

FACULTY OF SCIENCE AND TECHNOLOGY

Supervisor for Bachelor's and Master's Theses



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1. Introduction

A bachelor's or a master's thesis can be:

- an internal or external project published by the department/faculty
- an external project found by the student(s) themselves
- an internal project produced by the student(s)

External projects require an external supervisor in addition to a faculty course coordinator. For internal projects, the course coordinator and the supervisor may be the same person.

Having academic responsibility for a bachelor's or master's thesis entails having to:

- approve the level and scope of the project
- sign a contract with the student(s) so that projects can be accepted by the deadline, see table 1
- approve the timetable for the work
- together with the other possible supervisor set aside enough time to supervise the student(s). Students are entitled to a minimum of five supervision meetings with their course coordinator per semester, as well as supervision meetings with any external enterprise.
- read and provide feedback on the draft thesis before submission
- check the thesis for any plagiarism after submission in Inspira
- ensure an examiner is appointed, see table 1 for the deadline, ref. section 5-2 of the Regulations relating to Studies and Examinations
- evaluate the project by the deadline stated in table 1

The following chapters provide further information on some of the above points followed by references to relevant forms and guidelines.

The annual cycle for bachelor's and master's theses is shown below.

Thesis	Bachelor's thesis	Master's thesis, 30 ECTS	Master's thesis, 60 ECTS
Deadline for department information meeting	15.10.	15.10.	15.03.
Deadline for publishing theses (by the department, faculty or external company) ¹	15.10.	15.10.	15.03.
Deadline for students to propose a self-defined thesis ¹	15.11.	15.11.	15.04.
Deadline for students to apply for theses ¹	01.12.	01.12.	01.05.
Deadline for department to announce assigned theses ¹	15.12.	15.12.	15.05.
Deadline for students to formally accept thesis (sign contract)	15.01.	01.02.	15.09.
Thesis semester	Spring	Spring	Autumn & spring

Withdrawal deadline	01.04. ²	01.04. ³	01.04. ³ (01.11 for BIOMAS)
Withdrawal deadline for theses written outside the ordinary period	01.11. ²	06.10. ³	06.10. ³ (27.10. for BIOMAS)
Submission deadline for assessment ²	15.05.	15.06.	15.06.
Deadline for department to appoint examiners	02.05.	01.06.	01.06.
Deadline for assessment	4 weeks (3 weeks for 10 ECTS bachelor's theses.	10 weeks	10 weeks

Table 1 provides an overview of relevant dates for bachelor's and master's theses. ¹This must be done electronically via the Collaboration Portal, ²The withdrawal deadline is 6 weeks before the submission deadline, ³ The withdrawal deadline is 10 weeks before the submission deadline.

Students who travel on exchange the semester before they are to write their thesis and return to Norway after the date to formally accept the thesis (sign contract) - will be granted a postponed date to formally accept (sign contract) until after they have returned to Norway. This date should, as far as possible, be agreed before departure.

The date for submission of the assignment will be moved accordingly in accordance with section 1.11 of the rules.

- 1.1 The department arranges an information meeting for students and informs them about the routines and process surrounding writing a thesis. The department then publishes the available projects in the Collaboration Portal. Deadlines for arranging information meetings and publishing projects are shown in Table 1.
- 1.2 Students shall apply for three projects in prioritised order or register their own project, i.e. projects students have found themselves, in the Collaboration Portal. The Collaboration Portal will also show projects from external enterprises that students can apply for. The projects must be academically approved and be relevant to students' study programme. The deadlines for applications/registration are shown in Table 1.
- 1.3 The department approves the final project text and checks that the student has made sufficient progress, ref. sections 1.7 and 1.8. The department then assigns a supervisor at UiS so that projects can be accepted by the deadline in Table 1.
- 1.4 If the student will be carrying out a project in collaboration with an enterprise or other institution outside the University of Stavanger, the student will, in addition to a supervisor at UiS, be assigned a supervisor, who will normally be employed by the external enterprise or institution. If the student will be carrying out a project published by the department, the supervision will often be done by one person. The supervisor must be employed at the University of Stavanger. Research fellows, PhD candidates, postgraduates, technical personal and representatives of external enterprise/institutions can act as co-supervisors or external supervisors.

- 1.5 The contract must be signed in the Collaboration Portal. Each student must sign and submit a contract by the applicable deadline. If students will be writing their thesis as part of a group, a group contract must also be completed. This is also available from the Collaboration Portal. This must be completed by each student and submitted electronically by the applicable deadline. When students write their thesis as part of a group, each student must submit their own copy of the final thesis.
- 1.6 The withdrawal deadlines for bachelor's and master's theses are specified in section 3-9(6) of the ***Regulations relating to Studies and Examinations at the University of Stavanger***:
- The withdrawal deadline for bachelor's theses is **1 April**, i.e. 6 weeks before the submission deadline.
 - The withdrawal deadline for master's theses is **1 April**, i.e. 10 weeks before the submission deadline.
 - The withdrawal deadline for master's theses in biological chemistry (**BIOMAS**) is **1 November**, i.e. 6 weeks after accepting the project. This is due to the expensive laboratory exercises.
 - If a bachelor's thesis is going to be written outside the normal period, the withdrawal deadline is 1 November, i.e. 6 weeks before the submission deadline.
 - If a master's thesis is going to be written outside the normal period, the withdrawal deadline is 6 October, i.e. 10 weeks before the submission deadline.
 - If a master's thesis in biological chemistry (BIOMAS) is going to be written outside the normal period, the withdrawal deadline is 27 October, i.e. 6 weeks after accepting the project. This is due to the expensive laboratory exercises.

Oral notification of withdrawal is not valid. If candidates who have enrolled for a bachelor's or master's thesis withdraw after the specified deadline or fail to submit a thesis before the deadline without a valid reason, they will be deemed to have presented for examination and this will be counted as one attempt. Candidates are responsible for documenting that a withdrawal before examination was made by the specified deadline, cf. section 3-9(4) of the *Regulations relating to Studies and Examinations at the University of Stavanger*.

If students want to withdraw from a bachelor's or master's thesis, the student(s) must withdraw from assessment in Studentweb and also send an email to both the supervisor(s), and study adviser. Oral notification of withdrawal is not valid.

There are no continuation examinations for bachelor's and master's theses, ref. section 3-11(3) and (8) of the *Regulations relating to Studies and Examinations at the University of Stavanger*.

If a group needs to be split up or a student needs to leave the group, irrespective of the reason, the following applies:

- The student or students who want to split up the group must apply to the supervisor at UiS to do so by 1 April. The supervisor will then conduct individual interviews with each of the group members. The supervisor will forward the application to the head of department, who will make the final decision.
- After splitting up, all of the group members will continue to have the same supervisor(s) for their thesis.
- Everything the students have done prior to the date the group split up is jointly owned by the entire group. After splitting up the student(s), who wish to do so, will submit their thesis separately. In these circumstances, the individual(s) concerned will be assessed separately and receive their own grade. The thesis can build on what the group had done prior to the date it split up.
- A thesis written after splitting up is owned by the individual(s) who wrote it. This also applies to any software code or products that were produced in connection with the thesis.
- If there is a need to apply for a deferred deadline, see section 3.7.

- 1.7 To start a bachelor's thesis, students must satisfy one of the requirements below, in addition to any pre-requisites stated in the course descriptions:⁴
- meet the prior knowledge requirements specified in the course description, and have passed at least 100 ECTS in accordance with an approved education plan by 15 October; or
 - meet the prior knowledge requirements specified in the course description, and have passed at least 130 ECTS in accordance with an approved education plan by 15 January.
- 1.8 To start a 30-ECTS master's thesis, students must satisfy one of the requirements below, in addition to any pre-requisites stated in the course descriptions:⁴:
- passed the admission requirements for the **2-year master's degree programme** and have passed at least 50 ECTS in accordance with an approved education plan by 15 October; or
 - passed the admission requirements for the **2-year master's degree programme** and have passed at least 80 ECTS in accordance with an approved education plan by 15 January.

Special rules apply to the secondary education teacher programme in natural sciences. See the subject description.

- 1.9 To start a 60-ECTS master's thesis, the student must have passed at least 40 ECTS in the 2-year master's degree programme or at least 220 ECTS in the 5-year master's degree programme in accordance with an approved education plan by 15 August.
- 1.10 The thesis must normally be completed in the spring semester, in the last semester of the education plan. 60-ECTS master's theses can be completed over the last two semesters.
- 1.11 If a student wishes to change the thesis period, a written application explaining the reasons must be sent in the Digital service desk. The deadline for applications is 15 June and the application must be submitted through the form *Application regarding change of approved education plan*. The student is responsible to find a thesis and a supervisor at UiS who is willing to supervise the thesis during the given time period. The student is responsible to find a thesis and a supervisor at UiS who is willing to supervise the thesis during the given time period. Information about this must be provided in the application. The student must also include a thesis proposal. If the student is granted permission to write the thesis during another period, individual deadlines must be settled. Applications to change the thesis period, and the individual deadlines must be determined and approved by the head of the department. There is no guarantee that an application will be granted. The decision will be made based on the department's capacity.

To start a 20-ECTS bachelor's thesis in the autumn semester, the student must meet the admission requirements for the **3-year bachelor's degree programme** and have passed at least 130 ECTS in accordance with an approved education plan by 15 June.

To start a 30-ECTS master's thesis in the autumn semester, the student must meet the admission requirements for the **2-year master's degree programme** and have passed at least 80 ECTS in accordance with an approved education plan by 15 June.

To start a 60-ECTS master's thesis in the spring semester, the student must meet the admission requirements for the **2-year master's degree programme** and have passed at least 40 ECTS in the 2-year master's degree programme or at least 220 ECTS in the 5-year master's degree programme in accordance with an approved education plan by 1 January.

For a bachelor's thesis, the period between the acceptance and submission deadlines must be 4 months. For a 30-ECTS master's thesis, the period must be 4.5 months, and for a 60-ECTS master's thesis, the period must be 9 months.

2. Scope

A thesis should take about 30 hours per ECTS based on the faculty's workload norms. Therefore, the standard workload for a 30-ECTS master's thesis is 900 hours. It is important that students take this into account when drawing up their timetable. A bachelor's thesis worth 20 ECTS corresponds to around 600 hours' work. Bachelor's theses of the secondary education teacher programme in natural sciences is worth 10 ECTS.

As far as course coordinators are concerned, the scope is also specified by the faculty's standards. These can be found in the work plan. The scope of the supervision work can vary greatly based on the nature of the project and the students concerned. Up to 1-2 hours a week should be set aside in addition to the work before and after.

3. Dispensations

Please see sections 3-5 to 3-8 of the *Regulations for Bachelor's and Master's Theses*:

Section 3.7 Students can apply for a deferred submission deadline for a bachelor's or master's thesis based on valid reasons for absence. Applications are considered by the Dean. Deadlines may only be extended for a period proportional to the reasons for the absence (section 3-12 of the *Regulations relating to Studies and Examinations at the University of Stavanger*). According to the rules and conditions for valid reasons for absence, section 2(i), valid reasons for absence can be defined as *other circumstances that make it highly unreasonable for the student to undergo an assessment*. Applications must be documented and received by the administration no later than 14 days before the submission deadline.

Applications submitted after the specified deadline will be considered if the reason for the application arose after the deadline.

Section 3.8 Students requiring special facilitation may be granted up to 1 month's extra time to complete a bachelor's thesis and up to 2 months for a master's thesis. In exceptional cases, further extensions may be granted beyond this. Applications must be submitted by the specified deadlines and must be documented. The Department of Academic Affairs determines the sort of special facilitation that will be granted (section 4-3(1) and (6) of the *Regulations relating to Studies and Examinations at the University of Stavanger*).

Otherwise, as a course coordinator it is important to be familiar with the regulations that apply when a thesis receives a failing grade, is not submitted by the set deadline or the student wants to improve their grade.

Section 3.5 As a rule, a bachelor's or master's thesis can be submitted only once, ref. section 3-10(4) of the *Regulations relating to Studies and Examinations at the University of Stavanger*. If a student

wants to improve their grade, they must submit an application for dispensation stating the reasons. The application must be sent to student reception. The application will be considered by the Dean.

In such circumstances, the student cannot be given an opportunity to rework a previously submitted thesis, ref. section 3-10(4a) of the *Regulations relating to Studies and Examinations at the University of Stavanger*. The thesis must have a new topic and title.

NB! This will be counted as the second and final attempt. Dispensation cannot be granted for a third attempt.

Section 3.6 If a bachelor's or master's thesis is graded F, the student has a deadline of 14 days after the examiner has registered the grade to submit an application to either rewrite it or submit a new thesis, ref. section 3-10(4b) of the *Regulations relating to Studies and Examinations at the University of Stavanger*: “[...] a candidate who has not passed the bachelor's or master's thesis may be granted a second attempt. In such cases, a reworked version of the bachelor's or master's thesis may be submitted, or a completely new thesis may be submitted. This must then be submitted by the specified deadline and will count as a new examination attempt.”

Applications must be submitted to the faculty and will be considered by the Dean, ref. section 3-10(5) of the *Regulations relating to Studies and Examinations at the University of Stavanger*.

The faculty can give the student up to 1 month to rewrite the thesis.

The option to rewrite the thesis lapses upon expiry of the deadline. In these circumstances, the student will then have to apply to write a new thesis, ref. section 3.5.

If a bachelor's or master's thesis is not submitted by the deadline, it will be registered as 'not met' and count as an attempt. The student will then have to apply to write a new thesis, ref. section 3.5.

4. Proprietary rights and restricted access

Sections 5.1 to 5-6 of the *Regulations for Bachelor's and Master's Theses* provide guidelines concerning copyright and using a thesis:

- 5.1 Students own the copyright to their thesis. Students have the right to publish their thesis, or parts thereof, as a separate dissertation or as part of a larger work, or in popularised form in any public publication. However, this does not, without consent, apply to any material that has been made available by an enterprise/institution and which is disclosed directly in the thesis or in an appendix to it. Correspondingly, the consent of the course coordinator is required to disclose material that they have made available.
- 5.2 The submitted copies of the thesis along with any drawings, models and apparatus, as well as computer software included as part of or as an appendix to the thesis, are the property of the University of Stavanger. The University of Stavanger is free to make copies of **all or parts of** the thesis and appendices for teaching and research purposes. The student(s) must be named on each copy as prescribed by the law and good practice.

An agreement must always be entered into when a thesis is going to be restricted. Other agreements are only needed in special circumstances, such as if there are plans to patent the results of a project or in the case of other uses beyond what is specified in sections 5-1 to 5-3.

5. Assessment

5.1 General system

An external examiner will be appointed based on the course coordinator's recommendations. Grades are set by jointly by the examiner and the course coordinator. Assessment deadlines are specified in table 1.

5.2.1 Reasons for grades

Students have the right to learn the reasons why their thesis achieved the grade it did but must request written justification themselves via Studentweb. The deadline for requesting written justification for a grade is 1 week after the student has been informed of the grade. The written justification must normally be provided within 2 weeks after the student has requested it. The written justification must provide an account of the general principles on which the assessment of the student's performance was based.

5.2.2 Appealing grades

Students can choose to lodge an appeal concerning their grade within 3 weeks of the thesis's grade being announced. Students must do this via Studentweb. The faculty's examinations office will contact the supervisor in order to find a new external examiner and the thesis must be reassessed. The new examiner will not have access to the original grade for the thesis. The deadline for a new assessment by an examiner is 4 weeks from submission of the appeal for bachelor's and master's theses.

5.2 Bachelor's theses

(All text in italics has been obtained directly from the National Council for Technological Education (NRT))

5.2.3 Descriptions of Grades and Assessment Criteria for Bachelor's Theses in Engineering

Descriptions of Grades and Assessment Criteria for Bachelor's Theses in Engineering is prepared by the National Council for Technological Education (NRT). The descriptions are completed according to the Norwegian National Qualifications Framework for Higher Education and the National Curriculum Regulations for Engineering Education laid down by the Ministry of Education and Research on 3 February 2011. The descriptions are used for all bachelor's theses in engineering in accordance with this curriculum, starting spring 2014.

Grade/	Level:	Description:
<i>A</i>	<i>Excellent</i>	<p><i>1. Excellent work which is clearly outstanding and is characterised by:</i></p> <p><i>2. The candidate has extremely good insight into engineering and demonstrates engineering expertise at an outstanding level.</i></p> <p><i>3. The candidate is able to select and apply relevant scientific theories and methods at an outstanding level.</i></p> <p><i>4. The candidate is able to produce an outstandingly relevant and clear approach to the issue addressed and has planned and executed an extremely high quality piece of engineering work.</i></p> <p><i>5. This is an advanced and/or innovative contribution. The analysis and discussion have an outstandingly good scientific foundation and justification and are very relevant to the issue that is addressed. The candidate demonstrates extremely good critical reflection and distinguishes clearly between his/her contribution and the contributions from others.</i></p> <p><i>6. The form, dissemination, structure and language are at an extremely high level.</i></p>
<i>B</i>	<i>Very good</i>	<p><i>1. Very good work that is characterised by:</i></p> <p><i>2. The candidate has very good insight into engineering and demonstrates a very good level of engineering expertise.</i></p> <p><i>3. The candidate is able to select and apply relevant scientific theories and methods at a very good level.</i></p> <p><i>4. The candidate is able to produce a very relevant and clear approach to the issue addressed and has planned and executed a high quality piece of engineering work.</i></p> <p><i>5. This is a very good and/or innovative contribution. The analysis and discussion have a very good scientific foundation and justification and are clearly relevant to the issue that is addressed. The candidate demonstrates very good critical reflection and distinguishes clearly between his/her contribution and the contributions from others.</i></p> <p><i>6. The form, dissemination, structure and language are at a very high level.</i></p>

<i>C</i>	<i>Good</i>	<ol style="list-style-type: none"> <i>1. Good work that is characterised by:</i> <i>2. The candidate has good insight into engineering and demonstrates a good level of engineering expertise.</i> <i>3. The candidate is able to select and apply relevant scientific theories and methods at a good level.</i> <i>4. The candidate is able to produce a relevant and generally clear approach to the issue addressed and has planned and executed a good quality piece of engineering work.</i> <i>5. This is a good contribution with some creative elements. The analysis and discussion have a good scientific foundation and are relevant to the issue that is addressed. The candidate demonstrates good critical reflection and generally distinguishes between his/her contribution and the contributions from others.</i> <i>6. The form, dissemination, structure and language are at a good level.</i>
<i>D</i>	<i>Satisfactory</i>	<ol style="list-style-type: none"> <i>1. Clearly acceptable work that is characterised by:</i> <i>2. The candidate has satisfactory insight into engineering and demonstrates a satisfactory level of engineering expertise.</i> <i>3. The candidate is generally able to apply relevant scientific theories and methods.</i> <i>4. The candidate is able to produce a fairly relevant and clear approach to the issue addressed. However, the objectives could have been defined more clearly. The planning and execution result in a piece of engineering work at a satisfactory level.</i> <i>5. This is a satisfactory contribution. The analysis and discussion have a good scientific foundation and are relevant to the issue addressed but there is potential for improvement. The candidate demonstrates critical reflection and has some problems distinguishing between his/her contribution and the contributions from others.</i> <i>6. The form, dissemination, structure and language are at an acceptable level.</i>

<i>E</i>	<i>Sufficient</i>	<p><i>1. Work that is acceptable as it satisfies the minimum criteria and is characterised by:</i></p> <p><i>2. The candidate has sufficient insight into engineering and demonstrates a sufficient level of engineering expertise.</i></p> <p><i>3. The candidate is only just about able to apply relevant scientific theories and methods.</i></p> <p><i>4. The candidate has an adequate approach to the issue addressed. The objectives are described but are unclear. The planning and execution result in a piece of engineering work at an acceptable level. However the candidate shows limited scientific progress and requires close supervision.</i></p>
		<p><i>5. This is a limited and fragmentary contribution. The analysis and discussion have adequate scientific foundation but should have more closely tied to the issue addressed. The candidate demonstrates a sufficient level of critical reflection but has problems distinguishing between his/her contribution and the contributions from others.</i></p> <p><i>6. The presentation is generally acceptable but has clear deficiencies in terms of form, dissemination, structure and language.</i></p>
<i>F</i>	<i>Fail</i>	<p><i>1. Work that does not meet the minimum criteria and is characterised by:</i></p> <p><i>2. The candidate does not have the necessary insight into engineering and has an inadequate level of engineering expertise.</i></p> <p><i>3. The candidate lacks the competence to apply relevant scientific theories and methods.</i></p> <p><i>4. The candidate does not have the ability to adequately address the issue. The objectives are neither clearly defined nor described. The planning and execution of the work is not acceptable.</i></p> <p><i>5. This is a very limited and fragmentary contribution. The analysis and discussion have an inadequate scientific foundation and are loosely tied to the issue addressed. The candidate demonstrates an insufficient ability for critical reflection and fails to distinguish between his/her contribution and the contributions from others.</i></p> <p><i>6. The presentation has significant deficiencies in terms of form, structure and language.</i></p>

Detailed description of the above assessment criteria for bachelor's theses in engineering. The term work refers to the written thesis and any products, if relevant, as well as the oral presentation, if relevant.

1. General impression

Overall impression: Overall impression of the work.

Independent work: To what extent has the candidate generated important elements/issues/ideas in the work himself or herself? Is the candidate able to work independently to find and use relevant literature and methods, and complete an independent research or development project with supervision? Is there personal initiative? What kind of help and supervision has the candidate received in the various phases in the work? Has the candidate demonstrated the ability to take advantage of the scientific expertise available in the department and apply it in his or her own work?

Level: Assessment of each criterion is done in accordance with the bachelor's degree in engineering.

Time: An assumption in the assessment is that the work was delivered within the nominal timeframe.

2. Insight into engineering

Is the candidate's grounding in engineering adequately described? Is the work placed in a comprehensive system perspective and demonstrates for example life cycle, environmental, health, societal, economic and ethical perspectives? To what degree can the candidate update his/her knowledge in the area through information searches, as well as contact with the scientific expertise and practical work experience?

3. Theoretical insight

To what degree does the work document a good theoretical overview, specialisation within an area of engineering theory as well as knowledge about relevant research and development, methods and approaches?

4. Execution

Description of objectives: To what degree is the issue addressed? Is the background and objectives expressed in a clear and understandable manner?

Level of skill: To what degree does the work document the ability to plan and execute a piece of engineering work (projects, assignments, experiments)? To what degree is there documentation of the ability to collect, to assess, to use and to refer to information and scientific material with relevance to the issue addressed?

5. Results

Results: To what degree does the work build on earlier experimental or development work? Does the work demonstrate quality and creativity, and does it contribute to innovation or realization of products, systems or solutions that are sustainable and useful for society?

Analysis and discussion: To what degree is the analysis and discussion scientifically grounded and clearly related to the issue addressed? To what degree is the evaluation of the results based on a methodical approach?

Reflection: To what degree is there a reasonable assessment of the significance of the results? Is the candidate critical to various information sources? Are sources of uncertainty such as methodical error, measurement error and such like assessed and discussed? Are relevant ethical issues connected to science, the profession, societal aspects and research analysed? **Own contribution/achievements:** To what degree has the candidate been able to distinguish between his/her contribution and the contributions from others (source identification and clear referencing)? To what degree does the conclusion present how far the objectives were reached? Is there a reasonable and substantiated recommendation for further work, dissemination, implementation or application of the results?

6. Presentation

Structure: Is there a logical and structural form in the written work? Is the work generally well-arranged? Is there a uniform style for the references, figures and tables? **Form and communication:** To what degree is the issue and the results communicated with the required academic and linguistic precision? To what

degree is the thesis readable with suitable linguistic quality? What is the quality of the figures and tables? What is the quality of the product, if applicable? What is the quality of the oral presentation, if applicable?

5.2.4 Assessment form for bachelor's theses in engineering

The weighting of each criterion in the assessment can be decided in dialogue with candidate(s) and possibly external examiner(s) prior to starting work on the bachelor's thesis.

Assessment of	Weighting percentage	Weighting for specific work (possible examples of theses with practical focus)	Sub-criteria	Comments	Assessment	Total points/grade
1. General impression	10-15	10	Overall impression Independent work Level, Time			
2. Insight into engineering	15-25	25	Apart from the stated assessment criteria, sub-criteria can be added for an individual thesis			
3. Theoretical insight	15-25	15	Apart from the stated assessment criteria, sub-criteria can be added for an individual thesis			
4. Execution	15-25	20	Description of objectives Level of skill			
5. Results	15-25	20	Results, Analysis and discussion Reflection Own contribution/achievements			
6. Presentation	10-15	10	Structure, Form and communication Work effort			
Final grade						

The connection between the sum of points and the grade (this uses the same scale as recommended for the assessment of master's theses in MNT subjects):

A:	90-100 points
B:	80-89 points
C:	60-79 points
D:	50-59 points
E:	40-49 points
F:	0-39 points

5.2.5 Bachelor's thesis in natural sciences

For bachelor's theses in natural sciences, the Faculty of Science and Technology uses the same descriptions of grades and assessment criteria for examiners as those used for bachelor's degrees in engineering, with the exception of the requirements for professional insight into engineering. See section 6.2.1.

5.2.6 Facts about grading

If two or more students cooperate on an assignment, they are collectively responsible and receive the same grade. If an oral presentation/examination constitutes a part of the final grade, it may be possible to grade individually. The student may request a written justification of the assessment.

5.3 Master's theses

5.3.1 About descriptions of grades for master's theses

In 2012, the National Faculty meeting of Natural Sciences (NFmR) and the National Council for Technological Education (NRT), decided on new common grade descriptions for Master theses in mathematics, natural sciences and technology subjects (MNT). These will apply to master's theses submitted as of the spring semester 2014. Descriptions of grades are documented in the following guide:

1. *Descriptions of Grades for Master's Theses*
2. *Examiner Assessments, which is a guide for examiners and course coordinators and explains the criteria used in 1.*
3. *Supervisor Assessments, which is a guide for course coordinators and supervisors dealing with the criteria associated supervising a master's thesis.*

** NFmR and NRT are strategic academic units under Universities Norway (UHR).*

All of this has been added here to show what is given weight when assessing theses.

5.3.2 Using the grade 'A'

As far as grading master's theses is concerned, the Faculty of Science and Technology has, as is known, approved the following resolution concerning the use of the grade 'A'.

"The grade 'A' must be accompanied by a brief justification from the examiners to the head of department that provides an account of the originality and publishability."

5.3.3 Descriptions of grades for master's theses

The criteria for achieving the various grades are presented in the table below. (All text in italics has been obtained directly from the Norwegian text for NFmR and NRT.)

Grade/	Level	Description
A	<i>Excellent</i>	<p>- An outstanding thesis which clearly demonstrates a talent for research and/or originality, in a national perspective.</p> <p>- <i>The candidate has very good insight into the scientific theory and methods in his/her field and has demonstrated scientific knowledge at a very high level. The objectives of the thesis are well defined and easy to understand.</i></p> <p>- <i>The candidate is able to select and apply relevant scientific methods convincingly, has all the technical skills required for the work, can plan and conduct very advanced experiments or computations without help and works very independently.</i></p> <p>- <i>The thesis is considered very extensive and/or innovative. The analysis and discussion have an extremely good scientific foundation and justification and are clearly linked to the topic that is addressed. The candidate demonstrates extremely good critical reflection and distinguishes clearly between his/her contributions and the contributions from other.</i></p> <p>- <i>The form, structure and language in the thesis are at an extremely high level.</i></p>
B	<i>Very good</i>	<p>- A very good thesis that is clearly and positively distinguishable.</p> <p>- <i>The candidate has very good scientific knowledge and insight into the scientific theory and methods in his/her field. The objectives of the thesis are well defined and easy to understand.</i></p> <p>- <i>The candidate is able to select and apply relevant scientific methods soundly, has almost all the technical skills required for the work, can plan and conduct advanced experiments or computations without help, and works very independently.</i></p> <p>- <i>The thesis is considered extensive and/or innovative. The analysis and discussion have a very good scientific foundation and justification and are clearly linked to the topic that is addressed. The candidate demonstrates very good critical reflection and distinguishes clearly between his/her contributions and the contributions from others.</i></p> <p>- <i>The form, structure and language in the thesis are at a very high level.</i></p>

C	<i>Good</i>	<ul style="list-style-type: none"> - A good thesis. - <i>The candidate has good scientific knowledge and insight into the scientific theory and methods in his/her field. The objectives of the thesis are generally well defined but may contain some inexact formulations.</i> - <i>The candidate uses the relevant scientific methods satisfactorily, has most of the technical skills required for the work, can plan and conduct quite advanced experiments or computations without help, and works independently.</i> - <i>The thesis is considered good with elements that are creative. The analysis and discussion have a good scientific foundation and justification and are linked to the topic that is addressed. The candidate demonstrates good critical reflection and usually distinguishes clearly between his/her contributions and the contributions from others.</i> - <i>The form, structure and language in the thesis are at a good level.</i>
D	<i>Satisfactory</i>	<ul style="list-style-type: none"> - A satisfactory thesis. - <i>The candidate has quite good scientific knowledge and insight into the scientific theory and methods in his/her field. The objectives of the thesis are defined but may contain some inexact formulations.</i> - <i>The candidate is generally able to apply relevant scientific methods, has the main technical skills required for the work, and can plan and conduct experiments or computations without help. The candidate works independently to some extent but needs quite close supervision to achieve satisfactory scientific progress. The candidate may have problems utilising the research group's expertise in his/her own work.</i> - <i>The thesis is considered satisfactory. The analysis and discussion have a satisfactory scientific foundation and justification, and are linked to the topic that is addressed, but there is room for improvement. The candidate demonstrates his/her ability for critical reflection but has problems distinguishing clearly between his/her contributions and the contributions from others.</i> - <i>The form, structure and language in the thesis are at an acceptable level.</i>

E	<i>Sufficient</i>	<p>- A thesis that is acceptable and satisfies the minimum criteria.</p> <p>- The candidate has sufficient scientific knowledge and insight into the scientific theory and methods in his/her field. The objectives of the thesis are described but are vague and imprecise.</p> <p>- The candidate is able to apply some relevant scientific methods, has a minimum of technical skills required for the work, and can plan and conduct simple experiments or computations without help. The candidate achieves limited scientific progress without close supervision and has problems utilising the research group's expertise in his/her own work.</p> <p>- The thesis is considered limited and somewhat fragmented. The analysis and discussion have an adequate scientific foundation and justification, but ought to have had a better link to the topic that is discussed. The candidate demonstrates sufficient critical reflection but may have problems distinguishing between his/her contributions and the contributions from others.</p> <p>- The thesis is mostly acceptable, but has definite shortcomings with respect to form, structure and language.</p>
F	<i>Fail</i>	<p>- A thesis that does not satisfy the minimum requirements.</p> <p>- The candidate does not have sufficient scientific knowledge and insight into the scientific theory and methods in his/her field. The objectives of the thesis are not clearly defined or are lacking.</p> <p>- The candidate demonstrates a lack of competence in the use of scientific methods, does not have the required technical skills and independence for the work, and has scarcely utilized the research group's expertise in his/her own work.</p> <p>- The thesis is considered very limited and fragmented. The analysis and discussion do not have an adequate scientific foundation and justification and are loosely linked to the topic that is discussed. The candidate does not demonstrate sufficient critical reflection and does not clearly distinguish between his/her contributions and the contributions from others.</p> <p>- The thesis has major shortcomings with respect to form, structure, and language.</p>

The student may request a written justification of the assessment.

5.3.4 Examiner assessments

The list below is used by examiners and course coordinators to assess the extent to which you achieved the goals described. The various goals are shown in the table in section 6.3.3 and the text below provides a more detailed description of these.

(All text in italics has been obtained directly from the Norwegian text for NFmR and NRT. Words and concepts that have been underlined have been obtained and translated from the Norwegian version of the National Qualifications Framework.)

Assess the extent to which the candidate has achieved the goals described for each of the items.

Technical grounding

Is the theoretical and technical foundation clearly described, enabling the work to be placed in the context of relevant international research?

Theoretical insight

Does the work, in particular the introduction, document that the candidate has advanced knowledge of relevant general theory and methods, and particular in-depth insight into the specific field that is applicable to the thesis?

Goal description

Are the project's goals and/or hypotheses presented in a clear and comprehensible manner?

Level of skill

Does the candidate master relevant methods and use these in the thesis in an applicable and integrated manner?

Work

*Does the work display creativity and/or contribute to original thinking and innovation? Does the work give the impression of being particularly comprehensive? What can be said about the quality and significance of the new knowledge
/ results generated by the work?*

Analysis and discussion

Is the analysis, interpretation/synthesis and discussion technically grounded and supported and clearly linked to the problem/topic of the project? Does the discussion maintain a high academic standard? Is the candidate able to apply his/her knowledge and skills to new fields and place the results in a broader perspective?

Critical reflection

Does the candidate demonstrate a reasonable understanding of the value of the results? Does the candidate approach sources of information in a critical manner? Does the candidate evaluate and discuss elements of uncertainty such as methodological errors, data errors, etc.? Does the candidate analyse relevant ethical questions related to technical, professional and research matters?

Own contribution/achievement of goal

*Does the candidate make a clear distinction between his/her own work and contributions from others?
Does the written project reach a conclusion where the results are summarised satisfactorily, including a*

discussion of the extent to which goals have been attained? Does the candidate make and justify a reasonable suggestion for further developments or discuss future potential?

Structure

Does the work demonstrate an organised structure (normally 'IMRaD: Introduction, Methods, Results and Discussion')? Is the work generally clear?

Language

Is the candidate able to present problems and results with the necessary technical/academic precision? Is the work easily comprehended and does the candidate demonstrate a good command of the language used?

Form

Is a consistent style used for references, figures and tables? Is the quality of figures and tables acceptable? Does the candidate have a good command of relevant specialist terminology?

5.3.5 Supervisor assessments

Supervisor Assessments is a guide for course coordinators and supervisors dealing with the criteria associated supervising a master's thesis. In other words, these are additional criteria that course coordinators and any supervisor use in assessments.

(All text in italics has been obtained directly from the Norwegian text for NFmR and NRT. Words and concepts that have been underlined have been obtained and translated from the Norwegian version of the National Qualifications Framework.)

Provide an assessment for the criteria below for the extent to which the student has achieved the goals described.

Theoretical insight

Has the candidate himself/herself generated important elements/problems in the thesis? Has the student used relevant resources (databases, etc.) to acquire current and updated literature and background knowledge for the work?

Level of skill

Does the candidate master relevant methods and use these in the thesis in an applicable and integrated manner?

Working methods

Does the candidate demonstrate the ability to work systematically and methodically?

Effort

Does the candidate demonstrate the ability to put in a high level of effort and a sound level of professional dedication?

Independence

Can the candidate work and use relevant methods independently, and perform an independent research or development project under supervision? Has personal initiative been demonstrated? What type of help and guidance has the candidate received during the various phases of the work? Has the candidate demonstrated an ability to benefit from the expertise of the research community in his/her own work?

Project result

Does the work demonstrate creativity and/or contribute to new thinking/creativity? Does the work appear to be particularly extensive or comprehensive?

Time

A precondition for the assessment of the work is that it has been submitted within the normal allocated time.

5.3.6 Standardised assessment form for master's theses

The course coordinator and examiner will reach an agreement regarding a plan for assessment. To assist with this, NFmR and NRT have designed an assessment form, which is shown below. This may for example serve as a method for the systematisation of assessments.

Main assessment criteria	Sub-criteria comments	E/S*	Max. score	Pre-assessment	Final score	Comments
Introduction and theory (max. 20 points)	Technical grounding	E				
	Theoretical insight:	E				
	Goal description:	E				
	Own contribution:	S				
Methods and working practice (max. 25 points)	Level of skill:	E+S				
	Working methods:	S				
	Effort:	S				
	Degree of independence:	S				
Results and discussion (max. 35 points)	Project result:	E+S				
	Analysis and discussion:	E				
	Critical reflection	E				
	Own contribution/achievement of goals	E				
Presentation (max. 15 points)	Structure:	E				
	Language:	E				
	Form:	E				
Oral examination (max. 5 points)	Presentation in connection with final examination:	E+S				
		Total	100			

* The assessment is primarily provided by the **Examiner** or **Supervisor**

A maximum number of points is proposed for the main assessment criteria (which must not exceed 100 in total), whereas no maximum number of points is suggested for each of the sub-criteria (although they must amount to a total of 100). This is to accommodate different types of projects (theoretical/experimental, 30/60 ECTS, etc.) that require certain sub-criteria to be weighted differently.

5.3.7 Using the assessment form

Total scores:

The faculty/institute/department must set a maximum number of points for each criterion such that the total is 100. Similarly, a maximum total score must be decided for each sub-criterion so that the total for all the sub-criteria is 100. The maximum score for a criterion must be equal to the maximum scores for its associated sub-criteria.

One challenge associated with the assessment form and awarding points is that if 1 point for a criterion is considered acceptable and a master's thesis is assessed based on 1 point for each of the criteria, the entire criteria list will offer a total of 16 points. According to the grade table, this would be in the points range for an 'F' (0 – 39) and a fail. Therefore, 1 point cannot indicate an 'above threshold/acceptable' value. If a sub-criterion, such as 'Technical grounding', has a maximum score of 5 points, the following scale will apply:

5 points – near perfect

4 points – very good, only minimal improvement possible

3 points – good, but clear improvement possible

2 points – just acceptable for master's degree standard

1 point – some value, but insufficient for master's degree standard

0 points – negligible value

Assessment:

The examiner and supervisor carry out a pre-assessment and assign points based on the various criteria (marked E and S). All of the scores can be adjusted after the oral examination and assessment meeting, apart from 'Presentation' and 'Oral examination'. Criteria are marked 'E' (examiner) or 'S' (supervisor) based on who bears overall responsibility for the assessment. Three criteria are marked E + S, meaning that the examiner and supervisor are jointly responsible for the awarding of points.

Grade table

Grades	Points range
<i>A</i>	90-100
<i>B</i>	80-89
<i>C</i>	60-79
<i>D</i>	50-59
<i>E</i>	40-49
<i>F</i>	0-39

6 Relevant guides and forms

Some forms and guides are required in connection with completing bachelor's and master's theses. These can be downloaded from the faculty's website, www.uis.no. It is important that both students and the people with academic responsibility for theses are familiar with the content of these guides:

- Regulations for Bachelor's and Master's Theses
- Student Guide for Bachelor's and Master's Theses
- Information for Companies about Bachelor's and Master's Theses
- Agreement concerning Restricted Access to Bachelor's and Master's Theses
- Examiner's Guide for Bachelor's Theses
- Examiner's Guide for Master's Theses