

# Applied Physics and Electrical Engineering - International, M Sc in Engineering

300 credits

Civilingenjör i teknisk fysik och elektroteknik -  
internationell

6CYYI

Valid from: 2016 Spring semester

**Determined by**

Board of Studies for Electrical  
Engineering, Physics and Mathematics

**Date determined**

2016-01-19

## Entry requirements

### Degree in Swedish

Civilingenjör 300 hp och Teknologie master 120 hp

# Curriculum

## Semester 2 (Spring 2017)

| Course code     | Course name                            | Credits | Level | Timetable module | ECV |
|-----------------|--|---------|-------|------------------|-----|
| <b>Period 1</b> |  |         |       |                  |     |
| TATA42          | Calculus in One Variable 2             | 6       | G1X   | 1                | C   |
| TFYA81          | Oscillations and Mechanical Waves      | 4       | G1X   | 4                | C   |
| THSP22          | Spanish for Engineers I, part 2        | 6*      | G1X   | 3                | C   |
| TSRT04          | Introduction in Matlab                 | 2       | G1X   | 2                | C   |
| TBMT32          | Perspectives on Biomedical Engineering | 2*      | G1X   | 3                | E   |
| TFFM12          | Perspectives on Physics                | 2*      | G1X   | -                | E   |
| TSIT04          | The Language of Mathematics            | 4*      | G1X   | 3                | E   |
| TATA40          | Perspectives on Mathematics            | 1*      | G1X   | -                | V   |
| TGTU35          | Introduction to University Studies     | 2*      | G1X   | -                | V   |
| <b>Period 2</b> |  |         |       |                  |     |
| TATA43          | Calculus in Several Variables          | 8       | G1X   | 2                | C   |
| TFYA84          | Optics - Theory and Application        | 4       | G1X   | 4                | C   |
| THSP22          | Spanish for Engineers I, part 2        | 6*      | G1X   | 1                | C   |
| TBMT32          | Perspectives on Biomedical Engineering | 2*      | G1X   | 3                | E   |
| TFFM12          | Perspectives on Physics                | 2*      | G1X   | -                | E   |
| TSIT04          | The Language of Mathematics            | 4*      | G1X   | 3                | E   |
| TATA40          | Perspectives on Mathematics            | 1*      | G1X   | -                | V   |
| TGTU35          | Introduction to University Studies     | 2*      | G1X   | -                | V   |

### Semester 3 (Autumn 2017)

| Course code     | Course name                            | Credits | Level | Timetable module | ECV |
|-----------------|--|---------|-------|------------------|-----|
| <b>Period 1</b> |  |         |       |                  |     |
| TATA44          | Vector Analysis                        | 4       | G1X   | 1                | C   |
| TFYA76          | Mechanics                              | 6       | G1X   | 3                | C   |
| THSP41          | Spanish for Engineers II, part 1       | 6*      | G1X   | 4                | C   |
| TSTE05          | Electronics and Measurement Technology | 8*      | G1X   | 2                | C   |
| <b>Period 2</b> |  |         |       |                  |     |
| TATA45          | Complex Analysis                       | 6       | G2X   | 1                | C   |
| THSP41          | Spanish for Engineers II, part 1       | 6*      | G1X   | 4                | C   |
| TSTE05          | Electronics and Measurement Technology | 8*      | G1X   | 3                | C   |

### Semester 4 (Spring 2018)

| Course code     | Course name                          | Credits | Level | Timetable module | ECV |
|-----------------|--------------------------------------|---------|-------|------------------|-----|
| <b>Period 1</b> |                                      |         |       |                  |     |
| TAOP07          | Introduction to Optimization         | 6       | G1X   | 3                | C   |
| TMME32          | Mechanics, second course             | 4       | G1X   | 4                | C   |
| TSEA28          | Computer Hardware and Architecture Y | 6*      | G1X   | 2                | C   |
| TGTU63          | Visits to Industry                   | 1*      | G1X   | -                | V   |
| <b>Period 2</b> |                                      |         |       |                  |     |
| TATA57          | Transform Theory                     | 4       | G1X   | 1                | C   |
| TFYA13          | Electromagnetic Field Theory         | 8       | G2X   | 2                | C   |
| THSP42          | Spanish for Engineers II, part 2     | 2       | G1X   | 4                | C   |
| TSEA28          | Computer Hardware and Architecture Y | 6*      | G1X   | 3                | C   |
| TPTE06          | Industrial Placement                 | 6       | G1X   | -                | E   |
| TGTU63          | Visits to Industry                   | 1*      | G1X   | -                | V   |

## Semester 5 (Autumn 2018)

| Course code     | Course name                              | Credits | Level | Timetable module | ECV |
|-----------------|--|---------|-------|------------------|-----|
| <b>Period 1</b> |  |         |       |                  |     |
| TAMS24          | Statistics, First Course                 | 4       | G2X   | 4                | C   |
| TDDC76          | Programming and Data Structures          | 8*      | G2X   | 2                | C   |
| TFYA43          | Nanotechnology                           | 6       | G2X   | 3                | E   |
| <b>Period 2</b> |  |         |       |                  |     |
| TDDC76          | Programming and Data Structures          | 8*      | G2X   | 2                | C   |
| TFYA12          | Thermodynamics and Statistical Mechanics | 6       | G2X   | 1                | C   |
| TSDT18          | Signals and Systems                      | 6       | G2X   | 3                | C   |

## Semester 6 (Spring 2019)

| Course code     | Course name                                | Credits | Level | Timetable module | ECV |
|-----------------|--|---------|-------|------------------|-----|
| <b>Period 1</b> |  |         |       |                  |     |
| TFYA73          | Modern Physics I                           | 4       | G2X   | 3                | C   |
| TSRT12          | Automatic Control                          | 6       | G2X   | 1                | C   |
| TFYA75          | Applied Physics - Bachelor Project         | 16*     | G2X   | 2                | E   |
| TSEA56          | Electronics Engineering - Bachelor Project | 16*     | G2X   | 2                | E   |
| <b>Period 2</b> |  |         |       |                  |     |
| TAMS14          | Probability, first course                  | 4       | G1X   | 4                | C   |
| TEAE01          | Industrial Economics, Basic Course         | 6       | G1X   | 2                | E   |
| TFYA74          | Modern Physics II                          | 4       | G2X   | 1                | E   |
| TFYA75          | Applied Physics - Bachelor Project         | 16*     | G2X   | -                | E   |
| TSEA56          | Electronics Engineering - Bachelor Project | 16*     | G2X   | -                | E   |
| TSKS10          | Signals, Information and Communication     | 4       | G2X   | 3                | E   |

## Semester 7 (Autumn 2019)

| Course code     | Course name               | Credits | Level | Timetable module | ECV |
|-----------------|---------------------------|---------|-------|------------------|-----|
| <b>Period 1</b> |                           |         |       |                  |     |
| THSP18          | Spanish for Engineers III | 6*      | G2X   | -                | C   |
| TAMS32          | Stochastic Processes      | 6       | A1X   | 1                | E   |

| Course code | Course name  | Credits | Level | Timetable module | ECV |
|-------------|--|---------|-------|------------------|-----|
| TAMS46      | Probability Theory, Second Course                    | 6       | A1X   | 3                | E   |
| TAOP34      | Large Scale Optimization                             | 6       | A1X   | 3                | E   |
| TATA34      | Real Analysis, Honours Course                        | 6*      | G2X   | 4                | E   |
| TATA55      | Abstract Algebra                                     | 6*      | G2X   | 3                | E   |
| TATM85      | Functional Analysis                                  | 6*      | A1X   | 2                | E   |
| TBME04      | Anatomy and Physiology                               | 6       | G2X   | 3                | E   |
| TBMI19      | Medical Information Systems                          | 6*      | A1X   | 2                | E   |
| TDDC17      | Artificial Intelligence                              | 6       | G2X   | 3                | E   |
| TDDD38      | Advanced Programming in C++                          | 6*      | A1X   | 2                | E   |
| TDTS06      | Computer Networks                                    | 6       | G2X   | 1                | E   |
| TDTS08      | Advanced Computer Architecture                       | 6       | A1X   | 2                | E   |
| TFFM08      | Experimental Physics                                 | 6*      | A1X   | 1                | E   |
| TFFY54      | Quantum Mechanics                                    | 6       | A1X   | 2                | E   |
| TFKE59      | Fundamentals of Chemistry                            | 6       | G1X   | 2                | E   |
| TFYA18      | Mathematical Methods of Physics                      | 6       | A1X   | 3                | E   |
| TFYA43      | Nanotechnology                                       | 6       | G2X   | 3                | E   |
| TFYA88      | Additive Manufacturing: Tools, Materials and Methods | 6       | A1X   | 3                | E   |
| TFYA88      | Additive Manufacturing: Tools, Materials and Methods | 6       | A1X   | 3                | E   |
| TFYA95      | Principles of Materials Science                      | 6       | A1X   | 2                | E   |
| TFYY67      | Classical Electrodynamics                            | 6*      | A1X   | 3                | 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   |
| 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   |

| Course code     | Course name   | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 2</b> |   |         |       |                  |     |
| THSP18          | Spanish for Engineers III                             | 6*      | G2X   | -                | C   |
| TAMS17          | Statistical Theory, advanced course                   | 6       | A1X   | 1                | E   |
| TAMS22          | Probability Theory and Bayesian Networks              | 6       | A1X   | 1                | E   |
| TAMS41          | Statistical Modelling with Regression Methods         | 6       | A1X   | 3                | E   |
| TAOP04          | Mathematical Optimization                             | 6       | A1X   | 4                | E   |
| TATA34          | Real Analysis, Honours Course                         | 6*      | G2X   | 4                | E   |
| TATA55          | Abstract Algebra                                      | 6*      | G2X   | 3                | E   |
| TATA71          | Ordinary Differential Equations and Dynamical Systems | 6       | G2X   | 2                | E   |
| TATM85          | Functional Analysis                                   | 6*      | A1X   | 1                | 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   |
| TDDD38          | Advanced Programming in C++                           | 6*      | A1X   | -                | E   |
| TEAE05          | Resource Theory                                       | 6       | G1X   | 1                | E   |
| TFFM08          | Experimental Physics                                  | 6*      | A1X   | 1                | E   |
| TFFY70          | Physics of Condensed Matter part I                    | 6       | A1X   | 2                | E   |
| TFYA20          | Surface Physics                                       | 6       | A1X   | 4                | E   |
| TFYA39          | Semiconductor Technology                              | 6       | A1X   | 3                | E   |
| TFYA60          | Astronomy and Geophysics                              | 6       | G1X   | 3                | E   |
| TFYA90          | Computational Physics                                 | 6       | A1X   | 4                | E   |
| TFYY67          | Classical Electrodynamics                             | 6*      | A1X   | 3                | E   |
| TGTU04          | Leadership  | 6       | G2X   | 2                | E   |
| TGTU49          | History of Technology                                 | 6       | G1X   | 3                | E   |
| TKMJ24          | Environmental Engineering                             | 6       | G1N   | 3                | E   |
| TMHL03          | Mechanics of Light Structures                         | 6       | A1X   | 3                | E   |
| TMKM90          | Engineering Materials - Deformation and Fracture      | 6       | A1X   | 2                | E   |
| TMMS07          | Biomechanics  | 6       | A1X   | 4                | E   |
| TMMV18          | Fluid Mechanics                                       | 6       | A1X   | 2                | E   |
| TMMV54          | Computational Heat Transfer                           | 6       | A1X   | 1                | E   |
| TPPE29          | Financial Markets and Instruments                     | 6       | A1X   | 2                | E   |

| Course code | Course name                                     | Credits | Level | Timetable module | ECV |
|-------------|---|---------|-------|------------------|-----|
| 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   |
| 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   |
| TSRT78      | Digital Signal Processing                       | 6       | A1X   | 2                | E   |

*Specialisation: Applied Physics - Materials and Nano Physics*

| Course code     | Course name                        | Credits | Level | Timetable module | ECV |
|-----------------|------------------------------------|---------|-------|------------------|-----|
| <b>Period 1</b> |                                    |         |       |                  |     |
| TFFM08          | Experimental Physics               | 6*      | A1X   | 1                | C   |
| TFFY54          | Quantum Mechanics                  | 6       | A1X   | 2                | C   |
| TFYA43          | Nanotechnology                     | 6       | G2X   | 3                | E   |
| <b>Period 2</b> |                                    |         |       |                  |     |
| TFFM08          | Experimental Physics               | 6*      | A1X   | 1                | C   |
| TFFY70          | Physics of Condensed Matter part I | 6       | A1X   | 2                | C   |
| TFYA20          | Surface Physics                    | 6       | A1X   | 4                | E   |
| TFYA39          | Semiconductor Technology           | 6       | A1X   | 3                | E   |



*Specialisation: Applied physics -Theory, Modelling and Computation*

| Course code     | Course name                        | Credits | Level | Timetable module | ECV |
|-----------------|------------------------------------|---------|-------|------------------|-----|
| <b>Period 1</b> |                                    |         |       |                  |     |
| TFFY54          | Quantum Mechanics                  | 6       | A1X   | 2                | C   |
| TFYA18          | Mathematical Methods of Physics    | 6       | A1X   | 3                | C   |
| TATA75          | Theory of Relativity               | 6*      | A1X   | -                | E   |
| TFYY67          | Classical Electrodynamics          | 6*      | A1X   | 3                | E   |
| <b>Period 2</b> |                                    |         |       |                  |     |
| TFYA90          | Computational Physics              | 6       | A1X   | 4                | C   |
| TATA75          | Theory of Relativity               | 6*      | A1X   | 3                | E   |
| TDDE01          | Machine Learning                   | 6       | A1X   | 1                | E   |
| TFFY70          | Physics of Condensed Matter part I | 6       | A1X   | 2                | E   |
| TFYY67          | Classical Electrodynamics          | 6*      | A1X   | 3                | E   |

*Specialisation: Biomedical Engineering*

| 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                | E   |
| TSDT14          | Signal Theory                 | 6       | A1X   | 1                | E   |
| <b>Period 2</b> |                               |         |       |                  |     |
| TBMT01          | Biomedical Signal Processing  | 6       | A1X   | 1                | C   |
| TBME03          | Biochemistry and Cell Biology | 6       | G2X   | 2                | E   |
| TBMI19          | Medical Information Systems   | 6*      | A1X   | 3                | 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: Control and Information Systems*

| Course code     | Course name                                     | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TSRT62          | Modelling and Simulation                        | 6       | A1X   | 3                | C   |
| TSDT14          | Signal Theory                                   | 6       | A1X   | 1                | E   |
| TSFS09          | Modelling and Control of Engines and Drivelines | 6*      | A1X   | 4                | E   |
| TSKS15          | Detection and Estimation of Signals             | 6       | A1X   | 2                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TSRT78          | Digital Signal Processing                       | 6       | A1X   | 2                | C   |
| TSEA81          | Computer Engineering and Real-time Systems      | 6       | A1X   | 4                | C/E |
| TSFS02          | Vehicle Dynamics and Control                    | 6       | A1X   | 1                | E   |
| TSFS09          | Modelling and Control of Engines and Drivelines | 6*      | A1X   | 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: Engineering Mathematics*

| Course code     | Course name   | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TAMS32          | Stochastic Processes                                  | 6       | A1X   | 1                | C   |
| TATM85          | Functional Analysis                                   | 6*      | A1X   | 2                | C   |
| TAMS46          | Probability Theory, Second Course                     | 6       | A1X   | 3                | E   |
| TAOP34          | Large Scale Optimization                              | 6       | A1X   | 3                | E   |
| TATA55          | Abstract Algebra                                      | 6*      | G2X   | 3                | E   |
| TFYA18          | Mathematical Methods of Physics                       | 6       | A1X   | 3                | E   |
| TSKS15          | Detection and Estimation of Signals                   | 6       | A1X   | 2                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TATM85          | Functional Analysis                                   | 6*      | A1X   | 1                | C   |
| TAOP04          | Mathematical Optimization                             | 6       | A1X   | 4                | E   |
| TATA55          | Abstract Algebra                                      | 6*      | G2X   | 3                | E   |
| TATA71          | Ordinary Differential Equations and Dynamical Systems | 6       | G2X   | 2                | E   |

*Specialisation: Financial Mathematics*

| Course code     | Course name                       | Credits | Level | Timetable module | ECV |
|-----------------|-----------------------------------|---------|-------|------------------|-----|
| <b>Period 1</b> |                                   |         |       |                  |     |
| TAMS32          | Stochastic Processes              | 6       | A1X   | 1                | C   |
| TPPE17          | Corporate Finance                 | 6       | G2X   | 4                | C   |
| TAMS46          | Probability Theory, Second Course | 6       | A1X   | 3                | E   |
| TATM85          | Functional Analysis               | 6*      | A1X   | 2                | E   |
| <b>Period 2</b> |                                   |         |       |                  |     |
| TAOP04          | Mathematical Optimization         | 6       | A1X   | 4                | E   |
| TATM85          | Functional Analysis               | 6*      | A1X   | 1                | E   |
| TPPE29          | Financial Markets and Instruments | 6       | A1X   | 2                | E   |

*Specialisation: Mechanics and Control*

| Course code     | Course name                                     | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TMMV11          | Fluid Mechanics and Heat Transfer               | 6       | G2X   | 2                | E   |
| TSFS09          | Modelling and Control of Engines and Drivelines | 6*      | A1X   | 4                | E   |
| TSRT62          | Modelling and Simulation                        | 6       | A1X   | 3                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TSEA81          | Computer Engineering and Real-time Systems      | 6       | A1X   | 4                | C   |
| TSFS02          | Vehicle Dynamics and Control                    | 6       | A1X   | 1                | E   |
| TSFS09          | Modelling and Control of Engines and Drivelines | 6*      | A1X   | 3                | E   |
| TSRT78          | Digital Signal Processing                       | 6       | A1X   | 2                | 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                | C   |
| <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> |  |         |       |                  |     |
| TSEA81          | Computer Engineering and Real-time Systems | 6       | A1X   | 4                | E   |
| TSEK37          | Analog CMOS Integrated Circuits            | 6       | A1X   | 1                | E   |
| TSKS01          | Digital Communication                      | 6*      | A1X   | 4                | E   |

**Semester 8 (Spring 2020)**

| Course code     | Course name                                      | Credits | Level | Timetable module | ECV |
|-----------------|--|---------|-------|------------------|-----|
| <b>Period 1</b> |  |         |       |                  |     |
| TAMS29          | Stochastic Processes Applied to Financial Models | 6       | A1X   | 3                | E   |
| TANA15          | Numerical Linear Algebra                         | 6       | A1X   | 1                | E   |
| TATA27          | Partial Differential Equations                   | 6*      | A1X   | 2                | E   |
| TATA53          | Linear Algebra, Honours Course                   | 6*      | G2X   | -                | E   |
| TATA54          | Number Theory                                    | 6*      | G2X   | 3                | E   |
| TATA66          | Fourier and Wavelet Analysis                     | 6*      | A1X   | 4                | E   |

| Course code | Course name                                       | Credits | Level | Timetable module | ECV |
|-------------|---|---------|-------|------------------|-----|
| TATA78      | Complex Analysis, second course                   | 6*      | A1X   | 2                | E   |
| 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       | A1X   | 3                | E   |
| TBMT09      | Physiological Pressures and Flows                 | 6       | A1X   | 1                | E   |
| TDDD76      | Software Engineering Project                      | 8*      | G2X   | 2                | E   |
| TDDE09      | Natural Language Processing                       | 6       | A1X   | 2                | E   |
| TDTS07      | System Design and Methodology                     | 6       | A1X   | 1                | E   |
| TEAE04      | Industrial Economics and Organisation             | 6       | G1X   | 2                | E   |
| TEIO94      | Entrepreneurship and Idea Development             | 6*      | G2X   | 4                | E   |
| TFFM40      | Analytical Methods in Materials Science           | 6*      | A1X   | 1                | E   |
| TFYA21      | Physical Metallurgy                               | 6       | A1X   | 3                | E   |
| TFYA25      | Physics of Condensed Matter part II               | 6       | A1X   | 2                | E   |
| TFYA36      | Chaos and Non-Linear Phenomena                    | 6*      | A1X   | 1                | E   |
| TFYA71      | Cosmology   | 6*      | A1X   | 1                | E   |
| TFYA85      | Alternative Energy Sources and their 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   |
| TKMJ15      | Environmental Management Strategies               | 6       | G1F   | 3                | E   |
| TMMS30      | Multi Body Dynamics and Robotics                  | 6       | A1X   | 1                | E   |
| TNM048      | Information Visualisation                         | 6       | A1X   | 3                | E   |
| TPPE32      | Financial Risk Management                         | 6       | A1X   | 2                | 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   |
| TSFS04      | Electrical Drives                                 | 6       | G2X   | 4                | E   |
| TSKS13      | Wireless Communications                           | 6       | A1X   | 4                | E   |

| Course code     | Course name   | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| 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   |
| TSTE93          | Analog Circuits   | 6*      | G2X   | 1                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TANA31          | Computational Methods for Ordinary and Partial Differential Equations | 6       | A1X   | 2                | E   |
| TAOP24          | Optimization, Advanced Course   | 6       | G2X   | 1                | E   |
| TAOP87          | Applied Optimization Project Course                                   | 6       | A1X   | 3                | E   |
| TATA27          | Partial Differential Equations  | 6*      | A1X   | 4                | E   |
| TATA53          | Linear Algebra, Honours Course  | 6*      | G2X   | -                | E   |
| TATA54          | Number Theory   | 6*      | G2X   | 1                | E   |
| TATA66          | Fourier and Wavelet Analysis  | 6*      | A1X   | 2                | E   |
| TATA78          | Complex Analysis, second course                                       | 6*      | A1X   | 3                | E   |
| TBME08          | Biomedical Modeling and Simulation                                    | 6       | A1X   | 3                | E   |
| TBMT26          | Technology in Intensive Care and Surgery                              | 6       | A1X   | 1                | E   |
| TDDC78          | Programming of Parallel Computers - Methods and Tools                 | 6       | A1X   | 3                | E   |
| TDDD12          | Database Technology   | 6       | G2X   | 4                | E   |
| TDDD76          | Software Engineering Project  | 8*      | G2X   | 2                | E   |
| TEAE13          | Civil and Commercial Law  | 6       | G1X   | 2                | E   |
| TEIE44          | Intellectual Property Rights  | 4       | G1X   | 1                | E   |
| TEIO94          | Entrepreneurship and Idea Development                                 | 6*      | G2X   | 4                | E   |
| TFM40           | Analytical Methods in Materials Science                               | 6*      | A1X   | 1                | E   |
| TFMT19          | Chemical Sensor Systems   | 6       | A1X   | 4                | E   |
| TFYA19          | Quantum Computers   | 6       | A1X   | 4                | E   |
| TFYA36          | Chaos and Non-Linear Phenomena  | 6*      | A1X   | 2                | E   |
| TFYA38          | Optoelectronics   | 6       | A1X   | 3                | E   |
| TFYA41          | Thin Film Physics   | 6       | A1X   | 2                | E   |
| TFYA71          | Cosmology   | 6*      | A1X   | 2                | E   |
| TGTU95          | Philosophy of Science and Technology                                  | 6       | G1X   | 4                | E   |
| TKMJ29          | Resource Efficient Products   | 6       | A1N   | 1                | E   |

| Course code | Course name                                     | Credits | Level | Timetable module | ECV |
|-------------|---|---------|-------|------------------|-----|
| TNM079      | Modelling and Animation                         | 6       | A1X   | 2                | E   |
| TPPE33      | Portfolio Management                            | 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   |
| TSEK12      | Test of Analog/Mixed Signal Integrated Circuits | 6       | A1X   | 1                | E   |
| TSFS03      | Vehicle Propulsion Systems                      | 6       | A1X   | 3                | E   |
| TSFS06      | Diagnosis and Supervision                       | 6       | A1X   | 1                | E   |
| TSFS11      | Electrical and Energy Technology                | 6       | G2X   | 4                | E   |
| TSKS14      | Multiple Antenna Communications                 | 6       | A1X   | 3                | 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   |
| TSTE93      | Analog Circuits                                 | 6*      | G2X   | 1                | E   |

*Specialisation: Applied Physics - Materials and Nano Physics*

| Course code     | Course name                             | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TFFM40          | Analytical Methods in Materials Science | 6*      | A1X   | 1                | C   |
| TFYA21          | Physical Metallurgy                     | 6       | A1X   | 3                | E   |
| TFYA25          | Physics of Condensed Matter part II     | 6       | A1X   | 2                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TFFM40          | Analytical Methods in Materials Science | 6*      | A1X   | 1                | C   |
| TFMT19          | Chemical Sensor Systems                 | 6       | A1X   | 4                | E   |
| TFYA38          | Optoelectronics                         | 6       | A1X   | 3                | E   |
| TFYA41          | Thin Film Physics                       | 6       | A1X   | 2                | E   |



*Specialisation: Applied physics -Theory, Modelling and Computation*

| Course code     | Course name                          | Credits | Level | Timetable module | ECV |
|-----------------|--------------------------------------|---------|-------|------------------|-----|
| <b>Period 1</b> |                                      |         |       |                  |     |
| TATA27          | Partial Differential Equations       | 6*      | A1X   | 2                | E   |
| TBMI26          | Neural Networks and Learning Systems | 6       | A1X   | 2                | E   |
| TFYA21          | Physical Metallurgy                  | 6       | A1X   | 3                | E   |
| TFYA25          | Physics of Condensed Matter part II  | 6       | A1X   | 2                | E   |
| TFYA36          | Chaos and Non-Linear Phenomena       | 6*      | A1X   | 1                | E   |
| TFYA71          | Cosmology                            | 6*      | A1X   | 1                | E   |
| TSBK07          | Computer Graphics                    | 6*      | A1X   | 4                | E   |
| <b>Period 2</b> |                                      |         |       |                  |     |
| TATA27          | Partial Differential Equations       | 6*      | A1X   | 4                | E   |
| TFYA19          | Quantum Computers                    | 6       | A1X   | 4                | E   |
| TFYA36          | Chaos and Non-Linear Phenomena       | 6*      | A1X   | 2                | E   |
| TFYA71          | Cosmology                            | 6*      | A1X   | 2                | E   |
| TSBK07          | Computer Graphics                    | 6*      | A1X   | 1                | E   |

*Specialisation: Biomedical Engineering*

| Course code     | Course name                               | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TBMT02          | Medical Imaging                           | 6       | A1X   | 3                | C   |
| TBMT09          | Physiological Pressures and Flows         | 6       | A1X   | 1                | C   |
| 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   |
| <b>Period 2</b> |   |         |       |                  |     |
| TBME08          | Biomedical Modeling and Simulation        | 6       | A1X   | 3                | E   |
| TBMT26          | Technology in Intensive Care and Surgery  | 6       | A1X   | 1                | E   |

*Specialisation: Communication*

| Course code     | Course name                          | Credits | Level | Timetable module | ECV |
|-----------------|--------------------------------------|---------|-------|------------------|-----|
| <b>Period 1</b> |                                      |         |       |                  |     |
| TBMI26          | Neural Networks and Learning Systems | 6       | A1X   | 2                | E   |
| TSBK08          | Data Compression                     | 6       | A1X   | 2                | E   |
| TSEK38          | Radio Frequency Transceiver Design   | 6       | A1X   | 2                | E   |
| TSKS13          | Wireless Communications              | 6       | A1X   | 4                | E   |
| <b>Period 2</b> |                                      |         |       |                  |     |
| TFYA19          | Quantum Computers                    | 6       | A1X   | 4                | E   |
| TSBK02          | Image and Audio Coding               | 6       | A1X   | 4                | E   |
| TSKS14          | Multiple Antenna Communications      | 6       | A1X   | 3                | E   |
| TSKS16          | Signal Processing for Communications | 6       | A1X   | 1                | E   |

*Specialisation: Control and Information Systems*

| Course code     | Course name   | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TSRT07          | Industrial Control Systems                            | 6       | A1X   | 2                | C   |
| TSRT09          | Control Theory  | 6       | A1X   | 3                | C   |
| <b>Period 2</b> |   |         |       |                  |     |
| TDDD12          | Database Technology                                   | 6       | G2X   | 4                | C/E |
| TDDC78          | Programming of Parallel Computers - Methods and Tools | 6       | A1X   | 3                | E   |
| TSFS06          | Diagnosis and Supervision                             | 6       | A1X   | 1                | E   |
| TSRT14          | Sensor Fusion   | 6       | A1X   | 2                | E   |

*Specialisation: Electronics*

| Course code     | Course name                                     | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TSTE08          | Analog and Discrete-Time Integrated Circuits    | 6       | A1X   | 3                | C   |
| TSEK06          | VLSI Design                                     | 12*     | A1X   | 4                | C/E |
| TSEK38          | Radio Frequency Transceiver Design              | 6       | A1X   | 2                | 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                | C/E |
| TSEK12          | Test of Analog/Mixed Signal Integrated Circuits | 6       | A1X   | 1                | 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: Engineering Mathematics*

| Course code     | Course name                    | Credits | Level | Timetable module | ECV |
|-----------------|--------------------------------|---------|-------|------------------|-----|
| <b>Period 1</b> |                                |         |       |                  |     |
| TANA15          | Numerical Linear Algebra       | 6       | A1X   | 1                | C   |
| TATA27          | Partial Differential Equations | 6*      | A1X   | 2                | E   |
| TATA66          | Fourier and Wavelet Analysis   | 6*      | A1X   | 4                | E   |
| TSRT09          | Control Theory                 | 6       | A1X   | 3                | E   |
| <b>Period 2</b> |                                |         |       |                  |     |
| TAOP24          | Optimization, Advanced Course  | 6       | G2X   | 1                | C   |
| TATA27          | Partial Differential Equations | 6*      | A1X   | 4                | E   |
| TATA66          | Fourier and Wavelet Analysis   | 6*      | A1X   | 2                | E   |
| TFYA19          | Quantum Computers              | 6       | A1X   | 4                | E   |

*Specialisation: Financial Mathematics*

| Course code     | Course name                                      | Credits | Level | Timetable module | ECV |
|-----------------|--|---------|-------|------------------|-----|
| <b>Period 1</b> |  |         |       |                  |     |
| TAMS29          | Stochastic Processes Applied to Financial Models | 6       | A1X   | 3                | C   |
| TANA15          | Numerical Linear Algebra                         | 6       | A1X   | 1                | C   |
| TPPE32          | Financial Risk Management                        | 6       | A1X   | 2                | E   |
| <b>Period 2</b> |  |         |       |                  |     |
| TAOP24          | Optimization, Advanced Course                    | 6       | G2X   | 1                | E   |
| TDDD12          | Database Technology                              | 6       | G2X   | 4                | E   |
| TPPE33          | Portfolio Management                             | 6       | A1X   | 2                | E   |

*Specialisation: Mechanics and Control*

| Course code     | Course name                      | Credits | Level | Timetable module | ECV |
|-----------------|----------------------------------|---------|-------|------------------|-----|
| <b>Period 1</b> |                                  |         |       |                  |     |
| TMMS30          | Multi Body Dynamics and Robotics | 6       | A1X   | 1                | E   |
| TSFS04          | Electrical Drives                | 6       | G2X   | 4                | E   |
| TSRT07          | Industrial Control Systems       | 6       | A1X   | 2                | E   |
| TSRT09          | Control Theory                   | 6       | A1X   | 3                | E   |
| <b>Period 2</b> |                                  |         |       |                  |     |
| TSFS03          | Vehicle Propulsion Systems       | 6       | A1X   | 3                | E   |
| TSFS06          | Diagnosis and Supervision        | 6       | A1X   | 1                | E   |
| TSRT14          | Sensor Fusion                    | 6       | A1X   | 2                | 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       | A1X   | 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   |
| TSEK06          | VLSI Design                                  | 12*     | A1X   | 4                | C/E |
| TSBK07          | Computer Graphics                            | 6*      | A1X   | 4                | E   |
| TSTE08          | Analog and Discrete-Time Integrated Circuits | 6       | A1X   | 3                | E   |
| <b>Period 2</b> |  |         |       |                  |     |
| TSEK06          | VLSI Design                                  | 12*     | A1X   | 4                | C/E |
| TEIE44          | Intellectual Property Rights                 | 4       | G1X   | 1                | E   |
| TSBK07          | Computer Graphics                            | 6*      | A1X   | 1                | 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   |

**Semester 9 (Autumn 2020)**

| Course code     | Course name  | Credits | Level | Timetable module | ECV |
|-----------------|--|---------|-------|------------------|-----|
| <b>Period 1</b> |  |         |       |                  |     |
| TAMS39          | Multivariate Statistical Methods   | 6       | A1X   | 4                | E   |
| TATA32          | Discrete Mathematics   | 8*      | G1X   | 3                | E   |
| TATA62          | Project - Applied Mathematics  | 12*     | A1X   | 4                | E   |
| TATA75          | Theory of Relativity   | 6*      | A1X   | -                | E   |
| TBMT14          | Biomedical Engineering - Project Course                                    | 12*     | A1X   | 4                | E   |
| TBMT57          | Biomedical Optics  | 6       | A1X   | 1                | E   |
| TDDC88          | Software Engineering   | 12*     | A1X   | 1                | E   |
| TFKE59          | Fundamentals of Chemistry  | 6       | G1X   | 2                | E   |
| TFYA17          | Advanced Project Work in Applied Physics                                   | 6*      | A1X   | -                | E   |
| TFYA40          | Analytical Mechanics   | 6       | A1X   | 2                | E   |
| TFYA91          | Quantum Structures: Photonics and Transport                                | 6       | A1X   | 1                | E   |
| TFYA92          | Project Course in Applied Physics, CDIO                                    | 12*     | A1X   | 4                | E   |
| TFYY67          | Classical Electrodynamics  | 6*      | A1X   | 3                | E   |
| TMES09          | Industrial Energy Systems  | 6       | A1X   | 2                | E   |
| TMMS11          | Models of Mechanics  | 6*      | A1X   | 3                | E   |
| TMMV01          | Aerodynamics   | 6       | A1X   | 2                | E   |
| TNE071          | Microwave Engineering  | 6       | A1X   | 1                | E   |
| TNE089          | Electromagnetic Compatibility (EMC) and Printed Circuit Board (PCB) Design | 6*      | A1X   | 2                | E   |
| TNM067          | Scientific Visualization   | 6       | A1X   | 3                | E   |
| TPPE53          | Financial Valuation Methodology  | 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   |
| 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   |
| TSIT03          | Cryptology   | 6       | A1X   | 2                | E   |

| Course code     | Course name  | Credits | Level | Timetable module | ECV |
|-----------------|--|---------|-------|------------------|-----|
| TSKS12          | Modern Channel Coding, Inference and Learning                              | 6       | A1X   | 1                | E   |
| TSKS23          | Project Course in Signal Processing, Communications and Networking, CDIO   | 12*     | A1X   | 4                | E   |
| 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> |  |         |       |                  |     |
| TATA32          | Discrete Mathematics   | 8*      | G1X   | 1                | E   |
| TATA62          | Project - Applied Mathematics  | 12*     | A1X   | 4                | E   |
| TATA75          | Theory of Relativity   | 6*      | A1X   | 3                | E   |
| TBMI02          | Medical Image Analysis   | 6       | A1X   | 1                | E   |
| TBMT14          | Biomedical Engineering - Project Course                                    | 12*     | A1X   | 4                | E   |
| TDDC88          | Software Engineering   | 12*     | A1X   | 1                | E   |
| TDDD49          | Programming in C# and .NET Framework                                       | 4       | G2X   | 3                | E   |
| TDDD56          | Multicore and GPU Programming  | 6       | A1X   | 2                | E   |
| TFYA17          | Advanced Project Work in Applied Physics                                   | 6*      | A1X   | -                | E   |
| TFYA27          | Elementary Particle Physics  | 6       | A1X   | 2                | E   |
| TFYA28          | Quantum Dynamics   | 6       | A1X   | 1                | E   |
| TFYA57          | Relativistic Quantum Mechanics   | 6       | A1X   | 2                | E   |
| TFYA92          | Project Course in Applied Physics, CDIO                                    | 12*     | A1X   | 4                | E   |
| TFYY54          | Nano Physics   | 6       | A1X   | 3                | E   |
| TFYY67          | Classical Electrodynamics  | 6*      | A1X   | 3                | E   |
| TMME50          | Flight Mechanics   | 6       | A1X   | 2                | E   |
| TMMS11          | Models of Mechanics  | 6*      | A1X   | 3                | E   |
| TNE083          | Antenna Theory   | 6       | A1X   | 2                | E   |
| TNE089          | Electromagnetic Compatibility (EMC) and Printed Circuit Board (PCB) Design | 6*      | A1X   | 1                | E   |
| TNM086          | Virtual Reality Techniques   | 6       | A1X   | 2                | E   |
| TPPE61          | Financial Optimization   | 6       | A1X   | 2                | E   |
| TSBB11          | Images and Graphics, Project Course CDIO                                   | 12*     | A1X   | 4                | E   |
| TSBK03          | Advanced Game Programming  | 6*      | A1X   | -                | E   |
| TSEA26          | Design of Embedded DSP Processor   | 6       | A1X   | 2                | E   |

| Course code | Course name  | Credits | Level | Timetable module | ECV |
|-------------|--|---------|-------|------------------|-----|
| TSEA44      | Computer Hardware - a System on Chip                                     | 6       | A1X   | 1                | E   |
| TSEA84      | Digital Design Project   | 6*      | A1X   | 3                | E   |
| TSKS23      | Project Course in Signal Processing, Communications and Networking, CDIO | 12*     | A1X   | 4                | E   |
| TSRT08      | Optimal Control  | 6       | A1X   | 3                | E   |
| TSRT10      | Automatic Control - Project Course                                       | 12*     | A1X   | 4                | 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: Applied Physics - Materials and Nano Physics*

| Course code     | Course name                                 | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TFYA92          | Project Course in Applied Physics, CDIO     | 12*     | A1X   | 4                | C   |
| TFYA17          | Advanced Project Work in Applied Physics    | 6*      | A1X   | -                | E   |
| TFYA40          | Analytical Mechanics                        | 6       | A1X   | 2                | E   |
| TFYA91          | Quantum Structures: Photonics and Transport | 6       | A1X   | 1                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TFYA92          | Project Course in Applied Physics, CDIO     | 12*     | A1X   | 4                | C   |
| TFYY54          | Nano Physics                                | 6       | A1X   | 3                | C   |
| TFYA17          | Advanced Project Work in Applied Physics    | 6*      | A1X   | -                | E   |



*Specialisation: Applied physics -Theory, Modelling and Computation*

| Course code     | Course name                                 | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TFYA40          | Analytical Mechanics                        | 6       | A1X   | 2                | C   |
| TFYA92          | Project Course in Applied Physics, CDIO     | 12*     | A1X   | 4                | C   |
| TFYA17          | Advanced Project Work in Applied Physics    | 6*      | A1X   | -                | E   |
| TFYA91          | Quantum Structures: Photonics and Transport | 6       | A1X   | 1                | E   |
| TFYY67          | Classical Electrodynamics                   | 6*      | A1X   | 3                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TFYA92          | Project Course in Applied Physics, CDIO     | 12*     | A1X   | 4                | C   |
| TFYA17          | Advanced Project Work in Applied Physics    | 6*      | A1X   | -                | E   |
| TFYA27          | Elementary Particle Physics                 | 6       | A1X   | 2                | E   |
| TFYA28          | Quantum Dynamics                            | 6       | A1X   | 1                | E   |
| TFYA57          | Relativistic Quantum Mechanics              | 6       | A1X   | 2                | E   |
| TFYY67          | Classical Electrodynamics                   | 6*      | A1X   | 3                | E   |

*Specialisation: Biomedical Engineering*

| Course code     | Course name                             | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TBMT14          | Biomedical Engineering - Project Course | 12*     | A1X   | 4                | C   |
| TAMS39          | Multivariate Statistical Methods        | 6       | A1X   | 4                | E   |
| TATM38          | Mathematical Models in Biology          | 6       | A1X   | 3                | E   |
| TBMT57          | Biomedical Optics                       | 6       | A1X   | 1                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TBMT14          | Biomedical Engineering - Project Course | 12*     | A1X   | 4                | C   |
| TBMI02          | Medical Image Analysis                  | 6       | A1X   | 1                | E   |

*Specialisation: Communication*

| Course code     | Course name  | Credits | Level | Timetable module | ECV |
|-----------------|--|---------|-------|------------------|-----|
| <b>Period 1</b> |  |         |       |                  |     |
| TSIN01          | Information Networks   | 6       | A1X   | 3                | C   |
| TSKS23          | Project Course in Signal Processing, Communications and Networking, CDIO | 12*     | A1X   | 4                | C   |
| TSEK03          | Radio Frequency Integrated Circuits                                      | 6       | A1X   | 2                | E   |
| TSIT03          | Cryptology   | 6       | A1X   | 2                | E   |
| TSKS12          | Modern Channel Coding, Inference and Learning                            | 6       | A1X   | 1                | E   |
| <b>Period 2</b> |  |         |       |                  |     |
| TSKS23          | Project Course in Signal Processing, Communications and Networking, CDIO | 12*     | A1X   | 4                | C   |

*Specialisation: Control and Information Systems*

| Course code     | Course name   | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TATA62          | Project - Applied Mathematics                                 | 12*     | A1X   | 4                | C/E |
| TSRT10          | Automatic Control - Project Course                            | 12*     | A1X   | 4                | C/E |
| TDTS06          | Computer Networks   | 6       | G2X   | 1                | E   |
| TSFS12          | Autonomous Vehicles - Planning, Control, and Learning Systems | 6       | A1X   | 1                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TATA62          | Project - Applied Mathematics                                 | 12*     | A1X   | 4                | C/E |
| TSRT10          | Automatic Control - Project Course                            | 12*     | A1X   | 4                | C/E |
| TSRT08          | Optimal Control   | 6       | A1X   | 3                | E   |

*Specialisation: Electronics*

| Course code     | Course name  | Credits | Level | Timetable module | ECV |
|-----------------|--|---------|-------|------------------|-----|
| <b>Period 1</b> |  |         |       |                  |     |
| TSTE17          | System Design  | 12*     | A1F   | 4                | C/E |
| TNE071          | Microwave Engineering  | 6       | A1X   | 1                | E   |
| TNE089          | Electromagnetic Compatibility (EMC) and Printed Circuit Board (PCB) Design | 6*      | A1X   | 2                | 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   |
| TSTE25          | Power Electronics  | 6       | A1X   | 3                | E   |
| <b>Period 2</b> |  |         |       |                  |     |
| TSTE17          | System Design  | 12*     | A1F   | 4                | C/E |
| TNE083          | Antenna Theory   | 6       | A1X   | 2                | E   |
| TNE089          | Electromagnetic Compatibility (EMC) and Printed Circuit Board (PCB) Design | 6*      | A1X   | 1                | E   |
| TSEA26          | Design of Embedded DSP Processor   | 6       | A1X   | 2                | E   |
| TSEA44          | Computer Hardware - a System on Chip                                       | 6       | A1X   | 1                | E   |
| TSEA84          | Digital Design Project   | 6*      | A1X   | 3                | E   |
| TSTE26          | Powergrid and Technology for Renewable Production                          | 6       | A1X   | 3                | E   |
| TSTE85          | Low Power Electronics  | 6       | A1X   | 2                | E   |

*Specialisation: Engineering Mathematics*

| Course code     | Course name                        | Credits | Level | Timetable module | ECV |
|-----------------|------------------------------------|---------|-------|------------------|-----|
| <b>Period 1</b> |                                    |         |       |                  |     |
| TATA62          | Project - Applied Mathematics      | 12*     | A1X   | 4                | C/E |
| TSRT10          | Automatic Control - Project Course | 12*     | A1X   | 4                | C/E |
| TATA75          | Theory of Relativity               | 6*      | A1X   | -                | E   |
| TATM38          | Mathematical Models in Biology     | 6       | A1X   | 3                | E   |
| TDDD38          | Advanced Programming in C++        | 6*      | A1X   | 2                | E   |
| TFYA40          | Analytical Mechanics               | 6       | A1X   | 2                | E   |
| TMMS11          | Models of Mechanics                | 6*      | A1X   | 3                | E   |
| TPPE53          | Financial Valuation Methodology    | 6       | A1X   | 2                | E   |
| <b>Period 2</b> |                                    |         |       |                  |     |
| TATA62          | Project - Applied Mathematics      | 12*     | A1X   | 4                | C/E |
| TSRT10          | Automatic Control - Project Course | 12*     | A1X   | 4                | C/E |
| TATA75          | Theory of Relativity               | 6*      | A1X   | 3                | E   |
| TDDD38          | Advanced Programming in C++        | 6*      | A1X   | -                | E   |
| TFYA57          | Relativistic Quantum Mechanics     | 6       | A1X   | 2                | E   |
| TMMS11          | Models of Mechanics                | 6*      | A1X   | 3                | E   |
| TPPE61          | Financial Optimization             | 6       | A1X   | 2                | E   |

*Specialisation: Financial Mathematics*

| Course code     | Course name                     | Credits | Level | Timetable module | ECV |
|-----------------|---------------------------------|---------|-------|------------------|-----|
| <b>Period 1</b> |                                 |         |       |                  |     |
| TATA62          | Project - Applied Mathematics   | 12*     | A1X   | 4                | C   |
| TPPE53          | Financial Valuation Methodology | 6       | A1X   | 2                | C   |
| <b>Period 2</b> |                                 |         |       |                  |     |
| TATA62          | Project - Applied Mathematics   | 12*     | A1X   | 4                | C   |
| TPPE61          | Financial Optimization          | 6       | A1X   | 2                | C   |

*Specialisation: Mechanics and Control*

| Course code     | Course name   | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TSRT10          | Automatic Control - Project Course                            | 12*     | A1X   | 4                | C   |
| TFYA40          | Analytical Mechanics  | 6       | A1X   | 2                | E   |
| TSFS12          | Autonomous Vehicles - Planning, Control, and Learning Systems | 6       | A1X   | 1                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TSRT10          | Automatic Control - Project Course                            | 12*     | A1X   | 4                | C   |
| TMME50          | Flight Mechanics  | 6       | A1X   | 2                | E   |
| TSRT08          | Optimal Control   | 6       | A1X   | 3                | E   |

*Specialisation: Signal and Image Processing*

| Course code     | Course name                              | Credits | Level | Timetable module | ECV |
|-----------------|--|---------|-------|------------------|-----|
| <b>Period 1</b> |  |         |       |                  |     |
| TSBB11          | Images and Graphics, Project Course CDIO | 12*     | A1X   | 4                | C   |
| TNM067          | Scientific Visualization                 | 6       | A1X   | 3                | 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> |  |         |       |                  |     |
| TSBB11          | Images and Graphics, Project Course CDIO | 12*     | A1X   | 4                | C   |
| 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   |
| TSBK03          | Advanced Game Programming                | 6*      | A1X   | -                | E   |

*Specialisation: System-on-Chip*

| Course code     | Course name                          | Credits | Level | Timetable module | ECV |
|-----------------|--------------------------------------|---------|-------|------------------|-----|
| <b>Period 1</b> |                                      |         |       |                  |     |
| TSTE17          | System Design                        | 12*     | A1F   | 4                | C/E |
| TDTS08          | Advanced Computer Architecture       | 6       | A1X   | 2                | E   |
| TSEA84          | Digital Design Project               | 6*      | A1X   | 3                | E   |
| TSEK11          | Evaluation of an Integrated Circuit  | 2       | A1X   | 4                | E   |
| <b>Period 2</b> |                                      |         |       |                  |     |
| TSEA26          | Design of Embedded DSP Processor     | 6       | A1X   | 2                | C   |
| TSTE17          | System Design                        | 12*     | A1F   | 4                | C/E |
| TDDD56          | Multicore and GPU Programming        | 6       | A1X   | 2                | E   |
| TSEA44          | Computer Hardware - a System on Chip | 6       | A1X   | 1                | E   |
| TSEA84          | Digital Design Project               | 6*      | A1X   | 3                | E   |
| TSIT02          | Computer Security                    | 6       | G2X   | 2                | E   |
| TSTE85          | Low Power Electronics                | 6       | A1X   | 2                | E   |

**Semester 10 (Spring 2021)**

| 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