

300 credits

Civilingenjör i medicinsk teknik

6CMED

Valid from:

**Determined by**

**Date determined**

## Entry requirements

### Degree in Swedish

Civilingenjör 300 hp och Teknologie master 120 hp

# Curriculum

## Semester 8 (Spring 2017)

| Course code     | Course name                                       | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TAOP07          | Introduction to Optimization                      | 6       | G1F   | 3                | E   |
| TBMI26          | Neural Networks and Learning Systems              | 6       | A1N   | 2                | E   |
| TBMT02          | Medical Imaging                                   | 6       | A1F   | 3                | E   |
| TBMT09          | Physiological Pressures and Flows                 | 6       | A1N   | 1                | E   |
| TEIO20          | Entrepreneurship and New Business Development     | 6*      | G2X   | 4                | E   |
| TFFM40          | Analytical Methods in Materials Science           | 6*      | A1X   | 1                | E   |
| TFTB34          | Biosensor Technology                              | 6       | A1X   | 2                | E   |
| TFYA21          | Physical Metallurgy                               | 6       | A1F   | 3                | E   |
| TFYA85          | Alternative Energy Sources and their Applications | 6       | G2X   | 4                | E   |
| TGTU01          | Technology and Ethics                             | 6       | G1X   | 1                | E   |
| THEN18          | English   | 6*      | G1X   | 4                | E   |
| THFR05          | Communicative French                              | 6*      | G1X   | 4                | E   |
| THSP05          | Spanish   | 6*      | G1X   | 4                | E   |
| THTY05          | German  | 6*      | G1X   | 4                | E   |
| TKMJ15          | Environmental Management Strategies               | 6       | G1X   | 3                | E   |
| TSBB15          | Computer Vision                                   | 12*     | A1X   | 1                | E   |
| TSBK07          | Computer Graphics                                 | 6*      | A1X   | 4                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TBME08          | Biomedical Modeling and Simulation                | 6       | A1N   | 3                | E   |
| TBMT26          | Technology in Intensive Care and Surgery          | 6       | A1N   | 1                | E   |
| TDDD74          | Databases for Bioinformatics                      | 6       | G2X   | 4                | E   |
| TEIO20          | Entrepreneurship and New Business Development     | 6*      | G2X   | 4                | E   |
| TFFM40          | Analytical Methods in Materials Science           | 6*      | A1X   | 1                | E   |
| TFKE52          | Fundamentals of Chemistry                         | 6       | G1X   | 2                | E   |
| TFMT19          | Chemical Sensor Systems                           | 6       | A1X   | 4                | E   |
| THEN18          | English   | 6*      | G1X   | 4                | E   |

| Course code | Course name            | Credits | Level | Timetable module | ECV |
|-------------|------------------------|---------|-------|------------------|-----|
| THFR05      | Communicative French   | 6*      | G1X   | 4                | E   |
| THSP05      | Spanish                | 6*      | G1X   | 4                | E   |
| THTY05      | German                 | 6*      | G1X   | 4                | E   |
| TSBB15      | Computer Vision        | 12*     | A1X   | 3                | E   |
| TSBK02      | Image and Audio Coding | 6       | A1X   | 4                | E   |
| TSBK07      | Computer Graphics      | 6*      | A1X   | 1                | E   |

*Specialisation: Biomedical Imaging and Visualization*

| Course code     | Course name                          | Credits | Level | Timetable module | ECV |
|-----------------|--------------------------------------|---------|-------|------------------|-----|
| <b>Period 1</b> |                                      |         |       |                  |     |
| TBMT02          | Medical Imaging                      | 6       | A1F   | 3                | C   |
| TSBK07          | Computer Graphics                    | 6*      | A1X   | 4                | C   |
| TAOP07          | Introduction to Optimization         | 6       | G1F   | 3                | E   |
| TBMI26          | Neural Networks and Learning Systems | 6       | A1N   | 2                | E   |
| TBMT09          | Physiological Pressures and Flows    | 6       | A1N   | 1                | E   |
| TSBB15          | Computer Vision                      | 12*     | A1X   | 1                | E   |
| <b>Period 2</b> |                                      |         |       |                  |     |
| TSBK07          | Computer Graphics                    | 6*      | A1X   | 1                | C   |
| TBME08          | Biomedical Modeling and Simulation   | 6       | A1N   | 3                | E   |
| TSBB15          | Computer Vision                      | 12*     | A1X   | 3                | E   |
| TSBK02          | Image and Audio Coding               | 6       | A1X   | 4                | E   |

*Specialisation: Biomedical Materials*

| 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       | A1F   | 3                | C   |
| TBMT09          | Physiological Pressures and Flows        | 6       | A1N   | 1                | E   |
| TFTB34          | Biosensor Technology                     | 6       | A1X   | 2                | E   |
| <b>Period 2</b> |  |         |       |                  |     |
| TFFM40          | Analytical Methods in Materials Science  | 6*      | A1X   | 1                | C   |
| TFKE52          | Fundamentals of Chemistry                | 6       | G1X   | 2                | C   |
| TBME08          | Biomedical Modeling and Simulation       | 6       | A1N   | 3                | E   |
| TBMT26          | Technology in Intensive Care and Surgery | 6       | A1N   | 1                | E   |
| TFMT19          | Chemical Sensor Systems                  | 6       | A1X   | 4                | E   |

*Specialisation: Biomedical Modelling*

| Course code     | Course name                               | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TBMT09          | Physiological Pressures and Flows         | 6       | A1N   | 1                | C   |
| TAOP07          | Introduction to Optimization              | 6       | G1F   | 3                | E   |
| TBMT03          | Medical Information Models and Ontologies | 6       | A1X   | 4                | E   |
| TBMT26          | Neural Networks and Learning Systems      | 6       | A1N   | 2                | E   |
| TBMT02          | Medical Imaging                           | 6       | A1F   | 3                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TBME08          | Biomedical Modeling and Simulation        | 6       | A1N   | 3                | C   |
| TBMT26          | Technology in Intensive Care and Surgery  | 6       | A1N   | 1                | E   |
| TDDD74          | Databases for Bioinformatics              | 6       | G2X   | 4                | E   |

## Semester 9 (Autumn 2017)

| Course code     | Course name   | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TAMS39          | Multivariate Statistical Methods  | 6       | A1N   | 4                | E   |
| TBMT14          | Biomedical Engineering - Project Course                                 | 12*     | A1F   | 4                | E   |
| TBMT36          | Biomedical Optics   | 6       | A1X   | 1                | E   |
| TFFM08          | Experimental Physics  | 6*      | A1X   | 1                | E   |
| TFYA43          | Nanotechnology  | 6       | G2X   | 3                | E   |
| TFYA51          | Project Course in Physics - Design and Fabrication of Sensor Chip, CDIO | 12*     | A1X   | 4                | E   |
| TNM067          | Scientific Visualization  | 6       | A1X   | 3                | E   |
| TSBB08          | Digital Image Processing  | 6       | A1X   | 4                | E   |
| TSBB11          | Images and Graphics, Project Course CDIO                                | 12*     | A1F   | 4                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TBMT02          | Medical Image Analysis  | 6       | A1N   | 1                | E   |
| TBMT14          | Biomedical Engineering - Project Course                                 | 12*     | A1F   | 4                | E   |
| TFFM08          | Experimental Physics  | 6*      | A1X   | 1                | E   |
| TFYA30          | Supramolecular Chemistry  | 6       | A1N   | 1                | E   |
| TFYA37          | Soft Condensed Matter Physics   | 6       | A1X   | 1                | E   |
| TFYA51          | Project Course in Physics - Design and Fabrication of Sensor Chip, CDIO | 12*     | A1X   | 4                | E   |
| TGTU04          | Leadership  | 6       | G2X   | 2                | E   |
| TNM086          | Virtual Reality Techniques  | 6       | A1X   | 2                | E   |
| TSBB11          | Images and Graphics, Project Course CDIO                                | 12*     | A1F   | 4                | E   |

*Specialisation: Biomedical Imaging and Visualization*

| Course code     | Course name                              | Credits | Level | Timetable module | ECV |
|-----------------|--|---------|-------|------------------|-----|
| <b>Period 1</b> |  |         |       |                  |     |
| TSBB11          | Images and Graphics, Project Course CDIO | 12*     | A1F   | 4                | C   |
| TAMS39          | Multivariate Statistical Methods         | 6       | A1N   | 4                | E   |
| TBMI19          | Medical Information Systems              | 6*      | A1N   | 2                | E   |
| TBMT36          | Biomedical Optics                        | 6       | A1X   | 1                | E   |
| TNM067          | Scientific Visualization                 | 6       | A1X   | 3                | E   |
| TSBB08          | Digital Image Processing                 | 6       | A1X   | 4                | E   |
| <b>Period 2</b> |  |         |       |                  |     |
| TBMI02          | Medical Image Analysis                   | 6       | A1N   | 1                | C   |
| TSBB11          | Images and Graphics, Project Course CDIO | 12*     | A1F   | 4                | C   |
| TBMI19          | Medical Information Systems              | 6*      | A1N   | 3                | E   |
| TNM086          | Virtual Reality Techniques               | 6       | A1X   | 2                | E   |

*Specialisation: Biomedical Materials*

| Course code     | Course name   | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TBMT14          | Biomedical Engineering - Project Course                                 | 12*     | A1F   | 4                | C/E |
| TFYA51          | Project Course in Physics - Design and Fabrication of Sensor Chip, CDIO | 12*     | A1X   | 4                | C/E |
| TBMT36          | Biomedical Optics   | 6       | A1X   | 1                | E   |
| TFYA43          | Nanotechnology  | 6       | G2X   | 3                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TFYA30          | Supramolecular Chemistry  | 6       | A1N   | 1                | C   |
| TBMT14          | Biomedical Engineering - Project Course                                 | 12*     | A1F   | 4                | C/E |
| TFYA51          | Project Course in Physics - Design and Fabrication of Sensor Chip, CDIO | 12*     | A1X   | 4                | C/E |

*Specialisation: Biomedical Modelling*

| Course code     | Course name                             | Credits | Level | Timetable module | ECV |
|-----------------|---|---------|-------|------------------|-----|
| <b>Period 1</b> |   |         |       |                  |     |
| TBMT14          | Biomedical Engineering - Project Course | 12*     | A1F   | 4                | C   |
| TBMT36          | Biomedical Optics                       | 6       | A1X   | 1                | C   |
| TAMS39          | Multivariate Statistical Methods        | 6       | A1N   | 4                | E   |
| TSBB06          | Multidimensional Signal Analysis        | 6*      | A1X   | 2                | E   |
| <b>Period 2</b> |   |         |       |                  |     |
| TBMT14          | Biomedical Engineering - Project Course | 12*     | A1F   | 4                | C   |
| TBMT02          | Medical Image Analysis                  | 6       | A1N   | 1                | E   |
| TSBB06          | Multidimensional Signal Analysis        | 6*      | A1X   | 3                | E   |

**Semester 10 (Spring 2018)**

| 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