

# Industrial Engineering and Management - International, M Sc in Engineering

300 credits

Civilingenjör i industriell ekonomi - internationell

6CIEI

Valid from: 2016 Spring semester

**Determined by** Board of Studies for Industrial Engineering and Logistics

Date determined 2016-01-19

# Entry requirements

# Degree in Swedish

Civilingenjör 300 hp och Teknologie master 120 hp



# Curriculum

# Semester 2 (Spring 2017)

| Course<br>code | Course name                         | Credits | Level | Timetable<br>module | ECV |
|----------------|-------------------------------------|---------|-------|---------------------|-----|
| Period 1       |                                     |         |       |                     |     |
| TATA42         | Calculus in One Variable 2          | 6       | G1X   | 2                   | С   |
| TDDD11         | Introduction to Programming         | 8*      | G1X   | 4                   | С   |
| THTY22         | German for Engineers I, part 2      | 6*      | G1X   | 3                   | С   |
| Period 2       |                                     |         |       |                     |     |
| TAOP52         | Introduction to Operations Research | 4       | G1X   | 3                   | С   |
| TATA69         | Calculus in Several Variables       | 6       | G1X   | 2                   | С   |
| TDDD11         | Introduction to Programming         | 8*      | G1X   | 4                   | С   |
| THTY22         | German for Engineers I, part 2      | 6*      | G1X   | 1                   | С   |

# Semester 3 (Autumn 2017)

| Course<br>code | Course name                           | Credits | Level | Timetable<br>module | ECV |
|----------------|---------------------------------------|---------|-------|---------------------|-----|
| Period 1       |                                       |         |       |                     |     |
| THTY41         | German for Engineers II, part 1       | 6*      | G1N   | 4                   | С   |
| TKMJ51         | Corporate Sustainability Management   | 6       | G1X   | 2                   | С   |
| TMME27         | Engineering Mechanics                 | 10*     | G1X   | 3                   | С   |
| Period 2       |                                       |         |       |                     |     |
| TAMS79         | Mathematical Statistics, First Course | 4       | G1X   | 3                   | С   |
| THTY41         | German for Engineers II, part 1       | 6*      | G1N   | 4                   | С   |
| TMME27         | Engineering Mechanics                 | 10*     | G1X   | 1                   | С   |
| TPPE98         | Economic Analysis: Economic Theory    | 4       | G2X   | 2                   | С   |



# Semester 4 (Spring 2018)

| TAOP62Operations Research, Extended Course6G2X3TDDE10Object Oriented Programming in Java6G2X1TEIO61Industrial Management6G2X1TFBI11Genetics and Evolution6G1X2TMMV04Engineering Thermodynamics6G1X2 | ECV |
|---|-----|
| TAOP62Operations Research, Extended Course6G2X3TDDE10Object Oriented Programming in Java6G2X1TEIO61Industrial Management6G2X1TFBI11Genetics and Evolution6G1X2TMMV04Engineering Thermodynamics6G1X2 |     |
| TDDE10Object Oriented Programming in Java6G2X1TEIO61Industrial Management6G2X1TFBI11Genetics and Evolution6G1X2TMMV04Engineering Thermodynamics6G1X2  | С   |
| TEIO61Industrial Management6G2X1TFBI11Genetics and Evolution6G1X2TMMV04Engineering Thermodynamics6G1X2  | С   |
| TFBI11Genetics and Evolution6G1X2TMMV04Engineering Thermodynamics6G1X2  | E   |
| TMMV04Engineering Thermodynamics6G1X2   | E   |
|   | E   |
| TMPT07 Manufacturing Technology 6 G2X 2   | E   |
|   | E   |
| TSEA22 Switching Theory and Logical Design 6 G1X 2  | E   |
| TSRT04 Introduction in Matlab 2 G1X 2   | E   |
| Period 2  |     |
| TAMS65Mathematical Statistics, second course6*G2X2  | С   |
| THTY42German for Engineers II, part 22G1X4  | С   |
| TPPE24Economic Analysis: Decision- and Financial<br>Methodology6G2X3  | С   |
| TATA82Discrete Mathematics6G1X1   | E   |
| TFKE52Fundamentals of Chemistry6G1X1  | E   |
| TMES44Energy Systems - Supply and Demand6G2F1   | E   |
| TMKT14CAD and Machine Elements6G2X1   | E   |
| TSEA82 Computer Hardware and Architecture 4 G1X 4   | E   |
| TSRT04 Introduction in Matlab 2 G1X 1   | E   |
| TPTE06 Industrial Placement 6 G1X -   | V   |

#### Specialisation: Specialization Biotechnical Engineering

| Course<br>code | Course name               | Credits | Level | Timetable<br>module | ECV |
|----------------|---------------------------|---------|-------|---------------------|-----|
| Period 1       |                           |         |       |                     |     |
| TFBI11         | Genetics and Evolution    | 6       | G1X   | 2                   | С   |
| Period 2       |                           |         |       |                     |     |
| TFKE52         | Fundamentals of Chemistry | 6       | G1X   | 1                   | С   |
|                |                           |         |       |                     |     |



| Course<br>code | Course name                         | Credits | Level | Timetable<br>module | ECV |
|----------------|-------------------------------------|---------|-------|---------------------|-----|
| Period 1       |                                     |         |       |                     |     |
| TDDE10         | Object Oriented Programming in Java | 6       | G2X   | 1                   | С   |
| Period 2       |                                     |         |       |                     |     |
| TATA82         | Discrete Mathematics                | 6       | G1X   | 1                   | С   |

#### Specialisation: Specialization Computer Science and Engineering

| Specialisation: Specialization Electrical Engineering |                                     |         |       |                     |     |  |
|---|-------------------------------------|---------|-------|---------------------|-----|--|
| Course<br>code  | Course name                         | Credits | Level | Timetable<br>module | ECV |  |
| Period 1  |                                     |         |       |                     |     |  |
| TSEA22  | Switching Theory and Logical Design | 6       | G1X   | 2                   | С   |  |
| Period 2  |                                     |         |       |                     |     |  |
| TSEA82  | Computer Hardware and Architecture  | 4       | G1X   | 4                   | С   |  |

#### Specialisation: Specialization Electrical Engineering

#### Specialisation: Specialization Energy Engineering

| Course<br>code | Course name                        | Credits | Level | Timetable<br>module | ECV |
|----------------|------------------------------------|---------|-------|---------------------|-----|
| Period 1       |                                    |         |       |                     |     |
| TMMV04         | Engineering Thermodynamics         | 6       | G1X   | 2                   | С   |
| Period 2       |                                    |         |       |                     |     |
| TMES44         | Energy Systems - Supply and Demand | 6       | G2F   | 1                   | С   |
|                |                                    |         |       |                     |     |

#### Specialisation: Specialization Mechanical Engineering

| Course<br>code | Course name              | Credits | Level | Timetable<br>module | ECV |
|----------------|--------------------------|---------|-------|---------------------|-----|
| Period 1       |                          |         |       |                     |     |
| TMPT07         | Manufacturing Technology | 6       | G2X   | 2                   | С   |
| Period 2       |                          |         |       |                     |     |
| TMKT14         | CAD and Machine Elements | 6       | G2X   | 1                   | С   |

# Semester 5 (Autumn 2018)



| Course<br>code | Course name                                | Credits | Level | Timetable<br>module | ECV |
|----------------|--|---------|-------|---------------------|-----|
| Period 1       |  |         |       |                     |     |
| TPPE13         | Production and Operations Management       | 6       | G2X   | 1                   | С   |
| TSRT22         | Automatic Control                          | 6       | G2X   | 4                   | С   |
| TDDE18         | Programming C++                            | 6*      | G2X   | 2                   | E   |
| TDDE22         | Data Structures and Algorithms             | 6       | G2X   | 3                   | E   |
| TEIO91         | Project Management                         | 6*      | G2X   | -                   | E   |
| TFBI22         | Cell Biology and Microbial Processes       | 6       | G1X   | 3                   | E   |
| TMHL22         | Solid Mechanics                            | 6       | G2X   | 3                   | E   |
| TMKM86         | Engineering Materials                      | 6*      | G2X   | 4                   | E   |
| TMMV11         | Fluid Mechanics and Heat Transfer          | 6       | G2X   | 2                   | E   |
| TMMV57         | Applied Energy Engineering                 | 6*      | G2X   | 3                   | E   |
| TSDT84         | Signals and Systems, and Transform Theory  | 8*      | G2X   | 4                   | E   |
| TSEA52         | Switching Theory and Logical Design        | 6*      | G1X   | 2                   | E   |
| TSTE95         | Electronics                                | 4       | G1X   | 3                   | E   |
| Period 2       |  |         |       |                     |     |
| TEIO04         | Project Management                         | 6       | G2X   | 2                   | С   |
| NBIB45         | Principles in Physiology and Ethics        | 6       | G1F   | 1                   | E   |
| TDDE18         | Programming C++                            | 6*      | G2X   | 1                   | E   |
| TDTS10         | Computer Architecture                      | 6       | G1X   | 3                   | E   |
| TEIM03         | Intercultural Communication                | 4       | G1X   | 4                   | E   |
| TEIO91         | Project Management                         | 6*      | G2X   | -                   | E   |
| TKMJ35         | Industrial Ecology                         | 6       | G2F   | 3                   | E   |
| TKMJ39         | Resource Efficient Products and Production | 6       | G2F   | 1                   | E   |
| TMKM86         | Engineering Materials                      | 6*      | G2X   | 4                   | E   |
| TMMI46         | Industrial Automation                      | 6       | G2F   | 3                   | E   |
| TMMV57         | Applied Energy Engineering                 | 6*      | G2X   | 3                   | E   |
| TSDT84         | Signals and Systems, and Transform Theory  | 8*      | G2X   | 3                   | E   |
| TSEA52         | Switching Theory and Logical Design        | 6*      | G1X   | 4                   | E   |



| Course<br>code | Course name                          | Credits | Level | Timetable<br>module | ECV |
|----------------|--------------------------------------|---------|-------|---------------------|-----|
| Period 1       |                                      |         |       |                     |     |
| TFBI22         | Cell Biology and Microbial Processes | 6       | G1X   | 3                   | С   |
| Period 2       |                                      |         |       |                     |     |
| NBIB45         | Principles in Physiology and Ethics  | 6       | G1F   | 1                   | С   |
| TKMJ35         | Industrial Ecology                   | 6       | G2F   | 3                   | E   |

#### Specialisation: Specialization Biotechnical Engineering

Specialisation: Specialization Computer Science and Engineering

| Course<br>code | Course name                         | Credits | Level | Timetable<br>module | ECV |
|----------------|-------------------------------------|---------|-------|---------------------|-----|
| Period 1       |                                     |         |       |                     |     |
| TSEA52         | Switching Theory and Logical Design | 6*      | G1X   | 2                   | С   |
| TDDE22         | Data Structures and Algorithms      | 6       | G2X   | 3                   | E   |
| Period 2       |                                     |         |       |                     |     |
| TDTS10         | Computer Architecture               | 6       | G1X   | 3                   | С   |
| TSEA52         | Switching Theory and Logical Design | 6*      | G1X   | 4                   | С   |

#### Specialisation: Specialization Electrical Engineering

| Course<br>code | Course name                               | Credits | Level | Timetable<br>module | ECV |
|----------------|---|---------|-------|---------------------|-----|
| Period 1       |   |         |       |                     |     |
| TDDE18         | Programming C++                           | 6*      | G2X   | 2                   | С   |
| TSDT84         | Signals and Systems, and Transform Theory | 8*      | G2X   | 4                   | С   |
| TSTE95         | Electronics                               | 4       | G1X   | 3                   | E   |
| Period 2       |   |         |       |                     |     |
| TDDE18         | Programming C++                           | 6*      | G2X   | 1                   | С   |
| TSDT84         | Signals and Systems, and Transform Theory | 8*      | G2X   | 3                   | С   |
|                |   |         |       |                     |     |



| Course<br>code | Course name                                | Credits | Level | Timetable<br>module | ECV |
|----------------|--|---------|-------|---------------------|-----|
| Period 1       |  |         |       |                     |     |
| TMMV11         | Fluid Mechanics and Heat Transfer          | 6       | G2X   | 2                   | С   |
| TMMV57         | Applied Energy Engineering                 | 6*      | G2X   | 3                   | С   |
| Period 2       |  |         |       |                     |     |
| TMMV57         | Applied Energy Engineering                 | 6*      | G2X   | 3                   | С   |
| TKMJ39         | Resource Efficient Products and Production | 6       | G2F   | 1                   | E   |

#### Specialisation: Specialization Energy Engineering

#### Specialisation: Specialization Mechanical Engineering

| Course<br>code | Course name           | Credits | Level | Timetable<br>module | ECV |
|----------------|-----------------------|---------|-------|---------------------|-----|
| Period 1       |                       |         |       |                     |     |
| TMHL22         | Solid Mechanics       | 6       | G2X   | 3                   | С   |
| TMKM86         | Engineering Materials | 6*      | G2X   | 4                   | С   |
| Period 2       |                       |         |       |                     |     |
| TMKM86         | Engineering Materials | 6*      | G2X   | 4                   | С   |
| TMMI46         | Industrial Automation | 6       | G2F   | 3                   | E   |

Semester 6 (Spring 2019)



| Course<br>code | Course name   | Credits | Level | Timetable<br>module | ECV |
|----------------|---|---------|-------|---------------------|-----|
| Period 1       |   |         |       |                     |     |
| TEIM32         | Industrial Marketing  | 6       | G2X   | 4                   | С   |
| TDDD81         | Database Technology   | 6*      | G2X   | 2                   | E   |
| TDDD83         | Computer Engineering - Bachelor Project                           | 18*     | G2X   | 1/3                 | E   |
| TFBI23         | Ecology and the Environment                                       | 6       | G1X   | 3                   | E   |
| TFBI24         | Biotechnology - Bachelor Project                                  | 18*     | G2X   | 2                   | E   |
| TFYA89         | Natural Sciences for Engineers - Principles and<br>Applications   | 6*      | G2X   | -                   | E   |
| TMMV04         | Engineering Thermodynamics  | 6       | G1X   | 2                   | E   |
| TMMV16         | Energy Engineering - Bachelor Project                             | 18*     | G2X   | 3                   | E   |
| TMMV58         | Modelling and Simulation of Energy and Heat<br>Transfer Processes | 6       | G2X   | 1                   | E   |
| TMPS32         | Mechanical Engineering - Bachelor Project                         | 18*     | G2X   | 3                   | E   |
| TSBB18         | Embedded Perception Systems                                       | 6       | G2X   | 3                   | E   |
| TSEA56         | Electronics Engineering - Bachelor Project                        | 16*     | G2X   | 2                   | E   |
| Period 2       |   |         |       |                     |     |
| TDDD12         | Database Technology   | 6       | G2X   | 4                   | E   |
| TDDD81         | Database Technology   | 6*      | G2X   | 4                   | E   |
| TDDD83         | Computer Engineering - Bachelor Project                           | 18*     | G2X   | 1/3                 | E   |
| TFBI24         | Biotechnology - Bachelor Project                                  | 18*     | G2X   | 2/3/4               | E   |
| TFYA89         | Natural Sciences for Engineers - Principles and<br>Applications   | 6*      | G2X   | -                   | E   |
| TMMV16         | Energy Engineering - Bachelor Project                             | 18*     | G2X   | 3                   | E   |
| TMPS32         | Mechanical Engineering - Bachelor Project                         | 18*     | G2X   | 3                   | E   |
| TSEA56         | Electronics Engineering - Bachelor Project                        | 16*     | G2X   | -                   | E   |
| TSKS10         | Signals, Information and Communication                            | 4       | G2X   | 3                   | E   |



| Course<br>code | Course name                      | Credits | Level | Timetable<br>module | ECV |
|----------------|----------------------------------|---------|-------|---------------------|-----|
| Period 1       |                                  |         |       |                     |     |
| TFBI23         | Ecology and the Environment      | 6       | G1X   | 3                   | С   |
| TFBI24         | Biotechnology - Bachelor Project | 18*     | G2X   | 2                   | E   |
| Period 2       |                                  |         |       |                     |     |
| TFBI24         | Biotechnology - Bachelor Project | 18*     | G2X   | 2/3/4               | E   |

#### Specialisation: Specialization Biotechnical Engineering

| Specialisation: | Specialization | Computer | Science and | l Engineering |
|-----------------|----------------|----------|-------------|---------------|
| - <u>r</u>      | - <b>r</b>     | T        |             |               |

| Course<br>code | Course name                             | Credits | Level | Timetable<br>module | ECV |
|----------------|---|---------|-------|---------------------|-----|
| Period 1       |   |         |       |                     |     |
| TDDD81         | Database Technology                     | 6*      | G2X   | 2                   | E   |
| TDDD83         | Computer Engineering - Bachelor Project | 18*     | G2X   | 1/3                 | E   |
| Period 2       |   |         |       |                     |     |
| TDDD12         | Database Technology                     | 6       | G2X   | 4                   | С   |
| TDDD81         | Database Technology                     | 6*      | G2X   | 4                   | E   |
| TDDD83         | Computer Engineering - Bachelor Project | 18*     | G2X   | 1/3                 | E   |

#### Specialisation: Specialization Electrical Engineering

| Course<br>code | Course name                                | Credits | Level | Timetable<br>module | ECV |
|----------------|--|---------|-------|---------------------|-----|
| Period 1       |  |         |       |                     |     |
| TSBB18         | Embedded Perception Systems                | 6       | G2X   | 3                   | С   |
| TSEA56         | Electronics Engineering - Bachelor Project | 16*     | G2X   | 2                   | E   |
| Period 2       |  |         |       |                     |     |
| TSKS10         | Signals, Information and Communication     | 4       | G2X   | 3                   | С   |
| TSEA56         | Electronics Engineering - Bachelor Project | 16*     | G2X   | -                   | E   |



| Course<br>code | Course name   | Credits | Level | Timetable<br>module | ECV |
|----------------|---|---------|-------|---------------------|-----|
| Period 1       |   |         |       |                     |     |
| TMMV58         | Modelling and Simulation of Energy and Heat<br>Transfer Processes | 6       | G2X   | 1                   | С   |
| TMMV16         | Energy Engineering - Bachelor Project                             | 18*     | G2X   | 3                   | E   |
| Period 2       |   |         |       |                     |     |
| TMMV16         | Energy Engineering - Bachelor Project                             | 18*     | G2X   | 3                   | E   |
|                |   |         |       |                     |     |

#### Specialisation: Specialization Energy Engineering

#### Specialisation: Specialization Mechanical Engineering

| Course<br>code | Course name                               | Credits | Level | Timetable<br>module | ECV |
|----------------|---|---------|-------|---------------------|-----|
| Period 1       |   |         |       |                     |     |
| TMMV04         | Engineering Thermodynamics                | 6       | G1X   | 2                   | С   |
| TMPS32         | Mechanical Engineering - Bachelor Project | 18*     | G2X   | 3                   | E   |
| Period 2       |   |         |       |                     |     |
| TMPS32         | Mechanical Engineering - Bachelor Project | 18*     | G2X   | 3                   | E   |
|                |   |         |       |                     |     |

# Semester 7 (Autumn 2019)

| Course<br>code | Course name                              | Credits | Level | Timetable<br>module | ECV |
|----------------|--|---------|-------|---------------------|-----|
| Period 1       |  |         |       |                     |     |
| THTY18         | German for Engineers III                 | 6*      | G2X   | -                   | С   |
| TAMS32         | Stochastic Processes                     | 6       | A1X   | 1                   | E   |
| TAMS46         | Probability Theory, Second Course        | 6       | A1X   | 3                   | E   |
| TANA21         | Scientific Computing                     | 6       | G1X   | 3                   | E   |
| TAOP34         | Large Scale Optimization                 | 6       | A1X   | 3                   | E   |
| TATA34         | Real Analysis, Honours Course            | 6*      | G2X   | 4                   | E   |
| TATA44         | Vector Analysis                          | 4       | G1X   | 1                   | E   |
| TATM38         | Mathematical Models in Biology           | 6       | A1X   | 3                   | E   |
| TDDC17         | Artificial Intelligence                  | 6       | G2X   | 3                   | E   |
| TDDC88         | Software Engineering                     | 12*     | A1X   | 1                   | E   |
| TDDD23         | Design and Programming of Computer Games | 6       | A1X   | 2                   | E   |
| TDDD38         | Advanced Programming in C++              | 6*      | A1X   | 2                   | E   |
| TDDD43         | Advanced Data Models and Databases       | 6*      | A1X   | 2                   | E   |



| Course<br>code | Course name  | Credits | Level | Timetable<br>module | ECV |
|----------------|--|---------|-------|---------------------|-----|
| TDDE18         | Programming C++  | 6*      | G2X   | 2                   | E   |
| TDEI13         | Enterprise Resource Planning Systems:<br>Process and Implementation      | 6       | A1X   | 2                   | E   |
| TDEI72         | Strategy and Digitisation - Technology,<br>Standards and Network Effects | 6       | A1X   | 4                   | E   |
| TEIE72         | Corporate Strategies   | 6       | A1X   | 4                   | E   |
| TEIO07         | Project Based Organization and Management                                | 6       | A1X   | 4                   | E   |
| TEIO90         | Innovation Management  | 6       | A1X   | 2                   | E   |
| TETS23         | Purchasing   | 6       | A1N   | 2                   | E   |
| TETS37         | Basics in Logistics Management   | 6       | G2X   | 4                   | E   |
| TKMJ14         | Large Technical Systems and the Environment                              | 6       | A1X   | 4                   | E   |
| TKMJ31         | Biofuels for Transportation  | 6       | A1N   | 1                   | E   |
| TKMJ49         | Environmentally Driven Business<br>Development                           | 6*      | A1N   | 3                   | E   |
| TMES09         | Industrial Energy Systems  | 6       | A1X   | 3                   | E   |
| TMES27         | Modelling of Energy Systems  | 6       | A1N   | 3                   | E   |
| TMKM16         | Sustainable Material Selection   | 6       | A1X   | 4                   | E   |
| TMKT80         | Wood - Material  | 6       | G2X   | 2                   | E   |
| TMPS33         | Virtual Manufacturing  | 6       | A1N   | 4                   | E   |
| TMPS35         | Emerging Factory Technologies  | 6       | A1N   | 3                   | E   |
| TMPT03         | Production Engineering - Continuing Course                               | 6       | G2F   | 2                   | E   |
| TMQU03         | Quality Management and Engineering                                       | 6       | G2X   | 2                   | E   |
| TPPE16         | Manufacturing Strategies   | 6       | A1X   | 2                   | E   |
| TPPE17         | Corporate Finance  | 6       | G2X   | 4                   | E   |
| TSBB06         | Multidimensional Signal Analysis   | 6*      | A1X   | 2                   | E   |
| TSBB08         | Digital Image Processing   | 6       | A1X   | 4                   | E   |
| TSDT14         | Signal Theory  | 6       | A1X   | 1                   | E   |
| TSKS01         | Digital Communication  | 6*      | A1X   | 4                   | E   |
| TSKS15         | Detection and Estimation of Signals                                      | 6       | A1X   | 2                   | E   |
| TSRT62         | Modelling and Simulation   | 6       | A1X   | 3                   | E   |
| Period 2       |  |         |       |                     |     |
| THTY18         | German for Engineers III   | 6*      | G2X   | -                   | С   |
| NBID31         | Modelling of Biological Systems  | 6       | A1X   | 3/4                 | E   |



| Course<br>code | Course name   | Credits | Level | Timetable<br>module | ECV |
|----------------|---|---------|-------|---------------------|-----|
| TAOP04         | Mathematical Optimization   | 6       | A1X   | 4                   | E   |
| TATA34         | Real Analysis, Honours Course   | 6*      | G2X   | 4                   | E   |
| TATA45         | Complex Analysis  | 6       | G2X   | 1                   | E   |
| TDDC88         | Software Engineering  | 12*     | A1X   | 1                   | E   |
| TDDD07         | Real Time Systems   | 6       | A1X   | 4                   | E   |
| TDDD38         | Advanced Programming in C++   | 6*      | A1X   | -                   | E   |
| TDDD43         | Advanced Data Models and Databases  | 6*      | A1X   | 2                   | E   |
| TDDE01         | Machine Learning  | 6       | A1X   | 1                   | E   |
| TDDE18         | Programming C++   | 6*      | G2X   | 1                   | E   |
| TDEI19         | Management Control  | 6       | A1X   | 2                   | E   |
| TDEI21         | Strategic Organisational Application of IT -<br>Workflow and Knowledge Management | 6       | A1X   | 4                   | E   |
| TEIE42         | Industrial Sales Management   | 6       | A1X   | 4                   | E   |
| TEIM10         | Industrial Service Development  | 6       | A1X   | 2                   | E   |
| TETS27         | Supply Chain Logistics  | 6       | A1X   | 2                   | E   |
| TFBI17         | Advanced Project Course in Ecosystem Service<br>Valuation                         | 6       | A1X   | -                   | E   |
| TFYA96         | The physics behind technology   | 6       | G2X   | 4                   | E   |
| TKMJ35         | Industrial Ecology  | 6       | G2F   | 3                   | Е   |
| TKMJ49         | Environmentally Driven Business<br>Development                                    | 6*      | A1N   | 3                   | E   |
| TMES45         | Energy Planning and Modelling of<br>Communities                                   | 6       | A1F   | 4                   | E   |
| TMHL63         | Introduction to Computational Mechanics   | 6       | G2X   | 3                   | E   |
| TMHP03         | Engineering Systems Design  | 6       | A1X   | 4                   | E   |
| ТМКМ90         | Engineering Materials - Deformation and<br>Fracture                               | 6       | A1X   | 2                   | E   |
| TMKT71         | Affective Engineering   | 6       | A1X   | 2                   | E   |
| TMKT81         | Wood - Realisation  | 6       | G2X   | 1                   | E   |
| TMKU02         | Wood - Realisation  | 6       | G2X   | 1                   | E   |
| TMMV18         | Fluid Mechanics   | 6       | A1X   | 2                   | E   |
| TMPS22         | Assembly Technology   | 6       | A1X   | 3                   | E   |
| TMPS31         | Sustainable Manufacturing   | 6       | A1X   | 1                   | E   |
| TMQU12         | Lean Production   | 6       | A1X   | 2                   | E   |



| Course<br>code | Course name                                   | Credits | Level | Timetable<br>module | ECV |
|----------------|---|---------|-------|---------------------|-----|
| TPPE29         | Financial Markets and Instruments             | 6       | A1X   | 2                   | Е   |
| TPPE76         | Operations Planning and Control               | 6       | A1X   | 4                   | Е   |
| TSBB06         | Multidimensional Signal Analysis              | 6*      | A1X   | 3                   | E   |
| TSBB09         | Image Sensors                                 | 6       | A1X   | 4                   | E   |
| TSEA81         | Computer Engineering and Real-time Systems    | 6       | A1X   | 4                   | Е   |
| TSIT02         | Computer Security                             | 6       | G2F   | 2                   | E   |
| TSKS01         | Digital Communication                         | 6*      | A1X   | 4                   | E   |
| TSKS11         | Networks: Models, Algorithms and Applications | 6       | G2X   | 3                   | E   |
| TSRT78         | Digital Signal Processing                     | 6       | A1X   | 2                   | E   |

#### Specialisation: Master Profile Automatic Control

| Course<br>code | Course name                                | Credits | Level | Timetable<br>module | ECV |
|----------------|--|---------|-------|---------------------|-----|
| Period 1       |  |         |       |                     |     |
| TSDT14         | Signal Theory                              | 6       | A1X   | 1                   | С   |
| TSRT62         | Modelling and Simulation                   | 6       | A1X   | 3                   | С   |
| Period 2       |  |         |       |                     |     |
| TSEA81         | Computer Engineering and Real-time Systems | 6       | A1X   | 4                   | E   |
| TSRT78         | Digital Signal Processing                  | 6       | A1X   | 2                   | E   |
|                |  |         |       |                     |     |

#### Specialisation: Master Profile Computer Science and Engineering

| Course<br>code | Course name          | Credits | Level | Timetable<br>module | ECV |
|----------------|----------------------|---------|-------|---------------------|-----|
| Period 1       |                      |         |       |                     |     |
| TDDC88         | Software Engineering | 12*     | A1X   | 1                   | С   |
| Period 2       |                      |         |       |                     |     |
| TDDC88         | Software Engineering | 12*     | A1X   | 1                   | С   |



| Course<br>code | Course name   | Credits | Level | Timetable<br>module | ECV |
|----------------|---|---------|-------|---------------------|-----|
| Period 1       |   |         |       |                     |     |
| TDEI72         | Strategy and Digitisation - Technology,<br>Standards and Network Effects          | 6       | A1X   | 4                   | С   |
| TDEI13         | Enterprise Resource Planning Systems: Process<br>and Implementation               | 6       | A1X   | 2                   | E   |
| Period 2       |   |         |       |                     |     |
| TDEI21         | Strategic Organisational Application of IT -<br>Workflow and Knowledge Management | 6       | A1X   | 4                   | С   |
| TDEI19         | Management Control  | 6       | A1X   | 2                   | E   |

#### Specialisation: Master Profile Digitisation and Management

#### Specialisation: Master Profile Energy Engineering

| Course<br>code | Course name                 | Credits | Level | Timetable<br>module | ECV |
|----------------|-----------------------------|---------|-------|---------------------|-----|
| Period 1       |                             |         |       |                     |     |
| TMES09         | Industrial Energy Systems   | 6       | A1X   | 3                   | Е   |
| TMES27         | Modelling of Energy Systems | 6       | A1N   | 3                   | E   |
| Period 2       |                             |         |       |                     |     |
| TMMV18         | Fluid Mechanics             | 6       | A1X   | 2                   | E   |

#### Specialisation: Master Profile Finance

| Course<br>code | Course name                       | Credits | Level | Timetable<br>module | ECV |
|----------------|-----------------------------------|---------|-------|---------------------|-----|
| Period 1       |                                   |         |       |                     |     |
| TPPE17         | Corporate Finance                 | 6       | G2X   | 4                   | E   |
| Period 2       |                                   |         |       |                     |     |
| TPPE29         | Financial Markets and Instruments | 6       | A1X   | 2                   | C   |

#### Specialisation: Master Profile Industrial Marketing

| Course name                    | Credits   | Level   | Timetable<br>module  | ECV  |
|--------------------------------|---|---|--|--|
|                                |   |   |  |  |
| Corporate Strategies           | 6   | A1X   | 4  | E  |
|                                |   |   |  |  |
| Industrial Sales Management    | 6   | A1X   | 4  | C/E  |
| Industrial Service Development | 6   | A1X   | 2  | C/E  |
|                                | Corporate Strategies<br>Industrial Sales Management | Corporate Strategies 6<br>Industrial Sales Management 6 | Corporate Strategies   6   A1X     Industrial Sales Management   6   A1X | Course name   Credits   Level   Imodule     Corporate Strategies   6   A1X   4     Industrial Sales Management   6   A1X   4 |



| Course<br>code | Course name                    | Credits | Level | Timetable<br>module | ECV |
|----------------|--------------------------------|---------|-------|---------------------|-----|
| Period 1       |                                |         |       |                     |     |
| TETS37         | Basics in Logistics Management | 6       | G2X   | 4                   | С   |
| TETS23         | Purchasing                     | 6       | A1N   | 2                   | E   |
| Period 2       |                                |         |       |                     |     |
| TETS27         | Supply Chain Logistics         | 6       | A1X   | 2                   | C/E |

#### Specialisation: Master Profile Logistics Management

| Course<br>code | Course name                                | Credits | Level | Timetable<br>module | ECV |
|----------------|--|---------|-------|---------------------|-----|
| Period 1       |  |         |       |                     |     |
| TMPS33         | Virtual Manufacturing                      | 6       | A1N   | 4                   | E   |
| TMPS35         | Emerging Factory Technologies              | 6       | A1N   | 3                   | E   |
| TMPT03         | Production Engineering - Continuing Course | 6       | G2F   | 2                   | E   |
| Period 2       |  |         |       |                     |     |
| TMPS22         | Assembly Technology                        | 6       | A1X   | 3                   | С   |
| TMPS31         | Sustainable Manufacturing                  | 6       | A1X   | 1                   | E   |

#### Specialisation: Master Profile Manufacturing

#### Specialisation: Master Profile Operations Management

| Course<br>code | Course name                     | Credits | Level | Timetable<br>module | ECV |
|----------------|---------------------------------|---------|-------|---------------------|-----|
| Period 1       |                                 |         |       |                     |     |
| TPPE16         | Manufacturing Strategies        | 6       | A1X   | 2                   | С   |
| Period 2       |                                 |         |       |                     |     |
| TPPE76         | Operations Planning and Control | 6       | A1X   | 4                   | E   |

#### Specialisation: Master Profile Product Development

| Course<br>code | Course name                | Credits | Level | Timetable<br>module | ECV |
|----------------|----------------------------|---------|-------|---------------------|-----|
| Period 2       |                            |         |       |                     |     |
| TMHP03         | Engineering Systems Design | 6       | A1X   | 4                   | E   |



| Course<br>code | Course name                                 | Credits | Level | Timetable<br>module | ECV |
|----------------|---|---------|-------|---------------------|-----|
| Period 1       |   |         |       |                     |     |
| TEIO90         | Innovation Management                       | 6       | A1X   | 2                   | С   |
| TEIO07         | Project Based Organization and Management   | 6       | A1X   | 4                   | E   |
| TKMJ49         | Environmentally Driven Business Development | 6*      | A1N   | 3                   | E   |
| Period 2       |   |         |       |                     |     |
| TKMJ49         | Environmentally Driven Business Development | 6*      | A1N   | 3                   | E   |

#### Specialisation: Master Profile Project, Innovation and Entrepreneurship

#### Specialisation: Master Profile Quality Technology and Management

| Course<br>code | Course name                        | Credits | Level | Timetable<br>module | ECV |
|----------------|------------------------------------|---------|-------|---------------------|-----|
| Period 1       |                                    |         |       |                     |     |
| TMQU03         | Quality Management and Engineering | 6       | G2X   | 2                   | С   |
| Period 2       |                                    |         |       |                     |     |
| TMQU12         | Lean Production                    | 6       | A1X   | 2                   | E   |

#### Specialisation: Master Profile Signal and Image Processing

| Course name                      | Credits  | Level  | Timetable  | ECV  |
|----------------------------------|--|--|--|--|
|                                  |  |  | module   |  |
|                                  |  |  |  |  |
| Digital Image Processing         | 6  | A1X  | 4  | С  |
| Signal Theory                    | 6  | A1X  | 1  | С  |
| Multidimensional Signal Analysis | 6*   | A1X  | 2  | E  |
|                                  |  |  |  |  |
| Multidimensional Signal Analysis | 6*   | A1X  | 3  | E  |
| Image Sensors                    | 6  | A1X  | 4  | E  |
| Digital Signal Processing        | 6  | A1X  | 2  | E  |
|                                  | Digital Image Processing<br>Signal Theory<br>Multidimensional Signal Analysis<br>Multidimensional Signal Analysis<br>Image Sensors | Digital Image Processing     6       Signal Theory     6       Multidimensional Signal Analysis     6*       Multidimensional Signal Analysis     6*       Image Sensors     6 | Digital Image Processing6A1XSignal Theory6A1XMultidimensional Signal Analysis6*A1XMultidimensional Signal Analysis6*A1XImage Sensors6A1X | Course nameCreditsLevelImage moduleDigital Image Processing6A1X4Signal Theory6A1X1Multidimensional Signal Analysis6*A1X2Multidimensional Signal Analysis6*A1X3Image Sensors6A1X4 |



| Course<br>code | Course name   | Credits | Level | Timetable<br>module | ECV |
|----------------|---|---------|-------|---------------------|-----|
| Period 1       |   |         |       |                     |     |
| TEIE72         | Corporate Strategies  | 6       | A1X   | 4                   | С   |
| TEIO90         | Innovation Management   | 6       | A1X   | 2                   | E   |
| TKMJ49         | Environmentally Driven Business Development                                       | 6*      | A1N   | 3                   | E   |
| TPPE16         | Manufacturing Strategies  | 6       | A1X   | 2                   | E   |
| Period 2       |   |         |       |                     |     |
| TDEI19         | Management Control  | 6       | A1X   | 2                   | С   |
| TDEI21         | Strategic Organisational Application of IT -<br>Workflow and Knowledge Management | 6       | A1X   | 4                   | E   |
| TEIE42         | Industrial Sales Management   | 6       | A1X   | 4                   | E   |
| TKMJ49         | Environmentally Driven Business Development                                       | 6*      | A1N   | 3                   | E   |

#### Specialisation: Master Profile Strategic Management and Control

#### Specialisation: Master Profile Telecommunication

| Course<br>code | Course name                         | Credits | Level | Timetable<br>module | ECV |
|----------------|-------------------------------------|---------|-------|---------------------|-----|
| Period 1       |                                     |         |       |                     |     |
| TSDT14         | Signal Theory                       | 6       | A1X   | 1                   | С   |
| TSKS01         | Digital Communication               | 6*      | A1X   | 4                   | С   |
| TSKS15         | Detection and Estimation of Signals | 6       | A1X   | 2                   | E   |
| Period 2       |                                     |         |       |                     |     |
| TSKS01         | Digital Communication               | 6*      | A1X   | 4                   | С   |

#### Specialisation: Master Profile Wood Technology

| Course<br>code | Course name                    | Credits | Level | Timetable<br>module | ECV |
|----------------|--------------------------------|---------|-------|---------------------|-----|
| Period 1       |                                |         |       |                     |     |
| TMKT80         | Wood - Material                | 6       | G2X   | 2                   | С   |
| TMKM16         | Sustainable Material Selection | 6       | A1X   | 4                   | E   |
| Period 2       |                                |         |       |                     |     |
| TMKT81         | Wood - Realisation             | 6       | G2X   | 1                   | С   |
| TMKU02         | Wood - Realisation             | 6       | G2X   | 1                   | С   |
|                |                                |         |       |                     |     |



| Course<br>code | Course name  | Credits | Level | Timetable<br>module | ECV |
|----------------|--|---------|-------|---------------------|-----|
| Period 1       |  |         |       |                     |     |
| TATM38         | Mathematical Models in Biology                         | 6       | A1X   | 3                   | E   |
| TKMJ31         | Biofuels for Transportation                            | 6       | A1N   | 1                   | E   |
| Period 2       |  |         |       |                     |     |
| NBID31         | Modelling of Biological Systems                        | 6       | A1X   | 3/4                 | С   |
| TFBI17         | Advanced Project Course in Ecosystem Service Valuation | 6       | A1X   | -                   | E   |
| TKMJ35         | Industrial Ecology                                     | 6       | G2F   | 3                   | E   |

#### Specialisation: Specialization Biotechnical Engineering

Specialisation: Specialization Computer Science and Engineering

| Course<br>code | Course name                                   | Credits | Level | Timetable<br>module | ECV |
|----------------|---|---------|-------|---------------------|-----|
| Period 1       |   |         |       |                     |     |
| TDDC88         | Software Engineering                          | 12*     | A1X   | 1                   | С   |
| TDDC17         | Artificial Intelligence                       | 6       | G2X   | 3                   | E   |
| TDDD23         | Design and Programming of Computer Games      | 6       | A1X   | 2                   | E   |
| TDDD38         | Advanced Programming in C++                   | 6*      | A1X   | 2                   | E   |
| TDDE18         | Programming C++                               | 6*      | G2X   | 2                   | E   |
| Period 2       |   |         |       |                     |     |
| TDDC88         | Software Engineering                          | 12*     | A1X   | 1                   | С   |
| TDDD38         | Advanced Programming in C++                   | 6*      | A1X   | -                   | E   |
| TDDE01         | Machine Learning                              | 6       | A1X   | 1                   | E   |
| TDDE18         | Programming C++                               | 6*      | G2X   | 1                   | E   |
| TSIT02         | Computer Security                             | 6       | G2F   | 2                   | E   |
| TSKS11         | Networks: Models, Algorithms and Applications | 6       | G2X   | 3                   | E   |
|                |   |         |       |                     |     |



| Course<br>code | Course name                                   | Credits | Level | Timetable<br>module | ECV |
|----------------|---|---------|-------|---------------------|-----|
| Period 1       |   |         |       |                     |     |
| TSBB06         | Multidimensional Signal Analysis              | 6*      | A1X   | 2                   | E   |
| TSBB08         | Digital Image Processing                      | 6       | A1X   | 4                   | E   |
| TSDT14         | Signal Theory                                 | 6       | A1X   | 1                   | E   |
| TSKS01         | Digital Communication                         | 6*      | A1X   | 4                   | E   |
| TSKS15         | Detection and Estimation of Signals           | 6       | A1X   | 2                   | E   |
| TSRT62         | Modelling and Simulation                      | 6       | A1X   | 3                   | E   |
| Period 2       |   |         |       |                     |     |
| TSBB06         | Multidimensional Signal Analysis              | 6*      | A1X   | 3                   | E   |
| TSBB09         | Image Sensors                                 | 6       | A1X   | 4                   | E   |
| TSEA81         | Computer Engineering and Real-time Systems    | 6       | A1X   | 4                   | E   |
| TSIT02         | Computer Security                             | 6       | G2F   | 2                   | E   |
| TSKS01         | Digital Communication                         | 6*      | A1X   | 4                   | E   |
| TSKS11         | Networks: Models, Algorithms and Applications | 6       | G2X   | 3                   | E   |
| TSRT78         | Digital Signal Processing                     | 6       | A1X   | 2                   | E   |

#### Specialisation: Specialization Electrical Engineering

## Specialisation: Specialization Energy Engineering

| Course<br>code | Course name                                     | Credits | Level | Timetable<br>module | ECV |
|----------------|---|---------|-------|---------------------|-----|
| Period 1       |   |         |       |                     |     |
| TKMJ14         | Large Technical Systems and the Environment     | 6       | A1X   | 4                   | E   |
| TMES09         | Industrial Energy Systems                       | 6       | A1X   | 3                   | E   |
| TMES27         | Modelling of Energy Systems                     | 6       | A1N   | 3                   | E   |
| Period 2       |   |         |       |                     |     |
| TMES45         | Energy Planning and Modelling of<br>Communities | 6       | A1F   | 4                   | E   |
| TMMV18         | Fluid Mechanics                                 | 6       | A1X   | 2                   | E   |



| Course name   | Credits  | Level  | Timetable<br>module   | ECV  |
|---|--|--|---|--|
|   |  |  |   |  |
| Scientific Computing                                | 6  | G1X  | 3   | E  |
| Sustainable Material Selection                      | 6  | A1X  | 4   | E  |
| Wood - Material                                     | 6  | G2X  | 2   | E  |
| Virtual Manufacturing                               | 6  | A1N  | 4   | E  |
| Emerging Factory Technologies                       | 6  | A1N  | 3   | E  |
| Production Engineering - Continuing Course          | 6  | G2F  | 2   | E  |
|   |  |  |   |  |
| Engineering Systems Design                          | 6  | A1X  | 4   | E  |
| Engineering Materials - Deformation and<br>Fracture | 6  | A1X  | 2   | E  |
| Affective Engineering                               | 6  | A1X  | 2   | E  |
| Wood - Realisation                                  | 6  | G2X  | 1   | E  |
| Wood - Realisation                                  | 6  | G2X  | 1   | E  |
| Assembly Technology                                 | 6  | A1X  | 3   | E  |
| Sustainable Manufacturing                           | 6  | A1X  | 1   | E  |
|   | Scientific Computing<br>Sustainable Material Selection<br>Wood - Material<br>Virtual Manufacturing<br>Emerging Factory Technologies<br>Production Engineering - Continuing Course<br>Engineering Systems Design<br>Engineering Materials - Deformation and<br>Fracture<br>Affective Engineering<br>Wood - Realisation<br>Wood - Realisation<br>Assembly Technology | Scientific Computing6Sustainable Material Selection6Wood - Material6Virtual Manufacturing6Emerging Factory Technologies6Production Engineering - Continuing Course6Engineering Systems Design6Engineering Materials - Deformation and<br>Fracture6Affective Engineering6Wood - Realisation6Wood - Realisation6Assembly Technology6 | Scientific Computing6G1XSustainable Material Selection6A1XWood - Material6G2XVirtual Manufacturing6A1NEmerging Factory Technologies6A1NProduction Engineering - Continuing Course6G2FEngineering Systems Design6A1XEngineering Materials - Deformation and<br>Fracture6A1XMood - Realisation6G2XWood - Realisation6G2XMood - Realisation6A1XAssembly Technology6A1X | Course nameCreditsLevelmoduleScientific Computing6G1X3Sustainable Material Selection6A1X4Wood - Material6G2X2Virtual Manufacturing6A1N4Emerging Factory Technologies6A1N3Production Engineering - Continuing Course6G2F2Engineering Materials - Deformation and<br>Fracture6A1X4Mood - Realisation6A1X2Wood - Realisation6G2X1Assembly Technology6A1X3 |

#### Specialisation: Specialization Mechanical Engineering

# Semester 8 (Spring 2020)

| Course<br>code | Course name   | Credits | Level | Timetable<br>module | ECV |
|----------------|---|---------|-------|---------------------|-----|
| Period 1       |   |         |       |                     |     |
| TEIE06         | Corporate Planning                                  | 6*      | A1X   | -                   | С   |
| NBIC50         | Ecotoxicology and Environmental Monitoring          | 6       | G2X   | 1                   | E   |
| TAMS29         | Stochastic Processes Applied to Financial<br>Models | 6       | A1X   | 3                   | E   |
| TATA53         | Linear Algebra, Honours Course                      | 6*      | G2X   | -                   | E   |
| TBMI26         | Neural Networks and Learning Systems                | 6       | A1X   | 2                   | E   |
| TDDB68         | Concurrent Programming and Operating<br>Systems     | 6       | G2X   | 3                   | E   |
| TDDD17         | Information Security, Second Course                 | 6*      | A1X   | 4                   | E   |
| TDDD20         | Design and Analysis of Algorithms                   | 6       | A1X   | 3                   | E   |
| TDDD38         | Advanced Programming in C++                         | 6*      | A1X   | 2                   | E   |



| Course<br>code | Course name  | Credits | Level | Timetable<br>module | ECV |
|----------------|--|---------|-------|---------------------|-----|
| TDDD41         | Data Mining - Clustering and Association<br>Analysis                           | 6       | A1X   | 3                   | E   |
| TDDD51         | Service Design and Innovation  | 6       | A1X   | 4                   | E   |
| TDDD57         | Physical Interaction and Game Programming                                      | 6       | A1X   | 1                   | E   |
| TDDD75         | Effect-Driven Development and Human-<br>Centered Design of Interactive Systems | 6       | G2X   | 3                   | E   |
| TDDD97         | Web Programming  | 6       | G2X   | 3                   | E   |
| TDDE46         | Software Quality   | 6*      | A1N   | 2                   | E   |
| TDEI71         | Digitisation, Business Ecologies and Business<br>Models                        | 6       | A1N   | 4                   | E   |
| TDTS04         | Computer Networks and Distributed Systems                                      | 8       | G2X   | 2                   | E   |
| TEIE88         | Computer Law   | 4       | G1X   | 1                   | E   |
| TEIM09         | International Business   | 6       | A1X   | 2                   | E   |
| TEIO13         | Leadership and Organizational Change   | 6       | A1X   | 4                   | E   |
| TETS57         | Logistics Analysis   | 6       | A1X   | 2                   | E   |
| TFYA45         | Biotechnology Project  | 6*      | A1X   | -                   | E   |
| TFYA62         | Introduction to Biosensor Technology   | 6       | G2X   | 4                   | E   |
| TFYA85         | Alternative Energy Sources and their<br>Applications                           | 6       | G2X   | 4                   | E   |
| TGTU91         | Oral and Written Communication   | 6       | G1X   | 2                   | E   |
| TGTU94         | Technology and Ethics  | 6       | G1X   | 1                   | E   |
| TKMJ10         | Industrial Ecology   | 6       | A1X   | 1                   | E   |
| TKMJ47         | Environmental Systems Analysis   | 6*      | A1N   | 3                   | E   |
| TMES17         | Building Energy Systems  | 6       | A1N   | 3                   | E   |
| TMES43         | Analysis and Modelling of Industrial Energy<br>Systems                         | 6       | A1F   | 1                   | E   |
| TMKA04         | Wood - Innovation  | 6       | A1X   | 1                   | E   |
| TMKT48         | Design Optimization  | 6       | A1X   | 3                   | Е   |
| TMKT74         | Advanced CAD   | 6       | A1X   | 4                   | E   |
| TMMS21         | Mechatronics   | 6       | G2X   | 1                   | E   |
| TMPS42         | Production System Automation   | 6       | A1X   | 1                   | E   |
| TMQU31         | Statistical Quality Control  | 6       | A1X   | 2                   | E   |
| TPPE32         | Financial Risk Management  | 6       | A1X   | 2                   | E   |



| TPPE78Quantitative Models and Analysis in<br>Operations Management6A1X1ETSBK07Computer Graphics6*A1X4ETSBK08Data Compression6A1N2ETSK513Wireless Communications6A1F4ETSRT07Industrial Control Systems6A1N2ETSRT09Control Theory6A1N3ETSTE08Analog and Discrete-Time Integrated Circuits6A1X3ETVCB11Cellbiological Methodology6G2X1/4EPeriod 2CTELE06Corporate Planning6*A1X-CTDDC78Programming of Parallel Computers - Methods<br>and Tools6*A1X3ETDDD17Information Security, Second Course6*A1X4ETDDD27Advanced Web Programming in C+++6*A1X-E | Course<br>code | Course name                                  | Credits | Level | Timetable<br>module | ECV |
|---|----------------|--|---------|-------|---------------------|-----|
| TSBK08Data Compression6A1N2ETSKS13Wireless Communications6A1F4ETSRT07Industrial Control Systems6A1N2ETSRT09Control Theory6A1N3ETSTE08Analog and Discrete-Time Integrated Circuits6A1X3ETVCB11Cellbiological Methodology6G2X1/4EPeriod 2TTEIE06Corporate Planning6*A1X-CTATA53Linear Algebra, Honours Course6*G2X-ETDDC78Programming of Parallel Computers - Methods<br>and Tools6*A1X3ETDDD17Information Security, Second Course6*A1X4ETDDD27Advanced Web Programming6A1N3E   | TPPE78         |  | 6       | A1X   | 1                   | E   |
| TSKS13Wireless Communications6A1F4ETSRT07Industrial Control Systems6A1N2ETSRT09Control Theory6A1N3ETSTE08Analog and Discrete-Time Integrated Circuits6A1X3ETVCB11Cellbiological Methodology6G2X1/4EPeriod 2TEIE06Corporate Planning6*A1X-CTATA53Linear Algebra, Honours Course6*G2X-ETDDC78Programming of Parallel Computers - Methods<br>and Tools6*A1X3ETDDD17Information Security, Second Course6*A1X4ETDDD27Advanced Web Programming6A1N3E  | TSBK07         | Computer Graphics                            | 6*      | A1X   | 4                   | E   |
| TSRT07Industrial Control Systems6A1N2ETSRT09Control Theory6A1N3ETSTE08Analog and Discrete-Time Integrated Circuits6A1X3ETVCB11Cellbiological Methodology6G2X1/4EPeriod 2TEIE06Corporate Planning6*A1X-CTATA53Linear Algebra, Honours Course6*G2X-ETDDC78Programming of Parallel Computers - Methods<br>and Tools6*A1X3ETDDD17Information Security, Second Course6*A1X4ETDDD27Advanced Web Programming6A1N3E   | TSBK08         | Data Compression                             | 6       | A1N   | 2                   | Е   |
| TSRT09Control Theory6A1N3ETSTE08Analog and Discrete-Time Integrated Circuits6A1X3ETVCB11Cellbiological Methodology6G2X1/4EPeriod 2TEIE06Corporate Planning6*A1X-CTATA53Linear Algebra, Honours Course6*G2X-ETDDC78Programming of Parallel Computers - Methods<br>and Tools6A1X3ETDDD17Information Security, Second Course6*A1X4ETDDD27Advanced Web Programming6A1N3E  | TSKS13         | Wireless Communications                      | 6       | A1F   | 4                   | E   |
| TSTE08Analog and Discrete-Time Integrated Circuits6A1X3ETVCB11Cellbiological Methodology6G2X1/4EPeriod 2TEIE06Corporate Planning6*A1X-CTATA53Linear Algebra, Honours Course6*G2X-ETDDC78Programming of Parallel Computers - Methods<br>and Tools6*A1X3ETDDD17Information Security, Second Course6*A1X4ETDDD27Advanced Web Programming6A1N3E   | TSRT07         | Industrial Control Systems                   | 6       | A1N   | 2                   | Е   |
| TVCB11Cellbiological Methodology6G2X1/4EPeriod 2TEIE06Corporate Planning6*A1X-CTATA53Linear Algebra, Honours Course6*G2X-ETDDC78Programming of Parallel Computers - Methods<br>and Tools6*A1X3ETDDD17Information Security, Second Course6*A1X4ETDDD27Advanced Web Programming6A1N3E   | TSRT09         | Control Theory                               | 6       | A1N   | 3                   | Е   |
| Period 2TEIE06Corporate Planning6*A1X-CTATA53Linear Algebra, Honours Course6*G2X-ETDDC78Programming of Parallel Computers - Methods<br>and Tools6A1X3ETDDD17Information Security, Second Course6*A1X4ETDDD27Advanced Web Programming6A1N3E  | TSTE08         | Analog and Discrete-Time Integrated Circuits | 6       | A1X   | 3                   | E   |
| TEIE06Corporate Planning6*A1X-CTATA53Linear Algebra, Honours Course6*G2X-ETDDC78Programming of Parallel Computers - Methods<br>and Tools6A1X3ETDDD17Information Security, Second Course6*A1X4ETDDD27Advanced Web Programming6A1N3E  | TVCB11         | Cellbiological Methodology                   | 6       | G2X   | 1/4                 | E   |
| TATA53Linear Algebra, Honours Course6*G2X-ETDDC78Programming of Parallel Computers - Methods<br>and Tools6A1X3ETDDD17Information Security, Second Course6*A1X4ETDDD27Advanced Web Programming6A1N3E   | Period 2       |  |         |       |                     |     |
| TDDC78Programming of Parallel Computers - Methods<br>and Tools6A1X3ETDDD17Information Security, Second Course6*A1X4ETDDD27Advanced Web Programming6A1N3E  | TEIE06         | Corporate Planning                           | 6*      | A1X   | -                   | С   |
| IDDC/8and Tools6AIX3ETDDD17Information Security, Second Course6*AIX4ETDDD27Advanced Web Programming6AIN3E   | TATA53         | Linear Algebra, Honours Course               | 6*      | G2X   | -                   | E   |
| TDDD27   Advanced Web Programming   6   A1N   3   E   | TDDC78         |  | 6       | A1X   | 3                   | E   |
|   | TDDD17         | Information Security, Second Course          | 6*      | A1X   | 4                   | E   |
| TDDD38 Advanced Programming in C++ 6* A1X - E   | TDDD27         | Advanced Web Programming                     | 6       | A1N   | 3                   | E   |
|   | TDDD38         | Advanced Programming in C++                  | 6*      | A1X   | -                   | E   |
| TDDE07Bayesian Learning6A1F2E   | TDDE07         | Bayesian Learning                            | 6       | A1F   | 2                   | E   |
| TDDE31Big Data Analytics6A1X3E  | TDDE31         | Big Data Analytics                           | 6       | A1X   | 3                   | E   |
| TDDE41Software Architectures6A1X1E  | TDDE41         | Software Architectures                       | 6       | A1X   | 1                   | E   |
| TDDE46Software Quality6*A1N2E   | TDDE46         | Software Quality                             | 6*      | A1N   | 2                   | E   |
| TDEI35Strategy and Management Control6A1X2E   | TDEI35         | Strategy and Management Control              | 6       | A1X   | 2                   | E   |
| TEAE13Civil and Commercial Law6G1X2E  | TEAE13         | Civil and Commercial Law                     | 6       | G1X   | 2                   | E   |
| TEIM07Industrial Market Research6A1X2E  | TEIM07         | Industrial Market Research                   | 6       | A1X   | 2                   | E   |
| TEIO06Innovative Entrepreneurship6A1X2E   | TEIO06         | Innovative Entrepreneurship                  | 6       | A1X   | 2                   | E   |
| TEIO41   Corporate Social Responsibility   6   A1X   3   E  | TEIO41         | Corporate Social Responsibility              | 6       | A1X   | 3                   | E   |
| TETS36 Sustainable Logistics Systems 6 A1X 4 E  | TETS36         | Sustainable Logistics Systems                | 6       | A1X   | 4                   | E   |
| TETS56Logistics and Quality in Health Care6A1X2E  | TETS56         | Logistics and Quality in Health Care         | 6       | A1X   | 2                   | E   |
| TFYA45Biotechnology Project6*A1X-E  | TFYA45         | Biotechnology Project                        | 6*      | A1X   | -                   | E   |
| TGTU95Philosophy of Science and Technology6G1X4E  | TGTU95         | Philosophy of Science and Technology         | 6       | G1X   | 4                   | E   |
| TKMJ47Environmental Systems Analysis6*A1N2E   | TKMJ47         | Environmental Systems Analysis               | 6*      | A1N   | 2                   | E   |
| TMES21Industrial Energy Systems6A1F3E   | TMES21         | Industrial Energy Systems                    | 6       | A1F   | 3                   | E   |



| Course<br>code | Course name  | Credits | Level | Timetable<br>module | ECV |
|----------------|--|---------|-------|---------------------|-----|
| TMES41         | Strategic Development of Sustainable Energy<br>Systems | 6       | A1F   | 2                   | E   |
| TMKT57         | Product Modelling                                      | 6       | A1X   | 3                   | E   |
| TMKT77         | System Safety  | 6       | A1X   | 4                   | E   |
| TMKT83         | Small Scale Renewable Energy Conversion                | 6       | A1X   | 4                   | E   |
| TMME11         | Road Vehicle Dynamics                                  | 6       | A1X   | 1                   | E   |
| TMPS27         | Production Systems                                     | 6       | A1X   | 3                   | E   |
| TMQU04         | Six Sigma Quality                                      | 6       | A1X   | 2                   | E   |
| TMQU13         | Customer Focused Product and Service<br>Development    | 6       | A1N   | 4                   | E   |
| TPPE33         | Portfolio Management                                   | 6       | A1X   | 2                   | E   |
| TPPE74         | Design and Development of Manufacturing<br>Operations  | 6       | A1F   | 4                   | E   |
| TSBK02         | Image and Audio Coding                                 | 6       | A1X   | 4                   | E   |
| TSBK07         | Computer Graphics                                      | 6*      | A1X   | 1                   | E   |
| TSFS06         | Diagnosis and Supervision                              | 6       | A1N   | 1                   | E   |
| TSKS14         | Multiple Antenna Communications                        | 6       | A1X   | 3                   | E   |
| TSKS16         | Signal Processing for Communications                   | 6       | A1N   | 1                   | E   |
| TSRT14         | Sensor Fusion  | 6       | A1N   | 2                   | E   |

#### Specialisation: Master Profile Automatic Control

| Course<br>code | Course name                | Credits | Level | Timetable<br>module | ECV |
|----------------|----------------------------|---------|-------|---------------------|-----|
| Period 1       |                            |         |       |                     |     |
| TSRT07         | Industrial Control Systems | 6       | A1N   | 2                   | E   |
| TSRT09         | Control Theory             | 6       | A1N   | 3                   | Е   |
| Period 2       |                            |         |       |                     |     |
| TSFS06         | Diagnosis and Supervision  | 6       | A1N   | 1                   | E   |
| TSRT14         | Sensor Fusion              | 6       | A1N   | 2                   | E   |
|                |                            |         |       |                     |     |

### Specialisation: Master Profile Computer Science and Engineering

| Course<br>code | Course name            | Credits | Level | Timetable<br>module | ECV |
|----------------|------------------------|---------|-------|---------------------|-----|
| Period 2       |                        |         |       |                     |     |
| TDDE41         | Software Architectures | 6       | A1X   | 1                   | E   |



| Course<br>code | Course name   | Credits | Level | Timetable<br>module | ECV |  |
|----------------|---|---------|-------|---------------------|-----|--|
| Period 1       |   |         |       |                     |     |  |
| TDEI71         | Digitisation, Business Ecologies and Business<br>Models | 6       | A1N   | 4                   | С   |  |
| Period 2       |   |         |       |                     |     |  |
| TDEI35         | Strategy and Management Control                         | 6       | A1X   | 2                   | E   |  |

#### Specialisation: Master Profile Digitisation and Management

#### Specialisation: Master Profile Energy Engineering

| Course<br>code | Course name  | Credits | Level | Timetable<br>module | ECV |
|----------------|--|---------|-------|---------------------|-----|
| Period 1       |  |         |       |                     |     |
| TMES17         | Building Energy Systems                                | 6       | A1N   | 3                   | E   |
| TMES43         | Analysis and Modelling of Industrial Energy<br>Systems | 6       | A1F   | 1                   | E   |
| Period 2       |  |         |       |                     |     |
| TMES21         | Industrial Energy Systems                              | 6       | A1F   | 3                   | E   |
| TMKT83         | Small Scale Renewable Energy Conversion                | 6       | A1X   | 4                   | E   |

#### Specialisation: Master Profile Finance

| Course name               | Credits  | Level                       | Timetable<br>module             | ECV  |
|---------------------------|--|-----------------------------|---------------------------------|--|
|                           |  |                             |                                 |  |
| Financial Risk Management | 6  | A1X                         | 2                               | С  |
|                           |  |                             |                                 |  |
| Portfolio Management      | 6  | A1X                         | 2                               | E  |
|                           | Course name<br>Financial Risk Management<br>Portfolio Management | Financial Risk Management 6 | Financial Risk Management 6 A1X | Course name   Credits   Level   Instants<br>module     Financial Risk Management   6   A1X   2 |

#### Specialisation: Master Profile Industrial Marketing

| Course<br>code | Course name                | Credits | Level | Timetable<br>module | ECV |
|----------------|----------------------------|---------|-------|---------------------|-----|
| Period 1       |                            |         |       |                     |     |
| TEIM09         | International Business     | 6       | A1X   | 2                   | C/E |
| Period 2       |                            |         |       |                     |     |
| TEIM07         | Industrial Market Research | 6       | A1X   | 2                   | С   |



| Course<br>code | Course name                          | Credits | Level | Timetable<br>module | ECV |
|----------------|--------------------------------------|---------|-------|---------------------|-----|
| Period 1       |                                      |         |       |                     |     |
| TETS57         | Logistics Analysis                   | 6       | A1X   | 2                   | C/E |
| Period 2       |                                      |         |       |                     |     |
| TETS36         | Sustainable Logistics Systems        | 6       | A1X   | 4                   | E   |
| TETS56         | Logistics and Quality in Health Care | 6       | A1X   | 2                   | E   |

#### Specialisation: Master Profile Logistics Management

| Specialisation: Master Profile Manufacturing |   |
|--|---|
|  | _ |

| Course name                  | Credits                      | Level                          | Timetable<br>module                | ECV   |
|------------------------------|------------------------------|--------------------------------|------------------------------------|---|
|                              |                              |                                |                                    |   |
| Production System Automation | 6                            | A1X                            | 1                                  | E   |
|                              |                              |                                |                                    |   |
| Production Systems           | 6                            | A1X                            | 3                                  | С   |
|                              | Production System Automation | Production System Automation 6 | Production System Automation 6 A1X | Course name   Credits   Level module     Production System Automation   6   A1X   1 |

#### Specialisation: Master Profile Operations Management

| Course<br>code | Course name  | Credits | Level | Timetable<br>module | ECV |
|----------------|--|---------|-------|---------------------|-----|
| Period 1       |  |         |       |                     |     |
| TPPE78         | Quantitative Models and Analysis in Operations<br>Management | 6       | A1X   | 1                   | E   |
| Period 2       |  |         |       |                     |     |
| TPPE74         | Design and Development of Manufacturing<br>Operations        | 6       | A1F   | 4                   | С   |

#### Specialisation: Master Profile Product Development

| Course<br>code | Course name         | Credits | Level | Timetable<br>module | ECV |
|----------------|---------------------|---------|-------|---------------------|-----|
| Period 1       |                     |         |       |                     |     |
| TMKT48         | Design Optimization | 6       | A1X   | 3                   | С   |
| Period 2       |                     |         |       |                     |     |
| TMKT57         | Product Modelling   | 6       | A1X   | 3                   | С   |



| Course<br>code | Course name                          | Credits | Level | Timetable<br>module | ECV |
|----------------|--------------------------------------|---------|-------|---------------------|-----|
| Period 1       |                                      |         |       |                     |     |
| TEIO13         | Leadership and Organizational Change | 6       | A1X   | 4                   | E   |
| Period 2       |                                      |         |       |                     |     |
| TEIO06         | Innovative Entrepreneurship          | 6       | A1X   | 2                   | E   |
| TEIO41         | Corporate Social Responsibility      | 6       | A1X   | 3                   | E   |

#### Specialisation: Master Profile Project, Innovation and Entrepreneurship

#### Specialisation: Master Profile Quality Technology and Management

| Course<br>code | Course name   | Credits | Level | Timetable<br>module | ECV |
|----------------|---|---------|-------|---------------------|-----|
| Period 1       |   |         |       |                     |     |
| TMQU31         | Statistical Quality Control                         | 6       | A1X   | 2                   | Е   |
| Period 2       |   |         |       |                     |     |
| TMQU04         | Six Sigma Quality                                   | 6       | A1X   | 2                   | C/E |
| TMQU13         | Customer Focused Product and Service<br>Development | 6       | A1N   | 4                   | C/E |
| TETS56         | Logistics and Quality in Health Care                | 6       | A1X   | 2                   | E   |

#### Specialisation: Master Profile Signal and Image Processing

| Course<br>code | Course name                          | Credits | Level | Timetable<br>module | ECV |
|----------------|--------------------------------------|---------|-------|---------------------|-----|
| Period 1       |                                      |         |       |                     |     |
| TBMI26         | Neural Networks and Learning Systems | 6       | A1X   | 2                   | E   |
| TSBK07         | Computer Graphics                    | 6*      | A1X   | 4                   | E   |
| Period 2       |                                      |         |       |                     |     |
| TSBK02         | Image and Audio Coding               | 6       | A1X   | 4                   | E   |
| TSBK07         | Computer Graphics                    | 6*      | A1X   | 1                   | E   |



| Course<br>code | Course name                          | Credits | Level | Timetable<br>module | ECV |
|----------------|--------------------------------------|---------|-------|---------------------|-----|
| Period 1       |                                      |         |       |                     |     |
| TEIM09         | International Business               | 6       | A1X   | 2                   | E   |
| TEIO13         | Leadership and Organizational Change | 6       | A1X   | 4                   | E   |
| Period 2       |                                      |         |       |                     |     |
| TEIM07         | Industrial Market Research           | 6       | A1X   | 2                   | E   |
| TETS36         | Sustainable Logistics Systems        | 6       | A1X   | 4                   | E   |

#### Specialisation: Master Profile Strategic Management and Control

### Specialisation: Master Profile Telecommunication

|                | -I                              |         |       |                     |     |
|----------------|---------------------------------|---------|-------|---------------------|-----|
| Course<br>code | Course name                     | Credits | Level | Timetable<br>module | ECV |
| Period 1       |                                 |         |       |                     |     |
| TSBK08         | Data Compression                | 6       | A1N   | 2                   | E   |
| TSKS13         | Wireless Communications         | 6       | A1F   | 4                   | E   |
| Period 2       |                                 |         |       |                     |     |
| TSBK02         | Image and Audio Coding          | 6       | A1X   | 4                   | E   |
| TSKS14         | Multiple Antenna Communications | 6       | A1X   | 3                   | E   |
|                | •                               |         |       |                     |     |

#### Specialisation: Master Profile Wood Technology

| Course<br>code | Course name        | Credits | Level | Timetable<br>module | ECV |
|----------------|--------------------|---------|-------|---------------------|-----|
| Period 1       |                    |         |       |                     |     |
| TMKA04         | Wood - Innovation  | 6       | A1X   | 1                   | С   |
| Period 2       |                    |         |       |                     |     |
| TMKT57         | Product Modelling  | 6       | A1X   | 3                   | E   |
| TMPS27         | Production Systems | 6       | A1X   | 3                   | E   |



| Course<br>code | Course name  | Credits | Level | Timetable<br>module | ECV |
|----------------|--|---------|-------|---------------------|-----|
| Period 1       |  |         |       |                     |     |
| NBIC50         | Ecotoxicology and Environmental Monitoring           | 6       | G2X   | 1                   | E   |
| TFYA45         | Biotechnology Project                                | 6*      | A1X   | -                   | E   |
| TFYA85         | Alternative Energy Sources and their<br>Applications | 6       | G2X   | 4                   | E   |
| TKMJ47         | Environmental Systems Analysis                       | 6*      | A1N   | 3                   | E   |
| Period 2       |  |         |       |                     |     |
| TFYA45         | Biotechnology Project                                | 6*      | A1X   | -                   | E   |
| TKMJ47         | Environmental Systems Analysis                       | 6*      | A1N   | 2                   | E   |

#### Specialisation: Specialization Biotechnical Engineering

#### Specialisation: Specialization Computer Science and Engineering

| Course<br>code | Course name  | Credits | Level | Timetable<br>module | ECV |
|----------------|--|---------|-------|---------------------|-----|
| Period 1       |  |         |       |                     |     |
| TBMI26         | Neural Networks and Learning Systems   | 6       | A1X   | 2                   | E   |
| TDDB68         | Concurrent Programming and Operating<br>Systems                                | 6       | G2X   | 3                   | E   |
| TDDD17         | Information Security, Second Course  | 6*      | A1X   | 4                   | E   |
| TDDD20         | Design and Analysis of Algorithms  | 6       | A1X   | 3                   | E   |
| TDDD38         | Advanced Programming in C++  | 6*      | A1X   | 2                   | E   |
| TDDD41         | Data Mining - Clustering and Association<br>Analysis                           | 6       | A1X   | 3                   | E   |
| TDDD75         | Effect-Driven Development and Human-<br>Centered Design of Interactive Systems | 6       | G2X   | 3                   | E   |
| TDTS04         | Computer Networks and Distributed Systems                                      | 8       | G2X   | 2                   | Е   |
| Period 2       |  |         |       |                     |     |
| TDDD17         | Information Security, Second Course  | 6*      | A1X   | 4                   | Е   |
| TDDD27         | Advanced Web Programming   | 6       | A1N   | 3                   | E   |
| TDDD38         | Advanced Programming in C++  | 6*      | A1X   | -                   | E   |
| TDDE07         | Bayesian Learning  | 6       | A1F   | 2                   | E   |
| TDDE31         | Big Data Analytics   | 6       | A1X   | 3                   | E   |
| TDDE41         | Software Architectures   | 6       | A1X   | 1                   | E   |
|                |  |         |       |                     |     |



| Course name                          | Credits   | Level  | Timetable<br>module  | ECV  |
|--------------------------------------|---|--|--|--|
|                                      |   |  |  |  |
| Neural Networks and Learning Systems | 6   | A1X  | 2  | E  |
| Computer Graphics                    | 6*  | A1X  | 4  | E  |
| Data Compression                     | 6   | A1N  | 2  | E  |
| Wireless Communications              | 6   | A1F  | 4  | E  |
| Industrial Control Systems           | 6   | A1N  | 2  | E  |
| Control Theory                       | 6   | A1N  | 3  | E  |
|                                      |   |  |  |  |
| Image and Audio Coding               | 6   | A1X  | 4  | E  |
| Computer Graphics                    | 6*  | A1X  | 1  | E  |
| Diagnosis and Supervision            | 6   | A1N  | 1  | E  |
| Multiple Antenna Communications      | 6   | A1X  | 3  | E  |
| Signal Processing for Communications | 6   | A1N  | 1  | E  |
| Sensor Fusion                        | 6   | A1N  | 2  | E  |
|                                      | Neural Networks and Learning Systems<br>Computer Graphics<br>Data Compression<br>Wireless Communications<br>Industrial Control Systems<br>Control Theory<br>Image and Audio Coding<br>Computer Graphics<br>Diagnosis and Supervision<br>Multiple Antenna Communications<br>Signal Processing for Communications | Neural Networks and Learning Systems6Computer Graphics6*Data Compression6Wireless Communications6Industrial Control Systems6Control Theory6Image and Audio Coding6Computer Graphics6*Diagnosis and Supervision6Multiple Antenna Communications6Signal Processing for Communications6 | Neural Networks and Learning Systems6A1XComputer Graphics6*A1XData Compression6A1NWireless Communications6A1FIndustrial Control Systems6A1NControl Theory6A1NImage and Audio Coding6*A1XComputer Graphics6*A1XDiagnosis and Supervision6A1NMultiple Antenna Communications6A1N | Course nameCreditsLevelmoduleNeural Networks and Learning Systems6A1X2Computer Graphics6*A1X4Data Compression6A1N2Wireless Communications6A1F4Industrial Control Systems6A1N2Control Theory6A1N3Image and Audio Coding6*A1X4Computer Graphics6*A1X1Diagnosis and Supervision6A1N1Multiple Antenna Communications6A1N3Signal Processing for Communications6A1N1 |

#### Specialisation: Specialization Electrical Engineering

#### Specialisation: Specialization Energy Engineering

| Course<br>code | Course name  | Credits | Level | Timetable<br>module | ECV |
|----------------|--|---------|-------|---------------------|-----|
| Period 1       |  |         |       |                     |     |
| TKMJ10         | Industrial Ecology                                     | 6       | A1X   | 1                   | E   |
| TMES17         | Building Energy Systems                                | 6       | A1N   | 3                   | E   |
| TMES43         | Analysis and Modelling of Industrial Energy<br>Systems | 6       | A1F   | 1                   | E   |
| Period 2       |  |         |       |                     |     |
| TMES21         | Industrial Energy Systems                              | 6       | A1F   | 3                   | E   |
| TMES41         | Strategic Development of Sustainable Energy<br>Systems | 6       | A1F   | 2                   | E   |
| TMKT83         | Small Scale Renewable Energy Conversion                | 6       | A1X   | 4                   | E   |



| Course<br>code | Course name                  | Credits | Level | Timetable<br>module | ECV |
|----------------|------------------------------|---------|-------|---------------------|-----|
| Period 1       |                              |         |       |                     |     |
| TMKA04         | Wood - Innovation            | 6       | A1X   | 1                   | Е   |
| TMKT48         | Design Optimization          | 6       | A1X   | 3                   | Е   |
| TMKT74         | Advanced CAD                 | 6       | A1X   | 4                   | E   |
| TMMS21         | Mechatronics                 | 6       | G2X   | 1                   | E   |
| TMPS42         | Production System Automation | 6       | A1X   | 1                   | E   |
| Period 2       |                              |         |       |                     |     |
| TMKT57         | Product Modelling            | 6       | A1X   | 3                   | E   |
| TMKT77         | System Safety                | 6       | A1X   | 4                   | E   |
| TMME11         | Road Vehicle Dynamics        | 6       | A1X   | 1                   | E   |
| TMPS27         | Production Systems           | 6       | A1X   | 3                   | E   |
|                |                              |         |       |                     |     |

#### Specialisation: Specialization Mechanical Engineering

# Semester 9 (Autumn 2020)

| Course<br>code | Course name  | Credits | Level | Timetable<br>module | ECV |
|----------------|--|---------|-------|---------------------|-----|
| Period 1       |  |         |       |                     |     |
| TAMS39         | Multivariate Statistical Methods   | 6       | A1X   | 4                   | E   |
| TATM38         | Mathematical Models in Biology   | 6       | A1X   | 3                   | E   |
| TDDC34         | Technical, Economic and Societal Evaluation of IT-products               | 6       | A1X   | 3                   | E   |
| TDDD04         | Software Testing   | 6       | A1X   | 2                   | E   |
| TDDE15         | Advanced Machine Learning  | 6       | A1X   | 1                   | E   |
| TDDE45         | Software Design and Construction   | 6       | A1X   | 4                   | E   |
| TDEI72         | Strategy and Digitisation - Technology,<br>Standards and Network Effects | 6       | A1X   | 4                   | E   |
| TEAE12         | Strategic Analysis and Methods for Strategic<br>Change                   | 12*     | A1F   | 2                   | E   |
| TEIM04         | Industrial Market and Technology Strategies                              | 12*     | A1X   | 2                   | E   |
| TEIO89         | Innovation and Entrepreneurship - Project<br>Course                      | 12*     | A1X   | 4                   | E   |
| TETS38         | Logistics Project  | 12*     | A1X   | 4                   | E   |
| TKMJ31         | Biofuels for Transportation  | 6       | A1N   | 1                   | E   |



| Course<br>code | Course name  | Credits | Level | Timetable<br>module | ECV |
|----------------|--|---------|-------|---------------------|-----|
| TMKT79         | Collaborative Multidisciplinary Design<br>Optimization           | 6       | A1X   | 2                   | E   |
| TMPE01         | Project Course Advanced - Energy Engineering                     | 12*     | A1X   | -                   | E   |
| TMPM08         | Project Course Advanced - Manufacturing<br>Engineering           | 12*     | A1X   | -                   | E   |
| TMQU27         | Quality Management - Project Course                              | 12*     | A1X   | 2                   | E   |
| TMQU47         | Quality Engineering and Design                                   | 6       | A1X   | 4                   | E   |
| TPPE53         | Financial Valuation Methodology                                  | 6       | A1X   | 2                   | E   |
| TPPE66         | Investment Valuation   | 6*      | A1X   | 4                   | E   |
| TPPE73         | Operations Management - Project Course                           | 12*     | A1X   | 4                   | E   |
| TPPE99         | Simulation in Production and Logistics                           | 6       | A1X   | 3                   | E   |
| TSFS12         | Autonomous Vehicles - Planning, Control, and<br>Learning Systems | 6       | A1X   | 1                   | E   |
| TSIT03         | Cryptology   | 6       | A1X   | 2                   | E   |
| TSKS12         | Modern Channel Coding, Inference and<br>Learning                 | 6       | A1X   | 1                   | E   |
| Period 2       |  |         |       |                     |     |
| TAOP18         | Supply Chain Optimization  | 6       | A1X   | 1                   | E   |
| TDDB44         | Compiler Construction  | 6       | A1X   | 1                   | Е   |
| TDDC90         | Software Security  | 6       | A1X   | 1                   | Е   |
| TDDD89         | Scientific Method  | 6       | A1X   | 3                   | E   |
| TEAE12         | Strategic Analysis and Methods for Strategic Change              | 12*     | A1F   | 2                   | E   |
| TEAE18         | Sustainable Value Chain Strategies                               | 6       | A1X   | 4                   | E   |
| TEIM04         | Industrial Market and Technology Strategies                      | 12*     | A1X   | 2                   | Е   |
| TEIM10         | Industrial Service Development                                   | 6       | A1X   | 2                   | E   |
| TEIO89         | Innovation and Entrepreneurship - Project<br>Course              | 12*     | A1X   | 4                   | E   |
| TETS31         | Logistics Strategies   | 6       | A1X   | 4                   | E   |
| TETS38         | Logistics Project  | 12*     | A1X   | 2                   | E   |
| TFBI17         | Advanced Project Course in Ecosystem Service<br>Valuation        | 6       | A1X   | -                   | E   |
| TKMJ32         | Integrated Product Service Engineering                           | 6       | A1N   | 3                   | E   |
| TMES51         | International Energy Markets                                     | 6       | A1N   | 1                   | E   |
|                |  |         |       |                     |     |



| Course<br>code | Course name  | Credits | Level | Timetable<br>module | ECV |
|----------------|--|---------|-------|---------------------|-----|
| TMKA03         | Industrial Design                                      | 6       | G2X   | 1                   | E   |
| TMPE01         | Project Course Advanced - Energy Engineering           | 12*     | A1X   | -                   | E   |
| TMPM08         | Project Course Advanced - Manufacturing<br>Engineering | 12*     | A1X   | -                   | E   |
| TMQU12         | Lean Production  | 6       | A1X   | 2                   | E   |
| TMQU27         | Quality Management - Project Course                    | 12*     | A1X   | 4                   | E   |
| TPPE61         | Financial Optimization                                 | 6       | A1X   | 2                   | E   |
| TPPE66         | Investment Valuation                                   | 6*      | A1X   | 4                   | E   |
| TPPE73         | <b>Operations Management - Project Course</b>          | 12*     | A1X   | 4                   | E   |
| TSRT08         | Optimal Control  | 6       | A1X   | 3                   | E   |

#### Specialisation: Master Profile Automatic Control

| Course<br>code | Course name     | Credits | Level | Timetable<br>module | ECV |
|----------------|-----------------|---------|-------|---------------------|-----|
| Period 2       |                 |         |       |                     |     |
| TSRT08         | Optimal Control | 6       | A1X   | 3                   | E   |

#### Specialisation: Master Profile Computer Science and Engineering

| Course<br>code | Course name                      | Credits | Level | Timetable<br>module | ECV |
|----------------|----------------------------------|---------|-------|---------------------|-----|
| Period 1       |                                  |         |       |                     |     |
| TDDD04         | Software Testing                 | 6       | A1X   | 2                   | С   |
| TDDE45         | Software Design and Construction | 6       | A1X   | 4                   | С   |
| Period 2       |                                  |         |       |                     |     |
| TDDD89         | Scientific Method                | 6       | A1X   | 3                   | С   |

#### Specialisation: Master Profile Digitisation and Management

| Course<br>code | Course name   | Credits | Level | Timetable<br>module | ECV |
|----------------|---|---------|-------|---------------------|-----|
| Period 1       |   |         |       |                     |     |
| TDDC34         | Technical, Economic and Societal Evaluation of<br>IT-products | 6       | A1X   | 3                   | E   |



| Course<br>code | Course name                                  | Credits | Level | Timetable<br>module | ECV |
|----------------|--|---------|-------|---------------------|-----|
| Period 1       |  |         |       |                     |     |
| TKMJ31         | Biofuels for Transportation                  | 6       | A1N   | 1                   | E   |
| TMPE01         | Project Course Advanced - Energy Engineering | 12*     | A1X   | -                   | E   |
| Period 2       |  |         |       |                     |     |
| TMPE01         | Project Course Advanced - Energy Engineering | 12*     | A1X   | -                   | E   |

#### Specialisation: Master Profile Energy Engineering

#### Specialisation: Master Profile Finance

| Course<br>code | Course name                     | Credits | Level | Timetable<br>module | ECV |
|----------------|---------------------------------|---------|-------|---------------------|-----|
| Period 1       |                                 |         |       |                     |     |
| TPPE53         | Financial Valuation Methodology | 6       | A1X   | 2                   | E   |
| TPPE66         | Investment Valuation            | 6*      | A1X   | 4                   | E   |
| Period 2       |                                 |         |       |                     |     |
| TPPE61         | Financial Optimization          | 6       | A1X   | 2                   | E   |
| TPPE66         | Investment Valuation            | 6*      | A1X   | 4                   | E   |

#### Specialisation: Master Profile Industrial Marketing

| Course<br>code | Course name                                 | Credits | Level | Timetable<br>module | ECV |
|----------------|---|---------|-------|---------------------|-----|
| Period 1       |   |         |       |                     |     |
| TEIM04         | Industrial Market and Technology Strategies | 12*     | A1X   | 2                   | С   |
| Period 2       |   |         |       |                     |     |
| TEIM04         | Industrial Market and Technology Strategies | 12*     | A1X   | 2                   | С   |

#### Specialisation: Master Profile Logistics Management

| Course<br>code | Course name                            | Credits | Level | Timetable<br>module | ECV |
|----------------|--|---------|-------|---------------------|-----|
| Period 1       |  |         |       |                     |     |
| TETS38         | Logistics Project                      | 12*     | A1X   | 4                   | С   |
| TPPE99         | Simulation in Production and Logistics | 6       | A1X   | 3                   | E   |
| Period 2       |  |         |       |                     |     |
| TETS38         | Logistics Project                      | 12*     | A1X   | 2                   | С   |
| TETS31         | Logistics Strategies                   | 6       | A1X   | 4                   | E   |



| Course<br>code | Course name  | Credits | Level | Timetable<br>module | ECV |
|----------------|--|---------|-------|---------------------|-----|
| Period 1       |  |         |       |                     |     |
| TMPM08         | Project Course Advanced - Manufacturing<br>Engineering | 12*     | A1X   | -                   | С   |
| Period 2       |  |         |       |                     |     |
| TMPM08         | Project Course Advanced - Manufacturing<br>Engineering | 12*     | A1X   | -                   | С   |
|                |  |         |       |                     |     |

#### Specialisation: Master Profile Manufacturing

| Specialisation: Master Profile Operations Management |  |
|--|--|
|  |  |

| Course<br>code | Course name                                   | Credits Level                               |     | Timetable<br>module | ECV |
|----------------|---|---|-----|---------------------|-----|
| Period 1       |   |   |     |                     |     |
| TPPE73         | <b>Operations Management - Project Course</b> | rations Management - Project Course 12* A1X |     | 4                   | С   |
| TPPE99         | Simulation in Production and Logistics 6      |   | A1X | 3                   | E   |
| Period 2       |   |   |     |                     |     |
| TPPE73         | <b>Operations Management - Project Course</b> | 12*   | A1X | 4                   | С   |

#### Specialisation: Master Profile Product Development

| Course<br>code | Course name   | Credits Lev |     | Timetable<br>module | ECV |
|----------------|---|-------------|-----|---------------------|-----|
| Period 1       |   |             |     |                     |     |
| TMPM05         | Project Course Advanced - Design Engineering<br>and Product Development 12* A1X |             | -   | С                   |     |
| Period 2       |   |             |     |                     |     |
| TMPM05         | Project Course Advanced - Design Engineering<br>and Product Development         | 12*         | A1X | -                   | С   |

#### Specialisation: Master Profile Project, Innovation and Entrepreneurship

| Course<br>code | Course name   | Credits |     | Timetable<br>module | ECV |
|----------------|---|---------|-----|---------------------|-----|
| Period 1       |   |         |     |                     |     |
| TEIO89         | Innovation and Entrepreneurship - Project 12* A1X<br>Course |         | 4   | С                   |     |
| Period 2       |   |         |     |                     |     |
| TEIO89         | Innovation and Entrepreneurship - Project<br>Course         | 12*     | A1X | 4                   | С   |



| Course<br>code | Course name Credits Level                  |     |     |   | ECV |
|----------------|--|-----|-----|---|-----|
| Period 1       |  |     |     |   |     |
| TMQU27         | 27 Quality Management - Project Course 12* |     |     | 2 | С   |
| TMQU47         | Quality Engineering and Design             | 6   | A1X | 4 | E   |
| Period 2       |  |     |     |   |     |
| TMQU27         | Quality Management - Project Course        | 12* | A1X | 4 | С   |

#### Specialisation: Master Profile Quality Technology and Management

| Specialisation. Master 110file bir alegie management and control |  |                  |                     |     |   |  |
|--|--|------------------|---------------------|-----|---|--|
| Course<br>code   | Course name Credits Level  |                  | Timetable<br>module | ECV |   |  |
| Period 1   |  |                  |                     |     |   |  |
| TEAE12   | Strategic Analysis and Methods for Strategic<br>Change                       | 12*              | A1F                 | 2   | С |  |
| TDEI72   | Strategy and Digitisation - Technology,<br>Standards and Network Effects6A1X |                  | A1X                 | 4   | E |  |
| Period 2   |  |                  |                     |     |   |  |
| TEAE12   | Strategic Analysis and Methods for Strategic<br>Change                       | 12* A1F          |                     | 2   | С |  |
| TEAE18   | Sustainable Value Chain Strategies   | Strategies 6 A1X |                     | 4   | Е |  |
| TEIM10   | Industrial Service Development   | 6                | A1X                 | 2   | Е |  |
| TMQU12   | Lean Production  | 6                | A1X                 | 2   | E |  |

#### Specialisation: Master Profile Strategic Management and Control

#### Specialisation: Master Profile Telecommunication

| Course Course name code |   | Credits | Level | Timetable<br>module | ECV |
|-------------------------|---|---------|-------|---------------------|-----|
| Period 1                |   |         |       |                     |     |
| TSKS12                  | Modern Channel Coding, Inference and Learning | 6       | A1X   | 1                   | E   |

## Specialisation: Master Profile Wood Technology

| Course<br>code | Course name   | me Credits Level |     | Timetable<br>module | ECV |
|----------------|---|------------------|-----|---------------------|-----|
| Period 1       |   |                  |     |                     |     |
| TMPM05         | Project Course Advanced - Design Engineering<br>and Product Development 12* A1X |                  | -   | С                   |     |
| Period 2       |   |                  |     |                     |     |
| TMPM05         | Project Course Advanced - Design Engineering<br>and Product Development         | 12*              | A1X | -                   | С   |



| Course<br>code | Course name   | name Credits L |     | Timetable<br>module | ECV |
|----------------|---|----------------|-----|---------------------|-----|
| Period 1       |   |                |     |                     |     |
| TATM38         | Mathematical Models in Biology 6                          |                | A1X | 3                   | E   |
| Period 2       |   |                |     |                     |     |
| TFBI17         | Advanced Project Course in Ecosystem Service<br>Valuation | 6              | A1X | -                   | E   |

#### Specialisation: Specialization Biotechnical Engineering

#### Specialisation: Specialization Computer Science and Engineering

| Course<br>code | Course name  | Credits | Level | Timetable<br>module | ECV |
|----------------|--|---------|-------|---------------------|-----|
| Period 1       |  |         |       |                     |     |
| TDDD04         | Software Testing   | 6       | A1X   | 2                   | E   |
| TDDE15         | Advanced Machine Learning  | 6       | A1X   | 1                   | E   |
| TDDE45         | Software Design and Construction                                 | 6       | A1X   | 4                   | E   |
| TSFS12         | Autonomous Vehicles - Planning, Control, and<br>Learning Systems | 6       | A1X   | 1                   | E   |
| TSIT03         | Cryptology   | 6       | A1X   | 2                   | E   |

#### Specialisation: Specialization Electrical Engineering

| Course<br>code | Course name  | Level | Timetable<br>module | ECV |   |
|----------------|--|-------|---------------------|-----|---|
| Period 1       |  |       |                     |     |   |
| TSFS12         | Autonomous Vehicles - Planning, Control, and<br>Learning Systems | 6     | A1X                 | 1   | E |
| TSIT03         | Cryptology   | 6     | A1X                 | 2   | E |
| TSKS12         | Modern Channel Coding, Inference and Learning                    | 6     | A1X                 | 1   | E |
| Period 2       |  |       |                     |     |   |
| TSRT08         | Optimal Control  | 6     | A1X                 | 3   | E |



| Course<br>code | Course name                                  |     | Level | Timetable<br>module | ECV |
|----------------|--|-----|-------|---------------------|-----|
| Period 1       |  |     |       |                     |     |
| TKMJ31         | 31 Biofuels for Transportation               |     | A1N   | 1                   | E   |
| TMPE01         | Project Course Advanced - Energy Engineering | 12* | A1X   | -                   | E   |
| Period 2       |  |     |       |                     |     |
| TMPE01         | Project Course Advanced - Energy Engineering | 12* | A1X   | -                   | E   |

#### Specialisation: Specialization Energy Engineering

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| SDECIULISULION. | Specia     | uzanon  | mechani | cui Liiui | neerinu |
|                 |            |         |         |           |         |

| Course<br>code | Course name  | Credits | Level | Timetable<br>module | ECV |
|----------------|--|---------|-------|---------------------|-----|
| Period 1       |  |         |       |                     |     |
| TMKT79         | Collaborative Multidisciplinary Design<br>Optimization | 6       | A1X   | 2                   | E   |
| TMPM08         | Project Course Advanced - Manufacturing<br>Engineering | 12*     | A1X   | -                   | E   |
| Period 2       |  |         |       |                     |     |
| TKMJ32         | Integrated Product Service Engineering                 | 6       | A1N   | 3                   | E   |
| TMKA03         | Industrial Design                                      | 6       | G2X   | 1                   | E   |
| TMPM08         | Project Course Advanced - Manufacturing<br>Engineering | 12*     | A1X   | -                   | E   |

## Semester 10 (Spring 2021)

| Course<br>code | Course name                      | Credits | Level | Timetable<br>module | ECV |
|----------------|----------------------------------|---------|-------|---------------------|-----|
| Period 1       |                                  |         |       |                     |     |
| TQXX33         | Degree project - Master's Thesis | 30*     | A1X   | -                   | С   |
| Period 2       |                                  |         |       |                     |     |
| TQXX33         | Degree project - Master's Thesis | 30*     | A1X   | -                   | С   |

ECV = Elective / Compulsory /Voluntary

\*The course is divided into several semesters and/or periods

