

Guidelines
on diploma theses (bachelor, engineering, master) written by students
of the Faculty of Engineering Management of Bialystok University of Technology

INTRODUCTORY ISSUES

1. One of the conditions for completing Bachelor's and Master's studies and receiving a diploma is a positive assessment of the diploma thesis.
2. The diploma thesis is an unassisted and individual preparation of a specified scientific or practical problem, or a technical achievement, presenting the student's general knowledge and skills pertaining to the particular field, level and profile of education of study, as well as to the student's abilities of analysing and drawing conclusions independently.
3. Each work should lead to the creation of new added value in the area of the topic undertaken.
4. The topic of the thesis must take into account the specifics of the field of study and be linked to the scientific disciplines to which the course is assigned.
5. The thesis topic is initially evaluated by the department head and then submitted to the Dean for approval.
6. The thesis should be no less than 50 standard typewritten pages for first cycle students and no less than 70 pages for second cycle students (the volume of the thesis does not include a title page, a thesis card, a thesis statement, an abstract, appendices, lists of tables, figures and diagrams).
7. The number of scientific sources (books, articles) should not be less than 30 in the diploma thesis at first cycle courses and 50 in the thesis at second cycle courses.
8. The thesis should make use of the latest (recommended not older than 10 years) literature on the subject, including literature published in foreign publications (at least 10% of foreign language publications at first cycle courses, at least 20% of foreign language publications at second cycle courses).
9. Internet sources used must have credible and scientific content or contain reliable data on the studied enterprise/enterprises or sector/industry.
10. The diploma thesis shall respect the principles of intellectual and industrial property protection.
11. The author of the thesis shall take care of the linguistic correctness of the work and observes recommendations concerning the formal and editorial aspects of the text.
12. In the case of study course in Polish, the language of the diploma thesis is Polish. On request of the diploma thesis supervisor, or on a written request of the student after consultation with the diploma thesis supervisor, the competent Dean may agree for the diploma thesis to be written in a modern foreign language. The diploma thesis may be written in a modern foreign language if the student's education was conducted in this language.

DIPLOMA THESIS FOR GENERAL ACADEMIC STUDIES

1. The thesis is a confirmation that the student is equipped with research competences, and in particular:

First cycle studies

- Can appropriately select sources and information coming from them, evaluate and critically analyse and synthesise this information;
- Takes into account development trends of scientific disciplines to which the field of studies has been assigned;
- Has the ability to interpret results of literature and empirical research, using analytical and/or statistical methods;
- Can carry out a logical and consistent argument of a scientific nature;
- Uses precise and specialised vocabulary proper for the disciplines to which the field of study is assigned.

Second cycle studies

- Can appropriately select sources and information coming from them, make an in-depth evaluation and critically analyse and synthesise this information;
- Takes into account development trends of scientific disciplines to which the field of studies has been assigned;
- Can formulate research problem/s, research hypothesis/s and carry out research allowing to test hypotheses selecting methods and research tools adequately to the topic, aim and scope of work;
- Has the ability to interpret results of literature and empirical research using advanced analytical and/or statistical methods;
- Can carry out a logical and consistent argument of a scientific nature and formulate synthesising and summarising conclusions;
- Uses precise and specialised vocabulary proper for the disciplines to which the field of study is assigned;
- Shows a clear progression of research skills in relation to the first cycle studies.

DIPLOMA THESIS FOR PRACTICAL STUDIES

1. The thesis is a confirmation that the student:

First cycle studies

- Can appropriately select sources and information coming from them, evaluate and critically analyse and synthesise this information;
- Uses precise and specialised vocabulary proper for the disciplines to which the field of study is assigned;

- Takes into account development trends of scientific disciplines to which the field of studies has been assigned;
- Can identify and assess simple problems typical for the professional activity related to the field of study;
- Can indicate practical application of results and conclusions obtained in the course of the diploma thesis, recommend actions of corrective or improving character.

Second cycle studies

- Can appropriately select sources and information coming from them, evaluate and critically analyse and synthesise this information, creatively interpret and present this information;
 - Uses precise and specialised vocabulary proper for the disciplines to which the field of study is assigned;
 - Takes into account development trends of scientific disciplines to which the field of studies has been assigned;
 - Can formulate and solve problems typical for the professional activity related to the field of study;
 - Can formulate and test hypotheses related to simple implementation problems;
 - Can formulate a research problem, design and carry out a research process correctly selecting methods enabling to solve the research problem;
 - Can identify and assess complex and unusual problems specific to the professional activity related to the field of study, and to propose advanced actions of corrective or improving character;
 - Demonstrates the ability to diagnose practical problems (states, phenomena, processes) at an advanced level;
 - Can indicate the practical application of the results and conclusions obtained in the thesis.
2. An auxiliary supervisor of the thesis may be a representative of the socio-economic environment who has a PhD degree and at least 5 years of experience in a given profession.
 3. It is recommended to choose topics submitted by entrepreneurs and other representatives of the socio-economic environment. In this case, the Dean, upon the application of the thesis supervisor or the student, may appoint a thesis consultant. The consultant may be a person employed in a company or other organisation who holds a Master's degree or a scientific degree. The consultant shall be invited to the diploma examination.

THESIS FOR BACHELOR'S (ENGINEERING) DEGREE

An engineering thesis may be of a design, application, conceptual or research and implementation nature. It confirms that the student:

- Can appropriately select sources and information from the area of engineering sciences;
- Uses precise and specialised vocabulary proper for the disciplines to which the field of study is assigned;
- Demonstrates knowledge and understanding of basic processes occurring in the life cycle of technical devices, objects and systems;
- Can plan and carry out experiments, including measurements and computer simulations, analyse and interpret the results and draw conclusions;
- Can critically analyse the functioning of existing technical solutions and assess these solutions;
- When analysing or designing technical solutions, he/she is able to notice their systemic and non-technical aspects, for example organisational, economic, social ones;
- Takes into account the practical use of engineering standards and norms.

STRUCTURE OF THE THESIS

1. The diploma thesis must be structured according to the level and profile of studies. It should be theoretical and empirical in nature.
2. The diploma thesis should contain a title page, a thesis card, a statement of the author of the work, an abstract, a table of contents, an introduction, at least 3 chapters divided into subchapters (from 3 to 5), a conclusion, a bibliography, a list of tables and figures, and - if it results from the methodology of the work - an appendix including documentation from the conducted research (e.g. a survey questionnaire, an interview scenario, technical/drawing documentation of own solution).
3. The chapter is the basic component unit of the thesis. Division of the thesis into chapters should take into account the following principles:
 - chapters should reflect the division of the content of the thesis, i.e. finally and in detail organise this content;
 - the division into chapters should be clear, logically coherent, excluding the possibility of repetition of the same content in different places in the work;
 - the proportions between the volumes of the chapters must be respected;
 - no text should be placed outside the structure of the work (chapters and sub-chapters);
 - the title of the chapter must not be a repetition of the thesis topic;
 - chapter titles should give as much detail as possible about the content of the chapter;
 - introduction and conclusion are not numbered.
4. Excessive fragmentation of the thesis is not advisable. An internal division of the chapters (subchapters) of at most one step should be adopted. The subdivision of the work into subsections should take into account the following principles:
 - subclauses should be distinguished according to the size of the text they contain (e.g. the size of the subclause should not be shorter than a few pages);

- the titles of the subclauses must not be the same as the titles of the chapters;
 - subclauses shall be subject to the same rules as chapters.
5. The table of contents shall appear in the thesis after a title page, a thesis card and a one-page English summary.
 6. The introduction shall include:
 - a justification of the validity and topicality of the topic undertaken, including an indication of the chosen subject matter;
 - a precisely formulated purpose of the thesis;
 - information about the research methods used in the thesis;
 - information on the structure of the paper;
 - brief description of the sources used in the thesis.
 7. The conclusion of the thesis contains summary findings and an unambiguous evaluation of the achievement of the objective of the thesis. In the case of the studies of the general academic profile, the conclusion should indicate further desirable research directions, and in the case of the practical studies, application conclusions.

Example structure of the Bachelor's thesis – **academic profile**

INTRODUCTION

Chapter 1. XXXXXXXXXXXXXXXXXXXX – THEORETICAL ANALYSIS OF THE PROBLEM

- 1.1. xxxxxxxxxxxx
- 1.2. xxxxxxxxxxxx
- 1.3. xxxxxxxxxxxx

Chapter 2. CHARACTERISTICS OF THE ORGANISATION/ SECTOR/ INDUSTRY STUDIED

- 2.1. xxxxxxxxxxxxxxxxxxxx
- 2.2. xxxxxxxxxxxxxxxxxxxx
- 2.3. xxxxxxxxxxxxxxxxxxxx

Chapter 3. XXXXXXXXXXXXXXXXXXXX – METHODOLOGY AND ANALYSIS OF TEST RESULTS

- 4.1. Methodology of own research (includes: object and purpose of research, problems and research hypotheses, organisation of research, description of research methods and tools used in the work, characteristics of the test sample)
- 3.2.
- 3.3.
- 3.4. Conclusions and recommendations

CONCLUSION

BIBLIOGRAPHY

LIST OF TABLES AND FIGURES

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Example structure of the Master's thesis – **academic profile**

INTRODUCTION

Chapter 1. XXXXXXXXXXXXXXXXXXXX – THEORETICAL ANALYSIS OF THE PROBLEM

- 1.1. xxxxxxxxxxxx
- 1.2. xxxxxxxxxxxx
- 1.3. xxxxxxxxxxxx

Chapter 2. CHARACTERISTICS OF THE ORGANISATION/ SECTOR/ INDUSTRY STUDIED

- 2.1. xxxxxxxxxxxxxxxxxxxx
- 2.2. xxxxxxxxxxxxxxxxxxxx
- 2.3. xxxxxxxxxxxxxxxxxxxx

Chapter 3. METHODOLOGY OF OWN RESEARCH

- 3.1. Object and aim of research
- 3.2. Research problems and hypotheses
- 3.3. Organisation, method and tools of research
- 3.4. Characteristics of the surveyed sample

Chapter 4. XXXXXXXXXXXXXXXXXXXX –METHODOLOGY AND ANALYSIS OF TEST RESULTS

- 4.1.
- 4.2.
- 4.3.
- 4.4. Conclusions and recommendations

CONCLUSION

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Example structure of the Bachelor's/Master's thesis – **academic profile**

INTRODUCTION

Chapter 1. XXXXXXXXXXXXXXXXXXXX – THEORETICAL ANALYSIS OF THE PROBLEM

- 1.1. xxxxxxxxxxxx
- 1.2. xxxxxxxxxxxx
- 1.3. xxxxxxxxxxxx

Chapter 2. CHARACTERISTICS OF THE ORGANISATION/ SECTOR/ INDUSTRY STUDIED

- 2.1. xxxxxxxxxxxxxxxxxxxx
- 2.2. xxxxxxxxxxxxxxxxxxxx
- 2.3. xxxxxxxxxxxxxxxxxxxx

Chapter 3. XXXXXXXXXXXXXXXXXXXX – METHODOLOGY AND ANALYSIS OF TEST RESULTS

- 3.1. Methodology of research
- 3.2. XXXXXXXXXXXXXXXXXXXX - test results
- 3.3. Conclusions and recommendations (**must be of a practical, implementation – improving or corrective nature**)

CONCLUSION

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Example structure of the Bachelor's thesis

INTRODUCTION

Chapter 1. XXXXXXXXXXXXXXXXXXXX – THEORETICAL ANALYSIS OF THE PROBLEM

- 1.1. XXXXXXXXXXXX
- 1.2. XXXXXXXXXXXX
- 1.3. XXXXXXXXXXXX

Chapter 2. XXXXXXXXXXXXXXXXXXXX - CHARACTERISTICS OF THE TEST OBJECT AND TEST METHOD

- 2.1. XXXXXXXXXXXXXXXXXXXX
- 2.2. XXXXXXXXXXXXXXXXXXXX
- 2.3. XXXXXXXXXXXXXXXXXXXX

Chapter 3. XXXXXXXXXXXXXXXXXXXX - THE CONCEPT OF SOLVING THE IDENTIFIED PROBLEM

- 3.1. General assumptions
- 3.2. Description of own concept
- 3.3. Impact assessment of the implementation of own concept

CONCLUSION (including findings, recommendations and observations for further actions)

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FORMAL AND EDITORIAL ASPECTS

1. In the thesis, verbs in the first person singular (I) or verbs in the first person plural (we) must not be used. The thesis is written in the impersonal form or the third person singular (the so-called abstract narrator). This requirement can be met by using appropriate impersonal forms of verbs, such as: instead of "we have calculated" - it has been calculated; instead of "we can conclude that..." - it can be concluded that...; instead of "we must notice" - it should be noticed.
2. Times New Roman 12 pt font should be used. Footnotes in 10 pt font. Line spacing between the lines - 1.5 lines. Spacing between paragraphs (the so called AFTER and BEFORE - 0 pt). Indentation of paragraphs - 1 cm. Margins: bottom and top 2.5 cm, left 3 cm, right 2 cm.
3. A title page, a thesis card, a student statement, an abstract should be printed on one side. From the table of contents onwards, the paper should be printed on both sides using the so-called mirror margins.
4. Page numbering begins on the page with the table of contents (from number 9).
5. Graphic materials (tables, figures, charts, diagrams, etc.) should have their own number and a source. References to figures and tables should be included in the text.
6. A figure should be understood as any graphical form of information presentation (a figure should be therefore understood as e.g. a photograph, a diagram, a flow chart, a plan, a sketch or a so-called printscreen). Figures should be numbered separately in each chapter. The first figure in Chapter 1 should be numbered 1.1 (Figure 1.1), the second figure in Chapter 1 should be numbered 1.2 (Figure 1.2), etc. In Chapter 2, the numbering should begin with Figure 2.1 (Figure 2.1). The caption shall be placed below the figure and a space shall be maintained between the figure and the caption. There shall also be a space between the figure and the text of the chapter. Figure captions should be smaller in size than the text of the chapter (recommended font is Times New Roman 11 pt).
7. Tables should be numbered similarly to figures: in chapter 1 - Table 1.1, Table 1.2, etc., in chapter 2 - Table 2.1, etc. The caption shall be placed above the table. Captions to the tables should be smaller in size than the text of the chapter (recommended font is Times New Roman 11 pt). Tables should be in a similar style/layout throughout the work. In the case of tables that do not fit on one page, the heading should be repeated on the following page.
8. Formulas should be numbered in the same way as figures and tables - the first formula in the first chapter is numbered 1.1, the second 1.2, etc. The formula number (in regular brackets) should be aligned to the right margin and the formula - centred. Space should be maintained between the formula and the text of the chapter. Numerical values and symbols representing constants should be written in normal typeface, and variables in italics, which applies to the entire text of the thesis.
9. A system of footnotes is obligatory in diploma theses. It is recommended that the following rules for footnotes be adopted:

- a book

Initials of name and surname of author(s), *Title of a book (in italics)*, publishing house, city, year, page(s).

For example:

J. Kowalski, *Zarządzanie jakością w przedsiębiorstwie*, Wydawnictwo naukowe PWN, Warszawa 2021, p. 29-32.

- a scientific article

Initials of name and surname of author (s), *Title of an article (in italics)*, "Journal title" (in quotation marks) year, issue, page(s).

For example:

J. Kowalski, *Podmiotowość w zarządzaniu kapitałem ludzkim organizacji*, „Zarządzanie Zasobami Ludzkimi” 2021, no 3, p. 10-13.

- chapter in a collective work

Initials of name and surname of author (s), *Title of a chapter*, [in:] *Title of a monograph (in italics)*,

For example:

J. Wiśniewska, *Nowoczesne narzędzia zarządzania projektowego*, [w:] *Zarządzanie procesowe*, J. Kwiatkowski (red.), DIFIN, Warszawa 2020, p. 78-82.

- referencing the same source twice in a row

Ibid. p.

- referencing the same source that was mentioned earlier in the footnotes within a given part of the work (eg. a chapter)

Initials of name and surname of author (s), *The first two words of the title of a book or article or chapter*, op. cit., p. X.

For example:

1. J. Kowalski, *Podmiotowość w zarządzaniu kapitałem ludzkim organizacji*, „Zarządzanie Zasobami Ludzkimi” 2021, no 3, p. 10-13.

2. Other publication

3. Other publication

4. J. Kowalski, *Podmiotowość...*, op. cit., p. 12.

or

1. J. Kowalski, *Podmiotowość w zarządzaniu kapitałem ludzkim organizacji*, „Zarządzanie Zasobami Ludzkimi” 2021, no 3, p. 10-13.

2. Other publication

3. Other publication

4. J. Kowalski, *Podmiotowość...*, op. cit., p. 12.

- referencing internet resources requires the provision of the website address and the date of access

- *Title of a document* [An electronic document]. Access www.pb.edu.pl/nauka/ [12.12.2021].

For example:

J. Kowalski, *Podmiotowość w zarządzaniu kapitałem ludzkim organizacji* [Electronic document]. Access www.pb.edu.pl/nauka/ [12.02.2021].

- legal acts

Act of 17 January 2019 *The Banking Law Act* (Journal of Laws of xx, item xxx).

Regulation of the Minister xxxx of xxxxxxxxxxxx regarding xxxxxxxxxxxx (Journal of Laws of xx, item xxx)

The bibliography shall include an alphabetical list of the sources used. A separate list of literature (books, scientific articles) and internet sources is made.

For example:

Bibliography

1. Bugajska J., Makowiec-Dąbrowska T., Wągrowaska-Koski E., *Zarządzanie wiekiem w przedsiębiorstwach jako element ochrony zdrowia starszych pracowników*, „Medycyna Pracy” 2021, no 61(1).
2. Bugdol M., *Wartości organizacyjne. Szkice z teorii organizacji i zarządzania*, Uniwersytet Jagielloński, Kraków 2020.
3. Bylok F., Słocińska A., *Kapitał ludzki i intelektualny jako elementy kształtujące przewagę konkurencyjną organizacji. Wprowadzenie do tematyki*, [in:] *Współczesne oblicza kapitału ludzkiego i intelektualnego*, F. Bylok, A. Słocińska (red.), Politechnika Częstochowska, Częstochowa 2020.
4. Callaway P.L., *The Relationship of Organizational Trust and Job Satisfaction: An Analysis on the Diverse Conceptualizations of Trust in Scholarly Research on Business Relationship*, „Journal of Business Ethics” 2021, no 3.
5. Cameron K.S., Quinn R.E., *Diagnosing and Changing Organizational Culture*, John Willey& Sons, San Francisco 2020.

Internet sources

1. Brdulak H., *Zarządzanie różnorodnością jako model biznesowy*. Access <http://www.sgh.waw.pl/kolegia/kgs/publikacje> [23.04.2014].
2. Szymańska M., Wolski K., *Coaching i mentoring – pojęcia (nie)bliskoznaczne*. Access <http://www.rynekpracy.pl> [13.05.2014].