

**STUDENT'S GUIDE**  
**to the writing and required layout of BSc and MSc theses**

**Debrecen**  
**2021**

## Contents

1. Introduction .....	1
2. General principles.....	1
3. The structure and length of BSc / MSc theses.....	2
4. Arrangement and style.....	4
4.1. Layout .....	4
4.2. Text .....	4
4.3. Requirements regarding illustrations and charts.....	5
4.4. Citing academic sources .....	5
5. Submitting the thesis .....	6
6. The assessment of the theses .....	6
7. Defending the thesis .....	6

## 1. Introduction

BSc students of Chemistry or Chemical Engineering are required to write and submit a **BSc thesis** before finishing their studies at the university. MSc students of Chemistry or Chemical Engineering are expected to submit an **MSc thesis**.

The aim of this guide is to familiarise students with the requirements related to the content and layout of the theses, and, at the same time, to provide help with the successful creation and submission of these papers.

## 2. General principles

The submission of a thesis is one of the key prerequisites for taking the final examination. BSc students of Chemistry have to choose and apply for their thesis topics in the fourth semester of their studies; BSc students of Chemical Engineering do this in their fifth, MSc students of Chemistry or Chemical Engineering in their second semesters. The deadlines are the following: the list of possible topics is published on the institute's website by the 15<sup>th</sup> of March / 15<sup>th</sup> of October; students have to submit their application for their chosen topic by the 15<sup>th</sup> of April / 15<sup>th</sup> of November. The prerequisites for the application are determined by the general requirements of the students' respective majors.

Students can register for BSc thesis and MSc thesis courses electronically. They can do this after they have applied for their topics (provided that the requirements for the application have been met), in the semester following the application at the earliest (naturally, they can begin working on their theses earlier – in the case of industrial topics, already during the students' summer internship). Students apply for topics, not specific titles — this means that the title submitted at the time of the application does not necessarily have to be the title of the finished thesis! The final title of the thesis is registered on the educational platform only after the paper has been uploaded to DEA by the student.

Any changes in the topic of the thesis, as well as a change in the person of the supervisor have to be immediately reported to the person responsible for the educational affairs of the Institute. This can be done by filling in a document titled “Education / Request forms / Application form for changing the subject of THESIS or DIPLOMA WORK” which can be downloaded from the website of the Institute of Chemistry.

Students are allowed to include in their **BSc theses** information gathered from academic sources, a repetition of reactions discussed in academic works, as well as an evaluation of measurements and data found in works published prior to the writing of the thesis. In the case of **MSc theses**, the student's work is required to build on individual experiments or on the theoretical solution of a problem / question relevant to the field of chemistry.

The aim of BSc / MSc theses is the organisation, consolidation and application of the theoretical and practical knowledge of the student, as well as the in-depth study of the relevant subtopic. By successfully writing and submitting a thesis, the student proves that he/she is capable of solving complex problems on his/her own. To achieve this, the thesis has to be compiled with the utmost attention and precision, in terms of both its contents and its layout.

Topics are provided by university faculties, companies, firms and research institutes; the topics include questions or problems that the establishments listed above aim to have solved. This means that the successful resolution of these questions is useful both for the student and for the company providing the topic. Students might receive topics from companies with whom they have a contract or by whom they are employed by. If a student has written a paper for the National Scientific Students' Associations Conference, it can also be expanded into a BSc / MSc thesis (provided that the paper is of appropriate quality). If a student wishes to work on a topic that he/she has received from an establishment independent of the institute, the topic has to be authorised by the educational committee of the institute when the topic is announced.

The process of writing a thesis is coordinated by a supervisor.

- a.* If the supervisor is a professor at the University of Debrecen (this category includes professors of other departments and faculties of the university), then he/she evaluates the student's work by registering a grade in the Neptun system.
- b.* If the supervisor belongs to a company or firm independent of the university, he/she cannot give a grade to the student. In this case, the Institute appoints a consultant, who helps the student to achieve the required layout of the thesis and the ppt document used when defending the paper. The consultant discusses the student's performance with the supervisor in order to determine what grade to give for the thesis.

We can only accept typewritten, printed documents as BSc / MSc theses.

### **3. The structure and length of BSc / MSc theses**

Compulsory elements:

- Title page: if the printed thesis is spiral-bound, the title page is the same as the cover page (see annex no. 1); if the thesis is hardcover or case-bound, the title page differs from the outer cover page (see annex no. 2), but the title page is required in both cases.
- Thesis statement: the student is required to declare that he/she complies with the rules stated in Act No. LXXVI of 1999 on Copyright (the document can be downloaded from the webpage of the Institute after choosing "Educations" and "Thesis")

*Contents* (including page numbers)

*An explanation of the abbreviations used in the thesis* (along with a list of notations and indexes, if necessary)

1. *Introduction* (beginning on page number 1)

1.1. The reason why the student chose this specific topic

1.2. General aims of the thesis

2. *Background, relevant academic literature* (the resulting problems, options, specific aims)

3. *Experimental methods used* (an explanation as to why these specific methods were chosen, a brief discussion of the process of the experiment in order to ensure they can be repeated)

4. *Results* (discussed in writing, as well as through illustrations, such as charts, pictures, spectra, etc.)

5. *Evaluation of the results* (a discussion of their accuracy and reproducibility, a comparison with the academic literary background, conclusions, possible further questions and options)

(Sections 4 and 5 can be discussed together, e.g. *Results and evaluation* or *Results and interpretation*; depending on the scientific field, the discussion of the experimental methods can follow the chapter dedicated to results and evaluation)

6. *Summary*

*List of academic sources*

*Appendix* (if necessary)

Depending on the scientific field that the topic of the thesis belongs to, the order of the chapters discussed above can be altered.

A confidentiality agreement is needed only if the company providing the topic or the supervisor specifically requests it.

The length of the thesis should be between 20 and 30 pages (page size: A4) in the case of BSc students of Chemistry or Chemical Engineering, and between 35 and 45 pages (page size: A4) in the case of MSc students of Chemistry or Chemical Engineering. Submitting a thesis that is more than 5% shorter or more than 5% longer than the required length is considered a violation of the rules. Tables, charts, lists of measurements and other materials that are monotonous and therefore require no individual creativity can be included in the appendix section of the thesis. This section is not taken into account when the length of the thesis is checked.

## 4. Arrangement and style

The arrangement and style of the thesis should be pleasant-looking, the layout of the different sections should be consistent. In order to achieve this, the following requirements should be kept in mind.

### 4.1. Layout

The thesis has to be written using a word processor. The required page size is A4. On the left hand side of the page (or, if both sides of the pages are printed upon, on the side closer to the binding) margins should be 3 cm wide, on the other side, 2 cm. The typeface used should be Times New Roman (12 font); the thesis should be written in a 1,5-spaced format. At the top of the page, a headline including the name of the student and the title of the thesis (“Name: Title”) should be placed. The page numbers should be at the bottom of the pages.

### 4.2. Text

The first element of the thesis (after the title page) is the contents page. This section is followed by an explanation of the notations and indexes used in the thesis (if necessary). In most cases, it is appropriate to begin the thesis by providing a brief overview of the topic, the situation of the relevant subfield in the context of the main field, and an outline of the academic literary background. In this part, the student should prove that he/she understand the field and is capable of characterising it. The language of the text should be brief, concise, clear and academic. The text has to be divided into chapters. The chapter titles and subtitles should be marked using a decimal system, up to a maximum of 3 decimal points (cf. the layout of this guide).

Formulas and equations have to be marked using numbers in parentheses — e.g. (1). An explanation of the symbols as well as Latin and Greek letters used in the text have to be given in the text or in a separated section titled “List of abbreviations.”

Measured or calculated data should be provided in tables or charts. These charts have to be either included in the relevant chapter, or placed in the appendix section of the thesis with clear markings.

When numbering compounds, the numbers used both in the text and on illustrations have to be bold. In these cases, bold letters should be used only for this purpose, to avoid confusion. All numbered formulas / compounds have to be mentioned in the body of the text.

Information and quotations taken from academic sources have to be cited clearly. Citations of academic literary sources have to be put into brackets — e.g. [4] — or given in superscript — e.g.<sup>4</sup>. The first citation should be number 1, and the following citations have to follow it in an uninterrupted, growing order. These numbers have to correspond to the numbers included in the list of academic sources given near the end of the thesis.

#### 4.3. Requirements regarding illustrations and charts

Illustrations and charts made by the students using a computer have to be included in the body of the text. The maximum size of any illustration or chart is one A4 page. Illustrations have to be marked with Arabic numerals and titles, which have to be written under the illustration. Charts also have to be given numbers and titles, which are to be written *above* the charts. All illustrations and charts have to be mentioned in the text.

#### 4.4. Citing academic sources

A list of academic sources has to be provided at the end of the thesis. The academic sources should be cited in the order in which they appear in the text. Citations have to be marked either with bracketed numbers, or with non-bracketed numbers ranging from 1 to *n* (the style of the numbers depends on the style used in the body of the text). All citations must include the family name of the author, his/her given name or its first letter, the title and publisher of the book, or the name of the journal, the year in which it was published, as well as the page numbers and volume numbers. Optional information includes the title of the article or its DOI identification. The student should try to be consistent when citing his/her sources. If a name or a title includes Cyrillic letters, the citation should use its Latin-lettered version. If the student cites an online source, he/she has to provide the name of the website and the date when he/she accessed it. If the thesis includes information taken from BSc / MSc / PhD theses, these sources also need to be cited (author, type of thesis, place of submission, year of submission). The numbers used for marking citations and the format of the citations both have to be consistent.

examples:

- [1] N.N Greenwood, A. Earnshaw, *Chemistry of the Elements*, Elsevier Books (1997).
- [2] E. Bienvenue, S. Choua, M.A. Lobo-Recio, C. Marzin, P. Pacheco, P. Seta, G. Tarrago, *J. Inorg. Biochem.*, 57 (1995) 157-168.
- [3] Kiss J., PhD Dissertation, University of Debrecen Egyetem, Debrecen (2003)
- [4] Puigdomenech, *Hydra/Medusa Chemical Equilibrium Database and Plotting Software*, KTH Royal Institute of Technology, 2004 <http://www.kth.se/en/che/medusa/downloads-1.386254>. Accessed: 15 November 2013.

or

1. Greenwood, N.N.; Earnshaw, A. *Chemistry of the Elements*, Elsevier Books, **1997**.
2. Bienvenue, E.; Choua, S.; Lobo-Recio, M.A.; Marzin, C.; Pacheco, P.; Seta, P.; Tarrago, G, *J. Inorg. Biochem.*, **1995**, 57, 157-168.
3. Kiss J., *PhD Dissertation*, University of Debrecen, Debrecen, **2003**
4. Puigdomenech, I.; *Hydra/Medusa Chemical Equilibrium Database and Plotting Software*, KTH Royal Institute of Technology, **2004** <http://www.kth.se/en/che/medusa/downloads-1.386254>. Accessed: 15 November 2013.

## 5. Submitting the thesis

An electronic version of the thesis has to be uploaded to DEA. (The pages signed by the student have to be scanned and protected against copying using a password.) Without a certificate of a successful upload, the student cannot receive his/her pre-degree certificate stating that all course-units have been completed. A detailed description of this can be found on the website of the Faculty of Science and Technology. Two printed and bound copies of the thesis have to be presented by the student to the Institute's administrator (Kiss Ibolya, Chemistry building E211), where the thesis is registered. Following this, the copies have to be submitted to the secretary of the final examination committee (check the institute's webpage — [kemia.unideb.hu](http://kemia.unideb.hu) — “Hallgatóknak,” “Záróvizsgák”). The thesis has to be submitted before the deadline determined by the Registrars Department of the Faculty of Science and Technology (4 weeks before the final examination period begins).

The thesis has to be presented orally, in the framework of a department seminar — preferably prior to the submission of the paper.

## 6. The assessment of the theses

Students receive grades for the courses “BSc thesis I,” “BSc thesis II,” “MSc thesis I” and “MSc thesis II.” This grade is given by the supervisor, based on the student's performance during the semester, and it is registered in Neptun by the supervisor or the consultant. A written evaluation of the work of BSc students of Chemical Engineering or Chemistry is presented by the supervisor or consultant to the final examination committee. This includes the filling in of a document of evaluation (see annex 3b) and a half-page-long written evaluation, for which the principles of evaluation provide guidance (annex 3a).

MSc students receive their grade from the supervisor, while their thesis is evaluated by an independent professor (somebody who does not teach at the same department as the supervisor does). Information about this evaluation is given in annex 4.

The grade received for the thesis itself is determined in all cases by the final examination committee.

## 7. Defending the thesis

Presenting (defending) the thesis is part of the final examination. An in-depth explanation of the process of the final examination can be found among the general requirements of the student's major. The secretary of the final examination committee has to make sure that the thesis supervisor and the person responsible for its evaluation are informed

about the schedule of the final examination; if possible, these two persons are to take part in the final examination (in the case of BSc students) or in the public presentation of the thesis (in the case of MSc students).

Dr. Sándor Kéki  
professor  
major coordinator  
(Chemical Engineering  
BSc, MSc)

Dr. László Somsák  
professor  
major coordinator  
(Chemistry BSc)

Dr. István Fábán  
professor  
major coordinator  
(Chemistry MSc)

**BSC / MSC THESIS**

**(Title)**

**(NAME)**

major

year

Supervisor: ..... (name)  
..... (position)

Consultant (if necessary): .....(name)  
.....(position)

University of Debrecen, Faculty of Science and Technology,  
..... department  
20.....

**BSC / MSC THESIS**

(Name)

**D e b r e c e n**

**20...**

## **Principles for the evaluation of students' theses**

### **1. The structure, language and style of the thesis (5 points maximum)**

- the thesis is well-structured, without errors and written in a smooth style of language: **5 points**
- the style and composition of the thesis is appropriate; it contains some minor mistakes resulting from inattention: **4 points**
- the language of the thesis is dull and cumbersome, but the text is carefully composed: **3 points**
- the language of the thesis is dull and cumbersome; it includes several errors / mistakes: **2 points**
- the thesis is difficult to comprehend; it has been carelessly composed and contains a large number of errors / mistakes: **1 point**

### **2. The treatment of relevant academic sources (5 points maximum)**

- the thesis builds on the student's individual processing of academic works, in a manner that is easily comprehensible, analytic and logically consistent: **5 points**
- the thesis uses foreign academic works suggested by the supervisor, in a manner that is easily comprehensible, analytic and logically consistent: **4 points**
- the thesis relies some academic sources, in a manner that is easily comprehensible, analytic and logically consistent: **3 points**
- the thesis processes simple sources (textbooks, theses, online sources, etc.), with instances of repetition and sometimes in an illogical manner: **2 points**
- the thesis uses only a couple of textbooks, the information acquired from various sources is often repeated, the text is not logically coherent: **1 point**

### **3. Interpreting results (5 points maximum)**

- the thesis presents the results of the student's research; the student evaluates and interprets these results (relying on the supervisor's brief instructions) in a logical manner; the evaluation of the results displays individual critical thinking; conclusions are drawn from the results: **5 points**
- the thesis presents the results of the student's research; these are interpreted in a logical manner (relying on the supervisor's instructions); the evaluation and analysis of the results is comprehensible; conclusions are drawn from the results: **4 points**
- the thesis states the results of the student's research; the results are evaluated briefly, relying solely on the student's discussions with his/her supervisor: **3 points**
- the thesis states the results of the student's research; the results are evaluated briefly, relying solely on the student's discussions with his/her supervisor; some of the information provided in the paper is inaccurate or false: **2 points**
- the thesis states the results of the student's research; the presentation of the results contains mistakes; no evaluation is given in the thesis: **1 point**

### **4. The application of the student's knowledge acquired during his studies at the university (5 points maximum)**

- the thesis displays great theoretical knowledge, he/she applies this knowledge well on his/her own; when needed, the student seeks out new information, he/she proposes ways of solving questions / problems arising while writing the thesis: **5 points**
- the thesis displays great theoretical knowledge, he/she applies his/her knowledge well on his/her own: **4 points**
- the student applies knowledge other than the main materials taught at the university well, he/she learns new information easily, he/she can apply this new information well: **3 points**
- the student uses the knowledge learnt at the university well, these pieces of information usually do not need to be repeated to him/her; he/she learns new information with difficulty, and can

apply this new information only after it has been repeated to him/her several times (if at all):

**2 points**

- the student has difficulty applying knowledge taught at the university; information has to be repeated to him/her multiple times; he/she learns new information with difficulty (if at all); he/she cannot use this new information on his/her own: **1 point**

**5. General evaluation of the student's performance while writing the thesis (attitude, self-sufficiency) (5 points maximum)**

- the student has written the thesis on his/her own, with little help from the supervisor: **5 points**
- the student has completed the tasks appointed by the supervisor on his/her own, he/she invested sufficient time and energy in order to write the thesis: **4 points**
- the student has completed the tasks appointed by the supervisor (with a large amount of help from his/her supervisor), he/she invested sufficient time and energy in order to write the thesis: **3 points**
- the student has invested little energy in writing the thesis; his/her efforts were sufficient to compile the thesis, he/she needed a very large amount of help from the supervisor: **2 points**
- the student has invested the smallest possible amount of energy in writing the thesis, his/her efforts were barely sufficient to compile the thesis, he/she needed a very large amount of help from the supervisor: **1 point**

## Evaluation of BSc theses

(to be filled in according to the principles of evaluation)

**Student's name:**.....

**Supervisor's name:**.....

**Title of the thesis:**.....

1.	The structure, language and style of the thesis	1-5 points	
2.	The treatment of relevant academic sources	1-5 points	
3.	Interpreting results	1-5 points	
4.	The application of the student's knowledge	1-5 points	
5.	General evaluation of the student's performance while writing the thesis (attitude, self-sufficiency)	1-5 points	
	<b>Total number of points</b>		

Written evaluation of the thesis, possible questions (min. 1000, max. 2000 characters, including spaces)

.....

proposed grade

Debrecen: ..... day ..... month 20.... year

.....

**supervisor**

### **The grading of the thesis**

The grade that the student receives for the thesis is determined by the final examination committee; the committee takes into consideration the supervisor's written evaluation before deciding on a grade. The committee also examines whether the requirements related to the layout of the thesis have been met. The grade received for an average thesis is a 4 (good), an explanation for any other grade (either higher or lower) has to be provided in the evaluation.

### **The proposed evaluation of the thesis based on the number of points:**

0- 11 pont	Failed	(1)
12- 14 pont	Passed	(2)
15- 18 pont	Average	(3)
19- 22 pont	Good	(4)
23- 25 pont	Excellent	(5)

---

## **Principles for the evaluation of MSc theses**

- The evaluation discusses the values and shortcomings of the structure of the thesis based on the 3<sup>rd</sup> point of this guide. The lengths of descriptive and analytic sections of the thesis should be balanced. The length of the written evaluation of the thesis should be 2000-3500 characters (including spaces).
- The evaluation has to contain three questions that can shed a light on the student's capability of engaging in a scientific debate. The questions have to be numbered.
- The proposed grade evaluates only the thesis (its contents and layout), not the student who has written it. The average grade is "good" (4), if the grade is higher or lower than this, an explanation should be provided.
- Two printed and signed copies, as well as an electronic version (Word document) have to be submitted to the secretary of the final examination committee. (During the presentation of the thesis, all questions will be projected onto a screen, so that the entire audience can see them.)
- The secretary of the final examination committee has the right to ask for the evaluation to be expanded (after the secretary has consulted at least one member of the committee).