SPECIALIZATION PROJECT
DEPARTMENT OF MECHANICAL AND INDUSTRIAL ENGINEERING

PROCEDURE FOR PROJECT EXECUTION
STUDY YEAR 2020 – 2021
(Last update: March 24, 2020)
Information about Specialization Projects and Specialization Courses at Department of Mechanical and Industrial Engineering (MTP), for students from the following study programs:

5-year MSc programs:
- Mechanical Engineering (MTPROD),
- Engineering and ICT (MTING)
- Materials Science and Engineering (NT/MTMT)
- Nano Technology (NT/MTNANO)

2-year MSc programs:
- Mechanical Engineering (MIPROD)
- Subsea Technology (MIUVT)
- Reliability, Availability, Maintainability and Safety (MSRAMS)
- Project Management (MSPROMAN)
- Global Manufacturing Management (MSGLOMAN)

Introduction

The objective with this memo is to present administrative information about the specialization project. It is important that you read this information carefully and that you follow what is written in the document. If you have questions, please, get in touch with your supervisor or one of the contact persons mentioned at the end of the document.

Project start

The official project start is week 34 (from August 17, 2020).

Start-up meeting

Your supervisor will invite you to a “start-up” meeting during week 34/35. During this meeting the following topics will be discussed/agreed upon:

1. Definition of the project content including a project title. The following has been decided for MTP projects:

   A plan for the Specialization Project shall be developed by the student and discussed and agreed with the main supervisor no later than 2 weeks after the start-up of the project. During the project period this plan can be revised.

2. Establish a routine for supervision/follow up meetings between the student and the supervisor(s).

3. Expectation from the supervisor regarding e.g. working methodology and working effort.
4. Discuss alternative specialization courses ("fordypningsemner") and agree upon one course.
5. For specialization projects executed at an external company premise, a special agreement describing rules and responsibilities has to be developed and agreed upon between the student and the supervisor(s).

**Student Workspaces**

Please visit out Wiki for more information

https://www.ntnu.no/wiki/display/mtp/Student+Work+Spaces

**Standard Agreements**

If you have a project where an external company is involved, consult with your supervisor if a “Standard Agreement concerning work done in cooperation with a company” needs to be filled out and signed.

MTP has established a system where projects defined by an external company will be charged with a fee to cover internal direct costs at MTP. *It is the responsibility of the supervisor to negotiate with the external company to cover this cost.*
Voluntary Courses

MTP offers the following courses to help you in executing the research work and to prepare the research report:

Risk Assessment Course

Target Group: All MTP students
Date: End of August 2020
Place: tbd
Lecturer: HSE Section
Content: The course includes a presentation of the “Risk Assessment Form”.

Literature Research and Citation Management

Target Group: All MTP students
Date: September 2020
Place: tbd
Lecturer: Almuth Gastinger

Content/learning outcome:
- Know how to choose relevant information sources
- Be able to create a good strategy for your search and choose meaningful keywords
- Know how to use the CRAP-test (source criticism and information evaluation)
- Be able to use the library catalogue Oria, manage your loans and order material
- Know how to use the scientific search engine Google Scholar, and the citation database Scopus, find full text material in these tools and save it to your preferred reference management system
- Know how to use subject databases, find full text material and save it to your preferred reference management system
- Know how you can refine your result lists
- Know where you can find eBooks offered by the library
- Be able to get citations right and to avoid plagiarism
- Know that there are several reference management systems to choose between

Scientific Writing

Target Group: All MTP students
Date: September 2020
Place: tbd
Lecturer: Anita Romsdal
Content/learning outcome:

- Know what characterizes scientific writing
- Understand that scientific writing takes practice
- Know how to structure a scientific report/thesis
- Know what to include in the main parts of a report/thesis
- Know what a literature review is
- Know how to carry out and document a literature study
- Know how your thesis will be assessed
- Understand the benefits and basic functions of a reference management software

HMS/Introduction course for the particular lab(s) you will be using

The scientific groups will inform the concerned students about the specific dates. This course may be classroom-based or online.
Risk Assessment

Performing a risk assessment is mandatory for any experimental work. A specific “Risk Assessment Form” is available and shall be used. This form will be presented in the Risk Assessment Course (see above). Known main activities must be risk assessed before the work can start. You are requested to do such a risk assessment within 3 weeks after having received your assignment. The form must be signed by you and delivered to your supervisor who signs, as well. You keep this form with both signatures and attach it to your final report. Risk assessment is an ongoing activity, and must be carried out before starting any activity that might cause injuries or damage materials/equipment or the external environment. It’s the supervisor’s responsibility to decide if such a risk assessment is not required, e.g. in case of a purely theoretical work.

Project Report

Reference is given to the information given in the voluntary course “Literature Research and Report Writing”.

The report must be written as a scientific report with summary of important findings, conclusion, literature references, table of contents, etc. Specific problems to be addressed in the project are to be stated in the beginning of the report and briefly discussed. The number of the report pages should be limited and preferable not exceed 30-40 pages. Additional tables, drawings, detailed sketches, photographs, etc. can be included in an appendix at the end of the report. References to the appendix must be specified. Figures and tables must be presented with explanations.

Literature references should be indicated by means of a number in brackets in the text, and each reference should be further specified at the end of the report in a reference list. References should be specified with name of author(s) and book, title and year of publication, and page number.

Integrating your formal problem description into the report:

A detailed problem description is supposed to be part of the introduction, e.g. such as below:

1 Introduction .................................................................................................................1
1.1 Background and motivation ................................................................................. 2
1.2 Problem description .................................................................................................2
1.3 Project scope .............................................................................................................3
1.3.1 Objectives ............................................................................................................3
1.3.2 Research questions ............................................................................................3
1.3.3 Limitations ............................................................................................................4
1.4 Thesis structure ........................................................................................................4
Report Submission

- The official deadline for the submission of the project report is December 9 2020 at 2 p.m.

- The report will be submitted via NTNU’s Digital Exam System Inspera (ENG). Don’t use Internet Explorer, but Chrome or another browser!

- You have to submit one PDF-file including attachments which belong to the report (max. 35 GB).

- It is also possible to upload supplementary attachments (max. 35 GB) as a zip-file (e.g. data files, model files, programming codes, multimedia files).

- Please, use the following file name: 2020_Fall_Family Name_Call Name_Project_Report.pdf. (e.g. 2020_Fall_Duck_Donald.Project_Report.pdf).

- INSPERA will be opened for submission by your study advisor a few days before the submission day. Go to “Mine prøver” and chose your project course code.

- Then, you can submit your report any time until the deadline, but please, note that you can only submit the report ONCE.

- After the submission you will find a copy of the report under “Archive”.

- You do NOT have to submit at printed report.

Assessment

The project reports will be assessed by the supervisor. An external sensor will participate in the assessment every 3. year. Attachment 1 shows the Assessment Form that will be the basis/guideline for the evaluation. One Assessment Form will be submitted to the department.

Contact Persons

Administrative questions:
Please send an email to studier@mtp.ntnu.no

Problem with supervision:
Deputy Department Manager: Roy Johnsen, roy.johnsen@ntnu.no
# ATTACHMENT 1: Standard Assessment Form Specialization Projects

<table>
<thead>
<tr>
<th>CANDIDATE</th>
<th>DATE:</th>
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<table>
<thead>
<tr>
<th>Category</th>
<th>Criteria</th>
<th>Max. score</th>
<th>Score</th>
<th>Comments/grounds</th>
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<td>Academic foundation</td>
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<tr>
<td></td>
<td>Theoretical insight</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Description of objectives</td>
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<td></td>
</tr>
<tr>
<td><strong>Methods and working practice (max 25)</strong></td>
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<tr>
<td></td>
<td>Working methods</td>
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<tr>
<td></td>
<td>Effort</td>
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<tr>
<td></td>
<td>Degree of independence</td>
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<tr>
<td><strong>Results and discussion (max 35)</strong></td>
<td>Results/Work</td>
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<td></td>
<td>Analysis and discussion</td>
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<tr>
<td></td>
<td>Conclusion and achievements</td>
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<tr>
<td><strong>Presentation of the report (max 15)</strong></td>
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<td>Language</td>
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<tr>
<td></td>
<td>Form</td>
<td>5</td>
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**SUM** | **100** |

**GRADE** | |

**SIGNATURE**

<table>
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<tr>
<th>Supervisor:</th>
<th>Co-Supervisor (opt.) / External sensor (every 3. year):</th>
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Use of the Standard Assessment Form

The purpose of the Assessment Form is mainly to be a working document for the examiner(s). The Assessment Form shall be added to the Grading Form (“Sensurskjema”). Both documents will be stored at the department. The Assessment Form will be useful documentation in case of complaints. It will be sent to the student when s/he asks for an explanation of a given grade.

Scoring

There is a max score for each assessment point, so the total is 100. Every sub-assessment criteria has a score, so that the sum of the sub-criteria equals the main assessment’s max scoring. If a sub-criterion, like “academic foundation” has a max score of 5, the points shall be divided after the following scaling:

- 5 points – Almost perfect
- 4 points – Very good, only minor shortcomings
- 3 points – Good, but with clear shortcomings
- 2 points – Just enough to be an acceptable performance for the master’s grade.
- 1 point – Something(s) of value, but not enough to be acceptable.
- 0 points – Little or nothing of value

This means that the assessment of the sub-criterions is done according to the primary description of grades where other maximum results than 5 points is used, the scaling must be done accordingly.

Assessment

The supervisor (end the external sensor) edit/s an Assessment Form in addition to the Grading Form (“Sensurskjema”). Both documents have to be signed by the involved parties and submitted to MTP.

Table of grades and scores

<table>
<thead>
<tr>
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<td>C</td>
<td>65 - 76</td>
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<td>E</td>
<td>41 - 52</td>
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<td>F</td>
<td>0 - 40</td>
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