

CHALMERS

Decision by: Vice President of Education and Lifelong Learning	Type of policy document: Regulation	Registration number: C 2020-0558	
Date of decision: 22 June 2020	Administrator: Karolina Rythla Emelie Wenersand	Document structure: D1.3 Operations Support	
Document applies from: 22 June 2020	Division/corresponding entity responsible for creation/revision of document: Admissions and degrees	Document revised, date: -	Version number: 1.9
Document applies through: Until further notice	Document replaces previous decision: Local Qualifications Framework for Chalmers University of Technology C 2018-1487	Document verified but not revised, date: -	

**Local Qualifications Framework for
Chalmers University of Technology
– first and second cycle qualifications
Policy document at Chalmers**

Content

1. Introduction	3
2. First and Second Cycle Qualifications awarded by Chalmers as well as its major subjects and main fields of study	4
3. Degree certificates	6
4. Grades and scope of education	6
5. Prerequisite courses, specific and general entry requirements	6
6. Overlapping content	7
7. Credit transfer	7
8. Local requirements for Environment and Sustainable Development (MHU) and Humans, Technology, Society (MTS)	7
8.1. Degree of Master of Science in Engineering	7
8.2. Degree of Master of Architecture	8
8.3. Degree of Bachelor of Science in Engineering	8
8.4. Degree of Bachelor of Science in Marine Engineering	8
8.5. Degree of Bachelor of Science in Nautical Science	9
9. Two or more qualifications awarded at Chalmers	9
10. Collaborative degrees	10
10.1. Double Degree	10
10.2. Joint Degree	10
11.1. National transitional provisions	10
11.2. Local transitional provisions	11
12. Appeal	12
13. Qualifications descriptors for first cycle general qualifications	12
13.1. Higher Education Diploma	12
13.2. Degree of Bachelor	13
14. Qualifications descriptors for second cycle general qualifications	15
14.1. Degree of Master (60 credits)	15
14.2. Degree of Master (120 credits)	16
15. Qualifications descriptors for first cycle professional qualifications	18
15.1. Degree of Bachelor of Science in Engineering	18
15.2. Degree of Bachelor of Science in Marine Engineering	19
15.3. Degree of Bachelor of Science in Nautical Science	21

15.4. Degree of Bachelor of Science in Secondary Education with a specialisation in teaching in the upper secondary school	22
16. Qualifications descriptors for second cycle professional qualifications.....	24
16.1. Degree of Master of Architecture	24
16.2. Degree of Master of Science in Engineering.....	26
16.3. Degree of Master of Science in Secondary Education with a specialisation in teaching in the upper secondary school.....	27
17. Validity of the document.....	30

1. Introduction

The Local Qualifications Framework for Chalmers University of Technology is based on the Act (1993:792) concerning authority to award certain qualifications in the first and second cycles, with effect from 1 July 2007.

The Act (1993:792) concerning authority to award certain qualifications states that the education shall follow requirements of education stipulated in Chapter 1 of the Swedish Higher Education Act (1992:1434) and in the National Qualifications Ordinance, Annex 2 of the Higher Education Ordinance (1993:100).

On 28 June 2007, the Government decided that with effect from 1 July 2007 Chalmers University of Technology AB ("Chalmers") will be entitled to award the qualifications specified in this local qualifications framework (Government decisions U2006/9375/UH, U2007/4718/UH).

On 10 February 2011, the Government decided that Chalmers will be entitled to award the Degree of Master of Science in Secondary Education with a specialisation in teaching in the upper secondary school in the subjects of mathematics, chemistry and physics and engineering (Government decision U2010/4017/UH).

On 2 October 2011, the Government decided that Chalmers will be entitled to award the Degree of Bachelor of Science in Secondary Education with a specialisation in teaching in the upper secondary school in the subjects of mathematics, chemistry and physics and engineering, after completion of Supplementary Teacher Education (Government decision U2010/4017/UH).

The qualifications framework for first and second cycle qualifications is also based on decisions pertaining to the following local requirements (qualifications descriptors) at Chalmers University of Technology:

- Five compulsory credits (7.5 credits) in Environment and Sustainable Development in all Bachelor of Science in Engineering programmes, ref. no. C 2006/1040.
- Five compulsory credits (7.5 credits) in Environment and Sustainable Development in all Master of Science in Engineering and Master of Architecture programmes, ref. no. C 216/-01.
- Compulsory course in Environment and Sustainable Development, ref. no. C 2005/1350.
- Chalmers Rules of Procedure - Doctoral Programmes, ref. no. 2014-0464.
- Clarification of Chalmers local qualifications descriptors for MHU (Environment and Sustainable Development) and MTS (Humans, Technology, Society), ref. no. C 2015-1325.
- Guidelines for recognition of courses, ref. no. C 2015-0454.
- Clarification of transitional provisions for students admitted before 1 July 2007 under the previous ordinance, ref. no. C 2016-0304. Supersedes decision, ref. no. C 2006/1210.

The official language of communication at Chalmers is Swedish and this English version of the approved policy document is merely a translation. In the event of differences between the qualifications framework in Swedish and the translation in English, the approved qualifications framework in Swedish shall take precedence.

Compilation		
Date	Version	Description
22 June 2020	1.9	<p>Decisions incorporated into the current version:</p> <ul style="list-style-type: none"> • Change of the English name for the Bachelor of Science in Engineering program Ekonomi och produktionsteknik (TIEPL) from Economics and manufacturing technology to Industrial Management and Production Engineering ref. no. C 2019-0305 • Establishment of the Master of Science in Engineering program, Global Systems Engineering ref. no. C 2019-0969 • Establishment of the Master of Science in Engineering program, Biomedical Engineering ref. no. C 2019-0970 • Clarification of the course requirements for projects within major subject Architecture or Architecture and Engineering, 150 cr. ref. no C 2020-0887 <p>New sections and additions:</p> <ul style="list-style-type: none"> • Overall clarification of local qualifications descriptors

2. First and Second Cycle Qualifications awarded by Chalmers as well as its major subjects and main fields of study

First cycle general qualifications

Higher Education Diploma

Degree of Bachelor of Science

Second cycle general qualifications

Degree of Master of Science (60 credits)

Degree of Master of Science (120 credits)

First cycle professional qualifications

Degree of Bachelor of Science in Engineering

Degree of Bachelor of Science in Marine Engineering

Degree of Bachelor of Science in Nautical Science

Degree of Bachelor of Science in Secondary Education with a specialisation in teaching in the upper secondary school

Second cycle professional qualifications

Degree of Master of Architecture

Degree of Master of Science in Engineering

Degree of Master of Science in Secondary Education with a specialisation in teaching in the upper secondary school

Major subjects of study for general qualifications at first and second cycle level

Huvudområde	Major subject
Arkitektur	Architecture
Arkitektur och teknik	Architecture and Engineering
Automation och mekatronik	Automation and Mechatronics Engineering
Bioteknik	Bioengineering
Datateknik	Computer Science and Engineering
Elektroteknik	Electrical Engineering
Energi- och miljöteknologi	Energy and Environmental Systems and Technology
Globala system	Global Systems Engineering
Industriell ekonomi	Industrial Engineering and Management
Informationsteknik	Information Technology
Kemiteknik	Chemical Engineering
Kemiteknik med fysik	Chemical Engineering with Engineering Physics
Maskinteknik	Mechanical Engineering
Matematik	Mathematics
Medicinteknik	Biomedical Engineering
Samhällsbyggnadsteknik	Civil and Environmental Engineering
Sjöfartsteknik	Shipping and Marine Technology
Teknisk design	Industrial Design Engineering
Teknisk fysik	Engineering Physics
Teknik och lärande	Technology and Learning

Main fields of study for professional qualifications at first cycle level

Inriktning	Main field of study
Byggteknik	Building and Civil Engineering
Datateknik	Computer Engineering
Design och produktutveckling	Product Design Engineering
Ekonomi och produktionsteknik	Industrial Management and Production Engineering
Elektroteknik	Electrical Engineering
Kemiteknik	Chemical Engineering
Maskinteknik	Mechanical Engineering
Mekatronik	Mechatronics Engineering
Samhällsbyggnadsteknik	Civil and Environmental Engineering

Main fields of study for professional qualifications at second cycle level

Inriktning	Main field of study
Arkitektur	Architecture
Arkitektur och teknik	Architecture and Engineering
Automation och mekatronik	Automation and Mechatronics Engineering
Bioteknik	Bioengineering
Datateknik	Computer Science and Engineering
Elektroteknik	Electrical Engineering
Globala system	Global Systems Engineering
Industriell ekonomi	Industrial Engineering and Management
Informationsteknik	Software Engineering
Kemiteknik	Chemical Engineering
Kemiteknik med fysik	Chemical Engineering with Engineering Physics
Maskinteknik	Mechanical Engineering

Medicinteknik	Biomedical Engineering
Samhällsbyggnadsteknik	Civil Engineering
Teknisk design	Industrial Design Engineering
Teknisk fysik	Engineering Physics
Teknisk matematik	Engineering Mathematics
Väg och vattenbyggnad	Civil Engineering

3. Degree certificates

Students who satisfy the requirements for a first and second cycle qualification are entitled to a degree certificate upon application. The date of issuance and the date when the qualification requirements were satisfied are stated on the degree certificate. Degree certificates are bilingual and issued in Swedish and English. Credited courses in the degree certificate can be stated in other languages than Swedish and English.

Since 1 January 2004, all degree certificates issued by Chalmers are accompanied by a Diploma Supplement for first and second cycle qualifications. Diploma Supplements describe the programme and where it fits into the Swedish educational system. Diploma Supplements are intended to facilitate recognition and transfer of a Swedish qualification to make it easier for those with academic qualifications to study or work in other countries.

The degree certificate is a valuable document and is issued only in one original. Only a person who has been granted protected identity or has changed his or her legal gender identity and proves this with an affidavit from the Swedish Tax Agency verifying the change is entitled to receive a new degree certificate for a previously awarded qualification.

4. Grades and scope of education

Final grades shall be given for courses included in the qualification. Unless otherwise stated in the course syllabus, grades are given after the course is completed. A completed course refers to a course for which the student has taken a final examination with a minimum grade of Three or Passed. The grade is given by an examiner appointed by the University. The grade scale is either Pass/Fail or Three, Four, Five, where Five is the highest grade. Grades lower than Three correspond to a Fail grade. No overall grade is given for the qualification earned. Target-related grading scales are used in Sweden, which means that students are not ranked.

The scope of the course or programme is indicated in credits. Sixty credits correspond to one academic year of full-time study.

5. Prerequisite courses, specific and general entry requirements

Courses included in an earned Bachelor's degree or professional qualification of at least 180 credits or the equivalent foreign qualification that are prerequisites for master's qualifications may not be included in the higher qualification. The courses that fulfil the specific entry requirements for admission to the master's degree program may not be included in that same degree. Courses that are at a lower level and that have been included in the admission requirements for the current education may not be included in the degree.

6. Overlapping content

Courses whose content partially or entirely overlaps with one or more other courses may not be simultaneously included within the framework of a single qualification.

7. Credit transfer

Credits can be transferred for an entire course or part of a course. Courses included in an earned Bachelor's degree or professional qualification of at least 180 credits or the equivalent foreign qualification that are prerequisites for master's qualifications may not be included in the higher qualification. This also applies to the courses that fulfil the specific entry requirements for admission to the master's degree program. Courses with overlapping content may not be simultaneously included in the qualification. Decisions on credit transfer at the first and second cycle levels are delegated to the director of studies.

8. Local requirements for Environment and Sustainable Development (MHU) and Humans, Technology, Society (MTS)

The following shall apply for courses to satisfy Chalmers' local requirements for MHU and MTS: MHU and MTS shall be taught in the courses, which means there must be learning outcomes that are directly connected to MHU and MTS and which are tested in examinations. "Directly connected to MHU and MTS" means that the content must contribute directly to fulfilling relevant part of outcomes stated in the Higher Education Ordinance (1993:100, Annex 2), see excerpt below. "Must contribute" means that a course does not have to cover all parts of the selected outcomes in the qualifications system, but the programme in its entirety must fulfil all aspects of the outcomes.

8.1. Degree of Master of Science in Engineering

The MHU and MTS requirements for the Degree of Master of Science in Engineering are that the MHU and MTS courses shall make a combined contribution to fulfilling the following outcomes stated in the National Qualifications Ordinance: MHU courses are regarded as specifically fulfilling outcome 1 and the environmental aspects of outcome 3 and MTS courses as fulfilling the other aspects of the outcomes. The aspects in brackets are excepted because they are regarded as being met in other courses.

Excerpt from the Higher Education Ordinance (1993:100, Annex 2):

The student shall:

1. Demonstrate the ability to develop and design products, processes and systems while taking into account the circumstances and needs of individuals and the targets for economically, socially and ecologically sustainable development set by the community.
2. Demonstrate the ability to make assessments informed by relevant (disciplinary), social and ethical aspects as well as awareness of ethical aspects of research and development work.
3. Demonstrate insight into the possibilities and limitations of technology, its role in society and the responsibility of the individual for how it is used, including both social and economic aspects and environmental (occupational health and safety) considerations.

8.2. Degree of Master of Architecture

The MHU requirement for the Degree of Master of Architecture is that MHU courses shall contribute to fulfilling outcome 1 below in the National Qualifications Ordinance and may also contribute to fulfilling outcome 2, if this is not fulfilled in other courses. The aspects in brackets are excepted because they are regarded as being met in other courses.

Excerpt from the Higher Education Ordinance (1993:100, Annex 2):

The student shall:

1. Demonstrate the ability to plan, design, maintain and renew built environments and buildings in complex contexts and with a holistic approach informed by various demands, in particular the sustainable development required by the community.
2. Demonstrate the ability to adopt a holistic view in making judgements and appraisals informed by the relevant (disciplinary), social, aesthetic and ethical aspects and which at the same time take into account the different needs and functional abilities of communities and individuals as well as the interaction between individuals and their physical settings, (including occupational health and safety).

8.3. Degree of Bachelor of Science in Engineering

The MHU requirement for the Degree of Bachelor of Science in Engineering is that MHU courses shall contribute to fulfilling outcome 1 below in the National Qualifications Ordinance and may also contribute to fulfilling outcomes 2 and 3, if this is not fulfilled in other courses. The aspects in brackets are excepted because they are regarded as being met in other courses.

Excerpt from the Higher Education Ordinance (1993:100, Annex 2):

The student shall:

1. Demonstrate the ability to design and manage products, processes and systems while taking into account the circumstances and needs of individuals and the targets for economically, socially and ecologically sustainable development set by the community.
2. Demonstrate the ability to make assessments informed by relevant (disciplinary), social and ethical aspects.
3. Demonstrate insight into the possibilities and limitations of technology, its role in society and the responsibility of the individual for how it is used, including social and economic aspects as well as environmental and (occupational health and safety) aspects.

8.4. Degree of Bachelor of Science in Marine Engineering

The MHU requirement for the Degree of Bachelor of Science in Marine Engineering is that MHU courses shall contribute to fulfilling outcome 1 below in the National Qualifications Ordinance and may also contribute to fulfilling outcomes 2 and 3, if this is not fulfilled in other courses. The aspects in brackets are excepted because they are regarded as being met in other courses.

Excerpt from the Higher Education Ordinance (1993:100, Annex 2):

The student shall:

1. Demonstrate the ability to manage products, processes and the working environment while taking into account the circumstances and needs of individuals and the targets for economically, socially and ecologically sustainable development set by the community.
2. Demonstrate the ability to in the field of shipping to make assessments informed by the relevant (disciplinary), social and ethical aspects.

3. Demonstrate insight into the possibilities and limitations of technology, its role in society and the responsibility of the individual for how it is used, including social and economic aspects as well as environmental and (occupational health and safety) aspects.

8.5. Degree of Bachelor of Science in Nautical Science

The MHU requirement for the Degree of Bachelor of Science in Nautical Science is that MHU courses shall contribute to fulfilling outcome 1 below in the National Qualifications Ordinance and may also contribute to fulfilling outcomes 2 and 3, if this is not fulfilled in other courses. The aspects in brackets are excepted because they are regarded as being met in other courses.

Excerpt from the National Qualifications Ordinance (SFS 2006:1053) (note, however, that no aspects are in brackets in the Qualifications Ordinance):

The student shall:

1. Demonstrate the ability to manage products, processes and occupational health and safety while taking into account the circumstances and needs of individuals and the targets for economically, socially and ecologically sustainable development set by the community.
2. Demonstrate the ability in the field of shipping to make assessments informed by the relevant (disciplinary), social and ethical aspects.
3. Demonstrate insight into the possibilities and limitations of technology, its role in society and the responsibility of the individual for how it is used, including social and economic aspects as well as environmental and (occupational health and safety) aspects.

9. Two or more qualifications awarded at Chalmers

Students who satisfy the requirements for different degrees at Chalmers in which some or all of the same courses are included can be awarded two or more qualifications.

Two or more Degrees of Master of Science in Engineering at Chalmers can be awarded only if all degree requirements for each programme have been satisfied and separate degree projects have been completed. In addition to the degree project, the courses included must differ by at least 60 credits, of which at least 30 credits at the second cycle level.

Two or more Degrees of Master of Architecture at Chalmers can be awarded only if all degree requirements for each programme have been satisfied and separate degree projects have been completed. In addition to the degree project, the courses included must differ by at least 60 credits, of which at least 30 credits at the second cycle level.

Two or more Degrees of Bachelor of Science in Engineering at Chalmers can be awarded only if all degree requirements for each programme have been satisfied and separate degree projects have been completed. In addition to the degree project, the courses included must differ by at least 45 credits.

Two or more Degrees of Master of Science (120 credits) at Chalmers in the same or different major subjects of study can be awarded only if all degree requirements are satisfied and separate degree projects have been completed. In addition to the degree project, the courses included must differ by at least 30 credits.

Two or more Degrees of Master of Science (60 credits) at Chalmers in the same or different major subjects of study can be awarded only if all degree requirements are satisfied and separate degree projects have been completed. In addition to the degree project, the courses included must differ by at least 15 credits. This requirement is satisfied if the degree project is for 30 credits.

Two or more Degrees of Bachelor of Science at Chalmers in the same or different major subjects of study can be awarded only if all degree requirements are satisfied and separate degree projects have been completed. In addition to the degree project, the courses included must differ by at least 45 credits.

Two or more Higher Education Diplomas at Chalmers in the same or different major subjects of study can be awarded only if all degree requirements are satisfied and separate degree projects have been completed. In addition to the degree project, the courses included must differ by at least 30 credits.

10. Collaborative degrees

Chalmers and certain external higher education institutions are parties to collaborative agreements whose programme syllabus leads to either a dual second cycle qualification (Double Degree) or a joint second cycle qualification (Joint Degree). These collaborative agreements take precedence over the local qualifications in the framework.

10.1. Double Degree

Students who are studying under a collaborative agreement whose programme syllabus leads to a double degree (second cycle/Degree of Master, 120 credits) study 60 credits at Chalmers and 60 credits at the partner institution. After two years of approved studies under the agreement, the student has the right to apply for two separate Degrees of Master (120 credits, second cycle qualifications), one from Chalmers and one from the partner institution, with the same courses included. Credits for courses studied at the partner university can, after evaluation, be transferred by the Office of Admissions and Degrees.

10.2. Joint Degree

Students who are studying under a collaborative agreement whose programme syllabus leads to a joint degree generally study 60 credits at Chalmers and 60 credits at the partner institution. After a total of two years of approved study under the agreement, the student can apply for a joint degree (second cycle/Degree of Master, 120 credits). In this case, the degree certificate is formulated jointly by Chalmers and the partner institution. The degree certificate is issued by the coordinating partner institution.

11. Transitional provisions

11.1. National transitional provisions

National transitional provisions corresponding to the Higher Education Ordinance (1993:100, Annex 2) apply at Chalmers regarding the sections below.

5. A person who has started an educational programme leading to a qualification under the older provisions in Annex 2 (the Qualifications Ordinance) before 1 July 2007 and a person who has been admitted to such a programme before that date but was granted deferment until a time after that date is entitled to complete her or his education and obtain a qualification under the older provisions before the end of June 2015.

6. One credit defining the scope of first, second, or third cycle education before 1 July 2007 is equivalent to one and a half credits under the new provisions.

9. If prior education or a first cycle qualification is required for a second cycle qualification awarded under the new provisions, a person who has corresponding education or a corresponding first cycle qualification will also satisfy the requirements for the qualification.

12. A person who has been admitted to a first cycle programme and has been granted deferment of commencement of studies until after 1 July 2007 will be deemed to have been admitted to the programme under the new provisions. However, this does not apply if the person admitted has chosen to exercise his or her rights under point 5.

11.2. Local transitional provisions

Local transitional provisions apply at Chalmers as set forth below.

1. A person who commenced his or her education before 1 July 2007 and wishes to complete the education after 30 June 2015 must satisfy the requirements under the Higher Education Ordinance (1993:100, Annex 2) and the local Qualifications Framework in effect.

2. Students admitted under the older ordinance (1993:956) before 1 July 2007 to one of the international master's programmes (90 hp) are given the possibility to complete their studies under the Qualifications Ordinance (1993:100, Annex 2) and the local Qualifications Framework. These students are offered an individual study plan to be able to fulfil the requirements for one of the existing master's programmes (120 hp). Thus, the prior award of a Degree of Bachelor, a Degree of Bachelor of Fine Arts, a professional or vocational qualification of at least 180 credits or a corresponding qualification from abroad is required, see section 14.2.

3. Students admitted under the older ordinance (1993:956) before 1 July 2007 to the Master of Science in Engineering or the Master of Architecture programme who have satisfied the MTS/MHU requirements then in effect shall be deemed to have also satisfied current MTS/MHU requirements. Students who have satisfied only part of the earlier MTS/MHU requirements must satisfy the current MTS/MHU requirements in their entirety.

4. Students admitted before 1 July 2007 to the Master of Science in Engineering or the Master of Architecture programme (270 credits/180 credits) according to the older ordinance now study according to an individual study plan whose objective is to earn a Master of Science in Engineering or Master of Architecture (300 credits) according to the current ordinance (1993:100 Annex 2) and the local System of Qualifications (C 2007/723). These students are granted a general waiver for first cycle studies, that is, the requirement for first cycle studies for the Degree of Master of Science in Engineering or the Degree of Master of Architecture does not apply to this group of students. This applies regardless of which admission year the student follows.

5. Students admitted under the earlier ordinance (1993:956), before 1 July 2007, are granted a general waiver from the requirement for a Degree of Bachelor to satisfy the requirements for the

Degree of Master. The waiver is granted because the students who studied according to the earlier ordinance were admitted to a long degree programme that does not provide opportunities for intermediate qualifications/degrees.

The waiver is granted provided that:

- the student follows the admission year for the Degree of Master of Science in Engineering or Degree of Master of Architecture programme (270 credits/180 credits) (substitution of courses in the programme syllabus is permitted),
- the student satisfies the requirements for the Degree of Master of Science in Engineering or Degree of Master of Architecture (300 credits) according to the ordinance (1993:100 Annex 2) and local System of Qualifications (C 2007/723),
- the student satisfies the requirements for the relevant second cycle programme. The student need not be admitted to the second cycle programme to satisfy the qualification requirements for the same.

Students admitted under the earlier ordinance mentioned above and who thereafter changed admission years and are following the programme syllabus according to Ordinance (1993:100, Annex 2) and the local System of Qualifications (C 2007/723), are not covered by the above waiver from satisfying the requirements for the second cycle qualification. An exception can be granted if it is to the student's advantage. For such an exception to be granted, the individual study plan and associated decisions must be signed by the director of studies and the director of the relevant second cycle programme (engineering or architecture).

12. Appeal

A decision to reject a student's request for a degree certificate or course certificate may be appealed against. The appeal shall be in writing and reach the registrar within three weeks of the date the decision was notified.

Students who feel wronged or unfairly treated may appeal against the decision as set forth in Chalmers' Rules of Procedure - First and Second Cycle Education.

13. Qualifications descriptors for first cycle general qualifications

13.1. Higher Education Diploma

National qualifications descriptor

Scope

A Higher Education Diploma is awarded after the student has completed the courses required to gain 120 credits with a defined specialisation determined by each higher education institution itself.

Outcomes

Knowledge and understanding

For a Higher Education Diploma, the student shall

- demonstrate knowledge and understanding in the principal field (major subject of study) of the study programme, including awareness of the disciplinary foundation of the field and knowledge of some applicable methodologies in the field.

Competence and skills

For a Higher Education Diploma, the student shall

- demonstrate the ability to search for, gather and critically interpret the relevant information in order to formulate answers to well defined issues in the major subject of study,
- demonstrate the ability to present and discuss his or her knowledge with different audiences, and
- demonstrate the skills required to work autonomously with specific tasks in the major subject of study.

Judgement and approach

For a Higher Education Diploma, the student shall

- demonstrate knowledge about and be equipped to deal with ethical issues in the major subject of study.

Independent project (degree project)

A requirement for the award of a Higher Education Diploma is completion by the student of an independent project (degree project) in the major subject of study.

Miscellaneous

Specific requirements determined by each higher education institution itself within the parameters of the requirements laid down in this qualification descriptor shall also apply for a Higher Education Diploma with a defined specialisation.

Local requirements

To be awarded a Higher Education Diploma at Chalmers, the student shall

- Have completed the course requirements of at least 40 credits for which final examinations were taken at Chalmers. The degree project can be included in these 40 credits.
- Have completed at least 60 credits in the programme's major subject of study, including at least 7.5 credits for the degree project.

Title of qualification

The title of the qualification is Högskoleexamen. The English translation of the title of the qualification is the Higher Education Diploma. The degree certificate states the major subject covered by the qualification.

13.2. Degree of Bachelor*National qualifications descriptor***Scope**

A Degree of Bachelor is awarded after the student has completed the courses required to gain 180 credits in a defined specialisation determined by each higher education institution itself, of which 90 credits are for progressively specialised study in the programme's major subject of study.

Outcomes*Knowledge and understanding*

For a Degree of Bachelor, the student shall

- demonstrate knowledge and understanding in the major subject of study, including knowledge of the disciplinary foundation of the field, knowledge of applicable methodologies in the field, specialised study in some aspect of the field as well as awareness of current research issues.

Competence and skills

For a Degree of Bachelor, the student shall

- demonstrate the ability to search for, gather, evaluate and critically interpret the relevant information for a formulated problem and also discuss phenomena, issues and situations critically,
- demonstrate the ability to identify, formulate and solve problems autonomously and to complete tasks within predetermined time frames,
- demonstrate the ability to present and discuss information, problems and solutions in speech and writing and in dialogue with different audiences, and
- demonstrate the skills required to work autonomously in the major subject of study.

Judgement and approach

For a Degree of Bachelor, the student shall

- demonstrate the ability to make assessments in the major subject of study informed by relevant disciplinary, social and ethical issues,
- demonstrate insight into the role of knowledge in society and the responsibility of the individual for how it is used, and
- demonstrate the ability to identify the need for further knowledge and ongoing learning.

Independent project (degree project)

A requirement for the award of a Degree of Bachelor is completion by the student of an independent project (degree project) for at least 15 credits in the major subject of study.

Miscellaneous

Specific requirements determined by each higher education institution itself within the parameters of the requirements laid down in this qualification descriptor shall also apply for a Degree of Bachelor with a defined specialisation.

Local requirements

To be awarded a Degree of Bachelor at Chalmers, the student shall

- Have completed the course requirements of at least 60 credits for which final examinations were taken at Chalmers. The degree project can be included in these 60 credits.

The Degree of Bachelor can be included as part of the Degree of Master of Science in Engineering/Master of Architecture/Master of Science in Secondary Education with a specialisation in teaching in the upper secondary school. In these cases, the programme-specific outcomes and the compulsory elements of the programme syllabus, as adopted by the Dean of Education, must be satisfied.

Title of qualification

The title of the qualification is Teknologie kandidatexamen The English translation of the title of the qualification is Degree of Bachelor of Science. The degree certificate states the major subject covered by the qualification.

14. Qualifications descriptors for second cycle general qualifications

14.1. Degree of Master (60 credits)

National qualifications descriptor

Scope

A Degree of Master (60 credits) is awarded after the student has completed the courses required to gain 60 credits with a defined specialisation determined by each higher education institution itself, of which at least 30 credits are for specialised study in the programme's major subject of study. In addition, the prior award of a Degree of Bachelor, a Degree of Bachelor of Fine Arts, a professional or vocational qualification of at least 180 credits or a corresponding qualification from abroad is required. The requirement of the prior award of a qualification may be waived for a student admitted to the programme without the basic entry requirement in the form of a qualification. This does not, however, apply if a waiver was granted during admission pursuant to the second paragraph of Section 28 of Chapter 7 on the grounds that the degree certificate had not yet been issued.

Outcomes

Knowledge and understanding

For a Degree of Master (60 credits), the student shall

- demonstrate knowledge and understanding in the major subject of study, including both an overview of the field and specialised knowledge in certain areas of the field as well as insight into current research and development work, and
- demonstrate specialised methodological knowledge in the major subject of study.

Competence and skills

For a Degree of Master (60 credits), the student shall

- demonstrate the ability to integrate knowledge and analyse, assess and deal with complex phenomena, issues and situations even with limited information,
- demonstrate the ability to identify and formulate issues autonomously as well as to plan and, using appropriate methods, undertake advanced tasks within predetermined time frames,
- demonstrate the ability in speech and writing to report clearly and discuss his or her conclusions and the knowledge and arguments on which they are based in dialogue with different audiences, and
- demonstrate the skills required for participation in research and development work or employment in some other qualified capacity.

Judgement and approach

For a Degree of Master (60 credits), the student shall

- demonstrate the ability to make assessments in the major subject of study informed by relevant disciplinary, social and ethical issues and also to demonstrate awareness of ethical aspects of research and development work,
- demonstrate insight into the possibilities and limitations of research, its role in society and the responsibility of the individual for how it is used, and
- demonstrate the ability to identify the personal need for further knowledge and take responsibility for his or her ongoing learning

Independent project (degree project)

A requirement for the award of a Degree of Master (60 credits) is completion by the student of an independent project (degree project) for at least 15 credits in the major subject of study.

Miscellaneous

Specific requirements determined by each higher education institution itself within the parameters of the requirements laid down in this qualification descriptor shall also apply for a Degree of Master (60 credits) with a defined specialisation.

Local requirements

To be awarded a Degree of Master (60 credits) at Chalmers, the student shall

- Have completed the course requirements of at least 45 credits at the second cycle level. The degree project can be included in these 45 credits.
- Have completed the course requirements of at least 30 credits at the second cycle level for which final examinations were taken at Chalmers. The degree project can be included in these 30 credits.

Title of qualification

The title of the qualification is Teknologie magisterexamen. The English translation of the title of the qualification is Degree of Master of Science (60 credits). The degree certificate states the major subject covered by the qualification.

14.2. Degree of Master (120 credits)

National qualifications descriptor

Scope

A Degree of Master (120 credits) is awarded after the student has completed the courses required to gain 60 credits with a defined specialisation determined by each higher education institution itself, of which at least 60 credits are for specialised study in the programme's major subject of study. In addition, the prior award of a Degree of Bachelor, a Degree of Bachelor of Fine Arts, a professional or vocational qualification of at least 180 credits or a corresponding qualification from abroad is required. The requirement of the prior award of a qualification may be waived for a student admitted to the programme without the basic entry requirement in the form of a qualification. This does not, however, apply if a waiver was granted during admission pursuant to the second paragraph of Section 28 of Chapter 7 on the grounds that the degree certificate had not yet been issued.

Outcomes

Knowledge and understanding

For a Degree of Master (120 credits), the student shall

- demonstrate knowledge and understanding in the major subject of study, including both broad knowledge of the field and a considerable degree of specialised knowledge in certain areas of the field as well as insight into current research and development work, and
- demonstrate specialised methodological knowledge in the major subject of study.

Competence and skills

For a Degree of Master (120 credits), the student shall

- demonstrate the ability to critically and systematically integrate knowledge and analyse, assess and deal with complex phenomena, issues and situations even with limited information,
- demonstrate the ability to identify and formulate issues critically, autonomously and creatively as well as to plan and, using appropriate methods, undertake advanced tasks within predetermined time frames and so contribute to the formation of knowledge as well as the ability to evaluate this work,
- demonstrate the ability in speech and writing both nationally and internationally to clearly report and discuss his or her conclusions and the knowledge and arguments on which they are based in dialogue with different audiences, and

– demonstrate the skills required for participation in research and development work or autonomous employment in some other qualified capacity.

Judgement and approach

For a Degree of Master (120 credits), the student shall

- demonstrate the ability to make assessments in the major subject of study informed by relevant disciplinary, social and ethical issues and also to demonstrate awareness of ethical aspects of research and development work,
- demonstrate insight into the possibilities and limitations of research, its role in society and the responsibility of the individual for how it is used, and
- demonstrate the ability to identify the personal need for further knowledge and take responsibility for his or her ongoing learning

Independent project (degree project)

A requirement for the award of a Degree of Master (120 credits) is completion by the student of an independent project (degree project) for at least 30 credits in the major subject of study. The degree project may comprise less than 30 credits, however no less than 15 credits, if the student has already completed an independent project in the second cycle for at least 15 credits in the major subject of study or the equivalent from a programme of study outside Sweden.

Miscellaneous

Specific requirements determined by each higher education institution itself within the parameters of the requirements laid down in this qualification descriptor shall also apply for a Degree of Master (120 credits) with a defined specialisation.

Local requirements

To be awarded a Degree of Master (120 credits) at Chalmers, the student shall

- Have completed the course requirements of at least 90 credits at the second cycle level. The degree project can be included in these 90 credits.
- Have completed the course requirements of at least 45 credits at the second cycle level for which final examinations were taken at Chalmers. The degree project can be included in these 45 credits.

The Degree of Master can be included as part of the Degree of Master of Science in Engineering/Master of Architecture/ Master of Science in Secondary Education with a specialisation in teaching in the upper secondary school. In these cases, the programme-specific outcomes and the compulsory elements of the programme syllabus, as adopted by the Dean of Education, must be satisfied.

Title of qualification

The title of the qualification is Teknologie masterexamen. The English translation of the title of the qualification is Degree of Master of Science (120 credits). The degree certificate states the major subject covered by the qualification and the programme that the student has completed. If the student has completed a double degree agreement the degree certificate states the major subject covered by the qualification, and the name of the agreement.

15. Qualifications descriptors for first cycle professional qualifications

15.1. Degree of Bachelor of Science in Engineering

National qualifications descriptor

Scope

A Degree of Bachelor of Science in Engineering is awarded after the student has completed the courses required to gain 180 credits.

Outcomes

For a Degree of Bachelor of Science in Engineering the student shall demonstrate the knowledge and skills required to work autonomously as a graduate engineer.

Knowledge and understanding

For a Degree of Bachelor of Science in Engineering, the student shall

- demonstrate knowledge of the disciplinary foundation of the engineering field chosen and proven experience in this field as well as awareness of current research and development work, and
- demonstrate broad knowledge in the engineering field chosen and relevant knowledge of mathematics and the natural sciences.

Competence and skills

For a Degree of Bachelor of Science in Engineering, the student shall

- demonstrate the ability to identify, formulate and deal with issues autonomously and creatively using a holistic approach and to analyse and evaluate technological solutions,
- demonstrate the ability to plan and using appropriate methods undertake tasks within predetermined parameters,
- demonstrate the ability to use knowledge critically and systematically to model, simulate, predict and evaluate series of events on the basis of relevant information, – demonstrate the ability to design and manage products, processes and systems while taking into account the circumstances and needs of individuals and the targets for economically, socially and ecologically sustainable development set by the community,
- demonstrate the capacity for teamwork and collaboration with various constellations, and
- demonstrate the ability to present and discuss information, problems and solutions in speech and writing and in dialogue with different audiences.

Judgement and approach

For a Degree of Bachelor of Science in Engineering, the student shall

- demonstrate the ability to make assessments informed by relevant disciplinary, social and ethical aspects,
- demonstrate insight into the possibilities and limitations of technology, its role in society and the responsibility of the individual for how it is used, including social and economic aspects as well as environmental and occupational health and safety aspects, and
- demonstrate the ability to identify the need for further knowledge and undertake ongoing development of his or her skills.

Independent project (degree project)

A requirement for the award of a Degree of Bachelor of Science in Engineering is completion by the student of an independent project (degree project) for at least 15 credits.

Miscellaneous

Specific requirements determined by each higher education institution itself within the parameters of the requirements laid down in this qualification descriptor shall also apply for a Degree of Bachelor of Science in Engineering.

Local requirements

To be awarded a Degree of Bachelor of Science in Engineering at Chalmers, the student shall

- Have completed the course requirements of at least 60 credits for which final examinations were taken at Chalmers. The degree project can be included in these 60 credits.
- Have completed the course requirements in the major subject mathematics of at least 15 credits. The degree project may not be included in these 15 credits.
- Have completed the course requirements in environment and sustainable development that must be included in the programme for a total of 7.5 credits. See also point 8.3.
- Have completed the course requirements and attained the outcomes stated in the respective programme syllabus.

Title of qualification

The title of the qualification is Högskoleingenjörsexamen The English translation of the title of the qualification is Degree of Bachelor of Science in Engineering. The main field of study is stated on the degree certificate.

15.2. Degree of Bachelor of Science in Marine Engineering

National qualifications descriptor

Scope

A Degree of Bachelor of Science in Marine Engineering is awarded after the student has completed the courses required to gain 180 credits.

Outcomes

For a Degree of Bachelor of Science in Marine Engineering the student shall demonstrate the knowledge and skills as well as the requisite placement experience required for certification as a marine engineer.

Knowledge and understanding

For a Degree of Bachelor of Science in Marine Engineering, the student shall

- demonstrate knowledge of the disciplinary foundation of the field and proven experience as well as awareness of current research and development work, and
- demonstrate the broad knowledge of marine engineering required to assume responsibility in a leading position for the operation and maintenance of marine mechanical and electrical systems and for fire safety.

Competence and skills

For a Degree of Bachelor of Science in Marine Engineering, the student shall

- demonstrate the ability to plan and use appropriate methods to undertake tasks within predetermined parameters as well as the capacity in all operational activities to comply with and implement suitable marine safety measures,
- demonstrate the ability to use knowledge critically and systematically to model, simulate, predict and evaluate series of events on the basis of relevant information

- demonstrate the ability to manage products, processes and occupational health and safety while taking into account the circumstances and needs of individuals and the targets for economically, socially and ecologically sustainable development set by the community,
- demonstrate the capacity to think in terms of marine safety and also for teamwork and cooperation in various constellations, and
- demonstrate the ability in both national and international contexts to present and discuss information, problems and solutions in speech and writing in dialogue with different audiences.

Judgement and approach

For a Degree of Bachelor of Science in Marine Engineering, the student shall

- demonstrate the ability in the field of shipping to make assessments informed by the relevant disciplinary, social and ethical aspects
- demonstrate insight into the possibilities and limitations of technology, its role in society and the responsibility of the individual for how it is used, including social and economic aspects as well as environmental and occupational health and safety aspects, and
- demonstrate the ability to identify the need for further knowledge and undertake ongoing development of his or her skills.

Independent project (degree project)

A requirement for the award of a Degree of Bachelor of Science in Marine Engineering is completion by the student of an independent project (degree project) for at least 15 credits.

Miscellaneous

Programmes leading to the award of a Degree of Bachelor of Science in Marine Engineering shall fulfil the requirements laid down in the 1978 International Convention on Standards of Training, Certification and Watchkeeping for Seafarers in its new wording (STCW Convention). These standards are to be regarded as minimum standards.

Specific requirements determined by each higher education institution itself within the parameters of the requirements laid down in this qualification descriptor shall also apply for a Degree of Bachelor of Science in Marine Engineering.

Local requirements

To be awarded a Degree of Bachelor of Science in Marine Engineering at Chalmers, the student shall

- Have completed the course requirements of at least 60 credits for which final examinations were taken at Chalmers. The degree project can be included in these 60 credits.
- Have completed the course requirements in environment and sustainable development that must be included in the programme for a total of 7.5 credits. See also point 8.4.
- Have completed the course requirements and attained the outcomes stated in the respective programme syllabus.

Title of qualification

The title of the qualification is Sjöingenjörsexamen. The English translation of the title of the qualification is Degree of Bachelor of Science in Marine Engineering.

15.3. Degree of Bachelor of Science in Nautical Science

National qualifications descriptor

Scope

A Degree of Bachelor of Science in Nautical Science is awarded after the student has completed the courses required to gain 180 credits.

Outcomes

For a Degree of Bachelor of Science in Nautical Science the student shall have the knowledge and skills as well as the requisite placement experience required for certification as a qualified Degree of Master mariner.

Knowledge and understanding

For a Degree of Bachelor of Science in Nautical Science, the student shall

- demonstrate knowledge of the disciplinary foundation of the field and proven experience as well as awareness of current research and development work, and
- demonstrate the broad knowledge of nautical science required to assume operational responsibility in a leading position for crews, vessels and cargo.

Competence and skills

For a Degree of Bachelor of Science in Nautical Science, the student shall

- demonstrate the ability to plan and use appropriate methods to undertake tasks within predetermined time frames, particularly those concerning marine safety measures as well as the capacity in all operational activities to observe and implement suitable marine safety measures,
- demonstrate the ability to use knowledge critically and systematically to model, simulate, predict and evaluate series of events on the basis of relevant information,
- demonstrate the ability to manage products, processes and occupational health and safety while taking into account the circumstances and needs of individuals and the targets for economically, socially and ecologically sustainable development set by the community,
- demonstrate the capacity to think in terms of marine safety and also for teamwork and cooperation in various constellations, and
- demonstrate the ability in both national and international contexts to present and discuss information, problems and solutions in speech and writing in dialogue with different audiences.

Judgement and approach

For a Degree of Bachelor of Science in Nautical Science, the student shall

- demonstrate the ability in the field of shipping to make assessments informed by the relevant disciplinary, social and ethical aspects,
- demonstrate insight into the possibilities and limitations of technology, its role in society and the responsibility of the individual for how it is used, including social and economic aspects as well as environmental and occupational health and safety aspects, and
- demonstrate the ability to identify the need for further knowledge and undertake ongoing development of his or her skills.

Independent project (degree project)

A requirement for the award of a Degree of Bachelor of Science in Nautical Science is completion by the student of an independent project (degree project) for at least 15 credits.

Miscellaneous

Programmes leading to the award of a Degree of Bachelor of Science in Nautical Science shall fulfil the requirements laid down in the 1978 International Convention on Standards of Training, Certification and Watchkeeping for Seafarers in its new wording (STCW Convention). These standards are to be regarded as minimum standards.

Specific requirements determined by each higher education institution itself within the parameters of the requirements laid down in this qualification descriptor shall also apply for a Degree of Bachelor of Science in Nautical Science.

Local requirements

To be awarded a Degree of Bachelor of Science in Nautical Science at Chalmers, the student shall

- Have completed the course requirements of at least 60 credits for which final examinations were taken at Chalmers. The degree project can be included in these 60 credits.
- Have completed the course requirements in environment and sustainable development that must be included in the programme for a total of 7.5 credits. See also point 8.5.
- Have completed the course requirements and attained the outcomes stated in the respective programme syllabus.

Title of qualification

The title of the qualification is Sjökapensexamen. The English translation of the title of the qualification is Degree of Bachelor of Science in Nautical Science.

15.4. Degree of Bachelor of Science in Secondary Education with a specialisation in teaching in the upper secondary school

National requirements

Scope

A Degree of Bachelor of Science in Secondary Education with a specialisation in teaching in the upper secondary school is awarded after the student has completed the courses required to gain 210 credits, including subject studies of 120 credits in one teaching subject.

Outcomes

Knowledge and understanding

For a Degree of Bachelor of Science in Secondary Education with a specialisation in teaching in the upper secondary school the student shall

- demonstrate the subject knowledge required for professional practice, including both broad knowledge of the field and a considerable degree of specialised knowledge in certain areas of the field as well as specialised insight into current research and development work,
- demonstrate the knowledge of didactics and subject didactics including methodology required for teaching and learning in the specialisation or specialisations for which the qualification is awarded as well as for professional practice in other respects and also show awareness of adult learning,
- demonstrate specialised knowledge of the theory of knowledge and qualitative and quantitative research methods as well as the relationship between the disciplinary foundation and proven experience and its significance for professional practice,
- demonstrate the knowledge about children's development, learning, needs and circumstances required for the specialisation for which the qualification is awarded,
- demonstrate knowledge and understanding of social relationships, conflict management and leadership,

- demonstrate knowledge of the organisation of the school system, relevant regulatory documents, syllabus theory and different educational and didactical perspectives as well as knowledge of the history of the school system, and
- demonstrate specialised knowledge of assessment and grading.

Competence and skills

For a Degree of Bachelor of Science in Secondary Education with a specialisation in teaching in the upper secondary school the student shall

- demonstrate a specialised capacity to create conditions in which all pupils can learn and develop,
- display the capacity to benefit from, systematise and reflect critically and autonomously on personal experience, the experience of others and relevant research findings and thereby contribute to professional development and the formation of knowledge in the subjects, subject areas and subject didactics,
- demonstrate the capacity to take advantage of the knowledge and experiences of pupils to stimulate the learning and development of every pupil,
- demonstrate the capacity to plan, implement, evaluate and develop teaching and educational processes individually and together with others in order to stimulate the learning and development of every pupil in the best way possible,
- demonstrate the capacity to identify and in cooperation with others deal with special educational needs,
- demonstrate the capacity to observe, document and analyse their pupils' development and learning in relation to educational objectives and to inform and cooperate with pupils and their caregivers,
- demonstrate the capacity to communicate and instil core educational values, including human rights and the fundamental democratic values,
- demonstrate the capacity to prevent and restrain discrimination and other forms of harassment of pupils,
- demonstrate the capacity to respect, communicate and instil a gender equal and equal rights perspective in educational processes,
- demonstrate communicative capacity in listening, speaking and writing to support educational processes,
- demonstrate the capacity to use digital aids assuredly and critically in educational processes and to take into account the significance of the role of different media and digital environments in this respect, and
- demonstrate the capacity to acquire during educational processes skills that are valuable for professional practice.

Judgement and approach

For a Degree of Bachelor of Science in Secondary Education with a specialisation in teaching in the upper secondary school the student shall

- demonstrate self-awareness and the capacity for empathy,
- demonstrate the capacity to adopt a professional approach to pupils and their caregivers,
- demonstrate the capacity to make assessments in educational processes on the basis of relevant scientific, social and ethical aspects with particular respect for human rights, especially children's rights according to the Convention on the Rights of the Child, and sustainable development, and
- demonstrate the capacity to identify the need for further knowledge and to develop his or her own skills in pedagogical practice.

Independent project (degree project)

A requirement for the award of a Degree of Bachelor of Science in Secondary Education with a specialisation in teaching in the upper secondary school is completion by the student of an independent project (degree project) for at least 15 credits.

Miscellaneous

The degree certificate shall state clearly which specialisation the student has completed and which teaching subject or subjects the qualification comprises.

Specific requirements determined by each higher education institution itself within the parameters of the requirements laid down in this qualification descriptor shall also apply for a Degree of Bachelor of Science in Secondary Education with a specialisation in teaching in the upper secondary school.

Local requirements

To be awarded the Degree of Bachelor of Science in Secondary Education with a specialisation in teaching in the upper secondary school at Chalmers, the student shall

- Have completed the course requirements of at least 60 credits for which final examinations were taken at Chalmers. The degree project can be included in these 60 credits.
- Have completed the course requirements and attained the outcomes stated in the respective programme syllabus.

Title of qualification

The title of the qualification is Ämneslärare med inriktning mot arbete i gymnasieskola. The English translation of the title of the qualification is Degree of Bachelor of Science in Secondary Education with a specialisation in teaching in the upper secondary school. The degree certificate states the teaching subject covered by the qualification and the title of the programme.

16. Qualifications descriptors for second cycle professional qualifications

16.1. Degree of Master of Architecture

National qualifications descriptor

Scope

A Degree of Master of Architecture is awarded after the student has completed the courses required to gain 300 credits.

Outcomes

For a Degree of Master of Architecture the student shall demonstrate the knowledge and skills required to work autonomously as an architect.

Knowledge and understanding

For a Degree of Master of Architecture, the student shall

- demonstrate knowledge of the disciplinary and artistic foundation of the field and insight into relevant research and development work, and
- demonstrate both broad knowledge and understanding of architectural theory and history as well as specialised knowledge of architectural design, planning and the development of built environments and also the processes, methods and statutory provisions that affect them.

Competence and skills

For a Degree of Master of Architecture, the student shall

- demonstrate the ability to plan, design, maintain and renew built environments and buildings in complex contexts and with a holistic approach informed by various demands, in particular the sustainable development required by the community,
- demonstrate the ability to use appropriate architectonic methods and syntheses to undertake and evaluate advanced and creative tasks autonomously and critically and within predetermined parameters in the field of architecture and urban planning,
- demonstrate the ability to apply knowledge about physical circumstances and technological principles to the erection and alteration of buildings,
- demonstrate the capacity for teamwork and collaboration with various constellations, and
- demonstrate the ability in dialogue with different audiences in both national and international contexts to present and discuss, using images and models, his or her conclusions and the knowledge and reasoning on which they are based in speech, writing or some other way and so contribute to the development of the profession and professional practice.

Judgement and approach

For a Degree of Master of Architecture, the student shall

- demonstrate the ability to adopt a holistic view in making judgements and appraisals informed by the relevant disciplinary, social, aesthetic and ethical aspects and which at the same time take into account the different needs and functional abilities of communities and individuals as well as the interaction between individuals and their physical settings, including occupational health and safety,
- demonstrate the disposition to base his or her work on high-quality, well-designed long-term functional solutions, and
- demonstrate the ability to identify the personal need for further knowledge and undertake ongoing development of his or her skills.

Independent project (degree project)

A requirement for the award of a Degree of Master of Architecture is completion by the student of an independent project (degree project) for at least 30 credits.

Miscellaneous

Specific requirements determined by each higher education institution itself within the parameters of the requirements laid down in this qualification descriptor shall also apply for a Degree of Master of Architecture.

Local requirements

To be awarded a Degree of Master of Architecture at Chalmers, the student shall

- Have completed the course requirements of at least 90 credits for which examinations are taken at Chalmers, of which at least 45 credits must be at the second cycle level. The degree project can be included in these 45 credits.
- Have completed the course requirements of at least 90 credits at the second cycle level. The degree project can be included in these 90 credits.
- Have completed the course requirements in environment and sustainable development that must be included in the programme for a total of 7.5 credits. See also point 8.2.
- Have completed the course requirements of at least 150 credits within the theme of Architectural design project
- Have completed the course requirements and attained the outcomes stated in the respective programme syllabus. This applies to the master of architecture as well as an accredited master's programme, or an agreement for double master's degree.

The programme must meet the requirements set forth in the European Professional Qualifications Directive 2005/36/EC.

Title of qualification

The title of the qualification is Arkitektexamen. The English translation of the title of the qualification is Degree of Master of Architecture. The degree certificate shall state either “Master of Architecture” or “Master of Architecture and Engineering” as well as the master’s programme that the student has completed. If the student has completed an agreement for a double master’s degree the degree certificate states either “Master of Architecture” or “Master of Architecture and Engineering”, and the name of the agreement.

16.2. Degree of Master of Science in Engineering*National qualifications descriptor***Scope**

A Degree of Master of Science in Engineering is awarded after the student has completed the courses required to gain 300 credits.

Outcomes

For a Degree of Master of Science in Engineering the student shall demonstrate the knowledge and skills required to work autonomously as a graduate engineer.

Knowledge and understanding

For a Degree of Master of Science in Engineering, the student shall

- demonstrate knowledge of the disciplinary foundation of and proven experience in his or her chosen field of technology as well as insight into current research and development work, and
- demonstrate both broad knowledge of his or her chosen field of technology, including knowledge of mathematics and the natural sciences, as well as a considerable degree of specialised knowledge in certain areas of the field.

Competence and skills

For a Degree of Master of Science in Engineering, the student shall

- demonstrate the ability to identify, formulate and deal with complex issues autonomously and critically and with a holistic approach and also to participate in research and development work and so contribute to the formation of knowledge,
- demonstrate the ability to create, analyse and critically evaluate various technological solutions,
- demonstrate the ability to plan and use appropriate methods to undertake advanced tasks within predetermined parameters,
- demonstrate the ability to integrate knowledge critically and systematically as well as the ability to model, simulate, predict and evaluate sequences of events even with limited information,
- demonstrate the ability to develop and design products, processes and systems while taking into account the circumstances and needs of individuals and the targets for economically, socially and ecologically sustainable development set by the community,
- demonstrate the capacity for teamwork and collaboration with various constellations, and
- demonstrate the ability to clearly present his or her conclusions and the knowledge and arguments on which they are based in speech and writing to different audiences in both national and international contexts

Judgement and approach

For a Degree of Master of Science in Engineering, the student shall

- demonstrate the ability to make assessments informed by relevant disciplinary, social and ethical aspects as well as awareness of ethical aspects of research and development work,

- demonstrate insight into the possibilities and limitations of technology, its role in society and the responsibility of the individual for how it is used, including both social and economic aspects and also environmental and occupational health and safety considerations, and
- demonstrate the ability to identify the personal need for further knowledge and undertake ongoing development of his or her skills.

Independent project (degree project)

A requirement for the award of a Degree of Master of Science in Engineering is completion by the student of an independent project (degree project) for at least 30 credits.

Miscellaneous

Specific requirements determined by each higher education institution itself within the parameters of the requirements laid down in this qualification descriptor shall also apply for a Degree of Master of Science in Engineering.

Local requirements

To be awarded a Degree of Master of Science in Engineering at Chalmers, the student shall

- Have completed the course requirements of at least 90 credits for which final examinations are taken at Chalmers, of which at least 45 credits must be at the second cycle level. The degree project can be included in these 45 credits.
- Have completed the course requirements of at least 90 credits at the second cycle level. The degree project can be included in these 90 credits.
- Have completed the course requirements in the major subject mathematics of at least 30 credits. The degree project may not be included in these 30 credits.
- Have completed the course requirements in environment and sustainable development that must be included in the programme for a total of 7.5 credits. See also point 8.1.
- Have completed the course requirements in the field of Humans, Technology, Society that must be included in the programme for a total of 7.5 credits. See also point 8.1.
- Have completed the courses required and attained the outcomes stated in the respective programme syllabus. This applies to the master of science in engineering programme as well as an accredited master's programme, or an agreement for double master's degree.

Title of qualification

The title of the qualification is Civilingenjörsexamen. The English translation of the title of the qualification is Degree of Master of Science in Engineering. The degree certificate states the main field of study and the master's programme that the student has completed. If the student has completed an agreement for a double master's degree the degree certificate states the main field of study, and the name of the agreement.

16.3. Degree of Master of Science in Secondary Education with a specialisation in teaching in the upper secondary school

National qualifications descriptor

Scope

A Degree of Master of Science in Secondary Education with a specialisation in teaching in the upper secondary school is earned at the second cycle level and awarded after the student has completed the courses required to gain 300 credits. For the award of a Degree of Master of Science in Secondary Education with a specialisation in teaching in the upper secondary school, studies in the following areas are required: courses in the subjects and subject didactics that are relevant for teaching school

subjects for which a syllabus or curriculum has been laid down, core education subjects for 60 credits and a placement in a relevant subject and position for 30 credits.

For the award of a Degree of Master of Science in Secondary Education with a specialisation in teaching in the upper secondary school, the programme shall comprise subject courses and courses in subject didactics for 225 credits and study of two teaching subjects. The subject courses and courses in subject didactics shall include 15 credits for a subject-related placement. Studies shall include at least one specialisation for 120 credits in a relevant subject or subject area and one specialisation for 90 credits.

Specialisations are offered in a limited number of subject combinations.

Courses in core education subjects shall be linked to future professional practice and comprise the following:

- history of the school system, its organisation and conditions as well as core educational values, including fundamental democratic values and human rights,
- syllabus theory and didactics,
- theory of knowledge and research methodology,
- development, learning and special needs education,
- social relationships, conflict management and leadership,
- assessment and grading, and
- evaluation and development processes.

Outcomes

For a Degree of Master of Science in Secondary Education with a specialisation in teaching in the upper secondary school the student shall demonstrate the knowledge and skills required to work autonomously as a subject teacher in the specialisation for which the qualification is awarded. The student shall also demonstrate knowledge and skills for other forms of teaching for which the degree, pursuant to the applicable regulations, qualifies him or her.

Knowledge and understanding

For a Degree of Master of Science in Secondary Education with a specialisation in teaching in the upper secondary school the student shall

- demonstrate the subject knowledge required for professional practice, including both broad knowledge of the field and a considerable degree of specialised knowledge in certain areas of the field as well as specialised insight into current research and development work.

For a Degree of Master of Science in Secondary Education with a specialisation in teaching in the upper secondary school the student shall also

- demonstrate the knowledge of didactics and subject didactics including methodology required for teaching and learning in the specialisation or specialisations for which the qualification is awarded as well as for professional practice in other respects and also show awareness of adult learning,
- demonstrate specialised knowledge of the theory of knowledge and qualitative and quantitative research methods as well as the relationship between the disciplinary foundation and proven experience and its significance for professional practice,
- demonstrate the knowledge about children's development, learning, needs and circumstances required for the specialisation for which the qualification is awarded,
- demonstrate knowledge and understanding of social relationships, conflict management and leadership,

- demonstrate knowledge of the organisation of the school system, relevant regulatory documents, syllabus theory and different educational and didactical perspectives as well as knowledge of the history of the school system, and
- demonstrate specialised knowledge of assessment and grading.

Competence and skills

For a Degree of Master of Science in Secondary Education with a specialisation in teaching in the upper secondary school the student shall

- demonstrate a specialised capacity to create conditions in which all pupils can learn and develop,
- display the capacity to benefit from, systematise and reflect critically and autonomously on personal experience, the experience of others and relevant research findings and thereby contribute to professional development and the formation of knowledge in the subjects, subject areas and subject didactics,
- demonstrate the capacity to take advantage of the knowledge and experiences of pupils to stimulate the learning and development of every pupil,
- demonstrate the capacity to plan, implement, evaluate and develop teaching and educational processes individually and together with others in order to stimulate the learning and development of every pupil in the best way possible,
- demonstrate the capacity to identify and in cooperation with others deal with special educational needs,
- demonstrate the capacity to observe, document and analyse their pupils' development and learning in relation to educational objectives and to inform and cooperate with pupils and their caregivers,
- demonstrate the capacity to communicate and instil core educational values, including human rights and the fundamental democratic values,
- demonstrate the capacity to prevent and restrain discrimination and other forms of harassment of children,
- demonstrate the capacity to respect, communicate and instil a gender equal and equal rights perspective in educational processes,
- demonstrate communicative capacity in listening, speaking and writing to support educational processes,
- demonstrate the capacity to use digital aids assuredly and critically in educational processes and to take into account the significance of the role of different media and digital environments in this respect, and
- demonstrate the capacity to acquire during educational processes skills that are valuable for professional practice.

Judgement and approach

For a Degree of Master of Science in Secondary Education with a specialisation in teaching in the upper secondary school the student shall

- demonstrate self-awareness and the capacity for empathy,
- demonstrate the capacity to adopt a professional approach to pupils and their caregivers,
- demonstrate the capacity to make assessments in educational processes on the basis of relevant scientific, social and ethical aspects with particular respect for human rights, especially children's rights according to the Convention on the Rights of the Child, and sustainable development, and
- demonstrate the capacity to identify the need for further knowledge and to develop his or her own skills in pedagogical practice.

Independent project (degree project)

A requirement for the award of a Degree of Master of Science in Secondary Education with a specialisation in teaching in the upper secondary school is completion by the student of an

independent project (degree project) for at least 30 credits or two such projects for at least 15 credits in one or two of the subjects studied during the programme.

Miscellaneous

The degree certificate shall state clearly which specialisation the student has completed and which teaching subject or subjects the qualification comprises.

Specific requirements determined by each higher education institution itself within the parameters of the requirements laid down in this qualification descriptor shall also apply for a Degree of Master of Science in Secondary Education with a specialisation in teaching in the upper secondary school.

Local requirements

To be awarded the Degree of Master of Science in Secondary Education with a specialisation in teaching in the upper secondary school at Chalmers, the student shall

- Have completed the course requirements of at least 90 credits for which examinations are taken at Chalmers, of which at least 45 credits must be at the second cycle level. The degree project can be included in these 45 credits.
- Have completed the course requirements of at least 90 credits at the second cycle level. The degree project can be included in these 90 credits.
- Have completed the course requirements and attained the outcomes stated in the respective programme syllabus.

Title of qualification

The title of the qualification is Ämneslärarexamen med inriktning mot arbete i gymnasieskolan. The English translation of the title of the qualification is Degree of Master of Science in Secondary Education with a specialisation in teaching in the upper secondary school. The degree certificate states the two teaching subjects covered by the qualification and the master's programme that the student has completed.

17. Validity of the document

This policy document is valid from 22 June 2020 until further notice.