THE IMPLEMENTATION REGULATIONS

2010-2011

MASTER OF SCIENCE
CHEMICAL ENGINEERING

DELFT UNIVERSITY OF TECHNOLOGY

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Important changes with regard to the implementation regulations master Chemical Engineering 2009-2010

Editorial changes in articles 5.3 and 8.1	

Compiling the study programme

Article 1 – The study load

The study load for the Master's degree course is 120 credits. None of the components of the course may have formed part of the Bachelor's degree course

Article 2 – Specializations and tracks

1. The course comprises the following specializations:
   - Molecular Engineering
   - Process Engineering
   - Nuclear Science & Engineering

2. Within the specialization the student can choose the subjects given in Articles 5 and 6.

3. Within a specialization the student may opt for the graduation tracks Study Abroad, Education, Sustainability in Technology and Entrepreneurship mentioned in 'special tracks'.

Article 3 – The composition

1. The study programme is compiled in the following way:
   a. In the first year: core subjects, subjects belonging to the chosen specialization, electives, an internship or design project
   b. In the second year: an internship or design project, electives and
   c. a specialization-linked MSc thesis project of 40 credits. The MSc thesis project consists of a research project, a thesis, a summary of the thesis and a final presentation.

Article 4 – Registering the specialization and compiling the examination programme

1. When he/she commences his/her study the student must register himself/herself with the graduation coordinator as a prospective graduate of the specialization of his/her choice.

2. Any amendments made to the approved examination programme or to the approved graduation commission should be presented to the board of examiners.

3. Students who opt for the graduation tracks Study Abroad, Education, Sustainability in Technology and Entrepreneurship must have approval of study advisor and/or programme director in advance.

4. The student should at least have completed the following course modules before starting the MSc Thesis Project:
   a. the core programme of 15 credits and specialization courses of 15 credits
   b. have finished their internship and/or design project

Article 5 – The Molecular Engineering track

1. The Molecular Engineering track has the following specialisations (ChemE):
   · product and process engineering,
   · catalysis engineering,
   · nano-structured materials,
   · materials energy conversion and storage,
   · self assembling systems,
   · opto-electronic materials,
   · nano-organic chemistry,

2. Additional to the list mentioned under 1. the student may choose another options for his/her thesis work. However, this choice has to be approved by the examination committee before the start of the project.

3. The program consists of the following course modules:

Code	Course Module	Credits
	Core Programme	**30**
CH3131	Applied Numerical Mathematics	6
CH3141	Molecular Thermodynamics	6
CH3151	Molecular Transport Phenomena	3
CH3161	Synthesis Strategies and Methods in Nanochemical Engineering	6
CH3531	Functional Ceramics	3
CH3011	Interfacial Engineering	3
CH3641	Molecular Quantum Mechanics and Spectroscopy	3
	Electives	**15**
CH3701	**Internship in Industry**	**15**
	Design	**20**
CH3804	Product & Process Design	5
WM0320TU	Ethics	3
CH3843	Design project	12
CH3901	**MSc Thesis work**	**40**

Article 6 – The Process Engineering track

1. The Process Engineering track has the following specialisations (ChemE/MSP):
   - product and process engineering,
   - catalysis engineering,
   - nano-structured materials,
   - materials energy conversion and storage,
   - self assembling systems,
   - opto-electronic materials,
   - nano-organic chemistry
   - multiphase flows

2. Additional to the list mentioned under 1. the student may choose another options for his/her thesis work. However, this choice has to be approved by the examination committee before the start of the project.

3. The programme consists of the following course modules:

Code	Course Module	Credits
	Core Programme	**30**
CH3131	Applied Numerical Mathematics	6
CH3141	Molecular Thermodynamics	6
CH3151	Molecular Transport Phenomena	3
CH3052	Applied Transport Phenomena	3
SC4190CH	Process Dynamics & Control	6
CH3681	Reactors & Kinetics	6
	Electives	**15**
CH3701	**Internship in Industry**	**15**
	Design	**20**
CH3804	Product & Process Design	5
WM0320TU	Ethics	3

CH3843	Design project	12
CH3901	**MSc Thesis work**	**40**

Article 7 – The Nuclear Science & Engineering track

1. The Nuclear Science & Technology track has the following specialisations (Radiation, Radio Nuclides & Reactors - R^3)
   - Radiation and Isotopes for Health
   - Fundamental aspects of Materials and Energy
   - Radiation Detection & Matter
   - Physics of Nuclear Reactors

2. Additional to the list mentioned under 1. the student may choose another option for his/her thesis work. However, this choice has to be approved by the examination committee before the start of the project.

3. The programme consists of the following course modules:

Code	Course Module	Credits
	Core Programme	**30**
CH3131	Applied Numerical Mathematics	6
CH3141	Molecular Thermodynamics	6
CH3151	Molecular Transport Phenomena	3
CH3791	Nuclear Science	3
CH3771	Nuclear Chemistry	6
CH3781	Chemistry of the Nuclear Fuel Cycle	6
	Electives	**15**
CH3701	**Internship in Industry**	**15**
	Design	**20**
CH3804	Product & Process Design	5
WM0320TU	Ethics	3
CH3843	Design project	12
CH3901	**MSc Thesis work**	**40**

Article 8 – Subsidiary and alternative programme for students with a Dutch Institue of Higher Education (HBO) Bachelor Degree

1. Students who have been admitted on the basis of a Dutch Institute of Higher Education (HBO) Bachelor degree must, apart from the Master's degree course examination programme, complete a subsidiary programme consisting of the following subjects:

Code	Course Module	Credits
	Mathematics	**12**
	Calculus (analyse)	6
MSTTLIN	Linear Algebra	3
MSTTDIF	Differential Equations	3
	Process Technology	**18**
MSTTFTV	Transport Phenomena	6
MSTTSCT	Separation Technology	6
MSTTPT2	Process Technology 2	6

	Total number of credits	**30**

Article 9 – The free study programme

1. Students are free to compile examination programmes that are rounded off with a final exam. Such a programme needs prior approval by the board of examiners and it must consist entirely or mainly of subjects given in conjunction with the degree course but it can be complemented with subjects provided by or given in other courses.

2. The preliminary approval referred to in paragraph 1 must be presented to the board of examiners by the student in the form of a justified request.

Article 10 – Special tracks within the master programme

Students are allowed to replace their credits for electives and internship (total 30 credits) to do a special track.
The master programme Chemical Engineering has the following special tracks:

- Sustainability in Technology
- Education (Dutch students only)
- Study Abroad (Dutch students only)
- Entrepreneurship

Sustainability in Technology

1. The examination programme for students who have opted for the profile known as Sustainability in Technology may spent a total of 30 EC (electives and internship) on courses dealing with Sustainability in Technology. The programme has to be approved by the examination committee

Education (only Dutch students)

2. The examination programme for students who have opted for the profile known as Education may spent a total of 30 EC (electives and internship) on chemical didactics courses and teaching activities at a secondary school. The programme has to be approved by the examination committee

Study Abroad

3. The examination programme for students who have opted for the profile known as Study Abroad may spent a total of 30 EC (electives and internship). Their programme consists of courses/project at a foreign university. The programme has to be approved in advance by the examination committee.

Entrepreneurship

4. The examination programme for students who have opted for the profile known as Entrepreneurship may spent a total of 30 EC (electives and internship). Their programme consists of courses/project dealing with the subject of entrepreneurship. The programme has to be approved in advance by the examination committee.

Article 11 – The transition ruling Chemical Engineering

Students who have started their master programme Chemical Engineering before 1 September 2008 and have not finished their first year of their master programme, are advised to contact the academic counsellor to establish on an individual basis a "transition" programme.