

MASTER MECHANICAL ENGINEERING ACADEMIC YEAR 2018-2019

Courses written in italic still refer to the current academic year

PROFILE COURSES

Research & Development (R&D)		
Profile subjects	EC	Quarter
201500136 Fluid Mechanics II	5	1A
201400037 Linear Solid Mechanics	5	2A
191157710 Numerical Methods in Mechanical Engineering	5	1A
191155700 Solids & Surfaces	5	1A/1B
191131700 System Identification and Parameter Estimation	5	2A
191141700 Transport Phenomena	5	1A

Design & Construction (D&C)		
Profile subjects	EC	Quarter
191131360 Design Principles for Precision Mechanisms 2	5	2A/2B
191121720 Design, Production and Materials	5	1B/2A
191150700 Integrative Design of Biomedical Products	5	1A
201600018 Modelling of Technical Design Processes	5	1A
191157710 Numerical Methods in Mechanical Engineering	5	1A
201300155 Process Equipment Design	5	2A

Organisation & Management (O&M)		
Profile subjects	EC	Quarter
201400244 Cost Management & Engineering	5	1B
191124720 Design of Production & Inventory Systems	5	2A
<i>201700294 Engineering Project Management</i>	5	2B
201200146 Maintenance Engineering & Management	5	1A
191102041 Manufacturing Facility Design	5	1B
201700042 Safety by Design for Prod., Equipment and Syst.	5	1B

Specialization coordinators

BE Prof.dr.ir. H.F.J.M. Koopman
DE Ir. M.E. Toxopeus
PM Dr.ir. S. Hoekstra
MEO Dr. A. Martinetti MSc
MS3 Prof.dr.ir. A. de Boer
TFE Prof.dr.ir. C.H. Venner

SPECIALIZATION COURSES

Biomechanical Engineering & Robotics (BE)		
Core subjects	EC	Quarter
201800156 Biomechanics	5	2A
201400040 Dynamics & Control	5	1B
191150480 Human Movement Control	5	2A
Elective subjects	EC	Quarter
191150460 Biomechanical Engineering - Capita Selecta	5	-
201200133 Biomechatronics	5	2B
<i>193810070 Identification of Human Motor Control¹</i>	5	2B
201300004 Robotics for Medical Applications	5	1B

Design, Production & Management (DPM)		
Design Engineering (DE)		
Core subjects	EC	Quarter
191102010 Life-Cycle Strategy	5	2B
191102041 Manufacturing Facility Design	5	1B
191211080 Systems Engineering	5	1A
<i>191100010 TRIZ - Fundamentals</i>	3	Summer
<i>201000201 Virtual Reality</i>	5	2B
Elective subjects	EC	Quarter
201400103 3D Printing; Processes And Use	5	1A
191124430 CAD/CAM - Capita Selecta	5	-
191157730 Computational Structural Optimization	5	1B
191131730 Dynamics of Machines	5	2A
<i>201700294 Engineering Project Management</i>	5	2B
192850960 Intellectual Property in Product Development	5	2A
191127520 Lean Six Sigma Green Belt	5	2B
191158510 Programming in Engineering	3	Sum/1A
192850840 Sources of Innovation	5	1A
<i>191100020 TRIZ - Assignments</i>	2	-

Production Management (PM)		
Core subjects	EC	Quarter
191127520 Lean Six Sigma Green Belt	5	2B
191102041 Manufacturing Facility Design	5	1B
201800003 Operations Research Techniques 1	5	1A or 2A
191158510 Programming in Engineering	3	Sum/1A
191820210 Simulation	5	1A
<i>191530881 Stochastic Models in Operations Management</i>	5	2A
Elective subjects	EC	Quarter
191127500 Production Management - Capita Selecta	5	-
201800008 After-Sales Service Logistics	5	1B
192850840 Sources of Innovation	5	1A
191531830 Stochastic Models in Production and Logistics	5	2B
<i>191820120 Warehousing</i>	5	2B

Internship

191199152 (15EC) -> DPM
 191199154 (20EC) -> other

Graduation

191199197 (45EC) -> DPM
 191199198 (40EC) -> other

Maintenance Engineering & Operations (MEO)		
Core subjects	EC	Quarter
201300038 Failure Mechanisms & Life Prediction	5	1B
201200146 Maintenance Engineering & Management	5	1A
<i>191852630 Reliability Engineering & Maintenance Managm.</i>	5	2A
201300039 Structural Health and Condition Monitoring	5	2B
Elective subjects	EC	Quarter
<i>201500235 Design for Maintenance Operations</i>	5	2A
201800034 Infrastructure and Asset Management	5	2B
201800008 After-Sales Service Logistics	5	1B
201200145 Maintenance Eng. & Design-for-Main. - C.S.	5	-

Mechanics of Solids, Surfaces and Systems (MS3)		
Core subjects	EC	Quarter
191157730 Computational Structural Optimization	5	1B
201400040 Dynamics & Control	5	1B
201400046 Experimental Methods	5	2A/2B
201400042 Nonlinear Solid Mechanics	5	2B
201400044 Plastic and Elastomer Engineering	5	1A/1B
Elective subjects	EC	Quarter
191157240 Applied Mechanics - Capita Selecta	5	-
191121710 Composites	5	1B/2A
<i>191121700 Composites Forming</i>	5	2B
191210770 Digital Control Engineering	5	1A
191131730 Dynamics of Machines	5	2A
201500344 Elastomer Science & Engineering	5	2A/2B
191157750 Engineering Acoustics	5	1A
191210910 Image Processing and Computer Vision	5	2A
191137400 Laser Materials Processing	5	1B
191131410 Mechanical Automation - Capita Selecta	5	-
201200215 Motion and Vibration Control	5	2A
201400048 Moulding Technology	5	2A/2B
191210920 Optimal Estimation in Dynamic Systems	5	2B
<i>191121730 Production Technology - Capita Selecta</i>	5	-
191121740 Rheology & Processing of Thermoplastics	5	2A/2B
201400050 Signal Processing for Acoustics and Vibrations	5	1B
191155710 Surface Technology	5	2A
191155720 Surface Technology and Tribology - C.S.	5	-
201600101 Theory of ODE	5	2A
191155730 Tribology	5	2A/2B

Thermal & Fluid Engineering (TFE)		
Core subjects	EC	Quarter
201500024 Advanced Thermodynamics	5	1B
191154731 Computational Fluid Dynamics	5	2B
201600019 Energy Conversion Technology	5	1A
191154720 Fluid Mechanics of Turbo Machines 1	5	1B
201400300 Multi-Phase Flows	5	2B
Elective subjects	EC	Quarter
<i>201800371 Aero-acoustics</i>	5	2A
191158500 Advanced Programming in Engineering	5	1B/2A
201800102 Basics for Process Simulation	5	1A
191154740 Biophysical Fluid Dynamics: The Respiratory Syst.	5	1A
201700023 Energy from Biomass	5	1B
201600252 Energy Storage	5	2A
<i>201700029 Energy, Sustainability and Society</i>	5	2A
191157750 Engineering Acoustics	5	1A
193580020 Experimental Techniques in Physics of Fluids	3	2A
191154760 Fluid Mechanics of Turbomachines II	4	2B
201400195 Fluids and Elasticity	2,5	2B
191154340 Gasdynamics	5	2A
191102010 Life-cycle Strategy	5	2B
201600241 Multigrid/Multilevel Scientific Computing	5	-
191551150 Numerical Techniques for PDE	5	1B
201300155 Process Equipment Design	5	2A
191158510 Programming in Engineering	3+2	Sum/1A
201700025 Solar Energy	5	2A
201600101 Theory of ODE	5	2A
201700034 Introduction to Partial Differential Equations	5	2A
193735010 Thermodynamics and Flowsheeting	5	1B
201700218 Turbulent Combustion	5	2A
201700024 Wind Energy	5	2B

¹ not in combination with System Identification and Parameter Estimation
 When 2 quartiles are mentioned, it means that the course continues in the next quartile. Each courses is offered once a year
 For courses of other specializations and profiles go to the course catalog

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