IMPLEMENTATION REGULATIONS

2015-2016

MASTER OF SCIENCE
CHEMICAL ENGINEERING

DELFT UNIVERSITY OF TECHNOLOGY

Administrative data

Nomenclature in CROHO	**MSc Chemical Engineering**
CROHO registration number	**60437**
Orientation and level of the programme:	**Higher education, Academic Master level**
Number of credits	**120 ec, 2 years**
Mode(s) of study	**Fulltime**
Period of NVAO accreditation	**1 January 2014 till 31 December 2019**
Period of IChemE accreditation	**Intake year 2003 till 2017 (course ref 6671)**

THIS DOCUMENT

These Implementation Regulations apply to the teaching and the examinations related to the Master's degree programme in Chemical Engineering. This document is part of the Teaching and Examination Regulations.

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Article 1 – The programme's final attainment levels

1.1 In addition to the general attainment levels described in article 4 of the teaching and examination regulations, MSc Chemical Engineering graduates should possess the following kinds of competence:

1. required core knowledge and understanding in chemical engineering;
2. knowledge of methods and technical practice in chemical engineering;
3. training in theoretical knowledge and methods, including modelling;
4. advanced knowledge of specific areas in chemical engineering;
5. specific attitude and way of thinking expected in a particular subject;
6. awareness of connections with other disciplines and ability to engage in interdisciplinary work.

Article 2 – Admission to the programme

2.1 All students possessing a certificate proving that they have successfully completed their Bachelor of Science studies in Molecular Science & Technology, Chemical Engineering, Biochemical Engineering or equivalent in 3TU, IDEA League and Groningen will be admitted to the programme.

2.2 Students who do not possess the degree mentioned in paragraph 1 are required to obtain proof of admission to the programme from the dean, who will seek the advice of the admissions officer on this matter.

2.3 In order to obtain proof of admission, the student must meet or, as the case may be, possess:

a. The general relevant criteria set by the executive board in the "Policy on fees and enrolment", laid down in Appendix 1 of the Student Charter (central part), and clarified in Part 1.2 " Entrance and admission" of the mentioned Student Charter.
b. A certificate, together with the accompanying list of marks, proving that he/she possesses know-ledge of a sufficiently high level and broad scope to successfully complete the Master programme within the allotted period.

2.4 Students in possession of

a. a Bachelor of Science degree in Chemical Engineering or equivalent from a foreign university can be admitted to the programme provided he/she has a minimum Grade Point Average of 75% (guideline).
b. a Bachelor of Science degree in Chemistry from a Dutch or foreign university can be admitted to the Chemical Product Engineering and Nuclear Science and Engineering tracks of the programme including homologation courses, provided he/she has a minimum Grade Point Average of 75% (guideline).
c. a Bachelor of Science degree in Applied Earth Sciences or Life Science and Technology from Delft University of Technology can be admitted to the programme including homologation courses, provided he/she has a minimum Grade Point Average of 75% (guideline).
d. a Bachelor of Science degree in Chemistry from a Dutch university, or a Bachelor of Science degree in Aerospace Engineering, Applied Earth Sciences, Applied Physics, Life Science and Technology, Mechanical Engineering from Delft University of Technology having passed the Chemical Engineering bridging (minor) programme will be admitted to the programme.
e. a Bachelor of Engineering degree in Chemical Technology or equivalent from a Dutch university of Applied Sciences (HBO), having past the TU Delft Chemical Engineering bridging minor programme at their school, will be admitted to the programme.
f. a Bachelor of Engineering degree in Chemical Technology or equivalent, not having past the TU Delft Chemical Engineering bridging minor programme at their school, will be admitted to the bridging programme provided he/she has a minimum Grade Point Average of 75% (guideline). Completion of the bridging programme guarantees admission to the programme.

2.5 Because of the very large number of applications from India, MSc Chemical Engineering has a more stringent requirement for applicants in possession of a Bachelor degree obtained in India, compared to other MSc programmes at the university. To be considered for admission, they should have a (minimum) four year Bachelor's degree in Chemical Engineering or equivalent from a mainstream university (state / federal or 'deemed' institution) passed with First Class *Distinction* - or First Class from one of the Indian Institutes of Technology, Birla Institute of Technology & Science (Pilani), or Institute of Chemical Technology (Mumbai).

Article 3 – Structure of the programme.

3.1 The MSc Chemical Engineering programme is a two-year master programme and comprises 120 EC. The programme has a core-orientation structure. Within this structure, there is a choice of tracks. The core programme comprises 90 EC and has the same structure for all students. Combining the core programme with a 30 EC orientation completes the programme.

3.2 **Tracks.** The tracks within the Chemical Engineering programme are:
- Chemical Product Engineering (CPE),
- Nuclear Science and Engineering (NSE),
- Process Engineering (PE).

3.3 **Orientations.** Four orientations of 30 EC each can be chosen:
- Research and Development (R&D),
- Education (Ed1/Ed2),
- Management of Technology (MoT),
- Study Abroad (SA).

3.4 **Programme additions.**
- Honours programme. This is an individual programme for talented students.
- Double degree programme Chemical Engineering – Management of Technology.

Article 4 – Composition of the programme.

4.1.1 The core programme of each track comprises 90 credits and is the same for each student:
- Obligatory core modules (15 credits),
- Obligatory track modules (15 credits),
- Obligatory design modules (20 credits),
- MSc thesis project (40 credits).

4.1.2 Combining the core programme with a 30 credits Orientation (elective part) completes the programme.

4.1.3 The first year consists of: core modules, track modules, and subjects belonging to the orientation part of the programme and/or a design project.
The second year consists of: master thesis project, and subjects belonging to the orientation part of the programme and/or a design project.

4.1.4 Only one track is mentioned on the diploma. Courses of a second track can be done as electives, or within an honours programme.
Students are responsible for registering the track of their choice. The final choice must be made before handing in the diploma application form.

4.2 – The Chemical Product Engineering track

4.2.1 The core programme consists of the following course modules:

Code	Course Module	Credits
	Obligatory Core Modules	**15**
CH3131a	Applied Numerical Mathematics	6
CH3141	Molecular Thermodynamics	6
CH3151	Molecular Transport Phenomena	3
	Obligatory Track Modules	**15**
CH3162a	Design and Synthesis of Advanced Chemical Products	6
CH3173a	Structure/Property Relationships of Advanced Chemical Products	6
CH3372a	Soft Matter for Chemical Products	3
	Obligatory Design Modules	**20**
CH3804	Product & Process Design	5
WM0320TU	Ethics and Engineering	3
CH3843	Design project	12
CH3901	**MSc Thesis work**	**40**

4.2.2 The Chemical Product Engineering track has the following specialisations (ChemE):
- Advanced Soft Matter,
- Catalysis Engineering,
- Materials for Energy Conversion and Storage,
- Opto-electronic Materials,
- Organic Materials and Interfaces,
- Product and Process Engineering.

4.2.3 In addition to the list mentioned under 4.2.2, the student may choose another option for his/her thesis work. However, this choice has to be approved by the board of examiners before the start of the project.

4.3 – The Nuclear Science & Engineering track

4.3.1 The core programme consists of the following course modules:

Code	Course Module	Credits
	Obligatory Core Modules	**15**
CH3131a	Applied Numerical Mathematics	6
CH3141	Molecular Thermodynamics	6
CH3151	Molecular Transport Phenomena	3
	Obligatory Track Modules	**15**
CH3771	Nuclear Chemistry	6
CH3782	Chemistry of the Nuclear Fuel Cycle	3
CH3792	Introduction to Nuclear Science and Engineering	6
	Obligatory Design Modules	**20**
CH3804	Product & Process Design	5
WM0320TU	Ethics and Engineering	3
CH3843	Design project	12
CH3901	**MSc Thesis work**	**40**

4.3.2 The Nuclear Science & Engineering track has the following specialisations (RST):
- Fundamental Aspects of Materials and Energy,
- Neutron and Positron Methods in Materials,
- Nuclear Energy and Radiation Applications,
- Radiation Detection and Medical Imaging,
- Radiation and Isotopes for Health.

4.3.3 In addition to the list mentioned under 4.3.2, the student may choose another option for his/her thesis work. However, this choice has to be approved by the board of examiners before the start of the project.

4.4 – The Process Engineering track

4.4.1 The core programme consists of the following course modules:

Code	Course Module	Credits
	Obligatory Core Modules	**15**
CH3131a	Applied Numerical Mathematics	6
CH3141	Molecular Thermodynamics	6
CH3151	Molecular Transport Phenomena	3
	Obligatory Track Modules	**15**
CH3043a	Process Dynamics & Control	3
CH3053	Applied Transport Phenomena	6
CH3681a	Reactors & Kinetics	6
	Obligatory Design Modules	**20**
CH3804	Product & Process Design	5
WM0320TU	Ethics and Engineering	3
CH3843	Design project	12
CH3901	**MSc Thesis work**	**40**

4.4.2 The Process Engineering track has the following specialisations (ChemE):
- Advanced Soft Matter,
- Catalysis Engineering,
- Materials for Energy Conversion and Storage,
- Opto-electronic Materials,
- Organic Materials and Interfaces,
- Product and Process Engineering,
- Transport Phenomena;
- and Intensified Reaction & Separation Systems (P&E, 3mE)

4.4.3 In addition to the list mentioned under 4.4.2, the student may choose another options for his/her thesis work. However, this choice has to be approved by the board of examiners before the start of the project.

4.5 – Scientific and Social Orientation

The programme includes a 30 credits Orientation (elective part). The student may opt for:

4.5.1 Research and Development

This programme is especially tailored for students who will work in industry after completing their master education. It consists of:
- Industrial Internship (CH3702, 18 credits),
- Electives (12 credits):
  . Suggested Chemical Engineering electives or assigned homologation modules : 6-12 credits
  . MSc level modules offered by other TU Delft programmes : 0-6 credits

Suggested Chemical Engineering electives are obligatory track modules from a second track and modules from the list below. The choice of electives has to be approved by the board of examiners if less than 6 credits are mentioned on the list of suggested electives or homologation modules.

Code	Course Module	Credits
	Chemical Product Engineering Track	
CH3011	Interfacial Engineering	3
CH3101	Heterogeneous Catalysis	3
CH3301	Foreign Excursion Tour TG	3
CH3531	Functional Ceramics	3
CH3562	Nanoparticle Technology	3
CH3632	Chemistry of Solar Cells	6
CH3672	Computational Materials Science	3
CH3982	Literature Study	3-6
LM3311	Green Chemistry and Sustainable Technology	3
LM3731	Biocatalysis	6
	Nuclear Science and Engineering Track	
AP3371	Radiological Health Physics	6
CH3301	Foreign Excursion Tour TG	3
CH3582	Chemistry and Physics of Actinides	3
CH3982	Literature Study	3-6
	Process Engineering Track	
CH3011	Interfacial Engineering	3
CH3062	Multiphase Reactor Engineering	3
CH3073	Separation Processes, Design and Operation	3
CH3082	Chemical Technology	3
CH3101	Heterogeneous Catalysis	3
CH3181	Scale Up / Scale Down	3
CH3291	International Design Contest	3
CH3301	Foreign Excursion Tour TG	3
CH3421	Computational Transport Phenomena	6
CH3562	Nanoparticle Technology	3
CH3622	Process Intensification	3
CH3622-P	Process Intensification – Project	3
CH3861	Hydro Carbon Processing	3
CH3982	Literature Study	3-6
AP3171	Advanced Physical Transport Phenomena	6
SET3041	Energy from Biomass	4

Within the R&D orientation, students can fulfil the requirements for the Technology in Sustainable Development (TiSD) and Entrepreneurship annotations. Certificates will be granted during the graduation ceremony upon request of the student.

Technology in Sustainable Development (TiSD) is a university-wide initiative. Approval of the Master's thesis work and the internship by the coordinator (W.G. Bouwman) is required. The thesis project must be focussed on sustainable development or the development of knowledge and technology aimed at a more sustainable future, and also the industrial internship should have a clear relation to sustainability. The requirements for the TiSD annotation also include the 'Technology in Sustainable Development' (WM0939TU, 5ec) course and 10 credits of elective modules from the TiSD cluster-A and cluster-B lists. The lists can be found at www.tudelft.nl/tisd.

For the Annotation Entrepreneurship (AE), the student makes a proposal for the courses to be followed and for the final thesis and will discuss the proposal with the coordinator of the Delft Centre for Entrepreneurship (DCE) and a coordinator from the faculty. The programme should be approved by the programme coordinator and must always be approved by the board of examiners in advance.
Minimum requirements for the Annotation Entrepreneurship certificate include: Entrepreneurship Annotation Week (WM4001TU, 2ec), Annotation Entrepreneurship Final Thesis (WM4003TU, 8ec), and at least 15 EC elective modules on Entrepreneurship. Suggestions are listed on blackboard.
If the requirements for the Annotation Entrepreneurship certificate are fulfilled, sufficient experience with (startup) companies is present in the courses done, and the total number of credits done is at least 120EC, the industrial internship may be dropped from the Master programme if the Board of Examiners gives permission.

4.5.2 **Education** (only Dutch students)

The educational programme is aimed at Dutch-speaking students only, because they are oriented towards the Dutch school system and because it includes internship at Dutch secondary schools. Consequently the modules are taught in Dutch. The programme consists of Basisdeel/Ed1 (30 EC) and Verdiepingsdeel/Ed2 (30 EC).
The minor Education (Basisdeel/Ed1) can be done during the bachelor programme and leads to certification as a tweedegraads secondary school teacher with limited qualification (beperkte bevoegdheid). If a student has done the minor Education, only the Verdiepingsdeel/Ed2 of 30 EC remains for the master programme orientation. The combination of the minor Education and Ed2 orientation leads to certification as a fully-qualified eerstegraads (grade-one) secondary school teacher. The certificate will be attached to the master diploma.
Students that didn't take the minor Education can follow the Basisdeel/Ed1 orientation as part of their master programme and then do the Verdiepingsdeel/Ed2 as a post-master course in order to become fully qualified.
The programme has to be approved by coordinator, M.A.F.M. Jacobs.

Code	Course Module	Credits
	Education Basis	
SL3031	Didactical Skills	3
SL3041	Orienterende Stage	3
SL3111	Research Methodology in Social Sciences	3
SL3132	Didactics Chemistry 1	2
SL3174	Field Orientation Chemistry A	9
SL3342	Didactics Chemistry 2	4
SL3462	Educational Science	6
	Education Verdieping	
SL3012	Integration SC/SE	3
SL3021	The Designing of Communication and Education Products	6
SL3311	Research of Education	6
SL3381	Didactics Chemistry 3	3
SL3424	Field Orientation Chemistry B	12

4.5.3 **Management of Technology**

This orientation is offered by the faculty of Technology, Policy and Management. The programme consists of either the first semester or the second semester of the MSc Management of Technology. A mixture of courses from both semesters is only permitted if it is a coherent set of modules that is approved by the MoT programme coordinator, dr. R.M. Verburg, in advance.

Code	Course Module	Credits
	1st SEMESTER MoT Modules (30 EC)	
MOT1412	Technology Dynamics	5
MOT1421	Economic Foundations	5
MOT1442	Social and Scientific Values	5
MOT1461	Corporate Finance	5
MOT1524	Leading and Managing People	5
MOT1532	High-tech Marketing	5
	2nd SEMESTER MoT Modules (30 EC)	
MOT1003	Integration Moment	5
MOT1434	Technology Strategy and Entrepreneurship	5
MOT1451	Inter- and Intra-organisational Decision Making	5
MOT1531	Business Process Management & Technology	5
MOT2312	Research Methods	5
MOT2421	Emerging and breakthrough Technologies	5

4.5.4 **Study Abroad**
This programme consists of a semester at a foreign university. A package of 30 EC of courses (optionally including a research project of a maximum of 20 EC) must be done. This programme is especially recommended for students who will do a PhD after completing their master education.
A Study Abroad programme must always be approved by the board of examiners in advance.

4.5.5 Students opting for a **double degree** (second master) and have obtained permission are allowed to spend the Scientific and Social Orientation on modules from the second master programme.
Double degree programmes combining chemical engineering with other master programmes, such as Management of Technology, are always subject to the restrictions imposed by the university. The main restrictions are that the double degree programme comprises at least 180 EC and that there are two identifiable final project reports for both degrees.
Formal admission by the programme directors is required. The programme has to be approved by the board of examiners (if it differs from the standard programme).

4.6 – Honours Programme
The Honours Programme consists of at least 20 EC on top of the regular master programme of 120 EC. The full Chemical Engineering programme including the additional honours track should be finished according to schedule. It is an individual programme that contains a 5 EC specially developed course for all TU Delft honours track students plus a coherent package of at least 15 ec of challenging course modules or projects composed by the student.

Programme	Credits
Collective Part - obligatory UD2010, Critical Reflection on Technology	5
Individual Part **Example:** AS1000HPM, Company Oriented Honours Programme of Applied Sciences	15

4.7 – Double degree programme Chemical Engineering– Management of Technology
This is a three year programme Chemical Engineering – Management of Technology of the Faculties of Applied Sciences (AS) and Technology, Policy and Management (TPM).
Students finishing a Master ChE degree with orientation MoT may decide to do an additional year of Master MoT courses and thesis in order to obtain a double degree in both ChE and MoT. Access to this double degree programme is decided upon by the programme directors of the MSc Chemical Engineering and the MSc Management of Technology. The programme consists of:

Programme	Credits
The Chemical Engineering Core Programme	90
1st semester MoT modules (list of modules in art. 4.5.3)	30
The ChE orientation MoT / 2nd semester MoT modules (list of modules in art. 4.5.3)	30
MOT2003, Preparation for the Master Thesis	6
MoT MSc Thesis Project (MOT2910)	30

The 120EC Chemical engineering part of the programme consists of the 90EC chE Core Programme and the 30EC second semester MoT modules.

More generally, double degree programmes combining Chemical Engineering with other master courses taught at Delft are possible, but always subject to the restrictions imposed by the university. The main restrictions are that the double degree programme comprises at least 180 EC and that there are two identifiable final project reports for both degrees. Formal admission to the double degree programme by the programme directors is required in advance.

4.8 – The free study programme

Students may compile a free curriculum concluded by a final exam. Such a curriculum must consist entirely or mainly of modules given in conjunction with the programme. It has to comply with the final attainment levels of the programme. The curriculum must be accompanied by a justified request and submitted to the Board of Examiners for approval.

Article 5 – Bridging and homologation programmes

5.1 Students who have been admitted in the Chemical Product Engineering track or the Nuclear Science and Engineering track on the basis of a Bachelor of Science university degree in Chemistry must complete a homologation programme consisting of the following engineering modules:

Code	Course Module	Credits
CH3073	Separation Processes, Design and Operation	3
4052CHREKY	Chemical Reactor Engineering	6
SET3021	Transport Phenomena	4
WB4429	Thermodynamics of Process & Energy	3

It is strongly recommended to follow extra math courses in linear algebra and differential equations before the master programme is started.

Homologation modules are not required if a student eliminates deficiencies before enrolling in the master programme, by completing the following bachelor courses:

Code	Course Module	Credits
4052FYSTRY	Fysische Transportverschijnselen	6
4052CHREKY	Chemische Reactorkunde	6
4052SCHTEY	Scheidingstechnologie	6

5.2 Students who have been admitted on the basis of a Dutch institute of Higher Education (HBO) Bachelor of Engineering degree Chemical Technology (or equivalent) have to complete a bridging programme consisting of the following Dutch or English modules before they can enrol in the master programme:

Code	Course Module	Credits
	Dutch	**30**
4051CALC1Y	Calculus 1	6
4052LADIFY	Lineaire algebra en differentiaalvergelijkingen	6
4052FYSTRY	Fysische Transportverschijnselen	6
4052CHREKY	Chemical Reactor Engineering	6
4052SCHTEY	Scheidingstechnologie	6
	English	**34**
AESB1110-15	Mathematics 1	5
AESB1210-15	Mathematics 2	5
AESB2110	Mathematics 4	5
AESB2220	Chemical Thermodynamics	5
AESB2320	Physical Transport Phenomena	5
4052CHREKY	Chemical Reactor Engineering	6
CH3073	Separation Processes, Design and Operation	3

5.3 Students holding a Bachelor of Science degree in Aerospace Engineering, Applied Earth Sciences, Applied Physics, Life Science and Technology, Mechanical Engineering from Delft University of Technology are not always qualified for direct admission. In general a Chemical Engineering bridging (minor) programme will be done before they can enroll in the master programme. A maximum of 12 credits of homologation courses can be done as part of the master's programme.

a) Minimum bridging programme for BSc Aerospace Engineering, for track Process Engineering.

Code	Course Module	Credits
4051ALACHY	Algemene en Anorganische Chemie	6
4051OCSTRY	Organische Chemie en Structuuranalyse	9
4052CHAN3Y	Chemische analysemethoden	6
WB3550	Warmte en stofoverdracht	3
4052CHREKY	Chemical Reactor Engineering	6
4052SCHTEY	Scheidingstechnologie	6
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b) Bridging programme for BSc Applied Earth Sciences, for track Process Engineering.

Code	Course Module	Credits
4052STEVMY	Structuur en Eigenschappen van Materialen	6
4052FYSCKY	Fysische Chemie en Kinetiek	6
4052TLEO3Y	Leren Onderzoeken 3 Technologie	6
4052CHREKY	Chemical Reactor Engineering	6
4052SCHTEY	Scheidingstechnologie	6
		30

Students holding a BSc in Applied Earth Sciences with a minimum GPA of 7.5 can be admitted in the master programme without completing a bridging minor. Required homologation courses are:

Code	Course Module	Credits
CH3073	Separation Processes, Design and Operation	3
4052CHREKY	Chemical Reactor Engineering	6
WB4429	Thermodynamics of Process & Energy	3

c) Minimum bridging programme for BSc Applied Physics, for track Process Engineering.

Code	Course Module	Credits
4051ALACHY	Algemene en Anorganische Chemie	6
4051OCSTRY	Organische Chemie en Structuuranalyse	9
4052CHAN3Y	Chemische Analysemethoden	6
4052STEVMY	Structuur en Eigenschappen van Materialen	6
4052CHREKY	Chemical Reactor Engineering	6
4052SCHTEY	Scheidingstechnologie	6
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d) Bridging programme for BSc Life Science and Technology.

Code	Course Module	Credits
4052LADIFY	Lineaire Algebra en Differentiaalvergelijkingen	6
4052STEVMY	Structuur en Eigenschappen van Materialen	6
4052TLEO3Y	Leren Onderzoeken 3 Technologie	6
4052CHREKY	Chemical Reactor Engineering	6
4052SCHTEY	Scheidingstechnologie	6
		30

Students holding a BSc in Life Science and Technology with a minimum GPA of 7.5 can be admitted in the master programme without completing a bridging minor. Required homologation courses are:

Code	Course Module	Credits
CH3073	Separation Processes, Design and Operation	3
4052CHREKY	Chemical Reactor Engineering	6
WB4429	Thermodynamics of Process & Energy	3

It is strongly recommended to follow extra math courses in linear algebra and differential equations before the master programme is started.

e) Minimum bridging programme for BSc Mechanical Engineering, for track Process Engineering.

Code	Course Module	Credits
4051ALACHY	Algemene en Anorganische Chemie	6
4051OCSTRY	Organische Chemie en Structuuranalyse	9
4052CHAN3Y	Chemische analysemethoden	6
4052STEVMY	Structuur en eigenschappen van materialen	6
4052CHREKY	Chemical Reactor Engineering	6
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Article 6 – Examinations

6.1 **The form of the examinations and the methods of assessment**
The form of the examinations and the methods of assessment are described in the (digital) study guide, http://chem.msc.studyguide.tudelft.nl.

6.2 **Order of the exams**

6.2.1 Design project (CH3843)
A proof of full participation in the preparatory PPD course (CH3804) is required and at least 12 ec of other chemical engineering master courses/electives must have been completed to be admitted to the Design Project. Presence, making assignments and sitting for the exam is considered as proof for full participation in the PPD course.
Students doing homologation (bridging) courses as part of their master's program must have completed all (except at most one) of these courses.

6.2.2 Graduation Project, Master's thesis (CH3901)
The student should at least have completed the following modules before starting the Thesis Project:
1. all bridging/homologation modules,
2. the obligatory core and track modules,
3. the design project or the orientation part of the programme.

The student should have made a project plan with the responsible thesis supervisor.
At the start of the final project, the appropriate registration form must be filled in and handed in at the thesis project office.
The date and time of the master thesis defense is determined by the thesis supervisor, after hearing the student. In exceptional cases, the board of examiners may be involved in setting this date and time.
Further rules governing the MSc graduation projects can be found in article 26 to 29 of the Rules and Guidelines of the Board of Examiners

Article 7 – Transition ruling Chemical Engineering

7.1 Equivalences:
CH3041 = SC4190CH = CH3042 = CH3043
CH3051TU = CH3052 = CH3053
CH3071 = ME1590CH = CH3072 = CH3073 + WB4429
CH3161 = CH3162
CH3621 = ME1592CH = CH3622 + CH3622-P
CH3803 = CH3804
CH3842 = CH3843
WM0320TU = WM0329TU
Differences in credits may be compensated in the electives. Exception to this rule: CH3042+CH3053 and CH3052+CH3043 always count as 9 credits (and not 6 or 12).

7.2 Equivalences and alternatives for Bridging/Homologation modules:

4051CALCAY = WI1708TH1
4051CALCBY = WI1708TH2
4051CALC1Y = WI1421LR = WI1401LR = WI1708TH1 + WI1708TH2
4052DIFFVY = MSTTDIF = WI2149ST = WI2029LR = WI2180LR-I
4052LINEAY = MSTTLIN = WI2148ST = WI1403LR
4052LADIFY = 4052LINEAY + 4052DIFFVY
4052FYSTRY = MSTTFTV = ST2122 = TN2785
4052CHREKY = 4052PRTE2Y = MSTTPT2
4052SCHTEY = 4052SCHT3Y + 4052TDFASY = MSTTSCT
4052TDFASY = WB4429
4052SCHT3Y = WB4436