



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 20 (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
HH1801	Business Calculation and Entrepreneurship	7.5 hp	First cycle
HH1802	Business Finance and Organizational Structures	7.5 hp	First cycle
HU1800	External Accounting	7.5 hp	First cycle
HU1801	Industrial Marketing	7.5 hp	First cycle

Medical Technology (METL)

Year 1

Mandatory courses (42.0 Credits)

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

Optional courses

Code	Name	Credits	Edu. level
HF1009	Introduction to Mathematics	1.5 hp	First cycle
HF1010	Introduction to Computer Studies	1.5 hp	First cycle

Year 2

Mandatory courses (76.0 Credits)

Code	Name	Credits	Edu. level
HE1027	Electrical Principals	7.0 hp	First cycle
HE1030	Analog Electronics	8.0 hp	First cycle
HE1037	Data- and Telecommunication	10.0 hp	First cycle
HE1041	Microcomputer Engineering, Project Course	11.0 hp	First cycle
HF1005	Engineering and Information Skills	6.0 hp	First cycle
HF1011	Signals, Systems and Transforms	8.0 hp	First cycle
HI1024	Computer Programming, Basic Course	8.0 hp	First cycle
HL1015	Engineering in Intensive Care and Surgery	6.0 hp	First cycle
HL1201	Medicine and Medical Engineering, Basic Course	12.0 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
EN2720	Ethical Hacking	7.5 hp	Second cycle
HI1027	Object Oriented Programming	8.0 hp	First cycle
HI2002	Routing in IP Networks	7.5 hp	Second cycle
IC1007	Human-computer Interaction: Principles and Design	7.5 hp	First cycle

Year 3

Mandatory courses (56.0 Credits)

Code	Name	Credits	Edu. level
HE1037	Data- and Telecommunication	10.0 hp	First cycle
HF1012	Mathematical Statistics	6.0 hp	First cycle
HF1201	Sustainability and Ergonomics	6.0 hp	First cycle
HL1013	Medical Imaging Systems	6.0 hp	First cycle
HL1014	Clinical Engineering	6.0 hp	First cycle
HL1016	Medical Measurement and Monitoring	7.0 hp	First cycle
HL101X	Degree Project in Medical Technology, First Cycle	15.0 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
CM1006	Clinical Chemistry and Microbiology	6.0 hp	First cycle
HE1039	Control Engineering	6.0 hp	First cycle
HE1040	Electronic Design. Project Course	9.0 hp	First cycle
HL2015	Quality and Regulatory Aspects on Medical Devices	3.0 hp	Second cycle
HL2032	Medical Engineering, Project Course	9.0 hp	Second cycle
HL2041	Sports Technology	9.0 hp	Second cycle
SF1626	Calculus in Several Variables	7.5 hp	First cycle

Construction Engineering and Design (TIBY)

Year 1

Mandatory courses (32.5 Credits)

Code	Name	Credits	Edu. level
AF1734	Structural mechanics 1	5.0 hp	First cycle
AF1737	Building Technology 1 <i>Replace AF1731</i>	7.5 hp	First cycle
AF1738	Building Technology 2 <i>Replace AF1732</i>	10.0 hp	First cycle
HF1904	Linear Algebra	5.0 hp	First cycle
HF1905	Mathematical Analysis	5.0 hp	First cycle

Optional courses

Code	Name	Credits	Edu. level
HF1009	Introduction to Mathematics	1.5 hp	First cycle

Year 2

Mandatory courses (70.0 Credits)

Code	Name	Credits	Edu. level
AF1721	Environmental Science and Work Science	5.0 hp	First cycle
AF1722	The Building Process	5.0 hp	First cycle
AF1733	Building Technology 3, Building Physics and Materials	7.5 hp	First cycle
AF1735	Structural mechanics 2 with load analysis	7.5 hp	First cycle
AF1739	Surveying	7.5 hp	First cycle
AF1746	Structural Engineering 1	5.0 hp	First cycle
AF1748	Building Information Modeling	5.0 hp	First cycle
AF1749	Urban and Dwelling Planning	10.0 hp	First cycle
HF1905	Mathematical Analysis	5.0 hp	First cycle
HF1906	Mathematical Statistics	5.0 hp	First cycle
HS1029	Geology and Soil Mechanics	7.5 hp	First cycle

Year 3

Mandatory courses (52.5 Credits)

Code	Name	Credits	Edu. level
AF1747	Structural Engineering 2	7.5 hp	First cycle
AF1748	Building Information Modeling	5.0 hp	First cycle
AF1749	Urban and Dwelling Planning	10.0 hp	First cycle
AF179X	Degree Project in Constructional Engineering and Design, First Cycle	15.0 hp	First cycle
HS1007	Fluid Mechanics	7.5 hp	First cycle
HS1733	Concrete Structures	7.5 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
AF1743	Form, Space and Light	7.5 hp	First cycle
AF1750	Building Logistics and Risk Management	7.5 hp	First cycle
HS1020	Moisture Related Damages	7.5 hp	First cycle

Computer Engineering (TIDA)

Year 1

Mandatory courses (30.0 Credits)

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

Optional courses

Code	Name	Credits	Edu. level
HF1009	Introduction to Mathematics	1.5 hp	First cycle
HF1010	Introduction to Computer Studies	1.5 hp	First cycle

Year 2

Mandatory courses (53.0 Credits)

Code	Name	Credits	Edu. level
CM1000	Discrete mathematics	8.0 hp	First cycle
HE1028	Computer Engineering	8.0 hp	First cycle
HF1201	Sustainability and Ergonomics	6.0 hp	First cycle
HI1025	Operating Systems	7.0 hp	First cycle
HI1027	Object Oriented Programming	8.0 hp	First cycle
HI1030	Database Technology	7.0 hp	First cycle
HI1038	Computer Engineering and Internet Technology, Project Course	9.0 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
HF1011	Signals, Systems and Transforms	8.0 hp	First cycle
IC1007	Human-computer Interaction: Principles and Design	7.5 hp	First cycle
SF1626	Calculus in Several Variables	7.5 hp	First cycle

Year 3

Mandatory courses (60.0 Credits)

Code	Name	Credits	Edu. level
HE1033	Communication Networks	7.0 hp	First cycle
HF1012	Mathematical Statistics	6.0 hp	First cycle
HI1029	Algorithms and Data Structures	8.0 hp	First cycle
HI1031	Distributed Information Systems	7.5 hp	First cycle
HI1032	Communication Systems	7.5 hp	First cycle
HI1039	Software Development, Project Course	9.0 hp	First cycle
HT100X	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
ID1018	Programming I	7.5 hp	First cycle
IE1204	Digital Design	7.5 hp	First cycle
II1300	Engineering Skills	7.5 hp	First cycle
IX1307	Problem-Solving in Mathematics	7.5 hp	First cycle

Year 2

Mandatory courses (60.0 Credits)

Code	Name	Credits	Edu. level
DH2642	Interaction Programming and the Dynamic Web	7.5 hp	Second cycle
ID1021	Algorithms and Data Structures	7.5 hp	First cycle
IS1200	Computer Hardware Engineering	7.5 hp	First cycle
IV1350	Object Oriented Design	7.5 hp	First cycle
IV1351	Data Storage Paradigms	7.5 hp	First cycle
IX1303	Algebra and Geometry	7.5 hp	First cycle
IX1304	Calculus	7.5 hp	First cycle
IX1500	Discrete Mathematics	7.5 hp	First cycle

Year 3

Mandatory courses (45.0 Credits)

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

Conditionally elective courses

Code	Name	Credits	Edu. level
DD1318	Programming and Scientific Computing	9.0 hp	First cycle
DD1362	Programming Paradigms	6.0 hp	First cycle
EN2720	Ethical Hacking	7.5 hp	Second cycle
HH1800	Industrial Business Economics	7.5 hp	First cycle
HI1031	Distributed Information Systems	7.5 hp	First cycle
IC1007	Human-computer Interaction: Principles and Design	7.5 hp	First cycle
IC2005	Methodology of Interaction Design	7.5 hp	Second cycle
ID1212	Network Programming	7.5 hp	First cycle
ID1213	Logic Programming, Basic Course	7.5 hp	First cycle
ID1219	Software Evolution and Maintenance	7.5 hp	First cycle
ID2202	Compilers and Execution Environments	7.5 hp	Second cycle
ID2204	Constraint Programming	7.5 hp	Second cycle
ID2209	Distributed Artificial Intelligence and Intelligent Agents	7.5 hp	Second cycle
ID2214	Programming for Data Science	7.5 hp	Second cycle
II1302	Projects and Project Methods	7.5 hp	First cycle
IK1552	Internetworking	7.5 hp	First cycle
IL1331	VHDL Design	7.5 hp	First cycle
IV1023	Advanced Information Handling with XML	7.5 hp	First cycle
SF1626	Calculus in Several Variables	7.5 hp	First cycle

Electronics and Computer Engineering (TIED)

Year 1

Mandatory courses (30.0 Credits)

Code	Name	Credits	Edu. level
ID1018	Programming I	7.5 hp	First cycle
IE1204	Digital Design	7.5 hp	First cycle
II1300	Engineering Skills	7.5 hp	First cycle
IX1307	Problem-Solving in Mathematics	7.5 hp	First cycle

Year 2

Mandatory courses (60.0 Credits)

Code	Name	Credits	Edu. level
ID1021	Algorithms and Data Structures	7.5 hp	First cycle
IF1330	Electrical Principles	7.5 hp	First cycle
II1303	Signal Processing	7.5 hp	First cycle
IS1200	Computer Hardware Engineering	7.5 hp	First cycle
IS1300	Embedded Systems	7.5 hp	First cycle
IX1303	Algebra and Geometry	7.5 hp	First cycle
IX1304	Calculus	7.5 hp	First cycle
IX1500	Discrete Mathematics	7.5 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
IK1330	Wireless Systems	7.5 hp	First cycle

Year 3

Mandatory courses (52.5 Credits)

Code	Name	Credits	Edu. level
HT101X	Degree Project in Electrical Engineering and Economics, First Cycle	15.0 hp	First cycle
IE1202	Analog Electronics	7.5 hp	First cycle
IE1332	Electronic Product Development	7.5 hp	First cycle
IK1203	Networks and Communication	7.5 hp	First cycle
IL1331	VHDL Design	7.5 hp	First cycle
IX1501	Mathematical Statistics	7.5 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
EN2720	Ethical Hacking	7.5 hp	Second cycle
HE1038	Control Engineering	7.5 hp	First cycle
HT100X	Degree Project in Computer Engineering and Economics, First Cycle	15.0 hp	First cycle
II1302	Projects and Project Methods	7.5 hp	First cycle
IK1330	Wireless Systems	7.5 hp	First cycle
IK1332	Internet of Things	7.5 hp	First cycle
SF1626	Calculus in Several Variables	7.5 hp	First cycle

Electrical Engineering (TIEL)

Year 1

Mandatory courses (30.0 Credits)

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

Optional courses

Code	Name	Credits	Edu. level
HF1009	Introduction to Mathematics	1.5 hp	First cycle
HF1010	Introduction to Computer Studies	1.5 hp	First cycle

Year 2

Mandatory courses (53.0 Credits)

Code	Name	Credits	Edu. level
HE1027	Electrical Principals	7.0 hp	First cycle
HE1028	Computer Engineering	8.0 hp	First cycle
HE1030	Analog Electronics	8.0 hp	First cycle
HE1034	Telecommunication	7.0 hp	First cycle
HE1043	Electrical Engineering, Project Course	9.0 hp	First cycle
HF1011	Signals, Systems and Transforms	8.0 hp	First cycle
HF1201	Sustainability and Ergonomics	6.0 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
EN2720	Ethical Hacking	7.5 hp	Second cycle
HI1027	Object Oriented Programming	8.0 hp	First cycle
HI2002	Routing in IP Networks	7.5 hp	Second cycle

Year 3

Mandatory courses (45.0 Credits)

Code	Name	Credits	Edu. level
CM1002	Electrical Engineering, project course part 2	9.0 hp	First cycle
HE1032	Electric Power Engineering I	8.0 hp	First cycle
HE1033	Communication Networks	7.0 hp	First cycle
HF1012	Mathematical Statistics	6.0 hp	First cycle
HT101X	Degree Project in Electrical Engineering and Economics, First Cycle	15.0 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
AH2029	Railway Signalling System	7.5 hp	Second cycle
EG2340	Wind Power Systems	7.5 hp	Second cycle
EH2720	Management of Projects	7.5 hp	Second cycle
EI2435	Power Grid Technology and Components	7.5 hp	Second cycle
HE1036	Electric Power Engineering II	7.5 hp	First cycle
HI1027	Object Oriented Programming	8.0 hp	First cycle
HI1032	Communication Systems	7.5 hp	First cycle
HI1033	Mobile Applications and Wireless Networks	7.5 hp	First cycle
HI1035	Mobile Communications and Wireless Networks	7.5 hp	First cycle
HI2002	Routing in IP Networks	7.5 hp	Second cycle
IL1331	VHDL Design	7.5 hp	First cycle
IL2225	Embedded Hardware Design in ASIC and FPGA	7.5 hp	Second cycle
SF1626	Calculus in Several Variables	7.5 hp	First cycle

Chemical Engineering (TIKE)

Year 1

Mandatory courses (36.0 Credits)

Code	Name	Credits	Edu. level
KH1111	Mathematics	15.0 hp	First cycle
KH1123	General Chemistry 1	6.0 hp	First cycle
KH1124	General Chemistry 2	6.0 hp	First cycle
KH1150	Engineering Skills	9.0 hp	First cycle

Optional courses

Code	Name	Credits	Edu. level
KH0001	Introductory Course in Mathematics	1.5 fup	Pre-university level
KH0002	Introduction to Chemistry	1.5 fup	Pre-university level
KH1407	Practical Training for the Degree Programme in Chemical Engineering	7.5 hp	First cycle

Year 2

Mandatory courses (77.0 Credits)

Code	Name	Credits	Edu. level
KH1111	Mathematics	15.0 hp	First cycle
KH1121	Organic Chemistry	9.0 hp	First cycle
KH1122	Analytical Chemistry	7.5 hp	First cycle
KH1130	Chemical Engineering and Technology 1	7.5 hp	First cycle
KH1212	Mathematical Statistics	5.0 hp	First cycle
KH1231	Chemical Engineering and Technology 2	21.0 hp	First cycle
KH1242	Sustainable Development and the Chemical Engineer	6.0 hp	First cycle
KH1251	Electrical Measurements, Control Theory and Practice	6.0 hp	First cycle

Optional courses

Code	Name	Credits	Edu. level
KH1406	Swedish Writing for Engineers	7.5 hp	First cycle
KH1407	Practical Training for the Degree Programme in Chemical Engineering	7.5 hp	First cycle

Year 3

Mandatory courses (58.5 Credits)

Code	Name	Credits	Edu. level
KH1223	Biotechnology	7.5 hp	First cycle
KH1231	Chemical Engineering and Technology 2	21.0 hp	First cycle
KH1324	Analytical Chemistry 2	7.5 hp	First cycle
KH1341	Environmental Technology	7.5 hp	First cycle
KH138X	Degree Project in Chemical Engineering and Technology, First Cycle	15.0 hp	First cycle

Optional courses

Code	Name	Credits	Edu. level
KH1221	Applied Physical Chemistry	5.0 hp	First cycle
KH1222	Applied Chemistry	5.0 hp	First cycle
KH1332	Chemical Engineering and Technology 3	9.0 hp	First cycle
KH1353	Organisational Development and Leadership for Engineers	7.5 hp	First cycle
KH1406	Swedish Writing for Engineers	7.5 hp	First cycle
KH1407	Practical Training for the Degree Programme in Chemical Engineering	7.5 hp	First cycle

Mechanical Engineering (TIMA)

Year 1

Mandatory courses (30.0 Credits)

Code	Name	Credits	Edu. level
ML1000	Engineering Mathematics	11.0 hp	First cycle
ML1110	Mechanical Engineering, Introduction Course	9.0 hp	First cycle
ML1200	Engineering Materials and Production, General Course	10.0 hp	First cycle

Year 2

Mandatory courses (60.0 Credits)

Code	Name	Credits	Edu. level
ML1101	Mechanics, General Course	7.5 hp	First cycle
ML1111	Business Control with Applied Statistics	9.0 hp	First cycle
ML1201	Strength of Materials, General Course	6.0 hp	First cycle
ML1203	Energy Technology	6.0 hp	First cycle
ML1206	Machine Components	10.5 hp	First cycle
ML1209	Computer Based Product Development Tools, Basic Course	7.5 hp	First cycle
ML1309	Programming and Numerical Tools	6.0 hp	First cycle
ML1330	Financial Control in an Industrial Concept	7.5 hp	First cycle

Year 3

Mandatory courses (45.0 Credits)

Code	Name	Credits	Edu. level
HM1006	Electrical and Control Engineering	7.5 hp	First cycle
HM1016	Manufacturing Process, Intermediate Course 1	7.5 hp	First cycle
ML1213	Product Development and Design	15.0 hp	First cycle
ML190X	Degree Project in Mechanical Engineering and Economics, First Cycle	15.0 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
AH2401	Risk in Technical Systems	7.5 hp	Second cycle
HE1011	Control Systems	7.5 hp	First cycle
HU1903	Management	7.5 hp	First cycle
ML1108	Decision Models and Impact Assessment	7.5 hp	First cycle
ML1205	Production Driven Product Design	7.5 hp	First cycle
ML1214	Solid Mechanics, Advanced Course	7.5 hp	First cycle
ML1330	Financial Control in an Industrial Concept	7.5 hp	First cycle
ML1332	Computer-aided Mechanical Design, Continuation Course	7.5 hp	First cycle
ML1335	Safety and Management of Technical systems, Project Course	7.5 hp	First cycle
ML1336	Sensors and Actuators	7.5 hp	First cycle
ML1616	Industrial Project Management	7.5 hp	First cycle
ML1906	Factory Design - Shop Layout, Production Flow and Work Environment	7.5 hp	First cycle
ML2200	Manufacturing Process, Intermediate Course 2	7.5 hp	Second cycle



Appendix 2: Specialisations

Degree Programme in Engineering and Economics (TITEH)

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.