

SPECIALISATIONS								
Aeronautics (AERO)			Design & Manufacturing (DM)			Energy & Flow (EF)		
Specialisation courses	EC	Quarter	Specialisation courses	EC	Quarter	Specialisation courses	EC	Quarter
201900091 Advanced Topics in Finite Element Methods	5	2	201400103 3D printing	5	1	201500024 Advanced Thermodynamics	5	2
202300225 Basics of Acoustics and Aero-acoustics	5	4	201200133 Biomechatronics	5	4	191121710 Composites	5	1+2
202000244 Aircraft & Wind Turbine Aerodynamics	5	3	191121710 Composites	5	1+2	191154731 Computational Fluid Dynamics	5	4
191121710 Composites	5	1+2	191121720 Design, Production and Materials	5	1+2	201600019 Energy Conversion Technology	5	1
191154731 Computational Fluid Dynamics	5	4	191124720 Design of Production & Inventory Systems	5	3	201500136 Fluid Mechanics II	5	1
201500235 Design for Maintenance Operations	5	3	201000159 Durability of Consumer products	5	3	191154720 Fluid Mechanics of Turbomachines 1	5	2
202000245 Experimental methods in Fluid and Thermal Engine	5	1	202000033 Frontiers in Design and Manufacturing	5	3	202000036 Frontiers in Energy and Flow	5	4
201900074 Fundamentals of Numerical Methods	5	1	191137400 Laser Materials Processing	5	2	201900074 Fundamentals of Numerical Methods	5	1
202000246 Frontiers in Aeronautics	5	4	201200146 Maintenance Engineering & Management	5	1	201400300 Multiphase Flows	5	4
191154340 Gasdynamics	5	2	191102041 Manufacturing Facility Design	5	2	202000035 Multiscale Functional Materials	5	3
201400037 Linear Solid Mechanics	5	3	201600018 Modelling of Technical Design Processes	5	1	201300039 Structural Health and Condition Monitoring	5	3
201300039 Structural Health and Condition Monitoring	5	3	202200100 Systems Engineering	5	1	191141700 Transport Phenomena	5	1
Elective courses	EC	Quarter	Elective courses	EC	Quarter	Elective courses	EC	Quarter
191121700 Composites Forming	5	4	202100228 Adhesion and Bonding Technology	5	4	201900091 Advanced Topics in Finite Element Methods	5	2
202200127 Computational Optimization	5	4	201900091 Advanced Topics in Finite Element Methods	5	2	202300225 Basics of Acoustics & Aero-acoustics	5	4
201700173 Control for UAVs	5	4	201800156 Biomechanics of Human Movement	5	3	202000244 Aircraft & Wind Turbine Aerodynamics	5	3
201900037 Flexible Multibody Dynamics	5	2	202300210 Capita Selecta Design & Manufacturing	5	Y	202001436 Biofluid Dynamics	5	3
201500036 Fluid Mechanics II	5	1	191121700 Composites Forming	5	4	191121700 Composites Forming	5	4
201900097 Machine Learning in Engineering	5	3	202200127 Computational Optimization	5	4	202200127 Computational Optimization	5	4
201400042 Nonlinear Solid Mechanics	5	4	202500249 Cost Management & Engineering	5	2	201500235 Design for Maintenance Operations	5	3
201700024 Wind Energy	5	4	202100128 Design for Additive Manufacturing	5	3	201600252 Energy Storage	5	3
			191131360 Design Principles for Precision Mechanisms 2	5	3	191157750 Engineering Acoustics	5	1
			201900037 Flexible Multibody Dynamics	5	2	202000245 Experimental methods in Fluid and Thermal Engine	5	1
			192850730 Governing Product Development	5	1	191154340 Gasdynamics	5	2
			202400400 Integrative Design of Biomedical Products	5	1	201400194 Granular Matter	5	3
			191127520 Lean Six Sigma Green Belt	5	4	202200266 Hydrogen Technology	5	2
			191102010 Life-Cycle Strategy	5	4	201400037 Linear Solid Mechanics	5	3
			202000035 Multiscale Functional Materials	5	3	201300155 Process Equipment Design	5	3
			201900097 Machine Learning in Engineering	5	3	202400656 Programming in Engineering	-	Y
			201800003 Operations Research Techniques 1	5	1&3	201700218 Turbulent Combustion	5	3
			202300064 Simulation	5	1	201700024 Wind Energy	5	4
			191530881 Stochastic Models in Operations Management	5	3			
			191531830 Stochastic Models in Production and Logistics	5	4			

High-Tech Systems and Materials (HTSM)		
Specialisation courses	EC	Quarter
201900091 Advanced Topics in Finite Element Methods	5	2
202200104 Control System Design for Robotics	5	2
191131360 Design Principles for Precision Mechanisms 2	5	3
191121720 Design, Production and Materials	5	1+2
201400046 Experimental Methods	5	3+4
201900037 Flexible Multibody Dynamics	5	2
202000247 Frontiers in High-Tech Systems and Materials	5	4
201400037 Linear Solid Mechanics	5	3
201400042 Nonlinear Solid Mechanics	5	4
201400044 Plastic & Elastomer Engineering	5	2
191155700 Solids & Surfaces	5	1
202000037 Structural Dynamics	5	1
Elective courses	EC	Quarter
202100228 Adhesion and Bonding Technology	5	4
191121700 Composites Forming	5	4
191121710 Composites	5	1+2
202200127 Computational Optimization	5	4
201500344 Elastomer Science & Engineering	5	4
201900074 Fundamentals of Numerical Methods	5	1
191137400 Laser Materials Processing	5	2
201900097 Machine Learning in Engineering	5	3
202100319 Phase Transformations in Manufacturing	5	4
191155710 Surface Technology	5	3
202200111 System Identification and Parameter Estimation	5	4
191155730 Tribology	5	3

Maintenance Engineering & Operations (MEO)		
Specialisation courses	EC	Quarter
201800008 After-Sales Service Logistics	5	2
201500235 Design for Maintenance Operations	5	3
201300038 Failure Mechanisms & Life Prediction	5	2
202000039 Frontiers in Maintenance	5	4
201800034 Infrastructure Asset Management	5	4
191102010 Life-Cycle Strategy	5	4
201200146 Maintenance Engineering & Management	5	1
191852630 Reliability Engineering and Maintenance Management	5	3
202000037 Structural Dynamics	5	1
201300039 Structural Health and Condition Monitoring	5	3
191155730 Tribology	5	3
Elective courses	EC	Quarter
202100228 Adhesion and Bonding Technology	5	4
201900091 Advanced Topics in Finite Element Methods	5	2
201200145 Capita Selecta - Maintenance Engineering & Operations	5	4
202200104 Control System Design for Robotics	5	2
191121720 Design, Production and Materials	5	1+2
201700294 Engineering Project Management	5	4
201900037 Flexible Multibody Dynamics	5	2
191102041 Manufacturing Facility Design	5	2
191531830 Stochastic Models in Production and Logistics	5	4
191155710 Surface Technology	5	3
202200100 Systems Engineering	5	1
202400647 Warehousing	5	1

Personalized Health Technology (PHT)		
Specialisation courses	EC	Quarter
191210720 Biomedical Signal Acquisition	5	3
191121720 Design, Production and Materials	5	1+2
201700294 Engineering Project Management	5	4
201900037 Flexible Multibody Dynamics	5	2
201500136 Fluid Mechanics II	5	1
202000034 Frontiers in Personal Health Technology	5	2
202200103 Image Processing and Computer Vision	5	1
202400400 Integrative Design of Biomedical Products	5	1
202300102 Medical Certification & Human Factors	5	2
201400037 Linear Solid Mechanics	5	3
202200100 Systems Engineering	5	1
191141700 Transport Phenomena	5	1
Elective courses	EC	Quarter
201400103 3D Printing	5	1
202100080 3D Bioprinting	5	4
201500024 Advanced Thermodynamics	5	2
201900091 Advanced Topics in Finite Element Methods	5	2
202001436 Biofluid Dynamics	5	3
201800156 Biomechanics of Human Movement	5	3
201200133 Biomechatronics	5	4
191154740 Biophysical Fluid Dynamics	5	1
191154731 Computational Fluid Dynamics	5	4
202200104 Control System Design for Robotics	5	2
202000040 Design of Flexible and Soft Robotic Systems	5	4
191131360 Design Principles for Precision Mechanisms 2	5	3
202300256 Development of Artificial Internal Organs	5	3
201900074 Fundamentals of Numerical Methods	5	1
191150480 Human Movement Control	5	3
201700071 Identification of Human Physiological Systems	5	4
202300030 Imaging Techniques	5	1
191127520 Lean Six Sigma Green Belt	5	4
191155700 Solids & Surfaces	5	1
202200111 System Identification and Parameter Estimation and	5	4
191155730 Tribology	5	3

Smart and Sustainable Industry (SSI)		
Specialisation courses	EC	Quarter
201500518 Advanced 3D Modelling	5	3
202000030 Automated Production Systems	5	2
191124720 Design of Production & Inventory Systems	5	3
201600019 Energy Conversion Technology	5	1
202400340 Frontiers in Smart & Sustainable Industries	5	1
202000032 Industrial Robotic Systems	5	1
191102010 Life-cycle Strategy	5	4
201900097 Machine Learning in Engineering	5	3
202000028 Smart Industry Systems	5	4
202400341 Sustainable Cyber-Physical Production Systems	5	2
202400342 Sustainability in Manufacturing	5	2
202200111 System Identification with Parameter Estimation and	5	4
Elective courses	EC	Quarter
201400103 3D Printing	5	1
201700365 Business Models for Sustainable Energy	5	1
201700026 Electrical Power Engineering & System Integration	5	2
202400343 Energy System Integration	5	2
201700075 Internet of Things	5	1
191137400 Laser Materials Processing	5	2
201200146 Maintenance Engineering & Management	5	1
191102041 Manufacturing Facility Design	5	2
192850750 Product Life Cycle Management	5	3
202100226 Reinforcement learning in Engineering	5	4
191531830 Stochastic Models in Production and Logistics	5	4

General Electives		
General elective subjects	EC	Quarter
202001392 Active Sound and Vibration Control	5	3
191158500 Advanced Programming in Engineering	-	Y
201800102 Basics for Process Simulation	5	1
191124310 CAD/CAM - capita selecta	5	3
192850960 Intellectual Property in Product Development	5	3
201600241 Multigrid/Multilevel Scientific Computing	5	4
201700025 Solar Energy	5	3
192850840 Sources of Innovation	5	1
201000201 Virtual Reality	5	4
Glossary		
Y = all year		
1+2 = course will be spread over both quartiles		
I = Referes to latest course information		
Internship 202000250 (15 EC)		
Graduation 202000249 (45 EC)		

Changes compared to previous academic year:	
Energy from Biomass no longer available	
Theory of ODE no longer available	
Cost Management & Engineering has a new course code	
Gasdynamics is now in quartile 2	
Computational Optimization now quartile 4	