MSc Chemical Engineering

Betlem, March 2013, version 3

Molecular & Materials Engineering			
M1 Quarter	M2 Quarter	M3 Quarter	M4 Quarter
AMM Molecular and biomolecular CT 5 EC, Huskens	AMM Structure & properties of organic materials 5 EC, Vancso	AMM Structure & properties of inorganic materials 5 EC, Rijnders	AMM Applications 5 EC Lammertink
AMM Characterization 5 EC Schön		AMM Project organic materials 5 EC, Hempenius	AMM Project inorganic materials & molecular S&T 5 EC, Koster

Figure 1 **S**cheme of the compulsary subjects in the Molecular & Materials Engineering track

<table>
<tr><th colspan="4">Chemical & Process Engineering</th></tr>
<tr><th>M1 Quarter</th><th>M2 Quarter</th><th>M3 Quarter</th><th>M4 Quarter</th></tr>
<tr><td colspan="2">Chemical reaction engineering
5EC, Brilman</td><td colspan="2">Multiphase reaction technology
5EC, Coord: Kersten</td></tr>
<tr><td>Surface phenomenea & microfluids
5EC, Tsai, Gardeniers, Lammertink</td><td>Advanced molecular separations
5EC, Coord: De Vos</td><td colspan="2" rowspan="2">Process plant design
Inclusief Thermodynamica & flowsheeting
15 EC
Coordinator: Van der Ham</td></tr>
<tr><td>Elective
5EC</td><td>Elective
5EC</td></tr>
<tr><td colspan="2">Elective
5EC</td><td rowspan="2">Elective
5EC</td><td rowspan="2"></td></tr>
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Figure 2 **S**cheme of the compulsory subjects in the Chemical & Process Engineering track **from 2013/2014 to and including 2015/2016**

Course list Chemical Engineering 2013

Subjects of M&ME groups	Lecturer	Block	M&ME	C&PE	Remarks
C.S. Biomaterials Science and Technology	Grijpma (BST)	n.s.	X		
C.S. Biomedical Chemistry	Engbersen (BMC)	n.s.	X		
C.S. Biomolecular NanoTechnology	Cornelissen (BNT)	n.s.	X		
C.S. Inorganic Materials Science	Rijnders (IMS)	n.s.	X		
C.S. Macromolecular Nanotechnology	Vancso (MTP)	n.s.	X		
C.S. Molecular Nanofabrication	Huskens (MnF)	n.s.	X		
C.S. Supra-molecular Chemistry and Technology	Verboom (SMCT)	n.s.	X		
AMM – Molecular and Biomolecular Chemistry and Technology	Huskens (coord.)	1	**C**		
Physical Organic Chemistry	Jonkheijm	3	X		
AMM – Inorganic Materials Science	Rijnders (coord.)	3	**C**		
Lab Course Advanced Materials	Ten Elshof	n.s.	X		
AMM Project Inorganic Materials & Molecular S&T	Koster (coord.)	4	**C**		
Chemistry of Inorganic Materials and Nanostructures	Ten Elshof	1	X		
Imperfections	Koster	n.s.	X		
AMM – Characterization	Schön (coord.)	1	**C**		
AMM – Organic Materials Science	Vancso (coord.)	2	**C**		
Polymers & Material Science Practice Lab course	Hempenius	1	X		
AMM Project Organic Materials	Hempenius (coord.)	3	**C**		
Polymer Physics	Vancso	n.s.	X		
Organic Chemistry of Polymers	Engbersen/ Paulusse	n.s.	X		
Polymers for Biomedical Applications Lab course	Grijpma	n.s.	X		
Biochemistry	Poot	4	X		
Controlled Drug and Gene Delivery	Engbersen	2	X		
Literature Essay Minor Subject	Ten Elshof	n.s.	X		

Subjects of CP&E / M&ME groups	Lecturer	Block	M&ME	C&PE	EM3E	Remarks
C.S. Catalytic Processes and Materials	Lefferts (PBM)	n.s.	X	X		
C.S. Inorganic Membranes	Nijmeijer A. (IM)	n.s.	X	X		
C.S. Membrane Technology	Nijmeijer K. (MTG)	n.s.	X	X		
C.S. Mesoscale Chemical Systems	Gardeniers (MCS)	n.s.	X	X		
C.S. Photo-Catalytic Synthesis	Mul (PCS)	n.s.	X	X		
C.S. Soft matter, Fluidics and Interfaces	Lammertink	n.s.	X	X		
AMM – Applications	Lammertink (coord.)	4	**C**			
Advanced Molecular Separations	de Vos & Schuur	2	X	**C**		2013 new compulsary
Chemical Product Development	Nijmeijer K.	n.s.		X		
Multi-component mass transport	Benes	1-2		X		per 2013 in stead of Adv. Mol. Separations
Multi-component mass transport & Water treatment	Benes Kemperman	1-2			**C**	
Batteries, Fuel Cells and Electrolysers	Nijmeijer K. Bouwmeester ea	2	X		**C**	
Membranes for Gas Separation	Nijmeijer K. Bouwmeester ea	1-2	X	X	**C**	
Membrane Process Plant Design	van der Ham	1		X	**C**	
Advanced Ceramics	Winnubst	n.s.	X			
Biomaterials, materials for hard tissue replacements	Winnubst	3	X			
Defects and transport in solids	Bouwmeester	3-4	X			
Surface Phenomena & Microfluidics	Tsai, Gardeniers Lammertink	1		**C**		2013 new compulsary
Microfluidic Concepts & Devices	Tsai, Gardeniers	1			**C**	
Colloids and Interfaces	Lammertink	1	X	X		
Intro. to Computational Fluid Dynamics	Lammertink	2		X		
Theory of Phase Equilibria	van der Hoef	1	X	X		
Catalysis for Sustainable Technologies	Seshan	2	X	X		
Catalysis in the Process Industry	Seshan	4	X	X		
Photocatalytic Synthesis	Baltrusaitis, Mul	n.s.				in preparation
Contract research		n.s.	X	X		

Subjects of CP&E groups	Lecturer	Block	M&ME	C&PE	Remarks
C.S. Sustainable Process Technology	Kersten e.o.	n.s.		X	replaces C.S. TCCB
Thermodynamics and Flowsheeting for C&PE students	Van der Ham	2→3		**C**	will become part of PPD
Thermodynamics and Flowsheeting for non-C&PE students	Van der Ham	2	X		optional
Chemical Reaction Engineering	Brilman	1-2		**C**	
Multiphase Reaction Technology	Kersten	3-4		**C**	
Process Plant Design	van der Ham(C) van den Berg	3-4		**C**	compulsory per 2013 from 10 to 15 EC

Subjects of other educational programmes	Lecturer	Block	M&ME	C&PE	From	Remarks
Biomedical Materials Engineering II	Poot (coord.)	-	X		BME	see schedule BME
Biomedical Membrane Applications	Stamatialis	-	X		BME	see schedule BME
Membrane Technology Practical work	Stamatialis	-	X		BME	see schedule BME
Cost, Management and Engineering	Joosten	2		X	ÍO/ ME	by MB
Process Equipment Design	Van der Meer	3		X	ME	replacement per 2013 for ChEng Process Equipment Design
Transport Phenomena	Van der Meer	1		X	ME	replacement per 2010 for ChEng Advanced Transport Phenomena