



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 15 (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

Industrial Business Administration and Manufacturing (IEPS)

Year 3

Mandatory courses (43.5 Credits)

Code	Name	Credits	Edu. level
AH2401	Risk in Technical Systems	7.5 hp	Second cycle
HM1016	Manufacturing Process, Intermediate Course 1	7.5 hp	First cycle
HU1903	Management	7.5 hp	First cycle
ML1106	Factory Design	6.0 hp	First cycle
ML1214	Solid Mechanics, Advanced Course	7.5 hp	First cycle
ML2200	Manufacturing Process, Intermediate Course 2	7.5 hp	Second cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
HM101X	Degree Project in Industrial Business Administration and Manufacturing, First Cycle	15.0 hp	First cycle
HM102X	Degree Project in Mechanical Engineering, First Cycle	15.0 hp	First cycle
ML190X	Degree Project in Mechanical Engineering and Economics, First Cycle	15.0 hp	First cycle

Innovation and Industrial Design (IODS)

Year 3

Mandatory courses (28.5 Credits)

Code	Name	Credits	Edu. level
ML1210	Design and Product Development 1	7.5 hp	First cycle
ML1211	Design and Product Development 2	6.0 hp	First cycle
ML1212	Computer Support for Design Engineering 2	7.5 hp	First cycle
ML1906	Factory Design - Shop Layout, Production Flow and Work Environment	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
HF1008	Linear Algebra and Calculus in One Variable	10.0 hp	First cycle
HI1024	Computer Programming, Basic Course	8.0 hp	First cycle
HL1200	Engineering Introduction	6.0 hp	First cycle
HL1201	Medicine and Medical Engineering, Basic Course	12.0 hp	First cycle

Year 2

Mandatory courses (57.5 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
HF1011	Signals, Systems and Transforms	8.0 hp	First cycle
HH1800	Industrial Business Economics	7.5 hp	First cycle
HL1015	Engineering in Intensvie Care and Surgery	6.0 hp	First cycle

Year 3

Mandatory courses (34.0 Credits)

Code	Name	Credits	Edu. level
HE1019	EMC-Electronics	6.0 hp	First cycle
HE1040	Electronic Design. Project Course	9.0 hp	First cycle
HF1012	Mathematical Statistics	6.0 hp	First cycle
HL1014	Clinical Engineering	6.0 hp	First cycle
HL1016	Medical Measurement and Monitoring	7.0 hp	First cycle

Construction Engineering and Design (TIBY)

Year 1

Mandatory courses (30.0 Credits)

Code	Name	Credits	Edu. level
AF1710	Building Technology 1, Constructional Engineering and Design	7.5 hp	First cycle
AF1717	Technical Work, Methods and Tools	7.5 hp	First cycle
HF1903	Mathematics 1	7.5 hp	First cycle
HS1003	Structural Mechanics 1	7.5 hp	First cycle

Optional courses

Code	Name	Credits	Edu. level
HF0009	Introduction to Mathematics	1.5 fup	Pre-university level
HF0017	Introduction to Computer Studies	1.5 fup	Pre-university level

Year 2

Mandatory courses (60.0 Credits)

Code	Name	Credits	Edu. level
AF1711	Building Technology 2, Building Physics and Materials	7.5 hp	First cycle
AF1721	Environmental Science and Work Science	5.0 hp	First cycle
AF1722	The Building Process	5.0 hp	First cycle
AF1723	Building Logistics and Risk Management	5.0 hp	First cycle
AF1727	Development of Residential Buildings. Renovation, Rebuilding and Extension	7.5 hp	First cycle
HF1004	Mathematics and Statistics	7.5 hp	First cycle
HS1004	Structural Mechanics 2	7.5 hp	First cycle
HS1005	Surveying and Mathematical Statistics	7.5 hp	First cycle
HS1007	Fluid Mechanics	7.5 hp	First cycle

Year 3

Mandatory courses (37.5 Credits)

Code	Name	Credits	Edu. level
AF1730	Building Information Modeling	7.5 hp	First cycle
HS1001	Structure and Design	7.5 hp	First cycle
HS1008	Structural Design in Civil Engineering	7.5 hp	First cycle
HS1009	Urban Planning	7.5 hp	First cycle
HS1029	Geology and Soil Mechanics	7.5 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
AH1907	Installation .1 Road, Railways and Wastewater Networks	7.5 hp	First cycle
HS1020	Moisture Related Damages	7.5 hp	First cycle
HS1735	Project Building and Installations	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
HF0009	Introduction to Mathematics	1.5 fup	Pre-university level
HF0010	Introduction to Computer Studies	1.5 fup	Pre-university level

Year 2

Mandatory courses (60.5 Credits)

Code	Name	Credits	Edu. level
HE1028	Computer Engineering	8.0 hp	First cycle
HF1013	Discrete Mathematics	8.0 hp	First cycle
HF1201	Sustainability and Ergonomics	6.0 hp	First cycle
HH1800	Industrial Business Economics	7.5 hp	First cycle
HI1025	Operating Systems	7.0 hp	First cycle
HI1026	Computer Engineering and Internet Technology, Project Course	9.0 hp	First cycle
HI1027	Object Oriented Programming	8.0 hp	First cycle
HI1030	Database Technology	7.0 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
HI1028	Software Development, Project Course	9.0 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
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
IX1304	Calculus	7.5 hp	First cycle

Optional courses

Code	Name	Credits	Edu. level
SF0003	Introductory Course in Mathematics	1.5 fup	Pre-university level

Year 2

Mandatory courses (60.0 Credits)

Code	Name	Credits	Edu. level
ID1020	Algorithms and Data Structures	7.5 hp	First cycle
ID1354	Internet Applications	7.5 hp	First cycle
IK1203	Networks and Communication	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
IX1500	Discrete Mathematics	7.5 hp	First cycle

Year 3

Mandatory courses (30.0 Credits)

Code	Name	Credits	Edu. level
ID1019	Programming II	7.5 hp	First cycle
II1302	Projects and Project Methods	7.5 hp	First cycle
IK1552	Internetworking	7.5 hp	First cycle
IK2215	Advanced Internetworking	7.5 hp	Second cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
DD1315	Programming Techniques and Matlab	7.5 hp	First cycle
DD2387	Program System Construction Using C++	6.0 hp	Second cycle
DD2429	Computational Photography	6.0 hp	Second cycle
DD2431	Machine Learning	6.0 hp	Second cycle
DT2300	Sound in Interaction	7.5 hp	Second cycle
EP2300	Management of Networks and Networked Systems	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
ID1213	Logic Programming, Basic Course	7.5 hp	First cycle
ID2201	Distributed Systems, Basic Course	7.5 hp	Second cycle
ID2204	Constraint Programming	7.5 hp	Second cycle
IE1206	Embedded Electronics	7.5 hp	First cycle
II1351	Selectable Specialisation	6.0 hp	First cycle
IK2554	Practical Voice Over IP (VoIP)	7.5 hp	Second cycle
IV1013	Introduction to Computer Security	7.5 hp	First cycle
IV1023	Advanced Information Handling with XML	7.5 hp	First cycle
IV1300	Software Engineering	7.5 hp	First cycle
SF1626	Calculus in Several Variables	7.5 hp	First cycle

Electronics and Computer Engineering (TIED)

Year 1

Mandatory courses (22.5 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

Optional courses

Code	Name	Credits	Edu. level
SF0003	Introductory Course in Mathematics	1.5 fup	Pre-university level

Year 2

Mandatory courses (60.0 Credits)

Code	Name	Credits	Edu. level
ID1020	Algorithms and Data Structures	7.5 hp	First cycle
IE1202	Analog Electronics	7.5 hp	First cycle
IF1330	Electrical Principles	7.5 hp	First cycle
II1303	Signal Processing	7.5 hp	First cycle
IK1203	Networks and Communication	7.5 hp	First cycle
IS1200	Computer Hardware Engineering	7.5 hp	First cycle
IX1303	Algebra and Geometry	7.5 hp	First cycle
IX1500	Discrete Mathematics	7.5 hp	First cycle

Year 3

Mandatory courses (37.5 Credits)

Code	Name	Credits	Edu. level
HE1038	Control Engineering	7.5 hp	First cycle
IE1332	Electronic Product Development	7.5 hp	First cycle
II1302	Projects and Project Methods	7.5 hp	First cycle
IL1331	VHDL Design	7.5 hp	First cycle
IS1300	Embedded Systems	7.5 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
HH1800	Industrial Business Economics	7.5 hp	First cycle
ID1213	Logic Programming, Basic Course	7.5 hp	First cycle
ID1354	Internet Applications	7.5 hp	First cycle
IF1613	Electromagnetism and Waves	7.5 hp	First cycle
MJ2613	Sustainable Development	6.0 hp	Second 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
HF1008	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
HF0009	Introduction to Mathematics	1.5 fup	Pre-university level
HF0010	Introduction to Computer Studies	1.5 fup	Pre-university level

Year 2

Mandatory courses (60.5 Credits)

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

Year 3

Mandatory courses (30.0 Credits)

Code	Name	Credits	Edu. level
HE1032	Electric Power Engineering I	8.0 hp	First cycle
HE1033	Communication Networks	7.0 hp	First cycle
HE1035	Project Course in Electrical Engineering	9.0 hp	First cycle
HF1012	Mathematical Statistics	6.0 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
EH2720	Management of Projects	7.5 hp	Second cycle
HI1027	Object Oriented Programming	8.0 hp	First cycle
HI1032	Communication Systems	7.5 hp	First cycle
IL1331	VHDL Design	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

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

Year 3

Mandatory courses (64.0 Credits)

Code	Name	Credits	Edu. level
KH1221	Applied Physical Chemistry	5.0 hp	First cycle
KH1222	Applied Chemistry	5.0 hp	First cycle
KH1223	Biotechnology	7.5 hp	First cycle
KH1324	Analytical Chemistry 2	7.5 hp	First cycle
KH1332	Chemical Engineering and Technology 3	9.0 hp	First cycle
KH1341	Environmental Technology	7.5 hp	First cycle
KH1353	Organisational Development and Leadership for Engineers	7.5 hp	First cycle
KH138X	Degree Project in Chemical Engineering and Technology, First Cycle	15.0 hp	First cycle

Mechanical Engineering (TIMA)

Year 1

Mandatory courses (34.5 Credits)

Code	Name	Credits	Edu. level
ML1000	Engineering Mathematics	11.0 hp	First cycle
ML1040	Programme Integrating Course in Mechanical Engineering	6.0 hp	First cycle
ML1112	Mechanical Engineering, Introductory Course	7.5 hp	First cycle
ML1200	Engineering Materials and Production, General Course	10.0 hp	First cycle

Optional courses

Code	Name	Credits	Edu. level
ML0001	Introduction to Mathematics	1.5 fup	Pre-university level
ML0002	Introduction to Computer Studies	1.5 fup	Pre-university level

Year 2

Mandatory courses (63.0 Credits)

Code	Name	Credits	Edu. level
ML1040	Programme Integrating Course in Mechanical Engineering	6.0 hp	First cycle
ML1101	Mechanics, General Course	7.5 hp	First cycle
ML1113	Business Control with Applied Statistics	10.0 hp	First cycle
ML1201	Strength of Materials, General Course	6.0 hp	First cycle
ML1203	Energy Technology	6.0 hp	First cycle
ML1204	Machine Components	6.0 hp	First cycle
ML1302	Computerized Engineering Tools	11.0 hp	First cycle
ML1306	Electrical and Control Engineering	10.5 hp	First cycle



Appendix 2: Specialisations

Degree Programme in Engineering and Economics (TITEH)

Industrial Business Administration and Manufacturing (IEPS)

No information entered.

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.