

Szent István University
Faculty of Food Science

**GUIDELINES for the preparation, submission and evaluation of
BSc and MSc theses**

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Preamble

In order to complete the university study programme and to graduate as an engineer it is necessary to prepare a high quality thesis work. The main issues in connection with thesis preparation are the choice of the topic, the elaboration of the research work and its formal presentation. All these components should be managed in a more or less uniform way. This provides an easier and more consistent evaluation system for the theses. In this standardised framework (which is specified in this document), students will be able to understand the relevant methods in literature research, experimental design and data evaluation methods.

One of the first criteria is that in a thesis, the **personal, individual work of the student should be clearly distinguishable**, such that the department will be able to evaluate the student's performance. The student must show the extent to which he or she understood and applied the research and analytical methods in the field of the thesis. It should be clear to the reader that the student is **able to draw conclusions and form a valid opinion** as to the outcome of the research thesis.

With the permission or recommendation of the supervisor, research works issued for the Student's Scientific Conference events may be submitted as theses.

In a broader sense, the general guidelines of SZIU on Study and Exam conditions deal with the global issues of thesis preparation and submission. This document details those questions which apply to the students of the Food Science Faculty.

The deadline for thesis submission can be found on the website of the Faculty.

The deadline for choosing a topic for the thesis is either the 15th of March or the 15th of October (depending on the study schedule of the program).

If a student misses the deadline, a special permission request and late fee must be submitted to the Department of Education.

Students who prepare the thesis at an external (not SZIU) location with the help of an external supervisor must also have an internal (SZIU) supervisor.

In the Neptun system, the administration of thesis preparation is conducted as follows.

For the completion of the BSc Thesis I or MSc Thesis I courses, students must specify the goal of the thesis work, prepare a research schedule, plan and execute the literature research, complete the list of references, begin to write the literature part of the thesis, select research methods and create an experimental plan.

For the completion of the BSc Thesis II or MSc Thesis II courses, students must complete the literature chapter, the 'Materials and Methods' chapter, and prepare an overview and analysis of the research data.

If the thesis is not 80 % ready 1 month before the submission deadline, the supervisor has the right to refuse to place his or her authorised signature on the thesis.

The thesis work may be submitted for evaluation if the supervisor (or the head of department) signs the cover within a maximum of 2 days following the submission deadline.

1. General requirement of the thesis contents

1.1. BSc thesis

There are three main types of BSc theses:

1. **Review:** the exploration and analysis of literature related to any topic in the field of food science or bioengineering.
2. **Task-oriented:** an exact, literature-based monographic description of a chosen task in the field of food industry, with the involvement of its analysis, revealing the possible problems and giving suggestions. Some examples are: comparison of different technologies, introduction of a new product to the market, organising the distribution of a special product type, solving a food technology design problem.
3. **Research and development (R&D):** participation in an R&D project, and giving an overview of the results of the student's individual work

For the three types of BSc theses, different evaluation systems are used by the thesis reviewers, where the most relevant issues of the thesis are weighted differently.

The number of literature references depends on the type of thesis. In the case of the review type, more references are needed than in other thesis types. It is not only the number of references that is important, but also their relevance, as this gives a clear picture of the knowledge of the student in the given field.

The proportions of the thesis parts depend on the type of the thesis. Especially in the case of a review or task-oriented thesis, the help of the supervisor is crucial in order to find the right balance between the chapters. In all cases, it is a major requirement that the individual work of the student be clearly distinguished from the other parts. The 'Introduction' and 'Summary' chapters are also compulsory elements.

Writing a thesis in English is a challenge to students, since in most cases, this is not their native tongue. Using clear and concise wording is the best way to make the thesis understandable for the reader.

In case of a **Review type thesis (type #1)**, the following should be created with the help of the supervisor:

1. Introduction (showing the importance of the topic in a maximum of 2 pages)
2. The goal of the thesis and the methods applied (15-25% of the total volume)
3. Literature overview (overview of the relevant literature, with summary on each 'sub-field'. This should be about 40% of the total volume)
4. Results and discussion (approximately 40 % of total volume)
5. Summary (major outcomes, experiences, conclusions, a list of possible recommendations in 1-2 pages)
6. List of references

In the case of a **Task-oriented (type #2) or R&D (type #3)** thesis, the recommended structures are the following:

1. Introduction (showing the importance of the topic in a maximum of 2 pages)
2. The goal of the thesis work (1-2 pages)
3. Literature overview (overview of the relevant literature, with a summary on each 'sub-field'. This should be about 30-40% of the total volume)
4. Materials and methods
5. Results and discussion (35-45% of the total volume)
6. Summary (major outcomes, experiences, conclusions, a list of possible recommendations in 1-2 pages)
7. List of references

1.2. MSc thesis

In case of an MSc thesis, the elaboration of the work and the choice of methods should be more sophisticated. However, finding and proving new scientific results are not criteria at this level. The thesis should clearly show the individual work, problem solving and synthesising abilities of the student.

There are two major types of MSc theses:

1. Analysis of a process, solving a specialised planning task or managing an organisational problem
2. Individual research work

In case of the first type of MSc thesis, the help of the supervisor is crucial to find the right balance between the chapters. In all circumstances, it is a major requirement that the individual work of the student should be clearly distinguished from the other parts. The 'Introduction' and 'Summary' chapters are also compulsory elements.

The number of literature references depends on the type of thesis. In the case of the review type, more references are needed than in other thesis types. It is not only the number of references that is important, but also their relevance, as this gives a clear picture of the knowledge of the student in the given field.

Writing a thesis in English is a challenge to students, since in most cases, this is not their native tongue. Using clear and concise wording is the best way to make the thesis understandable for the reader.

The recommended structure of an MSc thesis is as follows:

- 1. Introduction** (showing the importance of the topic in a maximum of 2 pages)
- 2. The goal of the thesis work** (1-2 pages)

3. Literature overview (overview of the relevant literature, with a summary on each 'sub-field'. This should be about 30-40% of the total volume)

4. Materials and methods

5. Results and discussion (35-45% of the total volume)

6. Summary (major outcomes, experiences, conclusions, a list of possible recommendations in 1-2 pages)

7. List of references

2. Thesis layout and specifications

The language of the thesis is English. It is the student's choice as to which spelling (UK or US) is followed, but it must be used consistently throughout the text.

2.1. Major editing parameters

Paper size should be A/4. The text should be prepared in a text editing software which handles doc or docx formats. The number of characters should be around 2000 / page. Line spacing should be 1.5. This will result in 80 characters / row, with each page containing 28-30 lines.

2.2. Text specifications

Volume of BSc thesis: between 30 and 50 pages, not including the list references and the annexes.

Volume of MSc thesis: between 40 and 60 pages, not including the list references and the annexes.

Font: 12-point Times New Roman, justified

Line spacing: 1.5 lines

Margins: left: 30 mm, right, top and bottom: 25 mm

Chapters: The title of the major chapters should be typed in captions, with decimal numbering. Each major chapter should be started on a new page. Sub-chapters are numbered with continuous decimal numbers (e.g. 3.1; 3.2, etc.). Sub-chapters should be follow continuously on the same page, i.e. no page break is needed for a new sub-chapter.

Page numbers: may be either at the bottom or on the top of the page.

2.3. Structural elements

2.3.1. External cover page

BSc THESIS or MSc THESIS in capitals, centred, located on top third of the page. At the bottom of the page, the name of the student and the year of submission is printed. The name and the year are on the right side of the page.

2.3.2. Internal cover page

The following elements are compulsory (use of the faculty logo is optional):

- Name of the University
- Name of the Faculty
- Name of the Department

(These elements should be aligned to the left at the top of the page)

- Title of thesis (at the middle of the page, centred)

Followed by:

- Name of the student
- BUDAPEST
- Date of submission

(These elements should be at the bottom of the page, centred)

2.3.3. Formal cover page

The formal cover page is issued by the supervisor, and should be the first page after the internal cover page (see Annexes M1-M5).

2.3.4. Request for confidentiality

If the thesis is to be confidential, then the request for confidentiality should be integrated into the thesis. For further information, see chapter 2.7 and Annex M6.

2.3.5. Table of contents

The table of contents may be prepared as the last stage, when the editing of the text is finished. The pages of the table of contents should not be numbered.

2.3.6. Chapters of the thesis

The main parts of the thesis should be divided into chapters and sub-chapters. Numbering of these chapters should be decimal. Sub-chapters are only necessary if so required by the volume and the contents of the chapter. The Table of Contents should not be included in the decimal numbering. Some optional chapters in the thesis: list of abbreviations and symbols, list of figures and tables. These parts should not be numbered decimally.

Introduction

In this chapter, the reasoning of the topic and its relevance should be discussed with a brief summary of the main targets.

Goals of the thesis

Here the major goals of the thesis work should be specified in a maximum of 2 pages.

Literature overview

Here the most relevant literature resources should be analysed and summarised.

Materials and methods

This chapter describes the test materials, the applied methods and the exact description of the experiments.

Results and discussion

The most relevant research outcomes, experiences, conclusions or suggestions are explained here. This chapter can also make some references to the Materials and Methods chapter, evaluating their applicability, and further practical issues.

Summary

This gives a brief overview of the whole thesis work. It contains the essence of the thesis: explanation of the topic, goal of work, major results and experiences, conclusions or suggestions. This chapter is the last one that should be included in the page numbering.

Literature references

All references which were read and integrated in the thesis should be listed. Only those resources which are referred in the text should be listed. The listing of references should be in an alphabetical order.

Annexes

Annexes are not compulsory part of the thesis. Annexes usually contain large tables or images. Labelling of annexes may be: Annex 1. Table 1. or A.1. Table 1.

Acknowledgements

Here the student may thank the supervisor and other colleagues for their support.

Statement

This is a compulsory part of the thesis. The author's statement should be filled out and signed by the student, and it should be bound at the end of the thesis as Annex 8.

The other statement on the public accessibility of the thesis should be issued separately from the thesis to the library. This latter statement may be also negative, not allowing public access if the topic is confidential.

2.4. Labelling of tables and figures

Tables and figures should be numbered in a consecutive order (one order of numbers for the figures and another order of numbers for the tables). Large tables or such tables which contain less relevant data may be placed in the Annexes. Tables and Figures should be understandable without reading the surrounding textual parts. All Tables and Figures should be referred in the text. If the Tables and Figures were taken from other authors, this should be mentioned in the title (e.g. Smith, 2018). A list of Tables and Figures may be also prepared.

2.4.1. Tables

Tables should be numbered in a consecutive order. Each table should have a title, which is placed above the table and centred. The unit (e.g. tons or USD) and the year of the data may be given in the title if it applies to the whole table, otherwise it should be placed in the header of the table.

A) Example of a table created by the author

Table 1. The title of a table should be worded in a brief and clear manner

	Header 1 unit	Header 2 unit	Header 3 unit
Control	18.45	23.60	3.18
Treatment 'A'	3.70	16.70	4.17

B) Example of a table taken from another author

Table 1. The title of a table should be worded in a brief and clear manner (Smith, 2018)

	Header 1 unit	Header 2 unit	Header 3 unit
Control	18.45	23.60	3.18
Treatment 'A'	3.70	16.70	4.17

2.4.2. Figure

The title and number of figures (graph, drawing, or photo) should be edited under the object, and should be edited to the centre. If the figure is not the work of the author, a clear reference should be made (e.g. Photostock). In case of graphs and drawings, a legend is required. The applied type of graph should be appropriate for representing the data. As three-dimensional graphs take up a lot of space, they should only be used when truly necessary.

If any figures were downloaded from the Internet, then the reference should be short in the title (e.g. Internet 1). The exact web address should be listed in the references in the following manner:

Internet 1. Colorimeter, <https://sensing.konicaminolta.us/products/cr-400-chroma-meter-colorimeter/>

Referring to figures from other authors:

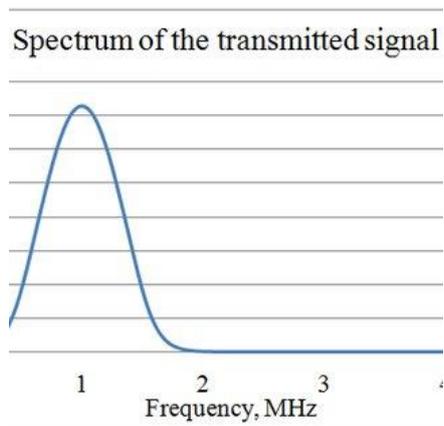


Figure 1. Typical chirp signal (Felföldi, 2018)



Figure 2. Colorimeter (Internet 1)

2.5. Referring to literature sources

All sources used during the preparation of the thesis should always be referenced in the text.

2.5.1. Form of referencing

The family name of the author and the year of the publication should be used in the text. Some examples are listed below:

If there is one author:

‘According to the studies of Smith (2018) it may be concluded...’

‘There are some relevant studies in that field (Smith, 2018)...’

If there are two authors:

‘According to the studies of Smith and Benson (2018), it may be concluded...’

‘There are some relevant studies in that field (Smith and Benson, 2018)...’

If there are more than two authors:

‘According to the studies of Smith and co-workers (2018) it may be concluded...’

‘There are some relevant studies in that field (Smith et al., 2018)...’

If there are more references from the same author in the same year, then the distinction should be clear both in the text and in the list of references (e.g. Smith 2018a; Smith 2018b; Smith 2018c).

Books and book chapters

a) if there is only one author of the book:

Afokawa, E. O. (2014) Cocoa production and processing technology, CRC Press Inc., Boca Raton, ISBN 978-1-4665-9824-9

b) if there are several authors, or there is an editor:

Clark, S.; Costello, M.; Drake, M.A.; Bodyfelt, F. (2009) The sensory evaluation of dairy products, Springer-Verlag, New York, ISBN 978-0-387-77406-0

c) a book chapter:

Barta, J., Balla. Cs., Vatai, Gy. (2012): Dehydration Preservation of Fruits. Chapter 10. In: Sinha, N., Sidhu, J., Barta, J., Wu, J., Pilar Cano, M. (ed.): Handbook of Fruits and Fruit Processing, Wiley-Blackwell Publishing, Ames, Iowa, USA, pp. 153-174 ISBN: 978-0-8138-0894-9

Scientific articles

The name of the authors should be written as in the case of books or book chapters. This is followed by: date of publication in brackets; title of the article; title of the journal (in italics); volume, issue, page numbers. If the article has a DOI number (Digital Object Identifier) this should be also displayed.

Some examples:

Hann, S., Dernovics, M., Koellensperger, G. (2015): Elemental analysis in biotechnology.

Current Opinion in Biotechnology 31: 93-100. DOI: <https://doi.org/10.1016/j.copbio.2014.08.008>

Prasad, R., Bhattacharyya, A., Quang D Nguyen, D.Q. (2017): Nanotechnology in sustainable agriculture: recent developments, challenges and perspectives. *Frontiers in Microbiology* 8: 1014. DOI: 10.3389/fmicb.2017.01014

Laws, acts, decrees

This type of resources should be cited in the following manner: title, year of publication, exact hyperlink. In the text a short version should be used (e.g. Internet 1), which is explained in the list of references.

Commission Regulation (EU) 2017/2158 of 20 November 2017 establishing mitigation measures and benchmark levels for the reduction of the presence of acrylamide in food, <http://data.europa.eu/eli/reg/2017/2158/oj>

2.6. Final assembly of the list of references

It is compulsory to list all the resources referred to or cited in the text. Only those references which contributed to the preparation of the thesis work should be included. The list of references should be numbered, in the alphabetical order of the authors. If there are several sources from the same author, these should be listed in the chronological order of their publication date.

2.7. Confidential thesis work

The thesis work may be treated as confidential if the topic involves the property of a company or requires confidentiality for other reasons. The relevant legislation may be found in the Educational and Exam Codex, chapter IV., section II., paragraph 45, sub-section 5.

The student may apply for confidential classification if any external partners have such kind of data in the work which should cannot be placed in the public domain.

The application form for confidential classification is in Annex 6 of these guidelines.

If the thesis work was prepared at an external location (company, authority, laboratory, etc.), the head of that unit may also apply for it to be classified as confidential. A confidential thesis will be not available in the library, and will be kept locked in the safe of the department. The application form for confidentiality should be bound as the first page of the thesis.

3. Summary

For the committee of the final exam, a thesis summary should be prepared in 8 copies. This is not the same as the summary chapter of the thesis.

On the top of the first page, the name of the university, faculty, specialisation and the department should be displayed. Below that, the name of the author and the title of the thesis should appear, justified to the centre of the page.

The summary should include very briefly the following: choice of topic, methods, most relevant outcomes and conclusions. All these sections should be no longer than 2 pages. A template can be found in Annex 10 of these guidelines.

The deadline for the issue of theses is set by the Faculty each year. This date is at least 6 weeks before final exams. Students who miss the deadline may only take the final exams at the following final exam period.

4. Printing the thesis

Theses should be issued in printed form, on A/4 pages. One copy should be hardbound in a black binding, and in one copy also in A/4 format, in an optional binding (e.g. binding strips). The thesis should be also submitted in an electronic format such as a PDF file on a CD or DVD disc. The electronic file should contain a watermark, but the printed version should not contain a watermark. You can add a watermark in Microsoft Office Word: Format / Background / Printed watermark. The text of the watermark should be: the name of the student and 'BSc thesis' or 'MSc thesis'.

The student should also submit a declaration about the public accessibility of the electronic file.

The student should submit the following items at the Department of Education:

- 1 copy of the CD / DVD for the library. It should contain the pdf file with the watermark
- 1 copy of the signed declaration on the public accessibility of the thesis for the library
- 8 copies of the Summary

The student should submit the following items at the Department according to his/her specialization or module:

- 1 printed copy of the thesis, hardbound with a black cover
- 1 printed copy of the thesis in any optional binding (this will be the student's copy after the final exam)
- 1 copy of the CD/DVD for the Department

5. Evaluation of the thesis

5.1. Main steps of the evaluation

The thesis work is evaluated by an internal reviewer (it may be a colleague from the Department where the thesis was made) and an external reviewer. This external reviewer should come from a different Department (in the case of a BSc thesis), or from a different Faculty or organisation (in the case of an MSc thesis).

Reviewers create an evaluation form which contains a written description about the work as well as a scoring and a recommended grade. In case of all scoring categories, the given score should be at least 25% of the maximum value. If this criterion is not fulfilled, the head of the final exam committee should decide or consult with a relevant colleague from the team. This approach should be used also in the case when the two reviewers give grades differing by 2 points or more.

The final grade for the thesis is issued by the final exam committee on the basis of the two reviews and the defence.

5.2. Written evaluation

The text should include: the reviewers' opinion about the topic, the major outcomes of the thesis, remarks and its deficiencies. It is recommended to submit two questions to the student, which should be answered at the thesis defence.

5.3. Scoring systems for thesis evaluation

The scoring systems for BSc and MSc thesis can be found in Annexes 12 and 13 of these guidelines.

6. Annexes

All relevant documents, guidelines, information and templates can be found on the following webpage:

The annexes of these guidelines are the following:

A1 BSc thesis (Biochemical engineer)

A2 BSc thesis (Food engineer)

A3 MSc thesis (Food engineer)

A4 MSc thesis (Food safety and quality engineer)

A6 Application for confidentiality

A7 Author's declaration

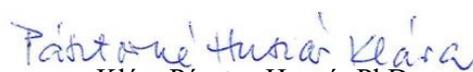
A8 Statement of origin and public access to thesis for the library

A9 Statement of origin and public access to classified thesis for the library

A10 Template for Summary

These guidelines were approved by the Faculty of Food Science, and are in force as of the fall semester of the 2018 academic year.

29th of March, Budapest


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Vice Dean for Education