



# Programme syllabus

[An accessible version of the syllabus can be found in the Course and programme directory.](#)

## Degree Programme in Engineering and Economics 180 credits

Högskoleingenjörutbildning i teknik och ekonomi

*Valid for students admitted to the education from spring 19 (HT - Autumn term; VT - Spring term).*

This is a translation of the Swedish, legally binding, programme syllabus.

# Programme objectives

Knowledge and understanding

Skills and abilities

Ability to make judgements and adopt a standpoint

Extent and content of the programme

Eligibility and selection

Implementation of the education

Courses

The programme is course-based. Lists of courses are included in appendix 1.

Grading system

Courses in the first and the second cycle are graded on a scale from A to F. A-E are passing grades, A is the highest grade. The grades pass (P) and fail (F) are used for courses under certain circumstances.

Appendix 1 - Course list

Appendix 2 - Programme syllabus descriptions



# Appendix 1: Course list

## Degree Programme in Engineering and Economics (TITEH)

### General courses

Year 1

#### Mandatory courses (30.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">HH1801</a>	Business Calculation and Entrepreneurship	7.5 hp	First cycle
<a href="#">HH1802</a>	Business Finance and Organizational Structures	7.5 hp	First cycle
<a href="#">HU1800</a>	External Accounting	7.5 hp	First cycle
<a href="#">HU1801</a>	Industrial Marketing	7.5 hp	First cycle

# Innovation and Industrial Design (IODS)

Year 3

## Mandatory courses (45.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">HM1016</a>	Manufacturing Process, Intermediate Course 1	7.5 hp	First cycle
<a href="#">ML1108</a>	Decision Models and Impact Assessment	7.5 hp	First cycle
<a href="#">ML1213</a>	Product Development and Design	15.0 hp	First cycle
<a href="#">ML190X</a>	Degree Project in Mechanical Engineering and Economics, First Cycle	15.0 hp	First cycle

## Conditionally elective courses

Code	Name	Credits	Edu. level
<a href="#">AH2401</a>	Risk in Technical Systems	7.5 hp	Second cycle
<a href="#">HE1011</a>	Control Systems	7.5 hp	First cycle
<a href="#">ML1214</a>	Solid Mechanics, Advanced Course	7.5 hp	First cycle
<a href="#">ML1330</a>	Financial Control in an Industrial Concept	7.5 hp	First cycle
<a href="#">ML1332</a>	Computer-aided Mechanical Design, Continuation Course	7.5 hp	First cycle
<a href="#">ML1335</a>	Safety and Management of Technical systems, Project Course	7.5 hp	First cycle
<a href="#">ML1336</a>	Sensors and Actuators	7.5 hp	First cycle
<a href="#">ML1616</a>	Industrial Project Management	7.5 hp	First cycle

# Medical Technology (METL)

Year 1

## Mandatory courses (42.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">HE1026</a>	Digital Electronics	6.0 hp	First cycle
<a href="#">HF1005</a>	Engineering and Information Skills	6.0 hp	First cycle
<a href="#">HF1006</a>	Linear Algebra and Calculus in One Variable	10.0 hp	First cycle
<a href="#">HI1024</a>	Computer Programming, Basic Course	8.0 hp	First cycle
<a href="#">HL1201</a>	Medicine and Medical Engineering, Basic Course	12.0 hp	First cycle

## Optional courses

Code	Name	Credits	Edu. level
<a href="#">HF1009</a>	Introduction to Mathematics	1.5 hp	First cycle
<a href="#">HF1010</a>	Introduction to Computer Studies	1.5 hp	First cycle

## Year 2

### Mandatory courses (83.5 Credits)

Code	Name	Credits	Edu. level
<a href="#">HE1027</a>	Electrical Principals	7.0 hp	First cycle
<a href="#">HE1030</a>	Analog Electronics	8.0 hp	First cycle
<a href="#">HE1037</a>	Data- and Telecommunication	10.0 hp	First cycle
<a href="#">HE1041</a>	Microcomputer Engineering, Project Course	11.0 hp	First cycle
<a href="#">HF1005</a>	Engineering and Information Skills	6.0 hp	First cycle
<a href="#">HF1011</a>	Signals, Systems and Transforms	8.0 hp	First cycle
<a href="#">HH1800</a>	Industrial Business Economics	7.5 hp	First cycle
<a href="#">HI1024</a>	Computer Programming, Basic Course	8.0 hp	First cycle
<a href="#">HL1015</a>	Engineering in Intensvie Care and Surgery	6.0 hp	First cycle
<a href="#">HL1201</a>	Medicine and Medical Engineering, Basic Course	12.0 hp	First cycle

## Year 3

### Mandatory courses (52.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">HE1019</a>	EMC-Electronics	6.0 hp	First cycle
<a href="#">HF1012</a>	Mathematical Statistics	6.0 hp	First cycle
<a href="#">HF1201</a>	Sustainability and Ergonomics	6.0 hp	First cycle
<a href="#">HL1013</a>	Medical Imaging Systems	6.0 hp	First cycle
<a href="#">HL1014</a>	Clinical Engineering	6.0 hp	First cycle
<a href="#">HL1016</a>	Medical Measurement and Monitoring	7.0 hp	First cycle
<a href="#">HT102X</a>	Degree Project in Medical Technology and Economics, First Cycle	15.0 hp	First cycle

## Conditionally elective courses

Code	Name	Credits	Edu. level
<a href="#">HE1040</a>	Electronic Design. Project Course	9.0 hp	First cycle
<a href="#">HI1027</a>	Object Oriented Programming	8.0 hp	First cycle
<a href="#">HL2032</a>	Medical Engineering, Project Course	9.0 hp	Second cycle
<a href="#">HL2041</a>	Sports Technology	9.0 hp	Second cycle
<a href="#">IL1331</a>	VHDL Design	7.5 hp	First cycle

## Construction Engineering and Design (TIBY)

### Year 1

#### Mandatory courses (32.5 Credits)

Code	Name	Credits	Edu. level
<a href="#">AF1731</a>	Building Technology 1, Constructional Engineering and Design, Cad 1	7.5 hp	First cycle
<a href="#">AF1732</a>	Building Technology 2, large buildings, materials, Cad 2, Civil Engineering A	10.0 hp	First cycle
<a href="#">AF1734</a>	Structural mechanics 1	5.0 hp	First cycle
<a href="#">HF1904</a>	Linear Algebra	5.0 hp	First cycle
<a href="#">HF1905</a>	Mathematical Analysis	5.0 hp	First cycle

#### Optional courses

Code	Name	Credits	Edu. level
<a href="#">HF1009</a>	Introduction to Mathematics	1.5 hp	First cycle

## Year 2

### Mandatory courses (67.5 Credits)

Code	Name	Credits	Edu. level
<a href="#">AF1721</a>	Environmental Science and Work Science	5.0 hp	First cycle
<a href="#">AF1722</a>	The Building Process	5.0 hp	First cycle
<a href="#">AF1735</a>	Structural mechanics 2 with load analysis	7.5 hp	First cycle
<a href="#">AF1739</a>	Surveying	7.5 hp	First cycle
<a href="#">AF1745</a>	Building Techniques, Detached Housing Project	10.0 hp	First cycle
<a href="#">AF1746</a>	Structural Engineering 1	5.0 hp	First cycle
<a href="#">AF1748</a>	Building Information Modeling	5.0 hp	First cycle
<a href="#">AF1749</a>	Urban and Dwelling Planning	10.0 hp	First cycle
<a href="#">HF1906</a>	Mathematical Statistics	5.0 hp	First cycle
<a href="#">HS1029</a>	Geology and Soil Mechanics	7.5 hp	First cycle

## Year 3

### Mandatory courses (62.5 Credits)

Code	Name	Credits	Edu. level
<a href="#">AF1730</a>	Building Information Modeling	7.5 hp	First cycle
<a href="#">AF1749</a>	Urban and Dwelling Planning	10.0 hp	First cycle
<a href="#">AF179X</a>	Degree Project in Constructional Engineering and Design, First Cycle	15.0 hp	First cycle
<a href="#">HS1001</a>	Structure and Design	7.5 hp	First cycle
<a href="#">HS1007</a>	Fluid Mechanics	7.5 hp	First cycle
<a href="#">HS1009</a>	Urban Planning	7.5 hp	First cycle
<a href="#">HS1029</a>	Geology and Soil Mechanics	7.5 hp	First cycle



## Conditionally elective courses

Code	Name	Credits	Edu. level
<a href="#">AF1719</a>	Building Services Engineering 2 within Construction and Civil Engineering	7.5 hp	First cycle
<a href="#">AF1743</a>	Form, Space and Light	7.5 hp	First cycle
<a href="#">AF1748</a>	Building Information Modeling	5.0 hp	First cycle
<a href="#">AF1750</a>	Building Logistics and Risk Management	7.5 hp	First cycle
<a href="#">AI1108</a>	Investment Analysis	7.5 hp	First cycle
<a href="#">AI1142</a>	Financial Reporting and Analysis	7.5 hp	First cycle
<a href="#">AI1147</a>	Real Estate Valuation	7.5 hp	First cycle
<a href="#">HS1020</a>	Moisture Related Damages	7.5 hp	First cycle

## Computer Engineering (TIDA)

### Year 1

### Mandatory courses (30.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">HE1026</a>	Digital Electronics	6.0 hp	First cycle
<a href="#">HF1005</a>	Engineering and Information Skills	6.0 hp	First cycle
<a href="#">HF1006</a>	Linear Algebra and Calculus in One Variable	10.0 hp	First cycle
<a href="#">HI1024</a>	Computer Programming, Basic Course	8.0 hp	First cycle

### Optional courses

Code	Name	Credits	Edu. level
<a href="#">HF1009</a>	Introduction to Mathematics	1.5 hp	First cycle
<a href="#">HF1010</a>	Introduction to Computer Studies	1.5 hp	First cycle

## Year 2

### Mandatory courses (60.5 Credits)

Code	Name	Credits	Edu. level
<a href="#">CM1000</a>	Discrete mathematics	8.0 hp	First cycle
<a href="#">HE1028</a>	Computer Engineering	8.0 hp	First cycle
<a href="#">HF1201</a>	Sustainability and Ergonomics	6.0 hp	First cycle
<a href="#">HH1800</a>	Industrial Business Economics	7.5 hp	First cycle
<a href="#">HI1025</a>	Operating Systems	7.0 hp	First cycle
<a href="#">HI1027</a>	Object Oriented Programming	8.0 hp	First cycle
<a href="#">HI1030</a>	Database Technology	7.0 hp	First cycle
<a href="#">HI1038</a>	Computer Engineering and Internet Technology, Project Course	9.0 hp	First cycle

## Year 3

### Mandatory courses (60.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">HE1033</a>	Communication Networks	7.0 hp	First cycle
<a href="#">HF1012</a>	Mathematical Statistics	6.0 hp	First cycle
<a href="#">HI1029</a>	Algorithms and Data Structures	8.0 hp	First cycle
<a href="#">HI1031</a>	Distributed Information Systems	7.5 hp	First cycle
<a href="#">HI1032</a>	Communication Systems	7.5 hp	First cycle
<a href="#">HI1039</a>	Software Development, Project Course	9.0 hp	First cycle
<a href="#">HT100X</a>	Degree Project in Computer Engineering and Economics, First Cycle	15.0 hp	First cycle

# Computer Engineering (TIDB)

## Year 1

### Mandatory courses (30.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">ID1018</a>	Programming I	7.5 hp	First cycle
<a href="#">IE1204</a>	Digital Design	7.5 hp	First cycle
<a href="#">II1300</a>	Engineering Skills	7.5 hp	First cycle
<a href="#">IX1307</a>	Problem-Solving in Mathematics	7.5 hp	First cycle

## Year 2

### Mandatory courses (67.5 Credits)

Code	Name	Credits	Edu. level
<a href="#">DH2642</a>	Interaction Programming and the Dynamic Web	7.5 hp	Second cycle
<a href="#">ID1020</a>	Algorithms and Data Structures	7.5 hp	First cycle
<a href="#">II1303</a>	Signal Processing	7.5 hp	First cycle
<a href="#">IS1200</a>	Computer Hardware Engineering	7.5 hp	First cycle
<a href="#">IV1350</a>	Object Oriented Design	7.5 hp	First cycle
<a href="#">IV1351</a>	Data Storage Paradigms	7.5 hp	First cycle
<a href="#">IX1303</a>	Algebra and Geometry	7.5 hp	First cycle
<a href="#">IX1304</a>	Calculus	7.5 hp	First cycle
<a href="#">IX1500</a>	Discrete Mathematics	7.5 hp	First cycle

## Year 3

### Mandatory courses (45.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">HT100X</a>	Degree Project in Computer Engineering and Economics, First Cycle	15.0 hp	First cycle
<a href="#">ID1019</a>	Programming II	7.5 hp	First cycle
<a href="#">ID1206</a>	Operating Systems	7.5 hp	First cycle
<a href="#">IK1203</a>	Networks and Communication	7.5 hp	First cycle
<a href="#">IX1501</a>	Mathematical Statistics	7.5 hp	First cycle

### Conditionally elective courses

Code	Name	Credits	Edu. level
<a href="#">IC1007</a>	Human-computer Interaction: Principles and Design	7.5 hp	First cycle
<a href="#">ID1213</a>	Logic Programming, Basic Course	7.5 hp	First cycle
<a href="#">ID2204</a>	Constraint Programming	7.5 hp	Second cycle
<a href="#">II1302</a>	Projects and Project Methods	7.5 hp	First cycle
<a href="#">II1351</a>	Selectable Specialisation	6.0 hp	First cycle
<a href="#">IK1552</a>	Internetworking	7.5 hp	First cycle
<a href="#">IK2215</a>	Advanced Internetworking	7.5 hp	Second cycle
<a href="#">IV1013</a>	Introduction to Computer Security	7.5 hp	First cycle
<a href="#">IV1023</a>	Advanced Information Handling with XML	7.5 hp	First cycle

# Electronics and Computer Engineering (TIED)

## Year 1

### Mandatory courses (30.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">ID1018</a>	Programming I	7.5 hp	First cycle
<a href="#">IE1204</a>	Digital Design	7.5 hp	First cycle
<a href="#">II1300</a>	Engineering Skills	7.5 hp	First cycle
<a href="#">IX1307</a>	Problem-Solving in Mathematics	7.5 hp	First cycle

## Year 2

### Mandatory courses (60.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">ID1020</a>	Algorithms and Data Structures	7.5 hp	First cycle
<a href="#">IF1330</a>	Electrical Principles	7.5 hp	First cycle
<a href="#">II1303</a>	Signal Processing	7.5 hp	First cycle
<a href="#">IS1200</a>	Computer Hardware Engineering	7.5 hp	First cycle
<a href="#">IS1300</a>	Embedded Systems	7.5 hp	First cycle
<a href="#">IX1303</a>	Algebra and Geometry	7.5 hp	First cycle
<a href="#">IX1304</a>	Calculus	7.5 hp	First cycle
<a href="#">IX1500</a>	Discrete Mathematics	7.5 hp	First cycle

## Year 3

### Mandatory courses (67.5 Credits)

Code	Name	Credits	Edu. level
<a href="#">HE1038</a>	Control Engineering	7.5 hp	First cycle
<a href="#">HT101X</a>	Degree Project in Electrical Engineering and Economics, First Cycle	15.0 hp	First cycle
<a href="#">IE1202</a>	Analog Electronics	7.5 hp	First cycle
<a href="#">IE1332</a>	Electronic Product Development	7.5 hp	First cycle
<a href="#">II1302</a>	Projects and Project Methods	7.5 hp	First cycle
<a href="#">IK1203</a>	Networks and Communication	7.5 hp	First cycle
<a href="#">IL1331</a>	VHDL Design	7.5 hp	First cycle
<a href="#">IS1300</a>	Embedded Systems	7.5 hp	First cycle

### Conditionally elective courses

Code	Name	Credits	Edu. level
<a href="#">AL2113</a>	Sustainable Development in theory and practise	6.0 hp	Second cycle

## Electrical Engineering (TIEL)

### Year 1

### Mandatory courses (30.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">HE1026</a>	Digital Electronics	6.0 hp	First cycle
<a href="#">HF1005</a>	Engineering and Information Skills	6.0 hp	First cycle
<a href="#">HF1006</a>	Linear Algebra and Calculus in One Variable	10.0 hp	First cycle
<a href="#">HI1024</a>	Computer Programming, Basic Course	8.0 hp	First cycle

## Optional courses

Code	Name	Credits	Edu. level
<a href="#">HF1009</a>	Introduction to Mathematics	1.5 hp	First cycle
<a href="#">HF1010</a>	Introduction to Computer Studies	1.5 hp	First cycle

## Year 2

### Mandatory courses (60.5 Credits)

Code	Name	Credits	Edu. level
<a href="#">HE1027</a>	Electrical Principals	7.0 hp	First cycle
<a href="#">HE1028</a>	Computer Engineering	8.0 hp	First cycle
<a href="#">HE1029</a>	Electrical Engineering and Internet Technology, Project Course	9.0 hp	First cycle
<a href="#">HE1030</a>	Analog Electronics	8.0 hp	First cycle
<a href="#">HE1034</a>	Telecommunication	7.0 hp	First cycle
<a href="#">HF1011</a>	Signals, Systems and Transforms	8.0 hp	First cycle
<a href="#">HF1201</a>	Sustainability and Ergonomics	6.0 hp	First cycle
<a href="#">HH1800</a>	Industrial Business Economics	7.5 hp	First cycle

## Year 3

### Mandatory courses (45.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">HE1032</a>	Electric Power Engineering I	8.0 hp	First cycle
<a href="#">HE1033</a>	Communication Networks	7.0 hp	First cycle
<a href="#">HE1035</a>	Project Course in Electrical Engineering	9.0 hp	First cycle
<a href="#">HF1012</a>	Mathematical Statistics	6.0 hp	First cycle
<a href="#">HT101X</a>	Degree Project in Electrical Engineering and Economics, First Cycle	15.0 hp	First cycle

## Conditionally elective courses

Code	Name	Credits	Edu. level
<a href="#">AH2026</a>	Railway Traffic - Market and Planning, Basic Course	7.5 hp	Second cycle
<a href="#">EG2340</a>	Wind Power Systems	7.5 hp	Second cycle
<a href="#">EH2741</a>	Communication and Control in Electric Power Systems	6.0 hp	Second cycle
<a href="#">HE1036</a>	Electric Power Engineering II	7.5 hp	First cycle
<a href="#">HI1027</a>	Object Oriented Programming	8.0 hp	First cycle
<a href="#">HI1032</a>	Communication Systems	7.5 hp	First cycle
<a href="#">IL1331</a>	VHDL Design	7.5 hp	First cycle

## Chemical Engineering (TIKE)

### Year 1

### Mandatory courses (36.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">KH1111</a>	Mathematics	15.0 hp	First cycle
<a href="#">KH1123</a>	General Chemistry 1	6.0 hp	First cycle
<a href="#">KH1124</a>	General Chemistry 2	6.0 hp	First cycle
<a href="#">KH1150</a>	Engineering Skills	9.0 hp	First cycle

### Optional courses

Code	Name	Credits	Edu. level
<a href="#">KH0001</a>	Introductory Course in Mathematics	1.5 fup	Pre-university level
<a href="#">KH0002</a>	Introduction to Chemistry	1.5 fup	Pre-university level
<a href="#">KH1406</a>	Swedish Writing for Engineers	7.5 hp	First cycle



## Year 2

### Mandatory courses (62.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">KH1121</a>	Organic Chemistry	9.0 hp	First cycle
<a href="#">KH1122</a>	Analytical Chemistry	7.5 hp	First cycle
<a href="#">KH1130</a>	Chemical Engineering and Technology 1	7.5 hp	First cycle
<a href="#">KH1212</a>	Mathematical Statistics	5.0 hp	First cycle
<a href="#">KH1231</a>	Chemical Engineering and Technology 2	21.0 hp	First cycle
<a href="#">KH1242</a>	Sustainable Development and the Chemical Engineer	6.0 hp	First cycle
<a href="#">KH1251</a>	Electrical Measurements, Control Theory and Practice	6.0 hp	First cycle

## Year 3

### Mandatory courses (45.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">HT104X</a>	Degree Project in Chemical Engineering and Economics, First Cycle	15.0 hp	First cycle
<a href="#">KH1223</a>	Biotechnology	7.5 hp	First cycle
<a href="#">KH1324</a>	Analytical Chemistry 2	7.5 hp	First cycle
<a href="#">KH1341</a>	Environmental Technology	7.5 hp	First cycle
<a href="#">KH1353</a>	Organisational Development and Leadership for Engineers	7.5 hp	First cycle

### Optional courses

Code	Name	Credits	Edu. level
<a href="#">KH1332</a>	Chemical Engineering and Technology 3	9.0 hp	First cycle

# Mechanical Engineering (TIMA)

## Year 1

### Mandatory courses (30.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">ML1000</a>	Engineering Mathematics	11.0 hp	First cycle
<a href="#">ML1110</a>	Mechanical Engineering, Introduction Course	9.0 hp	First cycle
<a href="#">ML1200</a>	Engineering Materials and Production, General Course	10.0 hp	First cycle

## Year 2

### Mandatory courses (60.0 Credits)

Code	Name	Credits	Edu. level
<a href="#">HM1006</a>	Electrical and Control Engineering	7.5 hp	First cycle
<a href="#">ML1101</a>	Mechanics, General Course	7.5 hp	First cycle
<a href="#">ML1111</a>	Business Control with Applied Statistics	9.0 hp	First cycle
<a href="#">ML1201</a>	Strength of Materials, General Course	6.0 hp	First cycle
<a href="#">ML1203</a>	Energy Technology	6.0 hp	First cycle
<a href="#">ML1206</a>	Machine Components	10.5 hp	First cycle
<a href="#">ML1209</a>	Computer Based Product Development Tools, Basic Course	7.5 hp	First cycle
<a href="#">ML1309</a>	Programming and Numerical Tools	6.0 hp	First cycle



# Appendix 2: Specialisations

Degree Programme in Engineering and Economics (TITEH)

Innovation and Industrial Design (IODS)

No information entered.

Medical Technology (METL)

No information entered.

Construction Engineering and Design (TIBY)

No information entered.

Computer Engineering (TIDA)

No information entered.

Computer Engineering (TIDB)

No information entered.

# Electronics and Computer Engineering (TIED)

No information entered.

# Electrical Engineering (TIEL)

No information entered.

# Chemical Engineering (TIKE)

No information entered.

# Mechanical Engineering (TIMA)

No information entered.