Check-list “Learning Outcomes for Diploma Work” – Master

The learning outcomes for the diploma work is regulated in the Swedish Higher Education Act – see attachment. It is essential that students, supervisors and examiners are aware of these goals and make sure that they are fulfilled before the project is passed. As an integral part of the examination, we therefore require that the checklist is filled in and signed by all three parties. We also recommend that people involved return to this checklist regularly during the project work.

We list a brief description and the full definition of the criteria below and ask you to answer if you feel that the criterion is fulfilled. If the answer is no, you should explain why in the comment box below:

1. **Learning goal on knowledge and understanding: understand the subject matter (Physics) – both theory, experiment and current research:**
   *The student shall demonstrate knowledge and understanding in the main field 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*

   Criterion fulfilled (yes/no): ________

   If no, why?
2. **Learning goal on knowledge and understanding: know how to do Physics – the method:**

The student shall demonstrate specialised methodological knowledge in the main field of study.

Criterion fulfilled (yes/no): ________

If no, why?

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3. **Learning goal on competence and skills: critical thinking and way of approaching tasks:**

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.

Criterion fulfilled (yes/no): ________

If no, why?
4. **Learning goal on competence and skills: critical thinking, problem-solving, independence, planning and keeping deadlines:**

   The student shall 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.

   Criterion fulfilled (yes/no): ________

   If no, why?

5. **Learning goal on competence and skills: oral and written presentation for and in collaboration with different groups, also in English:**

   The student shall demonstrate the ability in speech and writing both nationally and internationally to report clearly and discuss his or her conclusions and the knowledge and arguments on which they are based in dialogue with different audiences.

   Criterion fulfilled (yes/no): ________

   If no, why?
6. **Learning goal on competence and skills: prepared to do research and development work, as well as independent work:**

*The student shall demonstrate the skills required for participation in research and development work or autonomous employment in some other qualified capacity.*

Criterion fulfilled (yes/no): ________

If no, why?

7. **Learning goal for judgement and approach: the work in a context – socially, and ethically, as well as considering e.g. philosophy of science:**

*The student shall demonstrate the ability to make assessments in the main field of study informed by relevant disciplinary, social and ethical issues and also to demonstrate awareness of ethical aspects of research and development work.*

Criterion fulfilled (yes/no): ________

If no, why?
8. **Learning goal for judgement and approach: Physics and Physicists role and responsibility in the society:**

*The student shall demonstrate insight into the possibilities and limitations of research, its role in society and the responsibility of the individual for how it is used.*

Criterion fulfilled (yes/no): ________

If no, why?

9. **Learning goal on judgement and approach: discuss the future of the project, be able to participate in “life-long learning”:**

*The student shall demonstrate the ability to identify the personal need for further knowledge and take responsibility for his or her ongoing learning.*

Criterion fulfilled (yes/no): ________

If no, why?
We have discussed and agreed about the above assessments

Place:       Date:

Student:

Supervisor:

Examiner:
Appendix: From the Swedish Higher Education Act


(Swedish version can be found under: http://www.uhr.se/sv/Studier-och-antagning/Antagning-till-hogskolan/Hogskoleforordningen/)

Annex 2: Qualification ordinance

Part 4: Qualification Descriptors

Degree of Bachelor of Arts/Science

Scope

A Degree of Bachelor of Arts/Science 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 principal field (main field of study) of the programme.

Outcomes

Knowledge and understanding

For a Degree of Bachelor of Arts/Science the student shall

1. demonstrate knowledge and understanding in the main field of study, including knowledge of the disciplinary foundation of the field, understanding 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 of Arts/Science the student shall

2. 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
3. demonstrate the ability to identify, formulate and solve problems autonomously and to complete tasks within predetermined time frames
4. demonstrate the ability to present and discuss information, problems and solutions in speech and writing and in dialogue with different audiences, and
5. demonstrate the skills required to work autonomously in the main field of study.

Judgement and approach
For a Degree of Bachelor of Arts/Science the student shall

6. demonstrate the ability to make assessments in the main field of study informed by relevant disciplinary, social and ethical issues
7. demonstrate insight into the role of knowledge in society and the responsibility of the individual for how it is used, and
8. 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 of Arts/Science is completion by the student of an independent project (degree project) for at least 15 credits in the main field 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 of Arts/Science with a defined specialisation.

Degree of Master of Arts/Science (60 credits) [Magisterexamen]

Scope

A Degree of Master of Arts/Science (60 credits) degree 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 principal field (main field of study) of the study programme. In addition the prior award of a Degree of Bachelor's degree, Degree of Bachelor's degree in fine arts, 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 the Chapter 7 of the Higher Education Ordinance (1993:100) on the grounds that the qualification had not yet been issued.

Outcomes

Knowledge and understanding

For a Degree of Master of Arts/Science (60 credits) degree the student shall have:

1. demonstrate knowledge and understanding in the main field 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
2. demonstrate specialised methodological knowledge in the main field of study.

**Competence and skills**

For a Degree of Master of Arts/Science (60 credits) degree the student shall

3. demonstrate the ability to integrate knowledge and analyse, assess and deal with complex phenomena, issues and situations even with limited information
4. 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
5. 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
6. 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 of Arts/Science (60 credits) degree the student shall

7. demonstrate the ability to make assessments in the main field of study informed by relevant disciplinary, social and ethical issues and also to demonstrate awareness of ethical aspects of research and development work
8. 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
9. 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 of Arts/Science (60 credits) is completion by the student of an independent project (degree project) for at least 15 credits in the main field 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 of Arts/Science with a defined specialisation.
Degree of Master of Arts/Science (120 credits) [Degree of Masterexamen]

Scope

A Degree of Master of Arts/Science (120 credits) 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, of which at least 60 credits are for specialised study in the principal field (main field of study) of the study programme. In addition the prior award of a Degree of Bachelor's degree, Degree of Bachelor's degree in fine arts, 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 the Chapter 7 of the Higher Education Ordinance (1993:100) on the grounds that the qualification had not yet been issued.

Outcomes

Knowledge and understanding

For a Degree of Master of Arts/Science (120 credits) the student shall

1. demonstrate knowledge and understanding in the main field 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
2. demonstrate specialised methodological knowledge in the main field of study.

Competence and skills

For a Degree of Master of Arts/Science (120 credits) the student shall

3. demonstrate the ability to critically and systematically integrate knowledge and analyse, assess and deal with complex phenomena, issues and situations even with limited information
4. 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
5. demonstrate the ability in speech and writing both nationally and internationally 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
6. 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 of Arts/Science (120 credits) the student shall
7. demonstrate the ability to make assessments in the main field of study informed by relevant disciplinary, social and ethical issues and also to demonstrate awareness of ethical aspects of research and development work
8. 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
9. 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 of Arts/Science (120 credits) is completion by the student of an independent project (degree project) for at least 30 credits in the main field 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 main field of study or the equivalent from a programme of study outside Sweden.

**Miscellaneous**

Specific requirements determined by the 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 Arts/Science (120 credits) with a defined specialisation.