <tr> <td>Operations Management in Healthcare</td> </tr> <tr> <td>Health Care Technology and Management</td> </tr> <tr> <td>Financial Engineering and Management</td> </tr> </table> | Service Logistics and Maintenance Management | Supply Chain and Transportation Management | Manufacturing Logistics | Operations Management in Healthcare   | Health Care Technology and Management | Financial Engineering and Management |
| Service Logistics and Maintenance Management                  |                                       |            |  |  |  |                         |                                       |                                       |                                      |
| Supply Chain and Transportation Management                    |                                       |            |  |  |  |                         |                                       |                                       |                                      |
| Manufacturing Logistics                                       |                                       |            |  |  |  |                         |                                       |                                       |                                      |
| Operations Management in Healthcare                           |                                       |            |  |  |  |                         |                                       |                                       |                                      |
| Health Care Technology and Management                         |                                       |            |  |  |  |                         |                                       |                                       |                                      |
| Financial Engineering and Management                          |                                       |            |  |  |  |                         |                                       |                                       |                                      |

**Important notifications**

**Statistics & Probability (191506103)** may be mandatory for international students in case of a deficiency. Consult the specialisation coordinator to check what applies to your situation.

**Stochastic Models for Operations Management (191530881)** is:

- **not allowed** for students with an UT IEM-BSc background;
- **mandatory** for PLM and HCTM students who did a pre-master;
- **possibly mandatory** for international students in case of a deficiency. Consult the specialisation coordinator to check what applies to your situation.

| All courses are 5 EC (except the Master Thesis). Course content can be found in the Course Catalogue, see: <a href="#">Course Catalogue</a> |       |            |            |            |
|---|-------|------------|------------|------------|
| Programme IEM / Specialisations   | Qrt   | PLM (EC)   | HCTM (EC)  | FEM (EC)   |
| 201700020 IEM research orientation  | 1+3   | 5          | 5          | 5          |
| 202300200 Data Science  | 1+2+3 | 5          | 5          | 5          |
| 202001464 Thesis Preparation  | --    | 5          | 5          | 5          |
| 194100060 Thesis  | --    | 30         | 30         | 30         |
| 201800003 Operations Research Techniques 1  | 1+3   | 5          | 5          |            |
| 201800004 Operations Research Techniques 2  | 4     | 5          | 5          |            |
| 202300064 Simulation  | 1     | 5          | 5          |            |
| 191506103 Statistics & Probability  | 1     |            |            | 5          |
| 191860651 Micro Economics   | 1     |            |            | 5          |
| 201300060 Mathematical Finance  | 2     |            |            | 5          |
| Mandatory per Orientation: ≥ three courses  |       | 15         | 15         | 15         |
| Electives   |       | 45         | 45         | 45         |
| <b>Total</b>  |       | <b>120</b> | <b>120</b> | <b>120</b> |

| IEM Orientations                    |  |     |             |  |     |             |                                  |     |             |                                      |     |             |  |     |             |                                      |     |
|-------------------------------------|--|-----|-------------|--|-----|-------------|----------------------------------|-----|-------------|--------------------------------------|-----|-------------|--|-----|-------------|--------------------------------------|-----|
| Course Code                         | Service Logistics and Maintenance Management | Q   | Course code | Supply Chain and Transportation Management | Q   | Course code | Manufacturing Logistics          | Q   | Course code | Operations Management in Healthcare  | Q   | Course Code | Health Care Technology and Management  | Q   | Course Code | Financial Engineering and Management | Q   |
| <b>Mandatory IEM courses</b>        |  |     |             |  |     |             |                                  |     |             |                                      |     |             |  |     |             |                                      |     |
| 201700020                           | IEM research orientation                     | 1+3 | 201700020   | IEM research orientation                   | 1+3 | 201700020   | IEM research orientation         | 1+3 | 201700020   | IEM research orientation             | 1+3 | 201700020   | IEM research orientation               | 1+3 | 201700020   | IEM research orientation             | 1+3 |
| 202300200                           | Data Science                                 | 1-3 | 202300200   | Data Science                               | 1-3 | 202300200   | Data Science                     | 1-3 | 202300200   | Data Science                         | 1-3 | 202300200   | Data Science                           | 1-3 | 202300200   | Data Science                         | 1-3 |
| 202001464                           | Thesis Preparation                           | --  | 202001464   | Thesis Preparation                         | --  | 202001464   | Thesis Preparation               | --  | 202001464   | Thesis Preparation                   | --  | 202001464   | Thesis Preparation                     | --  | 202001464   | Thesis Preparation                   | --  |
| 194100060                           | Thesis                                       | --  | 194100060   | Thesis                                     | --  | 194100060   | Thesis                           | --  | 194100060   | Thesis                               | --  | 194100060   | Thesis                                 | --  | 194100060   | Thesis                               | --  |
| <b>Mandatory per specialisation</b> |  |     |             |  |     |             |                                  |     |             |                                      |     |             |  |     |             |                                      |     |
| 202300064                           | Simulation                                   | 1   | 202300064   | Simulation                                 | 1   | 202300064   | Simulation                       | 1   | 202300064   | Simulation                           | 1   | 202300064   | Simulation                             | 1   | 191506103   | Statistics & Probability             | 1   |
| 201800003                           | Operations Research Techniques 1             | 1+3 | 201800003   | Operations Research Techniques 1           | 1+3 | 201800003   | Operations Research Techniques 1 | 1+3 | 201800003   | Operations Research Techniques 1     | 1+3 | 201800003   | Operations Research Techniques 1       | 1+3 | 191860651   | Micro Economics *                    | 1   |
| 201800004                           | Operations Research Techniques 2             | 4   | 201800004   | Operations Research Techniques 2           | 4   | 201800004   | Operations Research Techniques 2 | 4   | 201800004   | Operations Research Techniques 2     | 4   | 201800004   | Operations Research Techniques 2       | 4   | 201300060   | Mathematical Finance                 | 2   |
| <b>Mandatory per orientation</b>    |  |     |             |  |     |             |                                  |     |             |                                      |     |             |  |     |             |                                      |     |
| 201800009                           | Advanced Inventory Management                | 2   | 201800009   | Advanced Inventory Management              | 2   | 201800009   | Advanced Inventory Management    | 2   | 191506103   | Statistics & Probability             | 1   | 201800005   | Applied Statistical Learning           | 1   | 191515101   | Introduction to Risk Theory          | 2   |
| 201800008                           | After-Sales Service Logistics                | 2   | 201800008   | After-Sales Service Logistics              | 2   | 201800007   | Planning & Scheduling            | 4   | 194121020   | Optimization of Healthcare Processes | 3   | 201700196   | Adv. Sim. for Health Economic Analysis | 3   | 191860181   | Risk Management                      | 3   |
| 191852630                           | Reliability Eng. & Maintenance Mngt.         | 3   | 201800010   | Transportation and Logistics Management    | 3   | 191820120   | Warehousing                      | 4   | 201800007   | Planning & Scheduling                | 4   | 201700197   | Decision Making in HC                  | 4   | 201300062   | Structured Products                  | 3   |

\* This course is best suitable for students in their second or third semester of the master programme