

**MASTER MECHANICAL ENGINEERING  
CURRICULUM GROUP ENGINEERING FLUID DYNAMICS 2007/2008**

**I) Master Track Research & Development**

*First Year: 60 EC in total*

**a. Track courses: choose 4 out of 6 (20 EC)**

	Qtr	EC	Rec	Group	Lectures
115771 Numerical Methods in Mechanical Engineering	k12	5	+++	TS/TM	
115471 Fluid Dynamics	k3	5	+++	TS	
115772 Solid Mechanics I, Elasticity	k3	5	+++	TM	
114170 Transport Phenomena	k1	5	++	ThW	
113170 System Identification & Parameter Estimation	k34	5	++	WA	
115570 Solids & Surfaces	k12	5	+	PT/OTR	

**b. Courses from other tracks: choose 1 (5 EC)**

	Qtr	EC	Rec	Group	Lectures
113136 Design Principles	k3	5	+++	WA	
375003 Process Equipment Design	k34	5	+++	ThW/CT	
110215 Product Design / Design principles	k1	5	++	OPM	
115070 Integrative Design of Biomedical Products	k34	5	+	BW	
112172 Design, Production & Materials	k23	5		OPM	
112472 Design Production & Inventory Systems	k3	5		OPM	
113932 Engineering Project Management	k34	5		OPM	
110212 Cost Management & Engineering	k2	3.6		OPM	
110204 Manufacturing Facility Design	k1/2	5		OPM	

**c. Courses in Fluid Dynamics ( $\geq 15$  EC)**

	Qtr	EC	Rec	Group	Lectures
115472 Fluid Mechanics of Turbomachines 1	k2	5		TS	
115473 Computational Fluid Dynamics	k4	3.6		TS	
115540 Aeroacoustics	tbd	3.6		TS	blokcollege
115434 Gasdynamics	k1	5		TS	
115474 Bio-physical Fluid Dynamics: The Respiratory System	k1	5		TS	
115475 Capita Selecta TS	tbd	tbd		TS	
115476 Fluid Mechanics of Turbomachines 2	k34	3.6		TS	
115437 Aerodynamics	k2	6		TSm	
115477 Wave Motion	k2	5		TS	
358001 Turbulence	k2	5		TN-PoF	
358002 Experimental Techniques in Physics of Fluids	k3	5		TN-PoF	

**d. Courses in Mathematics (minimal 1 course)**

	Qtr	EC	Rec	Group	Lectures
155010 Theory of Partial Differential Equations	k2	5		TW-NACM	
151044 Analyse C	k2	3		TW-NACM	
155115 Num. Techniques for Partial Diff. Equations	k2	5		TW-NACM	

**e. Elective Courses (remaining EC)**

	Qtr	EC	Rec	Group	Lectures
11xxxx Not chosen track courses in Research & Development					
11/35xx Not chosen fluid dynamics courses					
112174 Rheology and Processing of Thermoplastics	k34	5		PT	
114123 Practical exercises in Thermal Engineering	k2	2		ThW	
114142 Transp. in Turb. Chem. Reacting Flows	k34	3.6		ThW	
115432 Bijz. Onderwerpen uit de Stromingsleer	tbd	tbd		TS	
115573 Tribology	k34	5		OTR	
115539 Multi-Level Methods	tbd	3.6		TS	
115776 Solid Mechanics II, Plasticity	k4	5		TM	
115775 Engineering Acoustics	k4	5		TM	
115774 Advanced Dynamics	k12	5		TM	

115773 Computational Structural Optimisation	k4	5	TM
115039 Biomechanics	k2	5	TS/BW
121096 Signal Processing in Acoustics & Audio	k2	5	EL-
121130 Micro Electro Mechanical Systems Design	k3	5	EL-
141002 Thermodynamics & Statistical Physics	k2	5	TN-
357004 Theory of General Relativity	k4	5	TN-
144006 Electrodynamics	k1	5	TN-
146012 Introduction to Optics	k1	5	TN-
150630 Applied Functional Analysis	k12	6	TW-
150910 Advanced modeling	k34	6	TW-
151110 Applied Numerical Linear Algebra	k3	5	TW-
152025 Theory of Complex Functions	k4	5	TW-
155109 Mathematical Theory of Finite Element Methods	k4	6	TW-NACM
155116 Applied Finite Element Methods for PDE's	k34	6	TW-Nat.MSc Prog. Math
156037 Applied Analytical Methods	k4	5	TW-
157108 Random Signals and Systems	k3	5	TW-
340012 Nano-fluidics	k3	2.5	TN-
354000 Fundamentals of photonics	k1	5	TN-
371501 Reactor and micro-reactor engineering	k?	5	CT-
542010 Traffic flow theory and traffic management	k3	7.5	CiT-WEM
540041 Shallow Water Flows	k4	3	CiT-WEM
540042 Transport processes & morphology	k4	4.5	CiT-WEM
540090 Mathematical Physics of water systems	k3	7.5	CiT-WEM
574012 Wind Energy	k3	4	SET
574003 Energy from Biomass	k2	5	SET

Any other relevant course you find interesting!

***Second Year: 60 EC in total***

- a. Internship: 15 or 20 EC
- b. Courses: 5 or 0 EC
- c. MSc Assignment: 40 EC

## II) Master Track Design & Construction

### First Year: 60 EC in total

#### a. Track courses: choose 4 out of 6 (20 EC)

	Qtr	EC	Rec	Group	Lectures
115771 Numerical Methods in Mechanical Engineering	k12	5	+++	TS/TM	
113136 Design Principles	k3	5	+++	WA	
375003 Process Equipment Design	k34	5	+++	ThW/CT	
110215 Product Design / Design principles	k1	5	++	OPM	
115070 Integrative Design of Biomedical Products	k34	5	+	BW	
112172 Design, Production & Materials	k23	5		OPM	

#### b. Courses from other tracks: choose 1 (5 EC)

	Qtr	EC	Rec	Group	Lectures
115471 Fluid Dynamics	k3	5	+++	TS	
114170 Transport Phenomena	k1	5	++	ThW	
115772 Solid Mechanics I, Elasticity	k3	5	++	TM	
113170 System Identification & Parameter Estimation	k34	5	++	WA	
112472 Design of Production & Inventory Systems	k3	5		OPM	
113932 Engineering Project Management	k34	5		OPM	
110212 Cost, Management and Engineering	k2	3.6		OPM	
110204 Manufacturing Facility Design	k1/2	5		OPM	

#### c. Courses in Fluid Dynamics ( $\geq 15$ EC)

	Qtr	EC	Rec	Group	Lectures
115472 Fluid Mechanics of Turbomachines 1	k2	5		TS	
115473 Computational Fluid Dynamics	k4	3.6		TS	
115540 Aeroacoustics	tbd	3.6		TS	blokcollege
115434 Gasdynamics	k1	5		TS	
115474 Bio-physical Fluid Dynamics: The Respiratory System	k1	5		TS	
115475 Capita Selecta TS	tbd	tbd		TS	
115476 Fluid Mechanics of Turbomachines 2	k34	3.6		TS	
115437 Aerodynamics	k2	6		TSm	
115477 Wave Motion	k2	5		TS	
358001 Turbulence	k2	5		TN-PoF	
358002 Experimental Techniques in Physics of Fluids	k3	5		TN-PoF	

#### d. Courses in Mathematics (minimal 1 course)

	Qtr	EC	Rec	Group	Lectures
155010 Theory of Partial Differential Equations	k2	5		TW-NACM	
151044 Analyse C	k2	3		TW-NACM	
155115 Num. Techniques for Partial Diff. Equations	k2	5		TW-NACM	

#### e. Elective Courses (remaining EC)

	Qtr	EC	Rec	Group	Lectures
11xxxx Not chosen track courses in Research & Development					
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112174 Rheology and Processing of Thermoplastics	k34	5		PT	
114123 Practical exercises in Thermal Engineering	k2	2		ThW	
114142 Transp. in Turb. Chem. Reacting Flows	k34	3.6		ThW	
115432 Bijz. Onderwerpen uit de Stromingsleer	tbd	tbd		TS	
115573 Tribology	k34	5		OTR	
115539 Multi-Level Methods	tbd	3.6		TS	
115776 Solid Mechanics II, Plasticity	k4	5		TM	
115775 Engineering Acoustics	k4	5		TM	
115774 Advanced Dynamics	k12	5		TM	
115773 Computational Structural Optimisation	k4	5		TM	
115039 Biomechanics	k2	5		TS/BW	

121096 Signal Processing in Acoustics & Audio	k2	5	EL-
121130 Micro Electro Mechanical Systems Design	k3	5	EL-
141002 Thermodynamics & Statistical Physics	k2	5	TN-
357004 Theory of General Relativity	k4	5	TN-
144006 Electrodynamics	k1	5	TN-
146012 Introduction to Optics	k1	5	TN-
150630 Applied Functional Analysis	k12	6	TW-
150910 Advanced modeling	k34	6	TW-
151110 Applied Numerical Linear Algebra	k3	5	TW-
152025 Theory of Complex Functions	k4	5	TW-
155109 Mathematical Theory of Finite Element Methods	k4	6	TW-NACM
155116 Applied Finite Element Methods for PDE's	k34	6	TW-Nat.MSc Prog. Math
156037 Applied Analytical Methods	k4	5	TW-
157108 Random Signals and Systems	k3	5	TW-
340012 Nano-fluidics	k3	2.5	TN-
354000 Fundamentals of photonics	k1	5	TN-
371501 Reactor and micro-reactor engineering	k?	5	CT-
542010 Traffic flow theory and traffic management	k3	7.5	CiT-WEM
540041 Shallow Water Flows	k4	3	CiT-WEM
540042 Transport processes & morphology	k4	4.5	CiT-WEM
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574012 Wind Energy	k3	4	SET
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