



Programme syllabus

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

Degree Programme in Design and Product Realisation 270 credits

Civilingenjörsutbildning i design och produktframtagning

Valid for students admitted to the education from autumn 05 (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 Design and Product Realisation (P)

General courses

Year 3

Mandatory courses (27.0 Credits)

Code	Name	Credits	Edu. level
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MF1014	Design and Product Realization C	9.0 hp	First cycle
MH1005	Structural Materials	6.0 hp	First cycle
SD1115	Fundamentals of Noise and Vibration Control	6.0 hp	First cycle

Optional courses

Code	Name	Credits	Edu. level
DD1322	Applied Programming and Computer Science, Part 1	6.0 hp	First cycle
DD1324	Applied Programming and Computer Science, Part 2	3.0 hp	First cycle
DS1343	Spanish, Advanced Beginners Level	7.5 hp	First cycle
ME1004	Industrial Management, Basic Course	6.0 hp	First cycle
MF1019	Visualization and Communication	6.0 hp	First cycle
MF1027	Microcomputers in Embedded Systems	9.0 hp	First cycle
MF1031	Visualization Methods	6.0 hp	First cycle
MF1032	Project Work in Product Development	8.0 hp	First cycle
MG1001	Manufacturing	6.0 hp	First cycle
MG1002	Automation Technology	6.0 hp	First cycle
MG1023	Control Systems	6.0 hp	First cycle
MG2013	Advanced Welding Technology, Modulus 1	6.0 hp	Second cycle
MG2020	Modularisation of Products	6.0 hp	Second cycle
MG2022	Advanced CAD Modelling and Rapid Prototyping, Project Course	6.0 hp	Second cycle
MG2023	Effective Production	9.0 hp	Second cycle
MG2024	Manufacturing Systems and Automation	6.0 hp	Second cycle
MG2030	Production Engineering - Simulation of Factory, Flow and Processes	6.0 hp	Second cycle
MG2033	Quality Control	6.0 hp	Second cycle
MG2037	Industrial Adhesive Bonding	6.0 hp	Second cycle
MJ1403	Energy Technology	6.0 hp	First cycle
MJ1500	Technology and Ecosystems	6.0 hp	First cycle
SG1217	Fluid Mechanics, Basic Course	6.0 hp	First cycle
SK2360	Laser Metrology and Optical Metrology	6.0 hp	Second cycle
SK2370	Physics of Visual Impressions	6.0 hp	Second cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
MF102X	Degree Project in Design and Product Realization, First Cycle	15.0 hp	First cycle
MF107X	Degree Project in Design and Product Realization, First Cycle	15.0 hp	First cycle
MF112X	Degree Project in Design and Product Realization, First Cycle	15.0 hp	First cycle
MF116X	Degree Project in Design and Product Realization, First Cycle	15.0 hp	First cycle
MG103X	Degree Project in Design and Product Realization, First Cycle	15.0 hp	First cycle

Biomedical Engineering (BMT)

Year 3

Mandatory courses (42.0 Credits)

Code	Name	Credits	Edu. level
HL1008	Cellular and Molecular Biology	15.0 hp	First cycle
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MF1014	Design and Product Realization C	9.0 hp	First cycle
MH1005	Structural Materials	6.0 hp	First cycle
SD1115	Fundamentals of Noise and Vibration Control	6.0 hp	First cycle

Year 4

Mandatory courses (22.5 Credits)

Code	Name	Credits	Edu. level
HL1009	Neuroscience	7.5 hp	First cycle
HL1010	Systems Biology	7.5 hp	First cycle
HL2006	Medical Engineering, Basic Course	7.5 hp	Second cycle

Optional courses

Code	Name	Credits	Edu. level
DD2435	Mathematical Modelling of Biological Systems	9.0 hp	Second cycle
KD2270	Biomaterials	6.0 hp	Second cycle
KF2210	Polymer Chemistry	7.5 hp	Second cycle
KF2220	Biopolymers	7.5 hp	Second cycle
KF2270	Structure and Properties of Organic Materials	9.0 hp	Second cycle
KF2280	Structure and Function of Biofibres	7.5 hp	Second cycle

Energy Technology (EGI)

Year 3

Mandatory courses (39.0 Credits)

Code	Name	Credits	Edu. level
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MF1014	Design and Product Realization C	9.0 hp	First cycle
MH1005	Structural Materials	6.0 hp	First cycle
MJ1401	Heat Transfer	6.0 hp	First cycle
SD1115	Fundamentals of Noise and Vibration Control	6.0 hp	First cycle
SG1217	Fluid Mechanics, Basic Course	6.0 hp	First cycle

Year 4

Mandatory courses (33.0 Credits)

Code	Name	Credits	Edu. level
MJ2405	Sustainable Power Generation	9.0 hp	Second cycle
MJ2407	Sustainable Energy Utilisation	9.0 hp	Second cycle
MJ2409	Applied Energy Technology, Project Course	9.0 hp	Second cycle
MJ2411	Renewable Energy Technology	6.0 hp	Second cycle

Optional courses

Code	Name	Credits	Edu. level
MJ2410	Energy Management	6.0 hp	Second cycle
MJ2413	Energy and Environment	6.0 hp	Second cycle
MJ2420	Combustion Theory	6.0 hp	Second cycle
MJ2421	Modelling of Thermodynamic Systems	6.0 hp	Second cycle
MJ2424	Computational Methods in Energy Technology	6.0 hp	Second cycle
MJ2425	Cooling of Electronics	6.0 hp	Second cycle
MJ2429	Turbomachinery	6.0 hp	Second cycle
MJ2430	Thermal Turbomachinery	6.0 hp	Second cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
MJ2412	Renewable Energy Technology, Advanced Course	6.0 hp	Second cycle
MJ2422	Thermal Comfort and Indoor Climate	6.0 hp	Second cycle
MJ2423	Applied Refrigeration and Heat Pump Technology	6.0 hp	Second cycle
MJ2426	Applied Heat and Power Technology	6.0 hp	Second cycle

Combustion Engineering (FMT)

Year 3

Mandatory courses (33.0 Credits)

Code	Name	Credits	Edu. level
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MF1014	Design and Product Realization C	9.0 hp	First cycle
MH1005	Structural Materials	6.0 hp	First cycle
SD1115	Fundamentals of Noise and Vibration Control	6.0 hp	First cycle
SG1220	Fluid Mechanics for Engineers	6.0 hp	First cycle

Year 4

Mandatory courses (32.0 Credits)

Code	Name	Credits	Edu. level
MF2015	Internal Combustion Engineering, General Course	6.0 hp	Second cycle
MF2016	Combustion Engines, Advanced Course	9.0 hp	Second cycle
MF2017	Combustion Engines, Project Course	9.0 hp	Second cycle
SD2222	Vehicle Components	8.0 hp	Second cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
MF1025	Model Based Product Development II <i>group 1</i>	6.0 hp	First cycle
MF1026	Model Based Product Development I <i>group 1</i>	9.0 hp	First cycle
MF1043	Microcomputers in Embedded Systems <i>group 2</i>	9.0 hp	First cycle
MF2007	Dynamics and Motion Control <i>group 2</i>	9.0 hp	Second cycle
MF2010	Component Design <i>group 1</i>	6.0 hp	Second cycle
MF2014	Fluid Systems and Machines <i>group 1</i>	6.0 hp	Second cycle
MF2018	Tribology <i>grupp 1</i>	6.0 hp	Second cycle
MF2025	Project Work in Mechatronics <i>group 3</i>	6.0 hp	Second cycle
MJ2653	Environmental Consequences, Advanced Course II <i>group 3</i>	6.0 hp	Second cycle
SD2150	Experimental Structure Dynamics, Project Course <i>group 3</i>	9.0 hp	Second cycle

Ground Vehicle Engineering (FOT)

Year 3

Mandatory courses (39.0 Credits)

Code	Name	Credits	Edu. level
EL1120	Automatic Control, General Course	6.0 hp	First cycle
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MF1014	Design and Product Realization C	9.0 hp	First cycle
MH1005	Structural Materials	6.0 hp	First cycle
SD1115	Fundamentals of Noise and Vibration Control	6.0 hp	First cycle
SG1217	Fluid Mechanics, Basic Course	6.0 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
SA108X	Degree Project in Mechanical Engineering, First Cycle	15.0 hp	First cycle

Year 4

Mandatory courses (57.0 Credits)

Code	Name	Credits	Edu. level
MF2015	Internal Combustion Engineering, General Course	6.0 hp	Second cycle
MF2016	Combustion Engines, Advanced Course	9.0 hp	Second cycle
SD2222	Vehicle Components	8.0 hp	Second cycle
SD2225	Ground Vehicle Dynamics, Basic Course	11.0 hp	Second cycle
SD2306	Railway Systems and Rail Vehicles	9.0 hp	Second cycle
SD2313	Rail Vehicle Dynamics	8.0 hp	Second cycle
SG2211	Vehicle Aerodynamics	6.0 hp	Second cycle

Recommended courses

Code	Name	Credits	Edu. level
AF2901	Road- and Railway Track Engineering	7.5 hp	Second cycle
AH2026	Railway Traffic - Market and Planning, Basic Course	7.5 hp	Second cycle
EJ2400	Electric Traction	6.0 hp	Second cycle
EJ2410	Hybrid Vehicle Drives	7.5 hp	Second cycle
EL2520	Control Theory and Practice, Advanced Course	7.5 hp	Second cycle
ME2040	Human Factors Engineering - Man-Machine System	6.0 hp	Second cycle
MF1043	Microcomputers in Embedded Systems	9.0 hp	First cycle
SD2150	Experimental Structure Dynamics, Project Course	9.0 hp	Second cycle
SD2190	Vehicle Acoustics and Vibration	6.0 hp	Second cycle
SD2228	Environmental Friendly Vehicle - Project Course	8.0 hp	Second cycle
SD2411	Lightweight Structures and FEM	8.0 hp	Second cycle
SD2450	Biomechanics and Neuronics	6.0 hp	Second cycle
SD2625	Computational Road Vehicle Aerodynamics	3.0 hp	Second cycle

Solid Mechanics (HLF)

Year 3

Mandatory courses (33.0 Credits)

Code	Name	Credits	Edu. level
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MF1014	Design and Product Realization C	9.0 hp	First cycle
MH1005	Structural Materials	6.0 hp	First cycle
SD1115	Fundamentals of Noise and Vibration Control	6.0 hp	First cycle
SE1025	FEM for Engineering Applications	6.0 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
SA108X	Degree Project in Mechanical Engineering, First Cycle	15.0 hp	First cycle

Year 4

Mandatory courses (18.0 Credits)

Code	Name	Credits	Edu. level
SE2122	Applied Solid Mechanics	9.0 hp	Second cycle
SE2126	Material Mechanics	9.0 hp	Second cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
SE2116	Dynamic Problems in Solid Mechanics	6.0 hp	Second cycle
SE2121	Introduction to Biomechanics	9.0 hp	Second cycle
SE2123	Testing Techniques in Solid Mechanics	6.0 hp	Second cycle
SE2125	Solid Mechanics Modelling for Design	9.0 hp	Second cycle
SE2127	Packaging Materials	7.5 hp	Second cycle
SE2129	Fracture Mechanics and Fatigue	9.0 hp	Second cycle

Industrial Design (IDE)

Year 3

Mandatory courses (39.0 Credits)

Code	Name	Credits	Edu. level
HM1025	Ergonomics in Product Development	6.0 hp	First cycle
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MF1014	Design and Product Realization C	9.0 hp	First cycle
MF1019	Visualization and Communication	6.0 hp	First cycle
MH1005	Structural Materials	6.0 hp	First cycle
SD1115	Fundamentals of Noise and Vibration Control	6.0 hp	First cycle

Optional courses

Code	Name	Credits	Edu. level
MF1029	Industrial Design Theory	6.0 hp	First cycle
MF1031	Visualization Methods	6.0 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
MF116X	Degree Project in Design and Product Realization, First Cycle	15.0 hp	First cycle

Year 4

Mandatory courses (42.0 Credits)

Code	Name	Credits	Edu. level
MF2005	Innovative Design I	12.0 hp	Second cycle
MF2028	Industrial Design, Advanced Course	30.0 hp	Second cycle

Industrial Engineering and Organisation (IEO)

Year 3

Mandatory courses (39.0 Credits)

Code	Name	Credits	Edu. level
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
ME1007	Strategic Management	6.0 hp	First cycle
ME2044	Human Resource Management	6.0 hp	Second cycle
MF1014	Design and Product Realization C	9.0 hp	First cycle
MH1005	Structural Materials	6.0 hp	First cycle
SD1115	Fundamentals of Noise and Vibration Control	6.0 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
MG103X	Degree Project in Design and Product Realization, First Cycle	15.0 hp	First cycle

Year 4

Mandatory courses (3.0 Credits)

Code	Name	Credits	Edu. level
ME2000	Research Methodology	3.0 hp	Second cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
ME2013	Operations Management: Organization and Control	6.0 hp	Second cycle
ME2014	Operations Management: Strategy and Development	6.0 hp	Second cycle
ME2015	Project Management: Leadership and Control	6.0 hp	Second cycle
ME2017	Project Management: Leading Project-based Operations	6.0 hp	Second cycle
ME2018	Leading Temporary Organizations and Projects	6.0 hp	Second cycle
ME2026	Brand, Trends and Traditions	6.0 hp	Second cycle
ME2032	Economics of Industrial and Technical Transformation	6.0 hp	Second cycle
ME2034	Management of New Technology and Industrial Creativity	6.0 hp	Second cycle
ME2035	Globalization of Industry and Technology, Advanced Course	6.0 hp	Second cycle
ME2037	Project Communication	6.0 hp	Second cycle
ME2038	IT Management	6.0 hp	Second cycle
ME2039	Knowledge Management	6.0 hp	Second cycle

Industrial Ecology (ILE)

Year 3

Mandatory courses (33.0 Credits)

Code	Name	Credits	Edu. level
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MF1014	Design and Product Realization C	9.0 hp	First cycle
MH1005	Structural Materials	6.0 hp	First cycle
MJ1502	The Engineer and Sustainable Development	6.0 hp	First cycle
SD1115	Fundamentals of Noise and Vibration Control	6.0 hp	First cycle

Year 4

Mandatory courses (37.5 Credits)

Code	Name	Credits	Edu. level
MJ2611	Introduction Industrial Ecology	6.0 hp	Second cycle
MJ2621	Environmental Technology, Advanced Course	7.5 hp	Second cycle
MJ2652	Environmental Effects from Technical Systems and Processes	6.0 hp	Second cycle
MJ2663	Environmental Management	6.0 hp	Second cycle
MJ2680	Environmental Systems Analysis	6.0 hp	Second cycle
MJ2691	Technology and Sustainable Development	6.0 hp	Second cycle

Recommended courses

Code	Name	Credits	Edu. level
MJ2630	Waste Management, Advanced Course	6.0 hp	Second cycle
MJ2651	Ecology, Advanced Course	6.0 hp	Second cycle
MJ2653	Environmental Consequences, Advanced Course II	6.0 hp	Second cycle
MJ2664	Environmental Management II, Advanced Course	6.0 hp	Second cycle
MJ2670	Risk Management	6.0 hp	Second cycle

Industrial Production (INP)

Year 3

Mandatory courses (39.0 Credits)

Code	Name	Credits	Edu. level
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MF1014	Design and Product Realization C	9.0 hp	First cycle
MG1001	Manufacturing	6.0 hp	First cycle
MG1002	Automation Technology	6.0 hp	First cycle
MH1005	Structural Materials	6.0 hp	First cycle
SD1115	Fundamentals of Noise and Vibration Control	6.0 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
MG103X	Degree Project in Design and Product Realization, First Cycle	15.0 hp	First cycle

Year 4

Mandatory courses (24.0 Credits)

Code	Name	Credits	Edu. level
MG2027	Production Engineering - Project Course	6.0 hp	Second cycle
MG2028	CAD and Other IT Tools in Industrial Processes	6.0 hp	Second cycle
MG2029	Production Engineering - Planning and Control	6.0 hp	Second cycle
MG2030	Production Engineering - Simulation of Factory, Flow and Processes	6.0 hp	Second cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
MG2020	Modularisation of Products	6.0 hp	Second cycle
MG2026	Integration of Industrial IT Systems	6.0 hp	Second cycle
MG2031	Manufacturing, Advanced Course	6.0 hp	Second cycle
MG2032	Automation Technology, Advanced Course 1	6.0 hp	Second cycle
MG2033	Quality Control	6.0 hp	Second cycle
MG2034	Information Modelling and IT-strategies	6.0 hp	Second cycle
MG2035	Product Data Management/Product Lifecycle Management	6.0 hp	Second cycle

Industrial Production (INPE)

Year 3

Mandatory courses (24.0 Credits)

Code	Name	Credits	Edu. level
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MG1001	Manufacturing	6.0 hp	First cycle
MG1002	Automation Technology	6.0 hp	First cycle
MH1005	Structural Materials	6.0 hp	First cycle

Year 4

Mandatory courses (60.0 Credits)

Code	Name	Credits	Edu. level
MG2200	European Business Culture	7.5 hp	Second cycle
MG2201	Design and Process Modelling	7.5 hp	Second cycle
MG2202	Quality Control	9.0 hp	Second cycle
MG2203	Process Control and Management	9.0 hp	Second cycle
MG2204	Manufacturing Technology and Planning	9.0 hp	Second cycle
MG2205	Operations Management	9.0 hp	Second cycle
MG2206	Design and Information Management	9.0 hp	Second cycle

Integrated Product (IPU)

Year 3

Mandatory courses (39.0 Credits)

Code	Name	Credits	Edu. level
HM1025	Ergonomics in Product Development	6.0 hp	First cycle
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
ME1008	Work Organization and Leadership	6.0 hp	First cycle
MF1014	Design and Product Realization C	9.0 hp	First cycle
MH1005	Structural Materials	6.0 hp	First cycle
SD1115	Fundamentals of Noise and Vibration Control	6.0 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
MF112X	Degree Project in Design and Product Realization, First Cycle	15.0 hp	First cycle

Year 4

Mandatory courses (30.0 Credits)

Code	Name	Credits	Edu. level
MF2027	Integrated Product Development, Advanced Course	30.0 hp	Second cycle

Recommended courses

Code	Name	Credits	Edu. level
ME2035	Globalization of Industry and Technology, Advanced Course	6.0 hp	Second cycle
ME2045	Leading Organizational Change	6.0 hp	Second cycle
ME2046	Managing Risks in Complex Technical Systems	6.0 hp	Second cycle
MF2006	Innovative Design II	6.0 hp	Second cycle
MF2022	Eco Design Project	6.0 hp	Second cycle
MF2025	Project Work in Mechatronics	6.0 hp	Second cycle
MG1001	Manufacturing	6.0 hp	First cycle
MG1002	Automation Technology	6.0 hp	First cycle

Sound and Vibration (LJV)

Year 3

Mandatory courses (33.0 Credits)

Code	Name	Credits	Edu. level
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MF1014	Design and Product Realization C	9.0 hp	First cycle
MH1005	Structural Materials	6.0 hp	First cycle
SD1115	Fundamentals of Noise and Vibration Control	6.0 hp	First cycle
SD2125	Signals and Mechanical Systems	6.0 hp	Second cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
SA108X	Degree Project in Mechanical Engineering, First Cycle	15.0 hp	First cycle

Year 4

Mandatory courses (23.0 Credits)

Code	Name	Credits	Edu. level
SD2140	Vibro Acoustics	8.0 hp	Second cycle
SD2150	Experimental Structure Dynamics, Project Course	9.0 hp	Second cycle
SD2155	Flow Acoustics	6.0 hp	Second cycle

Recommended courses

Code	Name	Credits	Edu. level
SD2165	Acoustical Measurements	8.0 hp	Second cycle
SD2170	Energy Methods	6.0 hp	Second cycle
SD2175	Numerical Methods for Acoustics and Vibration	9.0 hp	Second cycle
SD2180	Non-linear Acoustics	6.0 hp	Second cycle
SD2185	Ultrasonics	6.0 hp	Second cycle
SD2190	Vehicle Acoustics and Vibration	6.0 hp	Second cycle

Lightweight Structures (LKR)

Year 3

Mandatory courses (39.0 Credits)

Code	Name	Credits	Edu. level
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MF1014	Design and Product Realization C	9.0 hp	First cycle
MH1005	Structural Materials	6.0 hp	First cycle
SD1115	Fundamentals of Noise and Vibration Control	6.0 hp	First cycle
SE1025	FEM for Engineering Applications	6.0 hp	First cycle
SF1861	Optimization	6.0 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
SA108X	Degree Project in Mechanical Engineering, First Cycle	15.0 hp	First cycle

Year 4

Mandatory courses (32.0 Credits)

Code	Name	Credits	Edu. level
SD2411	Lightweight Structures and FEM	8.0 hp	Second cycle
SD2413	Fibre Composites - Analysis and Design	6.0 hp	Second cycle
SD2414	Fibre Composites - Materials and Manufacturing	6.0 hp	Second cycle
SD2415	Process Modelling for Composite Manufacturing	6.0 hp	Second cycle
SD2416	Structural Optimisation and Sandwich Design	6.0 hp	Second cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
SD2432	Lightweight Design	20.0 hp	Second cycle
SD2450	Biomechanics and Neuronics	6.0 hp	Second cycle
SD2505	Biomaterials and Products	7.0 hp	Second cycle

Mechanics (MEK)

Year 3

Mandatory courses (33.0 Credits)

Code	Name	Credits	Edu. level
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MF1014	Design and Product Realization C	9.0 hp	First cycle
MH1005	Structural Materials	6.0 hp	First cycle
SD1115	Fundamentals of Noise and Vibration Control	6.0 hp	First cycle
SG1220	Fluid Mechanics for Engineers	6.0 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
SA108X	Degree Project in Mechanical Engineering, First Cycle	15.0 hp	First cycle

Year 4

Mandatory courses (14.5 Credits)

Code	Name	Credits	Edu. level
SG2150	Rigid Body Dynamic	7.0 hp	Second cycle
SG2214	Fluid Mechanics	7.5 hp	Second cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
SG2122	Continuum Mechanics	6.0 hp	Second cycle
SG2123	Mathematical Methods of Mechanics, General Course	6.0 hp	Second cycle
SG2125	Mathematical Methods of Mechanics, Intermediate Course	3.0 hp	Second cycle
SG2126	Non-linear Oscillations and Dynamical Systems in Mechanics	7.5 hp	Second cycle
SG2151	Modern Multibody Dynamics	8.0 hp	Second cycle
SG2211	Vehicle Aerodynamics	6.0 hp	Second cycle
SG2212	Computational Fluid Dynamics	7.5 hp	Second cycle
SG2213	Applied Computational Fluid Dynamics	3.0 hp	Second cycle
SG2215	Compressible Flow	7.5 hp	Second cycle
SG2218	Turbulence	7.5 hp	Second cycle
SG2219	Advanced Compressible Flows	7.5 hp	Second cycle
SG2221	Wave Motions and Hydrodynamic Stability	7.5 hp	Second cycle
SG2850	Finite Element Methods	7.5 hp	Second cycle
SG2860	FEM Modelling	8.0 hp	Second cycle
SG2870	Non - Linear Finite Element Methods	7.0 hp	Second cycle

Machine Design (MKN)

Year 3

Mandatory courses (45.0 Credits)

Code	Name	Credits	Edu. level
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MF1014	Design and Product Realization C	9.0 hp	First cycle
MF2018	Tribology	6.0 hp	Second cycle
MH1005	Structural Materials	6.0 hp	First cycle
SD1115	Fundamentals of Noise and Vibration Control	6.0 hp	First cycle
SE1025	FEM for Engineering Applications	6.0 hp	First cycle
SE1128	Solid Mechanics for Machine Design	6.0 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
MF102X	Degree Project in Design and Product Realization, First Cycle	15.0 hp	First cycle

Recommended courses

Code	Name	Credits	Edu. level
SE2119	Finite Element Method, Project Course	3.0 hp	Second cycle

Year 4

Mandatory courses (45.0 Credits)

Code	Name	Credits	Edu. level
MF2004	Advanced Machine Design	18.0 hp	Second cycle
MF2006	Innovative Design II	6.0 hp	Second cycle
MF2010	Component Design	6.0 hp	Second cycle
MF2011	Systems Engineering	9.0 hp	Second cycle
MF2024	Robust and Probabilistic Design	6.0 hp	Second cycle

Naval Systems (MSY)

Year 3

Mandatory courses (33.0 Credits)

Code	Name	Credits	Edu. level
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MF1014	Design and Product Realization C	9.0 hp	First cycle
MH1005	Structural Materials	6.0 hp	First cycle
SD1115	Fundamentals of Noise and Vibration Control	6.0 hp	First cycle
SE1025	FEM for Engineering Applications	6.0 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
SA108X	Degree Project in Mechanical Engineering, First Cycle	15.0 hp	First cycle
SG1217	Fluid Mechanics, Basic Course	6.0 hp	First cycle
SG1220	Fluid Mechanics for Engineers	6.0 hp	First cycle

Year 4

Mandatory courses (49.0 Credits)

Code	Name	Credits	Edu. level
SD2411	Lightweight Structures and FEM	8.0 hp	Second cycle
SD2701	Introduction to Naval Architecture	8.0 hp	Second cycle
SD2702	Naval Design	20.0 hp	Second cycle
SD2703	Marine Dynamics	8.0 hp	Second cycle
SD2704	Hull Structural Design	5.0 hp	Second cycle

Recommended courses

Code	Name	Credits	Edu. level
EH2010	Management of Technology	7.5 hp	Second cycle
SD2413	Fibre Composites - Analysis and Design	6.0 hp	Second cycle
SD2414	Fibre Composites - Materials and Manufacturing	6.0 hp	Second cycle
SD2416	Structural Optimisation and Sandwich Design	6.0 hp	Second cycle
SD2450	Biomechanics and Neuronics	6.0 hp	Second cycle
SG2212	Computational Fluid Dynamics	7.5 hp	Second cycle
SG2213	Applied Computational Fluid Dynamics	3.0 hp	Second cycle
SG2214	Fluid Mechanics	7.5 hp	Second cycle
SG2221	Wave Motions and Hydrodynamic Stability	7.5 hp	Second cycle

Mechatronics (MTK)

Year 3

Mandatory courses (42.0 Credits)

Code	Name	Credits	Edu. level
DD1321	Applied Programming and Computer Science	9.0 hp	First cycle
EL1120	Automatic Control, General Course	6.0 hp	First cycle
ME1001	Industrial Management, Basic Course	6.0 hp	First cycle
MF1014	Design and Product Realization C	9.0 hp	First cycle
MH1005	Structural Materials	6.0 hp	First cycle
SD1115	Fundamentals of Noise and Vibration Control	6.0 hp	First cycle

Conditionally elective courses

Code	Name	Credits	Edu. level
MF107X	Degree Project in Design and Product Realization, First Cycle	15.0 hp	First cycle

Year 4

Mandatory courses (36.0 Credits)

Code	Name	Credits	Edu. level
MF2003	Mechatronics, Advanced Course	18.0 hp	Second cycle
MF2007	Dynamics and Motion Control	9.0 hp	Second cycle
MF2008	Embedded Control Systems	9.0 hp	Second cycle



Appendix 2: Specialisations

Degree Programme in Design and Product Realisation (P)

Biomedical Engineering (BMT)

No information entered.

Energy Technology (EGI)

No information entered.

Combustion Engineering (FMT)

No information entered.

Ground Vehicle Engineering (FOT)

No information entered.

Solid Mechanics (HLF)

No information entered.

Industrial Design (IDE)

No information entered.

Industrial Engineering and Organisation (IEO)

No information entered.

Industrial Ecology (ILE)

No information entered.

Industrial Production (INP)

No information entered.

Industrial Production (INPE)

No information entered.

Integrated Product (IPU)

No information entered.

Sound and Vibration (LJV)

No information entered.

Lightweight Structures (LKR)

No information entered.

Mechanics (MEK)

No information entered.

Machine Design (MKN)

No information entered.

Naval Systems (MSY)

No information entered.

Mechatronics (MTK)

No information entered.