

# Computer Science and Engineering, M Sc in Engineering

300 credits

Civilingenjör i datateknik

6CDDD

Valid from: 2015 Spring semester

**Determined by**

Board of Studies for Computer Science  
and Media Technology

**Date determined**

## Entry requirements

### Degree in Swedish

Civilingenjör 300 hp och Teknologie master 120 hp

# Curriculum

## Semester 4 (Spring 2017)

| Course code     | Course name                                  | Credits | Level | Timetable module | ECV |
|-----------------|--|---------|-------|------------------|-----|
| <b>Period 1</b> |  |         |       |                  |     |
| TATA76          | Multivariable Calculus                       | 4       | G1X   | 4                | C   |
| TDEB68          | Concurrent Programming and Operating Systems | 6       | G2X   | 3                | C   |
| TDDD79          | Professionalism for Engineers, part 2        | 1*      | G1X   | -                | C   |
| TSEA83          | Computer Hardware and Architecture           | 8*      | G1X   | 2                | C   |
| TFFM12          | Perspectives on Physics                      | 2*      | G1X   | -                | E   |
| THEN18          | English                                      | 6*      | G1X   | 1                | E   |
| TATA40          | Perspectives on Mathematics                  | 1*      | G1X   | -                | V   |
| TGTU63          | Visits to Industry                           | 1*      | G1X   | -                | V   |
| <b>Period 2</b> |  |         |       |                  |     |
| TAMS27          | Mathematical Statistics                      | 6       | G2X   | 2                | C   |
| TDDD79          | Professionalism for Engineers, part 2        | 1*      | G1X   | -                | C   |
| TFYA86          | Physics                                      | 5       | G2X   | 4                | C   |
| TSEA83          | Computer Hardware and Architecture           | 8*      | G1X   | 1                | C   |
| TFFM12          | Perspectives on Physics                      | 2*      | G1X   | -                | E   |
| THEN18          | English                                      | 6*      | G1X   | 3                | E   |
| TPTE06          | Industrial Placement                         | 6       | G1X   | -                | E   |
| TSRT04          | Introduction in Matlab                       | 2       | G1X   | 1                | E   |
| TATA40          | Perspectives on Mathematics                  | 1*      | G1X   | -                | V   |
| TGTU63          | Visits to Industry                           | 1*      | G1X   | -                | V   |

## Semester 5 (Autumn 2017)

| Course code     | Course name                                     | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TAOP33          | Combinatorial Optimization, Introductory Course | 4       | G2X   | 2                | C   |
| TDDC93          | Software Engineering Theory                     | 4       | G2X   | 1                | C   |
| TDDD91          | Professionalism for Engineers, part 5           | 1*      | G1X   | -                | C   |
| TSDT84          | Signals and Systems, and Transform Theory       | 8*      | G2X   | 4                | C   |
| TSEA29          | Microcomputer, Project Laboratory               | 8*      | G2X   | 3                | C   |
| TGTU63          | Visits to Industry                              | 1*      | G1X   | -                | V   |
| <b>Period 2</b> |   |         |       |                  |     |
| TDDD88          | Logic   | 5       | G1X   | 2                | C   |
| TDDD91          | Professionalism for Engineers, part 5           | 1*      | G1X   | -                | C   |
| TSDT84          | Signals and Systems, and Transform Theory       | 8*      | G2X   | 3                | C   |
| TSEA29          | Microcomputer, Project Laboratory               | 8*      | G2X   | -                | C   |
| TFMT13          | Measurement Technology                          | 4       | G1X   | 1                | E   |
| TGTU63          | Visits to Industry                              | 1*      | G1X   | -                | V   |

## Semester 6 (Spring 2018)

| Course code     | Course name                             | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TDDD60          | Interactive Systems                     | 4       | G1X   | 4                | C   |
| TDDD79          | Professionalism for Engineers, part 2   | 1*      | G1X   | -                | C   |
| TDDD94          | Professionalism for Engineers, part 4   | 1*      | G1X   | -                | C   |
| TDDD96          | Software Engineering - Bachelor Project | 15*     | G2X   | 2/3              | C   |
| TDDD98          | Professionalism for Engineers, part 6   | 1*      | G1X   | -                | C   |
| TSRT12          | Automatic Control                       | 6       | G2X   | 1                | C   |
| <b>Period 2</b> |   |         |       |                  |     |
| TDDD79          | Professionalism for Engineers, part 2   | 1*      | G1X   | -                | C   |
| TDDD94          | Professionalism for Engineers, part 4   | 1*      | G1X   | -                | C   |
| TDDD96          | Software Engineering - Bachelor Project | 15*     | G2X   | 2/4              | C   |
| TDDD98          | Professionalism for Engineers, part 6   | 1*      | G1X   | -                | C   |
| TSKS10          | Signals, Information and Communication  | 4       | G2X   | 3                | C   |

## Semester 7 (Autumn 2018)

| Course code     | Course name  | Credits | Level | Timetable module | ECV |
|-----------------|--|---------|-------|------------------|-----|
| <b>Period 1</b> |  |         |       |                  |     |
| TANA21          | Scientific Computing                                       | 6       | G1X   | 3                | C/E |
| TAMS24          | Statistics, First Course                                   | 4       | G2X   | 4                | E   |
| TAMS32          | Stochastic Processes                                       | 6       | A1X   | 1                | E   |
| TATA55          | Abstract Algebra   | 6*      | G2X   | 3                | E   |
| TBME04          | Anatomy and Physiology                                     | 6       | G2X   | 3                | E   |
| TBMI19          | Medical Information Systems                                | 6*      | A1X   | 2                | E   |
| TBMT36          | Biomedical Optics  | 6       | A1X   | 1                | E   |
| TDDB84          | Design Patterns  | 6       | A1X   | 4                | E   |
| TDDC17          | Artificial Intelligence                                    | 6       | G2X   | 3                | E   |
| TDDC34          | Technical, Economic and Societal Evaluation of IT-products | 6       | A1X   | 3                | E   |
| TDDD04          | Software Testing   | 6       | A1X   | 2                | E   |
| TDDD08          | Logic Programming  | 6       | A1X   | 4                | E   |

| Course code     | Course name                                     | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| TDDD23          | Design and Programming of Computer Games        | 6       | A1X   | 2                | E   |
| TDDD38          | Advanced Programming in C++                     | 6*      | A1X   | 2                | E   |
| TDDD53          | Advanced Interaction Design                     | 6       | A1X   | 1                | E   |
| TDPO24          | Enterprise Systems                              | 6       | G2X   | 1                | E   |
| TDS06           | Computer Networks                               | 6       | G2X   | 1                | E   |
| TDS08           | Advanced Computer Architecture                  | 6       | A1X   | 2                | E   |
| TEIO32          | Project Management and Organization             | 6*      | G2X   | 3                | E   |
| TGTU91          | Oral and Written Communication                  | 6       | G1X   | 2                | E   |
| THFR05          | Communicative French                            | 6*      | G1X   | 4                | E   |
| THSP05          | Spanish   | 6*      | G1X   | 4                | E   |
| THTY05          | German  | 6*      | G1X   | 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   |
| TSFS09          | Modelling and Control of Engines and Drivelines | 6*      | A1X   | 4                | 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   |
| TSTE12          | Design of Digital Systems                       | 6       | A1X   | 3                | E   |
| TSTE86          | Digital Integrated Circuits                     | 6       | A1X   | 2                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TANA09          | Numerical Algorithms in Computer Science        | 4       | G2X   | 1                | C/E |
| TAMS22          | Probability Theory and Bayesian Networks        | 6       | A1X   | 1                | E   |
| TATA55          | Abstract Algebra                                | 6*      | G2X   | 3                | E   |
| TBME03          | Biochemistry and Cell Biology                   | 6       | G2X   | 2                | E   |
| TBMI19          | Medical Information Systems                     | 6*      | A1X   | 3                | E   |
| TBMT01          | Biomedical Signal Processing                    | 6       | A1X   | 1                | E   |
| TDDC73          | Interaction Programming                         | 6       | G2X   | 1                | E   |
| TDDD07          | Real Time Systems                               | 6       | A1X   | 4                | E   |
| TDDD37          | Database Technology                             | 6       | G2X   | 1                | E   |
| TDDD38          | Advanced Programming in C++                     | 6*      | A1X   | -                | E   |

| Course code | Course name                                     | Credits | Level | Timetable module | ECV |
|-------------|---|---------|-------|------------------|-----|
| TDDD49      | Programming in C# and .NET Framework            | 4       | G2X   | 3                | E   |
| TDDD55      | Compilers and Interpreters                      | 4       | G2X   | 1                | E   |
| TDDE01      | Machine Learning                                | 6       | A1X   | 1                | E   |
| TDDE02      | Software Entrepreneurship                       | 6       | A1X   | 2                | E   |
| TDDI07      | Distributed Embedded Software and Networks      | 4       | G2X   | 1                | E   |
| TDEI19      | Management Control                              | 6       | A1X   | 2                | E   |
| TEAE01      | Industrial Economics, Basic Course              | 6       | G1X   | 2                | E   |
| TEIM03      | Intercultural Communication                     | 4       | G1X   | 4                | E   |
| TEIO32      | Project Management and Organization             | 6*      | G2X   | 1                | E   |
| TFMT13      | Measurement Technology                          | 4       | G1X   | 1                | E   |
| TFYA39      | Semiconductor Technology                        | 6       | A1X   | 3                | E   |
| TGTU04      | Leadership                                      | 6       | G2X   | 2                | E   |
| TGTU49      | History of Technology                           | 6       | G1X   | 3                | E   |
| THFR05      | Communicative French                            | 6*      | G1X   | 4                | E   |
| THSP05      | Spanish   | 6*      | G1X   | 4                | E   |
| THTY05      | German  | 6*      | G1X   | 4                | E   |
| TKMJ24      | Environmental Engineering                       | 6       | G1N   | 3                | E   |
| TSBB06      | Multidimensional Signal Analysis                | 6*      | A1X   | 3                | E   |
| TSBB09      | Image Sensors                                   | 6       | A1X   | 4                | E   |
| TSEK02      | Radio Electronics                               | 6       | A1X   | 3                | E   |
| TSEK37      | Analog CMOS Integrated Circuits                 | 6       | A1X   | 1                | E   |
| TSFS02      | Vehicle Dynamics and Control                    | 6       | A1X   | 1                | E   |
| TSFS09      | Modelling and Control of Engines and Drivelines | 6*      | A1X   | 3                | E   |
| TSIN02      | Internetworking                                 | 6       | A1X   | 1                | E   |
| TSIT02      | Computer Security                               | 6       | G2X   | 2                | E   |
| TSKS01      | Digital Communication                           | 6*      | A1X   | 4                | E   |
| TSKS11      | Networks: Models, Algorithms and Applications   | 6       | G2X   | 3                | E   |

*Specialisation: AI and Machine Learning*

| Course code     | Course name                                   | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TDDC17          | Artificial Intelligence                       | 6       | G2X   | 3                | C   |
| TAMS24          | Statistics, First Course                      | 4       | G2X   | 4                | E   |
| TBMI19          | Medical Information Systems                   | 6*      | A1X   | 2                | E   |
| TDDD08          | Logic Programming                             | 6       | A1X   | 4                | E   |
| TSBB06          | Multidimensional Signal Analysis              | 6*      | A1X   | 2                | E   |
| TSBB08          | Digital Image Processing                      | 6       | A1X   | 4                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TDDE01          | Machine Learning                              | 6       | A1X   | 1                | C   |
| TBMI19          | Medical Information Systems                   | 6*      | A1X   | 3                | E   |
| TSBB06          | Multidimensional Signal Analysis              | 6*      | A1X   | 3                | E   |
| TSKS11          | Networks: Models, Algorithms and Applications | 6       | G2X   | 3                | E   |
| TSRT78          | Digital Signal Processing                     | 6       | A1X   | 2                | E   |

*Specialisation: Communication*

| Course code     | Course name                                   | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TSDT14          | Signal Theory                                 | 6       | A1X   | 1                | C   |
| TSKS01          | Digital Communication                         | 6*      | A1X   | 4                | C   |
| TSKS15          | Detection and Estimation of Signals           | 6       | A1X   | 2                | C   |
| TDTS06          | Computer Networks                             | 6       | G2X   | 1                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TSKS01          | Digital Communication                         | 6*      | A1X   | 4                | C   |
| TSEK02          | Radio Electronics                             | 6       | A1X   | 3                | E   |
| TSIN02          | Internetworking                               | 6       | A1X   | 1                | E   |
| TSKS11          | Networks: Models, Algorithms and Applications | 6       | G2X   | 3                | E   |
| TSRT78          | Digital Signal Processing                     | 6       | A1X   | 2                | E   |



*Specialisation: Computer Games Programming*

| Course code     | Course name                              | Credits | Level | Timetable module | ECV |
|-----------------|--|---------|-------|------------------|-----|
| <b>Period 1</b> |  |         |       |                  |     |
| TDDD23          | Design and Programming of Computer Games | 6       | A1X   | 2                | C   |
| TDDC17          | Artificial Intelligence                  | 6       | G2X   | 3                | E   |
| TDDD53          | Advanced Interaction Design              | 6       | A1X   | 1                | E   |
| <b>Period 2</b> |  |         |       |                  |     |
| TDDC73          | Interaction Programming                  | 6       | G2X   | 1                | C   |
| TDDE02          | Software Entrepreneurship                | 6       | A1X   | 2                | E   |

*Specialisation: Computer Systems Architecture*

| Course code     | Course name                                   | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TDDD04          | Software Testing                              | 6       | A1X   | 2                | E   |
| TDTS06          | Computer Networks                             | 6       | G2X   | 1                | E   |
| TDTS08          | Advanced Computer Architecture                | 6       | A1X   | 2                | E   |
| TSTE86          | Digital Integrated Circuits                   | 6       | A1X   | 2                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TDDD07          | Real Time Systems                             | 6       | A1X   | 4                | E   |
| TSIT02          | Computer Security                             | 6       | G2X   | 2                | E   |
| TSKS11          | Networks: Models, Algorithms and Applications | 6       | G2X   | 3                | E   |

*Specialisation: Electronics*

| Course code     | Course name                     | Credits | Level | Timetable module | ECV |
|-----------------|---------------------------------|---------|-------|------------------|-----|
| <b>Period 1</b> |                                 |         |       |                  |     |
| TSKS01          | Digital Communication           | 6*      | A1X   | 4                | C   |
| TSTE86          | Digital Integrated Circuits     | 6       | A1X   | 2                | C   |
| TSTE12          | Design of Digital Systems       | 6       | A1X   | 3                | E   |
| <b>Period 2</b> |                                 |         |       |                  |     |
| TSEK37          | Analog CMOS Integrated Circuits | 6       | A1X   | 1                | C   |
| TSKS01          | Digital Communication           | 6*      | A1X   | 4                | C   |
| TSEK02          | Radio Electronics               | 6       | A1X   | 3                | E   |

*Specialisation: Industrial Economics*

| Course code     | Course name                         | Credits | Level | Timetable module | ECV |
|-----------------|-------------------------------------|---------|-------|------------------|-----|
| <b>Period 1</b> |                                     |         |       |                  |     |
| TEAE01          | Industrial Economics, Basic Course  | 6       | G1X   | 2                | C   |
| TEIO32          | Project Management and Organization | 6*      | G2X   | 3                | C   |
| <b>Period 2</b> |                                     |         |       |                  |     |
| TDDE02          | Software Entrepreneurship           | 6       | A1X   | 2                | C   |
| TEIO32          | Project Management and Organization | 6*      | G2X   | 1                | C   |

*Specialisation: International Software Engineering*

| Course code     | Course name                        | Credits | Level | Timetable module | ECV |
|-----------------|------------------------------------|---------|-------|------------------|-----|
| <b>Period 1</b> |                                    |         |       |                  |     |
| TDDD62          | Internship                         | 18*     | A1X   | -                | C   |
| <b>Period 2</b> |                                    |         |       |                  |     |
| TDDD62          | Internship                         | 18*     | A1X   | -                | C   |
| TEAE01          | Industrial Economics, Basic Course | 6       | G1X   | 2                | C   |
| TDEI19          | Management Control                 | 6       | A1X   | 2                | E   |
| TSIT02          | Computer Security                  | 6       | G2X   | 2                | E   |

*Specialisation: Large Scale Software Engineering*

| Course code     | Course name  | Credits | Level | Timetable module | ECV |
|-----------------|--|---------|-------|------------------|-----|
| <b>Period 1</b> |  |         |       |                  |     |
| Tddb84          | Design Patterns  | 6       | A1X   | 4                | E   |
| TDDC34          | Technical, Economic and Societal Evaluation of IT-products | 6       | A1X   | 3                | E   |
| TDDD04          | Software Testing   | 6       | A1X   | 2                | E   |
| <b>Period 2</b> |  |         |       |                  |     |
| TDDD37          | Database Technology  | 6       | G2X   | 1                | E   |
| TDDE02          | Software Entrepreneurship                                  | 6       | A1X   | 2                | E   |

*Specialisation: Medical Informatics*

| Course code     | Course name                   | Credits | Level | Timetable module | ECV |
|-----------------|-------------------------------|---------|-------|------------------|-----|
| <b>Period 1</b> |                               |         |       |                  |     |
| TBME04          | Anatomy and Physiology        | 6       | G2X   | 3                | C   |
| TBMI19          | Medical Information Systems   | 6*      | A1X   | 2                | C   |
| TDDC17          | Artificial Intelligence       | 6       | G2X   | 3                | E   |
| TDDD53          | Advanced Interaction Design   | 6       | A1X   | 1                | E   |
| <b>Period 2</b> |                               |         |       |                  |     |
| TBMI19          | Medical Information Systems   | 6*      | A1X   | 3                | C   |
| TBME03          | Biochemistry and Cell Biology | 6       | G2X   | 2                | E   |
| TDDD37          | Database Technology           | 6       | G2X   | 1                | E   |
| TSIT02          | Computer Security             | 6       | G2X   | 2                | E   |

*Specialisation: Programming and Algorithms*

| Course code     | Course name                                   | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| Tddb84          | Design Patterns                               | 6       | A1X   | 4                | E   |
| TDDC17          | Artificial Intelligence                       | 6       | G2X   | 3                | E   |
| TDDD04          | Software Testing                              | 6       | A1X   | 2                | E   |
| TDDD08          | Logic Programming                             | 6       | A1X   | 4                | E   |
| TDDD38          | Advanced Programming in C++                   | 6*      | A1X   | 2                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TDDC90          | Software Security                             | 6       | A1X   | 1                | E   |
| TDDD37          | Database Technology                           | 6       | G2X   | 1                | E   |
| TDDD38          | Advanced Programming in C++                   | 6*      | A1X   | -                | E   |
| TSIT02          | Computer Security                             | 6       | G2X   | 2                | E   |
| TSKS11          | Networks: Models, Algorithms and Applications | 6       | G2X   | 3                | E   |

*Specialisation: Secure Systems*

| Course code     | Course name                   | Credits | Level | Timetable module | ECV |
|-----------------|-------------------------------|---------|-------|------------------|-----|
| <b>Period 1</b> |                               |         |       |                  |     |
| Tddb84          | Design Patterns               | 6       | A1X   | 4                | C   |
| Tddd38          | Advanced Programming in C++   | 6*      | A1X   | 2                | E   |
| Tdts06          | Computer Networks             | 6       | G2X   | 1                | E   |
| TSIT03          | Cryptography                  | 6       | A1X   | 2                | E   |
| <b>Period 2</b> |                               |         |       |                  |     |
| TDDC90          | Software Security             | 6       | A1X   | 1                | C   |
| TSIT02          | Computer Security             | 6       | G2X   | 2                | C   |
| TDDD30          | Advanced Software Engineering | 6       | A1X   | 4                | E   |
| TDDD37          | Database Technology           | 6       | G2X   | 1                | E   |
| TDDD38          | Advanced Programming in C++   | 6*      | A1X   | -                | E   |

*Specialisation: Signal and Image Processing*

| Course code     | Course name                      | Credits | Level | Timetable module | ECV |
|-----------------|----------------------------------|---------|-------|------------------|-----|
| <b>Period 1</b> |                                  |         |       |                  |     |
| TSBB06          | Multidimensional Signal Analysis | 6*      | A1X   | 2                | C   |
| TSBB08          | Digital Image Processing         | 6       | A1X   | 4                | C   |
| TSDT14          | Signal Theory                    | 6       | A1X   | 1                | E   |
| <b>Period 2</b> |                                  |         |       |                  |     |
| TSBB06          | Multidimensional Signal Analysis | 6*      | A1X   | 3                | C   |
| TSBB09          | Image Sensors                    | 6       | A1X   | 4                | C   |
| TSRT78          | Digital Signal Processing        | 6       | A1X   | 2                | C   |

*Specialisation: System-on-Chip*

| Course code     | Course name                     | Credits | Level | Timetable module | ECV |
|-----------------|---------------------------------|---------|-------|------------------|-----|
| <b>Period 1</b> |                                 |         |       |                  |     |
| TSTE12          | Design of Digital Systems       | 6       | A1X   | 3                | C   |
| TSTE86          | Digital Integrated Circuits     | 6       | A1X   | 2                | C   |
| TDTS06          | Computer Networks               | 6       | G2X   | 1                | E   |
| TSKS01          | Digital Communication           | 6*      | A1X   | 4                | E   |
| <b>Period 2</b> |                                 |         |       |                  |     |
| TDDD07          | Real Time Systems               | 6       | A1X   | 4                | E   |
| TDDD55          | Compilers and Interpreters      | 4       | G2X   | 1                | E   |
| TSEK37          | Analog CMOS Integrated Circuits | 6       | A1X   | 1                | E   |
| TSKS01          | Digital Communication           | 6*      | A1X   | 4                | E   |

*Specialisation: Systems Technology*

| Course code     | Course name                                   | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TDDC17          | Artificial Intelligence                       | 6       | G2X   | 3                | C   |
| TSBB08          | Digital Image Processing                      | 6       | A1X   | 4                | E   |
| TSKS15          | Detection and Estimation of Signals           | 6       | A1X   | 2                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TDDD37          | Database Technology                           | 6       | G2X   | 1                | C   |
| TDDD07          | Real Time Systems                             | 6       | A1X   | 4                | C/E |
| TDDD55          | Compilers and Interpreters                    | 4       | G2X   | 1                | C/E |
| TSKS11          | Networks: Models, Algorithms and Applications | 6       | G2X   | 3                | E   |

**Semester 8 (Spring 2019)**

| Course code     | Course name                    | Credits | Level | Timetable module | ECV |
|-----------------|--------------------------------|---------|-------|------------------|-----|
| <b>Period 1</b> |                                |         |       |                  |     |
| TANA15          | Numerical Linear Algebra       | 6       | A1X   | 1                | E   |
| TATA53          | Linear Algebra, Honours Course | 6*      | G2X   | -                | E   |
| TATA54          | Number Theory                  | 6*      | G2X   | 3                | E   |
| TATA64          | Graph Theory                   | 6*      | A1X   | 2                | E   |

| Course code | Course name  | Credits | Level | Timetable module | ECV |
|-------------|--|---------|-------|------------------|-----|
| TBMI01      | Medical Decision Support   | 6       | A1X   | 4                | E   |
| TBMI03      | Medical Information Models and Ontologies                                  | 6       | A1X   | 4                | E   |
| TBMI26      | Neural Networks and Learning Systems                                       | 6       | A1X   | 2                | E   |
| TBMT02      | Medical Imaging  | 6       | A1F   | 3                | E   |
| TBMT09      | Physiological Pressures and Flows  | 6       | A1X   | 1                | E   |
| TBMT32      | Perspectives on Biomedical Engineering                                     | 2*      | G1X   | 3                | E   |
| TDDA69      | Data and Program Structures  | 6*      | G2X   | 3                | E   |
| TDDD17      | Information Security, Second Course  | 6*      | A1X   | 4                | E   |
| TDDD20      | Design and Analysis of Algorithms  | 6       | A1X   | 3                | E   |
| TDDD25      | Distributed Systems  | 6       | A1X   | 2                | E   |
| TDDD38      | Advanced Programming in C++  | 6*      | A1X   | 2                | E   |
| TDDD41      | Data Mining - Clustering and Association Analysis                          | 6       | A1X   | 3                | E   |
| TDDD50      | Green Computing  | 4       | G2X   | 4                | E   |
| TDDD57      | Physical Interaction and Game Programming                                  | 6       | A1X   | 1                | E   |
| TDDD75      | Effect-Driven Development and Human-Centered Design of Interactive Systems | 6       | G2X   | 3                | E   |
| TDDD95      | Algorithmic Problem Solving  | 6*      | A1X   | 1                | E   |
| TDDD97      | Web Programming  | 6       | G2X   | 3                | E   |
| TDDE05      | AI Robotics  | 6*      | A1N   | 4                | E   |
| TDDE06      | Large-Scale Software Development - Structures and Processes                | 6*      | A1X   | 4                | E   |
| TDDE09      | Natural Language Processing  | 6       | A1X   | 2                | E   |
| TDDE46      | Software Quality   | 6*      | A1N   | 2                | E   |
| TDTS07      | System Design and Methodology  | 6       | A1X   | 1                | E   |
| TDTS21      | Advanced Networking  | 6*      | A1X   | 1                | E   |
| TEIE88      | Computer Law   | 4       | G1X   | 1                | E   |
| TEIO13      | Leadership and Organizational Change                                       | 6       | A1X   | 4                | E   |
| TEIO94      | Entrepreneurship and Idea Development                                      | 6*      | G2X   | 4                | E   |
| TGTU01      | Technology and Ethics  | 6       | G1X   | 1                | E   |
| THFR05      | Communicative French   | 6*      | G1X   | 4                | E   |
| THSP05      | Spanish  | 6*      | G1X   | 4                | E   |
| THTY05      | German   | 6*      | G1X   | 4                | E   |

| Course code     | Course name   | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| TKMJ15          | Environmental Management Strategies                         | 6       | G1F   | 3                | E   |
| TNM048          | Information Visualisation                                   | 6       | A1X   | 3                | E   |
| TSBB15          | Computer Vision   | 12*     | A1X   | 1                | E   |
| TSBK07          | Computer Graphics   | 6*      | A1X   | 4                | E   |
| TSBK08          | Data Compression  | 6       | A1X   | 2                | E   |
| TSEK06          | VLSI Design   | 12*     | A1X   | 4                | E   |
| TSEK38          | Radio Frequency Transceiver Design                          | 6       | A1X   | 2                | E   |
| TSKS13          | Wireless Communications                                     | 6       | A1F   | 4                | E   |
| TSRT07          | Industrial Control Systems                                  | 6       | A1X   | 2                | E   |
| TSRT09          | Control Theory  | 6       | A1X   | 3                | E   |
| TSTE08          | Analog and Discrete-Time Integrated Circuits                | 6       | A1X   | 3                | E   |
| TSTE14          | Analog Filters  | 6       | A1X   | 2                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TAOP87          | Applied Optimization Project Course                         | 6       | A1X   | 3                | E   |
| TATA53          | Linear Algebra, Honours Course                              | 6*      | G2X   | -                | E   |
| TATA54          | Number Theory   | 6*      | G2X   | 1                | E   |
| TATA64          | Graph Theory  | 6*      | A1X   | 2                | E   |
| TBMT26          | Technology in Intensive Care and Surgery                    | 6       | A1X   | 1                | E   |
| TBMT32          | Perspectives on Biomedical Engineering                      | 2*      | G1X   | 3                | E   |
| TDDA69          | Data and Program Structures                                 | 6*      | G2X   | 1                | E   |
| TDDC78          | Programming of Parallel Computers - Methods and Tools       | 6       | A1X   | 3                | E   |
| TDDD14          | Formal Languages and Automata Theory                        | 6       | G2X   | 2                | E   |
| TDDD17          | Information Security, Second Course                         | 6*      | A1X   | 4                | E   |
| TDDD27          | Advanced Web Programming                                    | 6       | A1X   | 3                | E   |
| TDDD29          | IT-Project Management                                       | 6       | A1X   | 3                | E   |
| TDDD38          | Advanced Programming in C++                                 | 6*      | A1X   | -                | E   |
| TDDD48          | Automated Planning  | 6       | A1X   | 1                | E   |
| TDDD95          | Algorithmic Problem Solving                                 | 6*      | A1X   | 4                | E   |
| TDDE05          | AI Robotics   | 6*      | A1N   | 4                | E   |
| TDDE06          | Large-Scale Software Development - Structures and Processes | 6*      | A1X   | 4                | E   |
| TDDE07          | Bayesian Learning   | 6       | A1F   | 2                | E   |

| Course code | Course name                              | Credits | Level | Timetable module | ECV |
|-------------|--|---------|-------|------------------|-----|
| TDDE31      | Big Data Analytics                       | 6       | A1X   | 3                | E   |
| TDDE34      | Software Verification                    | 6       | A1X   | 1                | E   |
| TDDE41      | Software Architectures                   | 6       | A1X   | 1                | E   |
| TDDE46      | Software Quality                         | 6*      | A1N   | 2                | E   |
| TDTS21      | Advanced Networking                      | 6*      | A1X   | 1                | E   |
| TEAE13      | Civil and Commercial Law                 | 6       | G1X   | 2                | E   |
| TEIE44      | Intellectual Property Rights             | 4       | G1X   | 1                | E   |
| TEIO06      | Innovative Entrepreneurship              | 6       | A1X   | 2                | E   |
| TEIO94      | Entrepreneurship and Idea Development    | 6*      | G2X   | 4                | E   |
| TFYA19      | Quantum Computers                        | 6       | A1X   | 4                | E   |
| TGTU83      | Philosophy of Science                    | 6       | G1X   | 4                | E   |
| THFR05      | Communicative French                     | 6*      | G1X   | 4                | E   |
| THSP05      | Spanish                                  | 6*      | G1X   | 4                | E   |
| THTY05      | German                                   | 6*      | G1X   | 4                | E   |
| TNM079      | Modelling and Animation                  | 6       | A1X   | 2                | E   |
| TSBB15      | Computer Vision                          | 12*     | A1X   | 3                | E   |
| TSBK02      | Image and Audio Coding                   | 6       | A1X   | 4                | E   |
| TSBK07      | Computer Graphics                        | 6*      | A1X   | 1                | E   |
| TSEK06      | VLSI Design                              | 12*     | A1X   | 4                | E   |
| TSFS06      | Diagnosis and Supervision                | 6       | A1N   | 1                | E   |
| TSKS14      | Multiple Antenna Communications          | 6       | A1X   | 2                | E   |
| TSKS16      | Signal Processing for Communications     | 6       | A1X   | 1                | E   |
| TSRT14      | Sensor Fusion                            | 6       | A1X   | 2                | E   |
| TSTE06      | Digital Filters                          | 6       | A1X   | 3                | E   |
| TSTE87      | Application-Specific Integrated Circuits | 6       | A1X   | 2                | E   |



*Specialisation: AI and Machine Learning*

| Course code     | Course name                                       | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TBMI26          | Neural Networks and Learning Systems              | 6       | A1X   | 2                | E   |
| TDDD20          | Design and Analysis of Algorithms                 | 6       | A1X   | 3                | E   |
| TDDD41          | Data Mining - Clustering and Association Analysis | 6       | A1X   | 3                | E   |
| TDDD95          | Algorithmic Problem Solving                       | 6*      | A1X   | 1                | E   |
| TDDE05          | AI Robotics                                       | 6*      | A1N   | 4                | E   |
| TDDE09          | Natural Language Processing                       | 6       | A1X   | 2                | E   |
| TSRT07          | Industrial Control Systems                        | 6       | A1X   | 2                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TDDD48          | Automated Planning                                | 6       | A1X   | 1                | E   |
| TDDD95          | Algorithmic Problem Solving                       | 6*      | A1X   | 4                | E   |
| TDDE05          | AI Robotics                                       | 6*      | A1N   | 4                | E   |
| TDDE07          | Bayesian Learning                                 | 6       | A1F   | 2                | E   |
| TDDE31          | Big Data Analytics                                | 6       | A1X   | 3                | E   |
| TSFS06          | Diagnosis and Supervision                         | 6       | A1N   | 1                | E   |
| TSRT14          | Sensor Fusion                                     | 6       | A1X   | 2                | E   |

*Specialisation: Communication*

| Course code     | Course name                          | Credits | Level | Timetable module | ECV |
|-----------------|--------------------------------------|---------|-------|------------------|-----|
| <b>Period 1</b> |                                      |         |       |                  |     |
| TDTS21          | Advanced Networking                  | 6*      | A1X   | 1                | E   |
| TSBK08          | Data Compression                     | 6       | A1X   | 2                | E   |
| TSKS13          | Wireless Communications              | 6       | A1F   | 4                | E   |
| <b>Period 2</b> |                                      |         |       |                  |     |
| TDTS21          | Advanced Networking                  | 6*      | A1X   | 1                | E   |
| TFYA19          | Quantum Computers                    | 6       | A1X   | 4                | E   |
| TSBK02          | Image and Audio Coding               | 6       | A1X   | 4                | E   |
| TSKS14          | Multiple Antenna Communications      | 6       | A1X   | 2                | E   |
| TSKS16          | Signal Processing for Communications | 6       | A1X   | 1                | E   |

*Specialisation: Computer Games Programming*

| Course code     | Course name                               | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TDDD57          | Physical Interaction and Game Programming | 6       | A1X   | 1                | C   |
| TSBK07          | Computer Graphics                         | 6*      | A1X   | 4                | C   |
| TBMI26          | Neural Networks and Learning Systems      | 6       | A1X   | 2                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TSBK07          | Computer Graphics                         | 6*      | A1X   | 1                | C   |
| TNM079          | Modelling and Animation                   | 6       | A1X   | 2                | E   |

*Specialisation: Computer Systems Architecture*

| Course code     | Course name   | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TDDA69          | Data and Program Structures                           | 6*      | G2X   | 3                | E   |
| TDDD25          | Distributed Systems                                   | 6       | A1X   | 2                | E   |
| TDDD38          | Advanced Programming in C++                           | 6*      | A1X   | 2                | E   |
| TDDD97          | Web Programming                                       | 6       | G2X   | 3                | E   |
| TDTS07          | System Design and Methodology                         | 6       | A1X   | 1                | E   |
| TDTS21          | Advanced Networking                                   | 6*      | A1X   | 1                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TDDA69          | Data and Program Structures                           | 6*      | G2X   | 1                | E   |
| TDDC78          | Programming of Parallel Computers - Methods and Tools | 6       | A1X   | 3                | E   |
| TDDD14          | Formal Languages and Automata Theory                  | 6       | G2X   | 2                | E   |
| TDDD27          | Advanced Web Programming                              | 6       | A1X   | 3                | E   |
| TDDD38          | Advanced Programming in C++                           | 6*      | A1X   | -                | E   |
| TDDE34          | Software Verification                                 | 6       | A1X   | 1                | E   |
| TDDE41          | Software Architectures                                | 6       | A1X   | 1                | E   |
| TDTS21          | Advanced Networking                                   | 6*      | A1X   | 1                | E   |

*Specialisation: Electronics*

| Course code     | Course name                                  | Credits | Level | Timetable module | ECV |
|-----------------|--|---------|-------|------------------|-----|
| <b>Period 1</b> |  |         |       |                  |     |
| TSEK06          | VLSI Design                                  | 12*     | A1X   | 4                | E   |
| TSEK38          | Radio Frequency Transceiver Design           | 6       | A1X   | 2                | E   |
| TSTE08          | Analog and Discrete-Time Integrated Circuits | 6       | A1X   | 3                | E   |
| TSTE14          | Analog Filters                               | 6       | A1X   | 2                | E   |
| TSTE93          | Analog Circuits                              | 6*      | G2X   | 1                | E   |
| <b>Period 2</b> |  |         |       |                  |     |
| TSTE87          | Application-Specific Integrated Circuits     | 6       | A1X   | 2                | C   |
| TSEK06          | VLSI Design                                  | 12*     | A1X   | 4                | E   |
| TSKS16          | Signal Processing for Communications         | 6       | A1X   | 1                | E   |
| TSTE06          | Digital Filters                              | 6       | A1X   | 3                | E   |
| TSTE93          | Analog Circuits                              | 6*      | G2X   | 1                | E   |

*Specialisation: Industrial Economics*

| Course code     | Course name                          | Credits | Level | Timetable module | ECV |
|-----------------|--------------------------------------|---------|-------|------------------|-----|
| <b>Period 1</b> |                                      |         |       |                  |     |
| TEIO13          | Leadership and Organizational Change | 6       | A1X   | 4                | C   |
| <b>Period 2</b> |                                      |         |       |                  |     |
| TEIO06          | Innovative Entrepreneurship          | 6       | A1X   | 2                | C   |

*Specialisation: Large Scale Software Engineering*

| Course code     | Course name   | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TDDE06          | Large-Scale Software Development - Structures and Processes | 6*      | A1X   | 4                | E   |
| TDDE46          | Software Quality  | 6*      | A1N   | 2                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TDDE06          | Large-Scale Software Development - Structures and Processes | 6*      | A1X   | 4                | E   |
| TDDE34          | Software Verification                                       | 6       | A1X   | 1                | E   |
| TDDE41          | Software Architectures                                      | 6       | A1X   | 1                | E   |
| TDDE46          | Software Quality  | 6*      | A1N   | 2                | E   |

*Specialisation: Medical Informatics*

| Course code     | Course name                               | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TBMI01          | Medical Decision Support                  | 6       | A1X   | 4                | E   |
| TBMI03          | Medical Information Models and Ontologies | 6       | A1X   | 4                | E   |
| TBMI26          | Neural Networks and Learning Systems      | 6       | A1X   | 2                | E   |
| TDDD17          | Information Security, Second Course       | 6*      | A1X   | 4                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TBMT26          | Technology in Intensive Care and Surgery  | 6       | A1X   | 1                | E   |
| TDDD17          | Information Security, Second Course       | 6*      | A1X   | 4                | E   |
| TDDE31          | Big Data Analytics                        | 6       | A1X   | 3                | E   |

*Specialisation: Programming and Algorithms*

| Course code     | Course name   | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TDDA69          | Data and Program Structures                           | 6*      | G2X   | 3                | 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 Analysis     | 6       | A1X   | 3                | E   |
| TDDD95          | Algorithmic Problem Solving                           | 6*      | A1X   | 1                | E   |
| TDDE09          | Natural Language Processing                           | 6       | A1X   | 2                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TDDA69          | Data and Program Structures                           | 6*      | G2X   | 1                | E   |
| TDDC78          | Programming of Parallel Computers - Methods and Tools | 6       | A1X   | 3                | E   |
| TDDD14          | Formal Languages and Automata Theory                  | 6       | G2X   | 2                | E   |
| TDDD38          | Advanced Programming in C++                           | 6*      | A1X   | -                | E   |
| TDDD95          | Algorithmic Problem Solving                           | 6*      | A1X   | 4                | E   |
| TDDE34          | Software Verification                                 | 6       | A1X   | 1                | E   |
| TDDE41          | Software Architectures                                | 6       | A1X   | 1                | E   |

*Specialisation: Secure Systems*

| Course code     | Course name                         | Credits | Level | Timetable module | ECV |
|-----------------|-------------------------------------|---------|-------|------------------|-----|
| <b>Period 1</b> |                                     |         |       |                  |     |
| TDDD17          | Information Security, Second Course | 6*      | A1X   | 4                | C   |
| TDDD38          | Advanced Programming in C++         | 6*      | A1X   | 2                | E   |
| TDDD97          | Web Programming                     | 6       | G2X   | 3                | E   |
| TDDE46          | Software Quality                    | 6*      | A1N   | 2                | E   |
| TDTS21          | Advanced Networking                 | 6*      | A1X   | 1                | E   |
| <b>Period 2</b> |                                     |         |       |                  |     |
| TDDD17          | Information Security, Second Course | 6*      | A1X   | 4                | C   |
| TDDD27          | Advanced Web Programming            | 6       | A1X   | 3                | E   |
| TDDD38          | Advanced Programming in C++         | 6*      | A1X   | -                | E   |
| TDDE46          | Software Quality                    | 6*      | A1N   | 2                | E   |
| TDTS21          | Advanced Networking                 | 6*      | A1X   | 1                | E   |

*Specialisation: Signal and Image Processing*

| Course code     | Course name                          | Credits | Level | Timetable module | ECV |
|-----------------|--------------------------------------|---------|-------|------------------|-----|
| <b>Period 1</b> |                                      |         |       |                  |     |
| TBMI26          | Neural Networks and Learning Systems | 6       | A1X   | 2                | E   |
| TBMT02          | Medical Imaging                      | 6       | A1F   | 3                | E   |
| TDDE09          | Natural Language Processing          | 6       | A1X   | 2                | E   |
| TNM048          | Information Visualisation            | 6       | A1X   | 3                | E   |
| TSBB15          | Computer Vision                      | 12*     | A1X   | 1                | E   |
| TSBK07          | Computer Graphics                    | 6*      | A1X   | 4                | E   |
| TSBK08          | Data Compression                     | 6       | A1X   | 2                | E   |
| <b>Period 2</b> |                                      |         |       |                  |     |
| TSBB15          | Computer Vision                      | 12*     | A1X   | 3                | E   |
| TSBK02          | Image and Audio Coding               | 6       | A1X   | 4                | E   |
| TSBK07          | Computer Graphics                    | 6*      | A1X   | 1                | E   |
| TSRT14          | Sensor Fusion                        | 6       | A1X   | 2                | E   |

*Specialisation: System-on-Chip*

| Course code     | Course name                                  | Credits | Level | Timetable module | ECV |
|-----------------|--|---------|-------|------------------|-----|
| <b>Period 1</b> |  |         |       |                  |     |
| TDS07           | System Design and Methodology                | 6       | A1X   | 1                | C   |
| TSBK07          | Computer Graphics                            | 6*      | A1X   | 4                | E   |
| TSEK06          | VLSI Design                                  | 12*     | A1X   | 4                | E   |
| TSTE08          | Analog and Discrete-Time Integrated Circuits | 6       | A1X   | 3                | E   |
| <b>Period 2</b> |  |         |       |                  |     |
| TEIE44          | Intellectual Property Rights                 | 4       | G1X   | 1                | E   |
| TSBK07          | Computer Graphics                            | 6*      | A1X   | 1                | E   |
| TSEK06          | VLSI Design                                  | 12*     | A1X   | 4                | E   |
| TSKS16          | Signal Processing for Communications         | 6       | A1X   | 1                | E   |
| TSTE06          | Digital Filters                              | 6       | A1X   | 3                | E   |
| TSTE87          | Application-Specific Integrated Circuits     | 6       | A1X   | 2                | E   |

*Specialisation: Systems Technology*

| Course code     | Course name                          | Credits | Level | Timetable module | ECV |
|-----------------|--------------------------------------|---------|-------|------------------|-----|
| <b>Period 1</b> |                                      |         |       |                  |     |
| TDS07           | System Design and Methodology        | 6       | A1X   | 1                | C   |
| TDDD25          | Distributed Systems                  | 6       | A1X   | 2                | C/E |
| TSBK08          | Data Compression                     | 6       | A1X   | 2                | C/E |
| TSRT07          | Industrial Control Systems           | 6       | A1X   | 2                | C/E |
| TBMI26          | Neural Networks and Learning Systems | 6       | A1X   | 2                | E   |
| <b>Period 2</b> |                                      |         |       |                  |     |
| TDDE41          | Software Architectures               | 6       | A1X   | 1                | C/E |
| TSFS06          | Diagnosis and Supervision            | 6       | A1N   | 1                | C/E |

**Semester 9 (Autumn 2019)**

| Course code     | Course name                      | Credits | Level | Timetable module | ECV |
|-----------------|----------------------------------|---------|-------|------------------|-----|
| <b>Period 1</b> |                                  |         |       |                  |     |
| TANA21          | Scientific Computing             | 6       | G1X   | 3                | C/E |
| TAMS39          | Multivariate Statistical Methods | 6       | A1X   | 4                | E   |

| Course code | Course name   | Credits | Level | Timetable module | ECV |
|-------------|---|---------|-------|------------------|-----|
| TBMT14      | Biomedical Engineering - Project Course                               | 12*     | A1X   | 4                | E   |
| TDDD43      | Advanced Data Models and Databases                                    | 6*      | A1X   | 2                | E   |
| TDDD53      | Advanced Interaction Design   | 6       | A1X   | 1                | E   |
| TDDE14      | Large-Scale Software Development: Contributions and Evolution         | 6*      | A1X   | 4                | E   |
| TDDE15      | Advanced Machine Learning   | 6       | A1X   | 1                | E   |
| TDDE19      | Advanced Project Course - AI and Machine Learning                     | 6*      | A1F   | 4                | E   |
| TDDE20      | Advanced Project Course - Game, App and Web Development               | 6*      | A1X   | 4                | E   |
| TDDE21      | Advanced Project Course: Secure Distributed and Embedded Systems      | 6*      | A1X   | 4                | E   |
| TDEI13      | Enterprise Resource Planning Systems: Process and Implementation      | 6       | A1X   | 2                | E   |
| TDEI72      | Strategy and Digitisation - Technology, Standards and Network Effects | 6       | A1X   | 4                | E   |
| TDTS06      | Computer Networks   | 6       | G2X   | 1                | E   |
| TEIM11      | Industrial Marketing  | 6       | G2X   | 3                | E   |
| TEIO90      | Innovation Management   | 6       | A1X   | 2                | E   |
| TNCG15      | Advanced Global Illumination and Rendering                            | 6       | A1X   | 4                | E   |
| TNM067      | Scientific Visualization  | 6       | A1X   | 3                | E   |
| TNM095      | Artificial Intelligence for Interactive Media                         | 6       | A1X   | 2                | E   |
| TSBB11      | Images and Graphics, Project Course CDIO                              | 12*     | A1X   | 4                | E   |
| TSBB17      | Visual Object Recognition and Detection                               | 6       | A1X   | 2                | E   |
| TSBK03      | Advanced Game Programming   | 6*      | A1X   | 1                | E   |
| TSEA26      | Design of Embedded DSP Processor                                      | 6       | A1X   | 1                | E   |
| TSEA84      | Digital Design Project  | 6*      | A1X   | 3                | E   |
| TSEK03      | Radio Frequency Integrated Circuits                                   | 6       | A1X   | 2                | E   |
| TSEK11      | Evaluation of an Integrated Circuit                                   | 2       | A1X   | 4                | E   |
| TSFS12      | Autonomous Vehicles - Planning, Control, and Learning Systems         | 6       | A1X   | 1                | E   |
| TSIN01      | Information Networks  | 6       | A1X   | 3                | E   |
| TSKS05      | Communication Systems, Project Course                                 | 12*     | A1X   | 4                | E   |
| TSKS12      | Modern Channel Coding, Inference and Learning                         | 6       | A1X   | 1                | E   |

| Course code     | Course name  | Credits | Level | Timetable module | ECV |
|-----------------|--|---------|-------|------------------|-----|
| TSRT10          | Automatic Control - Project Course                               | 12*     | A1X   | 4                | E   |
| TSTE17          | System Design  | 12*     | A1F   | 4                | E   |
| TSTE25          | Power Electronics  | 6       | A1X   | 3                | E   |
| <b>Period 2</b> |  |         |       |                  |     |
| TDDD89          | Scientific Method  | 6       | A1X   | 3                | C   |
| TANA09          | Numerical Algorithms in Computer Science                         | 4       | G2X   | 1                | C/E |
| TAOP61          | Optimization of Realistic Complex Systems                        | 6       | A1N   | 3                | E   |
| TBMI02          | Medical Image Analysis   | 6       | A1X   | 1                | E   |
| TBMT14          | Biomedical Engineering - Project Course                          | 12*     | A1X   | 4                | E   |
| TDDB44          | Compiler Construction  | 6       | A1X   | 1                | E   |
| TDDC90          | Software Security  | 6       | A1X   | 1                | E   |
| TDDD07          | Real Time Systems  | 6       | A1X   | 4                | E   |
| TDDD43          | Advanced Data Models and Databases                               | 6*      | A1X   | 2                | E   |
| TDDD56          | Multicore and GPU Programming                                    | 6       | A1X   | 2                | E   |
| TDDE13          | Multi Agent Systems  | 6       | A1X   | 1                | E   |
| TDDE14          | Large-Scale Software Development: Contributions and Evolution    | 6*      | A1X   | 4                | E   |
| TDDE16          | Text Mining  | 6       | A1X   | 2                | E   |
| TDDE19          | Advanced Project Course - AI and Machine Learning                | 6*      | A1F   | 4                | E   |
| TDDE20          | Advanced Project Course - Game, App and Web Development          | 6*      | A1X   | 4                | E   |
| TDDE21          | Advanced Project Course: Secure Distributed and Embedded Systems | 6*      | A1X   | 4                | E   |
| TNM086          | Virtual Reality Techniques                                       | 6       | A1X   | 2                | E   |
| TSBB11          | Images and Graphics, Project Course CDIO                         | 12*     | A1X   | 4                | E   |
| TSBK03          | Advanced Game Programming  | 6*      | A1X   | -                | E   |
| TSEA44          | Computer Hardware - a System on Chip                             | 6       | A1F   | 1                | E   |
| TSEA84          | Digital Design Project   | 6*      | A1X   | 3                | E   |
| TSIN02          | Internetworking  | 6       | A1X   | 1                | E   |
| TSKS05          | Communication Systems, Project Course                            | 12*     | A1X   | 4                | E   |
| TSRT10          | Automatic Control - Project Course                               | 12*     | A1X   | 4                | E   |
| TSTE17          | System Design  | 12*     | A1F   | 4                | E   |



| Course code | Course name                                       | Credits | Level | Timetable module | ECV |
|-------------|---|---------|-------|------------------|-----|
| TSTE26      | Powergrid and Technology for Renewable Production | 6       | A1X   | 3                | E   |
| TSTE85      | Low Power Electronics                             | 6       | A1X   | 2                | E   |

*Specialisation: AI and Machine Learning*

| Course code     | Course name   | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TDDE19          | Advanced Project Course - AI and Machine Learning             | 6*      | A1F   | 4                | C   |
| TDDE15          | Advanced Machine Learning                                     | 6       | A1X   | 1                | E   |
| TSBB17          | Visual Object Recognition and Detection                       | 6       | A1X   | 2                | E   |
| TSFS12          | Autonomous Vehicles - Planning, Control, and Learning Systems | 6       | A1X   | 1                | E   |
| TSRT62          | Modelling and Simulation                                      | 6       | A1X   | 3                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TDDE19          | Advanced Project Course - AI and Machine Learning             | 6*      | A1F   | 4                | C   |
| TDDE13          | Multi Agent Systems   | 6       | A1X   | 1                | E   |
| TDDE16          | Text Mining   | 6       | A1X   | 2                | E   |

*Specialisation: Communication*

| Course code     | Course name                                   | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TSIN01          | Information Networks                          | 6       | A1X   | 3                | C   |
| TSIT03          | Cryptology                                    | 6       | A1X   | 2                | E   |
| TSKS05          | Communication Systems, Project Course         | 12*     | A1X   | 4                | E   |
| TSKS12          | Modern Channel Coding, Inference and Learning | 6       | A1X   | 1                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TDDD07          | Real Time Systems                             | 6       | A1X   | 4                | E   |
| TSKS05          | Communication Systems, Project Course         | 12*     | A1X   | 4                | E   |

*Specialisation: Computer Games Programming*

| Course code     | Course name   | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TSBK03          | Advanced Game Programming                               | 6*      | A1X   | 1                | C   |
| TDDE20          | Advanced Project Course - Game, App and Web Development | 6*      | A1X   | 4                | E   |
| TNCG15          | Advanced Global Illumination and Rendering              | 6       | A1X   | 4                | E   |
| TSBB11          | Images and Graphics, Project Course CDIO                | 12*     | A1X   | 4                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TSBK03          | Advanced Game Programming                               | 6*      | A1X   | -                | C   |
| TDDE20          | Advanced Project Course - Game, App and Web Development | 6*      | A1X   | 4                | E   |
| TSBB11          | Images and Graphics, Project Course CDIO                | 12*     | A1X   | 4                | E   |
| TSIN02          | Internetworking   | 6       | A1X   | 1                | E   |

*Specialisation: Computer Systems Architecture*

| Course code     | Course name  | Credits | Level | Timetable module | ECV |
|-----------------|--|---------|-------|------------------|-----|
| <b>Period 1</b> |  |         |       |                  |     |
| TDDD43          | Advanced Data Models and Databases                               | 6*      | A1X   | 2                | E   |
| TDDE21          | Advanced Project Course: Secure Distributed and Embedded Systems | 6*      | A1X   | 4                | E   |
| TSEA26          | Design of Embedded DSP Processor                                 | 6       | A1X   | 1                | E   |
| TSIT03          | Cryptography   | 6       | A1X   | 2                | E   |
| TSKS01          | Digital Communication  | 6*      | A1X   | 4                | E   |
| <b>Period 2</b> |  |         |       |                  |     |
| TDDB44          | Compiler Construction  | 6       | A1X   | 1                | E   |
| TDDC90          | Software Security  | 6       | A1X   | 1                | E   |
| TDDD37          | Database Technology  | 6       | G2X   | 1                | E   |
| TDDD43          | Advanced Data Models and Databases                               | 6*      | A1X   | 2                | E   |
| TDDD56          | Multicore and GPU Programming                                    | 6       | A1X   | 2                | E   |
| TDDE21          | Advanced Project Course: Secure Distributed and Embedded Systems | 6*      | A1X   | 4                | E   |
| TSIN02          | Internetworking  | 6       | A1X   | 1                | E   |
| TSKS01          | Digital Communication  | 6*      | A1X   | 4                | E   |

*Specialisation: Electronics*

| Course code     | Course name                                       | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TSEA26          | Design of Embedded DSP Processor                  | 6       | A1X   | 1                | E   |
| TSEA84          | Digital Design Project                            | 6*      | A1X   | 3                | E   |
| TSEK03          | Radio Frequency Integrated Circuits               | 6       | A1X   | 2                | E   |
| TSEK11          | Evaluation of an Integrated Circuit               | 2       | A1X   | 4                | E   |
| TSTE17          | System Design                                     | 12*     | A1F   | 4                | E   |
| TSTE25          | Power Electronics                                 | 6       | A1X   | 3                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TSEA44          | Computer Hardware - a System on Chip              | 6       | A1F   | 1                | E   |
| TSEA84          | Digital Design Project                            | 6*      | A1X   | 3                | E   |
| TSTE17          | System Design                                     | 12*     | A1F   | 4                | E   |
| TSTE26          | Powergrid and Technology for Renewable Production | 6       | A1X   | 3                | E   |
| TSTE85          | Low Power Electronics                             | 6       | A1X   | 2                | E   |

*Specialisation: Industrial Economics*

| Course code     | Course name   | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TEIM11          | Industrial Marketing  | 6       | G2X   | 3                | C   |
| TEIO90          | Innovation Management   | 6       | A1X   | 2                | C   |
| TDEI72          | Strategy and Digitisation - Technology, Standards and Network Effects | 6       | A1X   | 4                | E   |

*Specialisation: International Software Engineering*

| Course code     | Course name  | Credits | Level | Timetable module | ECV |
|-----------------|--|---------|-------|------------------|-----|
| <b>Period 1</b> |  |         |       |                  |     |
| TDDC34          | Technical, Economic and Societal Evaluation of IT-products       | 6       | A1X   | 3                | C   |
| TDDD69          | Software Engineering - Company Project                           | 6*      | A1N   | 1                | C   |
| TDDD04          | Software Testing   | 6       | A1X   | 2                | E   |
| TDDD38          | Advanced Programming in C++                                      | 6*      | A1X   | 2                | E   |
| TDDD43          | Advanced Data Models and Databases                               | 6*      | A1X   | 2                | E   |
| TDDE45          | Software Design and Construction                                 | 6       | A1X   | 4                | E   |
| TDEI13          | Enterprise Resource Planning Systems: Process and Implementation | 6       | A1X   | 2                | E   |
| <b>Period 2</b> |  |         |       |                  |     |
| TDDD69          | Software Engineering - Company Project                           | 6*      | A1N   | 1                | C   |
| TDDC90          | Software Security  | 6       | 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   |
| TDEI19          | Management Control   | 6       | A1X   | 2                | E   |
| TEIM03          | Intercultural Communication                                      | 4       | G1X   | 4                | E   |

*Specialisation: Large Scale Software Engineering*

| Course code     | Course name   | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TDDE14          | Large-Scale Software Development: Contributions and Evolution | 6*      | A1X   | 4                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TDDE14          | Large-Scale Software Development: Contributions and Evolution | 6*      | A1X   | 4                | E   |

*Specialisation: Medical Informatics*

| Course code     | Course name                             | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TBMT14          | Biomedical Engineering - Project Course | 12*     | A1X   | 4                | E   |
| TDDC17          | Artificial Intelligence                 | 6       | G2X   | 3                | E   |
| TDDD43          | Advanced Data Models and Databases      | 6*      | A1X   | 2                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TBMT14          | Biomedical Engineering - Project Course | 12*     | A1X   | 4                | E   |
| TDDD43          | Advanced Data Models and Databases      | 6*      | A1X   | 2                | E   |
| TDDE01          | Machine Learning                        | 6       | A1X   | 1                | E   |

*Specialisation: Programming and Algorithms*

| Course code     | Course name                      | Credits | Level | Timetable module | ECV |
|-----------------|----------------------------------|---------|-------|------------------|-----|
| <b>Period 1</b> |                                  |         |       |                  |     |
| TDDD08          | Logic Programming                | 6       | A1X   | 4                | E   |
| TDDE45          | Software Design and Construction | 6       | A1X   | 4                | E   |
| TSIT03          | Cryptology                       | 6       | A1X   | 2                | E   |
| <b>Period 2</b> |                                  |         |       |                  |     |
| TDDB44          | Compiler Construction            | 6       | A1X   | 1                | E   |
| TDDD56          | Multicore and GPU Programming    | 6       | A1X   | 2                | E   |

*Specialisation: Secure Systems*

| Course code     | Course name  | Credits | Level | Timetable module | ECV |
|-----------------|--|---------|-------|------------------|-----|
| <b>Period 1</b> |  |         |       |                  |     |
| TDDD04          | Software Testing   | 6       | A1X   | 2                | C   |
| TDDE45          | Software Design and Construction                                 | 6       | A1X   | 4                | C   |
| TDDD38          | Advanced Programming in C++                                      | 6*      | A1X   | 2                | E   |
| TDDE21          | Advanced Project Course: Secure Distributed and Embedded Systems | 6*      | A1X   | 4                | E   |
| TSIT03          | Cryptology   | 6       | A1X   | 2                | E   |
| <b>Period 2</b> |  |         |       |                  |     |
| TDDC90          | Software Security  | 6       | A1X   | 1                | C   |
| TDDD37          | Database Technology  | 6       | G2X   | 1                | E   |
| TDDD38          | Advanced Programming in C++                                      | 6*      | A1X   | -                | E   |
| TDDE21          | Advanced Project Course: Secure Distributed and Embedded Systems | 6*      | A1X   | 4                | E   |

*Specialisation: Signal and Image Processing*

| Course code     | Course name                              | Credits | Level | Timetable module | ECV |
|-----------------|--|---------|-------|------------------|-----|
| <b>Period 1</b> |  |         |       |                  |     |
| TNM067          | Scientific Visualization                 | 6       | A1X   | 3                | E   |
| TSBB11          | Images and Graphics, Project Course CDIO | 12*     | A1X   | 4                | E   |
| TSBB17          | Visual Object Recognition and Detection  | 6       | A1X   | 2                | E   |
| TSBK03          | Advanced Game Programming                | 6*      | A1X   | 1                | E   |
| TSKS15          | Detection and Estimation of Signals      | 6       | A1X   | 2                | E   |
| <b>Period 2</b> |  |         |       |                  |     |
| TBMI02          | Medical Image Analysis                   | 6       | A1X   | 1                | E   |
| TDDD56          | Multicore and GPU Programming            | 6       | A1X   | 2                | E   |
| TDDE01          | Machine Learning                         | 6       | A1X   | 1                | E   |
| TNM086          | Virtual Reality Techniques               | 6       | A1X   | 2                | E   |
| TSBB11          | Images and Graphics, Project Course CDIO | 12*     | A1X   | 4                | E   |
| TSBK03          | Advanced Game Programming                | 6*      | A1X   | -                | E   |

*Specialisation: System-on-Chip*

| Course code     | Course name                          | Credits | Level | Timetable module | ECV |
|-----------------|--------------------------------------|---------|-------|------------------|-----|
| <b>Period 1</b> |                                      |         |       |                  |     |
| TDS08           | Advanced Computer Architecture       | 6       | A1X   | 2                | E   |
| TSEA26          | Design of Embedded DSP Processor     | 6       | A1X   | 1                | E   |
| TSEA84          | Digital Design Project               | 6*      | A1X   | 3                | E   |
| TSEK11          | Evaluation of an Integrated Circuit  | 2       | A1X   | 4                | E   |
| TSTE17          | System Design                        | 12*     | A1F   | 4                | E   |
| <b>Period 2</b> |                                      |         |       |                  |     |
| Tddb44          | Compiler Construction                | 6       | A1X   | 1                | E   |
| TDDD56          | Multicore and GPU Programming        | 6       | A1X   | 2                | E   |
| TSEA44          | Computer Hardware - a System on Chip | 6       | A1F   | 1                | E   |
| TSEA84          | Digital Design Project               | 6*      | A1X   | 3                | E   |
| TSIT02          | Computer Security                    | 6       | G2X   | 2                | E   |
| TSTE17          | System Design                        | 12*     | A1F   | 4                | E   |
| TSTE85          | Low Power Electronics                | 6       | A1X   | 2                | E   |

*Specialisation: Systems Technology*

| Course code     | Course name                                       | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TSRT62          | Modelling and Simulation                          | 6       | A1X   | 3                | C/E |
| TDDD43          | Advanced Data Models and Databases                | 6*      | A1X   | 2                | E   |
| TDDE19          | Advanced Project Course - AI and Machine Learning | 6*      | A1F   | 4                | E   |
| TDDE45          | Software Design and Construction                  | 6       | A1X   | 4                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| Tddb44          | Compiler Construction                             | 6       | A1X   | 1                | C/E |
| TDDD43          | Advanced Data Models and Databases                | 6*      | A1X   | 2                | E   |
| TDDE19          | Advanced Project Course - AI and Machine Learning | 6*      | A1F   | 4                | E   |

## Semester 10 (Spring 2020)

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

ECV = Elective / Compulsory / Voluntary

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