

# Engineering Biology, M Sc in Engineering

300 credits

Civilingenjör i teknisk biologi

6CTBI

Valid from: 2016 Autumn semester

**Determined by**

Board of Studies for Chemistry, Biology  
and Biotechnology

**Date determined**

2016-01-19

## Entry requirements

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## 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>					
NBIA25	Cell Biology	6	G1X	1/2	C
TATA41	Calculus in One Variable 1	6	G1X	4	C
TFYA46	Engineering Project	6*	G1X	3	C
TGTU35	Introduction to University Studies	2*	G1X	-	V
<b>Period 2</b>					
NBIA23	Microbiology	6	G1X	3/4	C
TATA42	Calculus in One Variable 2	6	G1X	2	C
TFYA46	Engineering Project	6*	G1X	1	C
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>					
TATA16	Linear Algebra	6*	G1X	4	C
TDDD87	Programming and Problem Solving	6	G1X	2	C
TSTE92	Electric Circuits	6	G1X	1	C
<b>Period 2</b>					
NBIB45	Principles in Physiology and Ethics	6	G1X	1	C
TATA16	Linear Algebra	6*	G1X	3	C
TFYA16	Engineering Mechanics	6	G1X	4	C

## Semester 4 (Spring 2018)

Course code	Course name	Credits	Level	Timetable module	ECV
<b>Period 1</b>					
TAMS28	Mathematical Statistics, First Course	6	G2X	4	C
TATA83	Calculus, several variables	6	G1X	1	C
TFYY55	Physics	6*	G2X	2	C
<b>Period 2</b>					
TDDD74	Databases for Bioinformatics	6	G2X	4	C
TFKE36	Biochemistry 2	6	G2X	1/2	C
TFYY55	Physics	6*	G2X	3	C
TPTE06	Industrial Placement	6	G1X	-	E

## Semester 5 (Autumn 2018)

Course code	Course name	Credits	Level	Timetable module	ECV
<b>Period 1</b>					
TFYA35	Molecular Physics	6	G2X	4	C
TSBB14	Signal and Image Processing	6*	G2X	3	C
TVMB17	Immunobiology and Immunological Techniques	6	G2X	1/2	C
<b>Period 2</b>					
TSBB14	Signal and Image Processing	6*	G2X	3	C
TSRT03	Biological Automatic Control	6	G2X	4	C
TVCB02	Gene Technology and Molecular Genetics	6	G2X	1/2	C

## Semester 6 (Spring 2019)

Course code	Course name	Credits	Level	Timetable module	ECV
<b>Period 1</b>					
TBMT19	Models in System Biology	2	G2X	3	C
TBMT33	System Biology and Modelling, Bachelor Project	16*	G2X	3	C
TFMT14	Measurement Technology	6	G2X	2	C
TVCB11	Cellbiological Methodology	6	G2X	1/4	C
<b>Period 2</b>					
TBMT33	System Biology and Modelling, Bachelor Project	16*	G2X	2/3/4	C

## Semester 7 (Autumn 2019)

*Specialisation: Devices and Materials in Biomedicine*

Course code	Course name	Credits	Level	Timetable module	ECV
<b>Period 1</b>					
TFYA31	Materials and Nanotechnology	6*	A1X	4	C
TFYA47	Surfaces and Interfaces	6	A1X	2	C
TANA21	Scientific Computing	6	G1X	3	C/E
TAOP88	Engineering Optimization	6	G2X	1	C/E
TATM38	Mathematical Models in Biology	6	A1X	3	C/E
TBMT36	Biomedical Optics	6	A1X	1	E
TEAE01	Industrial Economics, Basic Course	6	G1X	2	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
<b>Period 2</b>					
TAMS41	Statistical Modelling with Regression Methods	6	A1X	3	C
TFYA31	Materials and Nanotechnology	6*	A1X	1	C
TBMI04	eHealth: Aims and Applications	6	G2X	2/4	C/E
TFYA30	Supramolecular Chemistry	6	A1X	2	C/E
THFR05	Communicative French	6*	G1X	4	E
THSP05	Spanish	6*	G1X	4	E
THTY05	German	6*	G1X	4	E
TMMS07	Biomechanics	6	A1X	4	E

*Specialisation: Industrial biotechnology and production*

Course code	Course name	Credits	Level	Timetable module	ECV
<b>Period 1</b>					
TANA21	Scientific Computing	6	G1X	3	E
TAOP88	Engineering Optimization	6	G2X	1	E
TATM38	Mathematical Models in Biology	6	A1X	3	E
TEAE01	Industrial Economics, Basic Course	6	G1X	2	E
TGTU91	Oral and Written Communication	6	G1X	2	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
TKMJ31	Biofuels for Transportation	6	A1N	1	E
<b>Period 2</b>					
TAMS41	Statistical Modelling with Regression Methods	6	A1X	3	C
TFYA32	Industrial Biotechnology	6	A1X	1	C
TFKE30	Analytical Chemistry	6	G1X	4	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
TMMS07	Biomechanics	6	A1X	4	E

## Semester 8 (Spring 2020)

### *Specialisation: Devices and Materials in Biomedicine*

Course code	Course name	Credits	Level	Timetable module	ECV
<b>Period 1</b>					
TFTB34	Biosensor Technology	6	A1X	3	C
TFTB35	Surface Science	6	A1X	1	C
TFTB43	Materials in Medicine (CDIO-Project)	6*	A1X	2	C/E
TBMI26	Neural Networks and Learning Systems	6	A1X	2	E
TDDE10	Object Oriented Programming in Java	6	G2X	1	E
TFYA85	Alternative Energy Sources and their Applications	6	G2X	4	E
TGTU94	Technology and Ethics	6	G1X	1	E
THEN18	English	6*	G1X	4	E
TMQU46	Quality Management	6	G2X	4	E
TSRT07	Industrial Control Systems	6	A1X	2	E
<b>Period 2</b>					
TFTB38	Imaging and Ubiquitous Biosensing	6	A1F	1	C
TEIO95	eHealth: Innovation and Entrepreneurship	6	G2F	2/4	C/E
TFTB43	Materials in Medicine (CDIO-Project)	6*	A1X	2	C/E
TBME08	Biomedical Modeling and Simulation	6	A1X	3	E
TFMT19	Chemical Sensor Systems	6	A1X	4	E
TGTU95	Philosophy of Science and Technology	6	G1X	4	E
THEN18	English	6*	G1X	4	E



*Specialisation: Industrial biotechnology and production*

Course code	Course name	Credits	Level	Timetable module	ECV
<b>Period 1</b>					
TFTB32	Design of Biotechnical Process and Production Systems, Project Course	6*	A1X	1	C
TMMT03	Biotechnical Production Systems	6	A1X	3	C
TMQU46	Quality Management	6	G2X	4	C
TBMI26	Neural Networks and Learning Systems	6	A1X	2	E
TDDE10	Object Oriented Programming in Java	6	G2X	1	E
TFYA85	Alternative Energy Sources and their Applications	6	G2X	4	E
TGTU94	Technology and Ethics	6	G1X	1	E
TKMJ15	Environmental Management Strategies	6	G1F	3	E
TSRT07	Industrial Control Systems	6	A1X	2	E
<b>Period 2</b>					
NKED20	Drug Discovery and Pharmaceutical Development	6	A1X	2	C
TFTB32	Design of Biotechnical Process and Production Systems, Project Course	6*	A1X	1	C
TFTB39	Biotechnology Manufacturing	6	A1X	3/4	C
TGTU95	Philosophy of Science and Technology	6	G1X	4	E

**Semester 9 (Autumn 2020)**

*Specialisation: Devices and Materials in Biomedicine*

Course code	Course name	Credits	Level	Timetable module	ECV
<b>Period 1</b>					
TFTB40	Biomedical Materials	6	A1X	1	C
TAMS81	Experimental Design	6	A1X	4	C/E
TBMI28	eHealth Project	12*	A1X	2/4	C/E
TEIO94	Entrepreneurship and Idea Development	6*	G2X	3	C/E
TSRT92	Modelling and Learning for Dynamical Systems	6	A1X	3	C/E
TDDE18	Programming C++	6*	G2X	2	E
TEAE01	Industrial Economics, Basic Course	6	G1X	2	E
TFTB46	Advanced Bioinformatics	6	A1X	2	E
TFYA43	Nanotechnology	6	G2X	3	E
TKMJ24	Environmental Engineering	6	G1N	1	E
TMQU03	Quality Management and Engineering	6	G2X	2	E
<b>Period 2</b>					
TFTB33	Microsystems and Nanobiology	6	A1X	3	C
TBMI28	eHealth Project	12*	A1X	-	C/E
TEIO94	Entrepreneurship and Idea Development	6*	G2X	4	C/E
TBMT01	Biomedical Signal Processing	6	A1X	1	E
TDDE18	Programming C++	6*	G2X	1	E
TFKE30	Analytical Chemistry	6	G1X	4	E
TFYA32	Industrial Biotechnology	6	A1X	1	E
TFYA37	Soft Condensed Matter Physics	6	A1X	1	E
TGTU04	Leadership	6	G2X	2	E
TGTU49	History of Technology	6	G1X	3	E
TVCB13	Stem Cell Engineering	6	A1X	3	E

*Specialisation: Industrial biotechnology and production*

Course code	Course name	Credits	Level	Timetable module	ECV
<b>Period 1</b>					
TAMS81	Experimental Design	6	A1X	4	C
TEIO94	Entrepreneurship and Idea Development	6*	G2X	3	C
TBMT57	Biomedical Optics	6	A1X	1	E
TDDE18	Programming C++	6*	G2X	2	E
TEAE01	Industrial Economics, Basic Course	6	G1X	2	E
TEIO90	Innovation Management	6	A1X	2	E
TFTB46	Advanced Bioinformatics	6	A1X	2	E
TFYA47	Surfaces and Interfaces	6	A1X	2	E
TKMJ24	Environmental Engineering	6	G1N	1	E
TRTE18	The Biogas Process	6	A1X	1	E
TSRT92	Modelling and Learning for Dynamical Systems	6	A1X	3	E
TVMB26	Molecular Virology	6	A1X	1	E
<b>Period 2</b>					
TEIO94	Entrepreneurship and Idea Development	6*	G2X	4	C
TAOP61	Optimization of Realistic Complex Systems	6	A1X	3	E
TBMT01	Biomedical Signal Processing	6	A1X	1	E
TDDE18	Programming C++	6*	G2X	1	E
TGTU04	Leadership	6	G2X	2	E
TGTU49	History of Technology	6	G1X	3	E
TMQU12	Lean Production	6	A1X	2	E
TVCB13	Stem Cell Engineering	6	A1X	3	E

**Semester 10 (Spring 2021)**

*Specialisation: Devices and Materials in Biomedicine*

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

*Specialisation: Industrial biotechnology and production*

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