Guideline for the thesis work and final exam

University of Miskolc, Faculty of Earth Science and Engineering

This guideline is in accordance with the Thesis writing guidelines of Faculty of Earth Science and Engineering, approved by the Faculty Council and with the relevant legal rules which regulate the final exam procedure in Hungary (Act CCIV of 2011 On National Higher Education).

The final exam procedure

According to the Hungarian rules, „the student shall finish their studies in higher education vocational training, Bachelor and Master programmes as well as specialist postgraduate programmes by taking a final exam".[1]

„The final exam shall serve to verify and evaluate the knowledge, skills and abilities required for obtaining the diploma, during the course of which the student shall also attest that they are capable of applying the knowledge acquired. The final exam may consist of several sections: the defence of the thesis or diploma, as well as oral, written and practical tests – in accordance with criteria set out in the curriculum".[2]

At the Faculty of Earth Science and Engineering, the final exam consists of the defence of the thesis work and oral exam on two or three main, summing topics of the degree program (see table).

Prior to the final exam, the thesis work is reviewed by an external and an internal reviewer. Reviewers prepare a written thesis review and propose a grade on the 5-grade scale (5 is maximum, passing grade is 2).

Defence of thesis is the first part of the final exam: the student summarizes the problem and the main results in a 15 minutes oral presentation and answers the reviewer's questions and questions from the Exam Committee. Defence is evaluated by a grade on the 5-grade scale (defence grade).

In the second part of the final exam, the student answers orally the exam questions on the final exam topics. Each exam topic is evaluated by a grade on the 5-grade scale. The result of the exam grade is the average value of the exam results.

The result of final exam, which is the grade of the diploma is calculated as the rounded average value of the defence grade and the exam grade.

[1] Act CCIV of 2011 On National Higher Education, Section 50, paragraph 2.
[2] Act CCIV of 2011 On National Higher Education, Section 50, paragraph 4.

Degree program	*Final exam topics*	*Calculation method of the result of final exam*
MSc in Earth Science Engineering (leader: prof. Dr. György Less, Institute of Mineralogy and Geology)	Major in Geological engineering: A1: Geological and geophysical interpretation and planning A2: Geology A3: Mineral deposits Major in geophysical engineering: A1: Geological and geophysical interpretation and planning A2: Geophysical exploration methods A3: Topic of elective 1 (Seismic college)	$ZV = \frac{\frac{A1 + A2 + A3}{3} + D}{2}$ *ZV*: overall result of the final examination *D*: the final grade of the Thesis work, defined by the examination board
MSc in Hydrogeological engineering (leader: prof. Dr. Péter Szűcs, Institute of Environmental Management)	A1: Hydrogeology and water mining A2: Groundwater prospecting, water resources management, geotechnical engineering	$ZV = \frac{\frac{A1 + A2}{2} + D}{2}$ *ZV*: overall result of the final examination *D*: the final grade of the Thesis work, defined by the examination board
MSc in Environmental engineering (leader: Dr. Tamás Madarász, Institute of Environmental Management)	Major in Waste management A1: Waste management, waste incineration A2: Environmental processing: Process engineering, Design of waste processing technologies Major in Remediation and environmental geotechnics A1: Waste management, waste incineration A2: Remediation of contaminated sites (Water chemistry, Soil chemistry, Remediation, Risk assessment)	$ZV = \frac{\frac{A1 + A2}{2} + D}{2}$ *ZV*: overall result of the final examination *D*: the final grade of the Thesis work, defined by the examination board
MSc in Petroleum engineering (leader: prof. Dr. Zoltán Turzó, Petroleum and Natural Gas Institute)	A1: Deep drilling and well completion A2: Reservoir mechanics A3: Hydrocarbon production technology	$ZV = \frac{\frac{A1 + A2 + A3}{3} + D}{2}$ *ZV*: overall result of the final examination *D*: the final grade of the Thesis work, defined by the examination board
MSc in Petroleum Geoengineering (Leader: Dr. Endre Turai, Institute of Geophysics and Spatial Informatics)	A1: Integration of geophysical and geological methods in exploration A2: Implementation of exploration projects A3: Integration of geosciences and engineering	$ZV = \frac{\frac{A1 + A2 + A3}{3} + D}{2}$ *ZV*: overall result of the final examination *D*: the final grade of the Thesis work, defined by the examination board

Thesis topic selection and preparation rules

The thesis work should present the competencies of the student in analysis, research, design and scientific writing, based on an industrial project, or on a technical, technological, or scientific problem. Thesis topic should preferably based on the internship completed after the second semester of the degree program.

Thesis topic shall be approved and the Thesis Assignment shall be issued by the degree program leader at least seven months before the final exam (practically during September or October in the third semester). The Thesis Assignment shall define:

- the (preliminary) thesis title,
- an introduction to the problem,
- the purpose and limitations of the research,
- the research questions to be answered,
- name of supervisor(s) (department and industrial if relevant),
- submission deadline.

Thesis Assignment details shall be registered in the Neptun by the Institute administrator until the end of October in the third semester.

At least six months before the submission deadline a kick off meeting takes place where the student should prepare a short presentation (4 - 8 slides) containing:

- an introduction to the thesis topic and the problem statement,
- the approach to be taken, based on the preliminary literature review,
- a preliminary plan for the full duration of the thesis preparation period.

Until the end of the third semester (end of January), the completed literature review should be submitted to the supervisor(s). Department supervisor should record this fact on the Proof sheet (Appendix 1.).

First draft of the thesis should be submitted to the supervisor(s) before the end of second month of the fourth semester. The final version should be submitted for approval to the supervisor(s) ten workdays before the thesis submission deadline (defined by the academic schedule of the university, usually around 10th May). Submission deadline can be extended by the permission of the Dean, based on the written approval of the degree program leader.

When the thesis contains confidential information, this fact should be indicated on the Statement of originality and should be considered during the reviewing process, defence and disclosure of the thesis work.

Reviewer(s) are proposed by the internal supervisor and nominated by the degree program leader.
Exam questions form each final exam topics should be available for the students before the thesis submission date.

Thesis formal and content requirements

1 Formal requirements

1.1 Appearance

The Thesis must be prepared using computer-based word processor program and must be printed on A/4 size white paper (min. 80 g/sq.m.).

The Thesis must be submitted (two copies and the .pdf file) at the Administration Office of the degree program leading institute until the actual valid deadline. The original copy must be hard covered and must contain the original Thesis Assignment.

The hard cover must be black and any character written on it must be gold colour. The hard cover's lettering must have the same form like the following illustration (Appendix 2.). The author's name and the year must be written on the hard cover's spine!

The digital archive must be submitted on a CD and must be the part of the original copy (in the back pocket of the hard cover). The back pocket must be able to accommodate the CD, the appendices, and A/4 papers. The student's name, the thesis' title and the submission day must be written on the back side of the CD.

The Title page must follow the form as in Appendix 3. The second page must contain the original Thesis Assignment. The third page is reserved for the Statement of originality and for the institute comments. The table of contents is situated on page 4.

The thesis' length is between 40-80 pages (without the appendices).

1.2 Text formal requirements

Font style: Times new roman 12 or Arial 11 Paragraph style:

- „English" style (0.5 cm indentation, no space between paragraphs)
- "French" style (no indentation but one empty line between the paragraphs)

One work shall contain only one paragraph style.

The paragraph's title must have min. 13 font size, the sub-heading and the text has the same font size. Footnote's font size is 10.

Line spacing must be 1.5. Edges: 3 cm on the left side, 2.5 cm otherwise. Titles must be left positioned.

The main chapters must begin on new pages. The chapter's and heading's title and text must be perceptible and use one empty row before and after them. The chapter's and sub-chapter's numbering must be in decimal system.

Spelling shall be according to British English rules.

1.3 Figures, tables, pictures

The figures, tables and pictures must be placed in the text; middle positioned. Use one empty row before and after them.

The appendices must be used for publishing larger figures, pictures, tables than one page. The figures' (or picture's) numbering must be continuous and use the following formal requirements:

Figure 1 (bold) figure name, use the same size and style as in the normal text and place it below the figure.

The table's numbering must be continuous and use the following formal requirements: Table 1 (bold) table name, use the same size and style as in the normal text and place it above the table.

Equations must be placed in the middle of the page and use continuous numbering in the Thesis.

The numbering must be right positioned in the same row as the equation and put it in a bracket. The source of the table/figure must be given below the table/figure using 10 font size cursive characters. Table format shall be in accordance with the instructions in MEA Report Writing Guide

(https://www.mea.edu.au/s/MEA_ReportWritingGuide_eBook_2018ed.pdf)

1.4 References

For referencing rules and instructions, the MEA Report Writing Guide, Ch. 7. shall be applied. As per referencing style, at the Earth Sciences Engineering program the Harvard (in-text) style should applied, while the other programs prefer the Vancouver style (sequential numbers in the text). The References chapter is used to mention any literature material which was used while writing the Thesis.

2 Content's instructions

The the following structure is proposed:

1. Cover page
2. Thesis Assignment
3. Statement of originality and Istitute's comment page
4. Table of contents
5. Introduction
6. Own work
7. Summary, conclusion
8. References
9. Appendices

2.1 Title

The aim of the title is to inform the reader about the content of the Thesis. The good title is short, informative and indicates the topic.

2.2 Introduction

The introduction is to show more detailed the Thesis' topic for the reader. The writer has to justify the topic's selection and show the importance of the topic. The investigation method should be showed for the reader including the work's milestones. Write max. 3 pages in this chapter.

2.3 Own work

The own work begins with the literature review. The literature review should be deep enough to understand the problem's background and the usable technologies in the industry (if relevant). It is practical to divide the work into chapters.

The exact problem determination and the solution to the problems are the main part of this section. The problem determination must be objective and clear. The solution can be illustrated using figures, tables. The reader has to get a full review about the writer's knowledge in the topic. The whole section must be understandable and must clearly show the author's work.

2.4 Interpretation, summary, conclusions

This section is to get a comprehensive review about the author's work, inputs and solutions. The main results must be highlighted and the future opportunities can be appointed. The author has to concentrate on the own work.

2.5 References

The References chapter is used to mention any literature material which was used while writing the Thesis. The figures or tables must be included too.

2.6 Appendices

This chapter can be used to publish more detailed tables, figures which cannot be suited into the text.

Appendix 1.

Statement of Originality

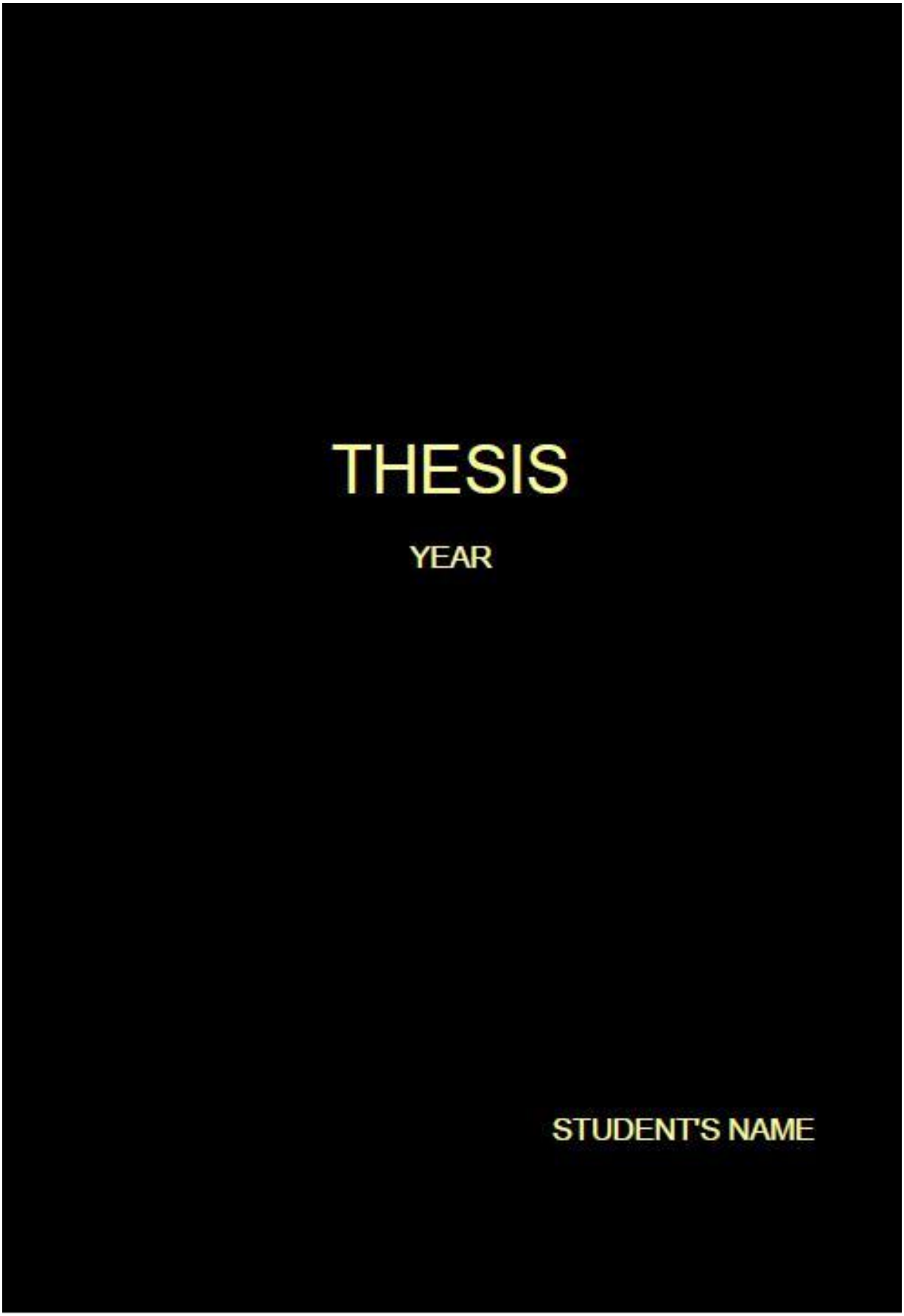
I hereby certify that I am the sole author of this thesis and that no part of this thesis has been published or submitted for publication.

I certify that, to the best of my knowledge, my thesis does not infringe upon anyone's copyright nor violate any proprietary rights and that any ideas, techniques, quotations, or any other material from the work of other people included in my thesis, published or otherwise, are fully acknowledged in accordance with standard referencing practices.

date

Signature of the student

Appendix 2.



Appendix 3.

University of Miskolc
Faculty of Earth Science and Engineering
Institute of ….

Title
Thesis

Author's name:
Department supervisor:
External supervisor

Miskolc, Date