

GUIDELINE FOR BACHELOR THESES

This guideline applies to all students of GMIT, irrespective of the faculty and study program in which the thesis is prepared.

1. General Information

The Bachelor thesis is an examination by which you broaden and deepen your knowledge in a field of engineering. With your work you will demonstrate your ability to solve a scientific or technical problem and present your results professionally.

1.1. Timeframe and Length

Bachelor theses (12 credits) are limited to project work over a maximum period of 6 months. This includes the time needed to carry out a literature review, practical work (e.g. data collection or a design project), and writing your thesis. You are advised to concentrate your work and to work coherently. In your own interest, you should keep books on your working hours.

The length of your thesis should be between 50 and 60 pages (Arial or similar font, size 11, 1.5x line spacing).

1.2. Registration and Selection of Topics

Any student who is formally enrolled in a Bachelor study program of GMIT, and who has achieved a minimum of 180 credit points can (and should) register for the bachelor thesis.

During the 7th semester, no later than November, please consult the professors and lecturers in your study program to discuss potential thesis topics. During the semester, the Literature Review module will familiarize you with various topics that are relevant regarding your thesis preparation.

Bachelor thesis must be registered using the *Bachelor Thesis Assignment* form.

1.3. Selection of Examiners

For any bachelor thesis there must be two examiners (supervisors). The first examiner must be a Faculty member of GMIT (excluding assistant lecturer) and the second can be anyone outside GMIT who has a suitable academic qualification (at least a master's degree in a relevant subject). An additional one examiner is appointed by the examination board for Colloquium. Examples would be short term lecturers or guest scientists at GMIT, experts from industry, government etc. In addition to the supervisors, there can be one (or more) advisor(s), e.g. industry experts or scientists from other institutions.

Students have the right to suggest / request specific supervisors. If no agreement can be found with the study program coordinators and Academic and Student Affairs, the Examination Board will be consulted. The Examination Board may deviate from the student's suggestion with well-founded reasons.

1.4. Recommended Schedule

| N ^o | Content | Suggested Timing |
|----------------|---|--|
| 0 | <p><i>Thesis assignment</i></p> <ul style="list-style-type: none"> • definition of the thesis topic • selection of examiners / advisers • formal registration with <i>Academic and Student Affairs</i> | 7 th semester October/November |
| 1 | <p><i>Introductory Meeting</i></p> <ul style="list-style-type: none"> • Clarification of expected content • Advice regarding literature, data sources • Working plan • Specific research methods (e.g. fieldwork, laboratory work, data analysis) | 7 th semester promptly after assignment |
| 2 | <p><i>Intermediate Meeting</i></p> <ul style="list-style-type: none"> • Discussion of draft versions of structure (table of content), introduction and state of the art chapters (to be submitted to the supervisor(s) 7 days prior to the meeting) • Report of the student on progress with the practical work (e.g. experiments / data collection / technical development) • Planning the remaining work | 2 to 3 months after assignment |
| 3 | <p><i>Final Meeting</i></p> <ul style="list-style-type: none"> • Discussion of a draft version of the whole thesis (to be submitted to the supervisor(s) 7 days prior to the meeting) • Specific questions by the student • Concluding advice by at least one supervisor | 1 month before submission |

1.5. Submission

Your thesis must be submitted by the submission deadline on **1st May 2019** in the **Academic and Student Affairs** office. It is necessary to submit three hardcopies plus an electronic version of your thesis. Under exceptional circumstances, it is possible to extend the submission deadline according to the Study and Exam regulations. In this case, please inform Academic and Student Affairs and your supervisor as early as possible.

2. Formal requirements

Your thesis must be written in **U.S. English** and contain the following elements:

1. Title page
2. Table of contents (with page numbers)
3. Main text chapters (described in more detail in section 2.2)
4. References list
5. Statutory declaration

2.1. Title Page

The title page should contain the following elements:

- GMIT logo and the name of the Faculty
- Bachelor thesis
- Title of your work
- Your name and student ID number
- Names of your supervisors and advisors
- Place and date

A template of the title page will be provided to you by your supervisors.

2.2. Table of Contents and Structure

Your thesis should be clearly structured into different chapters, and a *table of contents* must be included at the beginning of your thesis. If your thesis contains many figures or tables, an additional *list of figures* and/or *list of tables* should be included.

The chapters of your thesis should be divided into chapters and subchapters, which are numbered. Typically, a thesis contains the following main chapters.

1. Short introduction (relevance of your topic, main questions that your thesis deals with, methods that you used, main results)
2. State of the art (literature-based chapter that summarizes the current state of knowledge)
3. Material and Methods (description of the data/information and methodologies you used to solve a specific problem)
4. Results (outcomes of your own work)
5. Discussion / Conclusions

In some cases, it may be meaningful to use a different structure; in such a case, please make sure to discuss this with your supervisors.

2.3. Formatting

Your thesis should be formatted in the following way:

| | |
|-------------------------|---|
| Page Setup | DIN A 4 (210 mm x 297 mm) Top and bottom margin: 25 mm Left and Right Margin: 30 mm (to allow some extra space for binding and corrections) |
| Font and Spacing | Arial (or similar), font size 11 1.5x line spacing |

2.4. Citation Style and References

Thoughts of others –if it exceeds textbook knowledge– always need to be cited. This requires short citations in the text and a reference list at the end of your thesis.

Citations should be based on the Vancouver style, for which a separate guideline (*Citing & Referencing: Vancouver Style*) is provided to you.

2.5. Figures, Tables and Equations

Figures in the text need subsequent numbering and a caption that explains the core idea of the figure (e.g. Figure 1: Map of Nalaikh), and –whenever it was not created by yourself– a reference. Please make sure that figures are of a sufficient quality.

Tables in the text also require subsequent numbering and a caption that helps to understand the data/information presented (e.g. Table 1: Concentrations of PM2.5 in Nalaikh in December 2017). Whenever you cite a full table, a reference must be given in the caption. Whenever your table contains information from several sources, multiple references can be given in the caption. In some cases, it can be meaningful to place references inside the table to indicate precisely which information is from where.

Equations should be numbered subsequently (e.g. Equation 1: $a + b = c$).

3. Colloquium and Grading

3.1. Colloquium

After the submission of your thesis, please prepare yourself for a colloquium that consists of two parts:

- (1) a presentation about your thesis (about 20 minutes) and
- (2) questions by your supervisors and other lecturers/professors of GMIT (about 20 minutes)

A precondition to conduct the colloquium is the successful passing of the bachelor thesis. The assessment of the colloquium is successful if its results at least satisfactory and all requirements have been met. Examiners are the first and second supervisor of the bachelor thesis. Up to two additional examiners can be appointed among the members of the Examination Board. In case that one of the supervisors is absent during the colloquium, an additional examiner must be appointed by the Examination Board.

A handout summarizing your key points should be prepared to go along with your presentation.

3.2. Evaluation of Thesis and Colloquium

Your thesis and colloquium will be graded by at least two examiners, which must include at least one professor or one lecturer at GMIT holding a Ph.D. For more information, please see the *Study and Examination Regulations*.

3.3. Grading

To pass the bachelor thesis module, it is necessary to receive a passing grade for both the thesis and the colloquium. For the final module grade, the weighting is 4:1 (thesis: colloquium). The following grading system will be used:

| Letter grade | Number grade | Performance Percentage | Interpretation of results |
|--------------|--------------|------------------------|--|
| A | 4.0 | 95 to 100 | An excellent performance |
| A- | 3.7 | 90 to 94 | |
| B+ | 3.3 | 87 to 89 | A good performance considerably above average |
| B | 3.0 | 83 to 86 | |
| B- | 2.7 | 80 to 82 | |
| C+ | 2.3 | 70 to 79 | An average performance |
| C | 2.0 | 73 to 76 | |
| C- | 1.7 | 70 to 72 | |
| D+ | 1.3 | 65 to 69 | A performance that still satisfies the requirements despite deficiencies |
| D | 1.0 | 60 to 54 | |
| F | 0 | 0 to 59 | A performance that is not satisfactory |

4. Good Scientific Practice and Plagiarism

It is expected that you adhere to the rules of good scientific practice. In particular, this means that (1) you cite the thoughts of others whenever you take information from sources such as books, scientific articles or websites and (2) that you present your actual results without any modifications (e.g. manipulation or invention of data). Moreover, your thesis must have a significant degree of originality; side-long passages consisting only of citations (with or without paraphrasing) are not acceptable.

Please note that Academic Affairs will conduct a plagiarism check of your thesis using specific software and/or online services right after submission. If your thesis is found to contain an unusually high similarity to existing documents, your supervisors will double check the results and ask you for a personal meeting. You may then have to revise your thesis (within a short period of time!).

Please also note that plagiarism or data manipulations (even if your supervisors ask you to revise your thesis) will have a negative effect on your thesis evaluation. In extreme cases, your thesis will be graded as unsatisfactory (F). In this case, you will not be admitted to the colloquium.