



**GRADUATE SCHOOL OF
NATURAL AND APPLIED SCIENCES**

GUIDELINES FOR WRITING GRADUATE THESIS

This Guide was approved by the Senate with the decision dated on 27 September 2019 and numbered 2018-2019/17.4D.



SEPTEMBER 2019

ELAZIĞ

PREFACE

The final stage of graduate studies carried out with great difficulty is to prepare the thesis booklet and defend it in front of a committee. It is also only possible to maintain the scientific knowledge gained in the graduate studies by writing a good thesis. Like every scientific report, theses have some standards and scientific writing rules. These standards and rules reflect the scientific working culture, discipline and ethical understanding of the institution where the thesis is prepared.

Graduate thesis and seminar booklet prepared in the departments of Graduate School of Natural and Applied Sciences, Firat University, must comply with the rules given in this Guideline. Thus, it is assumed that the theses to be submitted to the Graduate School will provide basic scientific standards and accurately reflect the research culture and discipline of the institution. Therefore, thesis that are not prepared in accordance with the rules given here are not accepted.

This Guide has been prepared by the Directorate of the Graduate School and has been audited by the Administrative Board of The Graduate School, the Board of the Institute and the University Education Commission, respectively, and then accepted and enforced by the University Senate with the decision dated 27.09.2019 and numbered 2018-2019 / 17.4D. It is therefore a legal obligation to prepare thesis booklets in accordance with this Guide. Although this obligation belongs primarily to the thesis author, it is also the responsibilities of thesis supervisor and the members of thesis evaluation committee. A careful examination of this manual before starting to write the thesis will minimize the errors and reduce material and moral losses.

It is clear that the use of visual materials and technological facilities will also minimize errors. For this reason, the MS Word .dotx template, LATEX template, PDF Forms, the use of add-ons such as Mendeley or EndNote as a citation method and sample thesis, which are suggested for thesis writing, were created and presented on the the official web site. It is strongly recommended that the students who are preparing their thesis visit the <http://fbe.firat.edu.tr> website, examine the “Thesis Writing Toolbox”, and use the appropriate tools.

We would like to express our gratitude to all of our stakeholders, especially the members of the Administrative Board of the Graduate School, who have contributed to the preparation of this Guide and shared their valuable thoughts with us. We hope it would be useful for our students.

Directorate of Graduate School

ELAZIĞ, 2019

TABLE OF CONTENTS

	Page
PREFACE	ii
TABLE OF CONTENTS	iii
ABSTRACT	iv
ÖZET	v
LIST OF FIGURES	vi
LIST OF TABLES	vii
LIST OF APPENDICES	viii
SYMBOLS AND ABBREVIATIONS	ix
1. INTRODUCTION.....	1
1.1. Writing Language of Thesis	1
1.2. Ethical Principles	1
1.3. Layout of Thesis	3
1.4. Scope of Sections	3
2. GENERAL WRITING RULES	6
2.1. Paper, Reproduction and Binding	6
2.2. Page Margins	6
2.3. Configuring Headings.....	7
2.3.1. Chapter Captions (Heading 1).....	7
2.3.2. Section and Subsection Headings (Heading 2 and 3)	7
2.4. Writting Layout and Font Properties	8
2.4.1. Paragraph Structure	8
2.4.2. Page Numbers	10
2.4.3. Symbols, Units and Abbreviations	11
2.5. Use of Figures and Tables	11
2.5.1. Placement	11
2.5.2. Labeling (Numbering).....	11
2.5.3. Captions.....	12
2.5.4. Before and After Blank Lines	12
2.6. Equations	13
2.7. Quotation and Footnotes.....	13
2.8. Citations in Text	14
2.8.1. Numbering Method	14
2.8.2. Surname-Year Method	15
2.9. Creating Lists and List Layouts.....	16
2.9.1. List of Figures, Tables and Appendices	16
2.9.2. Symbols and Abbreviations.....	16
2.9.3. List of References.....	17
2.10. Appendix and Curriculum Vitae.....	19
3. THESIS LAYOUT AT A GLANCE.....	20
4. PROCEDURE FOR THE SUBMISSION OF THESIS	22
4.1. Procedure for Master's Thesis: First and Last States.....	22
4.2. The Procedure for Doctoral Thesis Submission: First and Last States	23
APPENDIX	24

ABSTRACT

Guidelines for Writing Graduate Theses

Name SURNAME

Master's Thesis (or Seminar) / Doctoral Thesis (or Seminar)

FIRAT UNIVERSITY

Graduate School of Natural and Applied Sciences

Department of.....

September 2019, Pages: ix + 47

The results obtained from scientific studies and the information produced can only be brought into the society by means of a report in compliance with international standards. Such reports reflect not only their content but also their compliance with the writing rules, reflecting their authors' meticulousness and adherence to ethical rules, and even reflect the scientific working culture, discipline and ethical understanding of the institution or organization in which it is prepared.

This guide published by the Graduate School of Natural and Applied Sciences, Firat University, has been prepared in order to create the rules required for the writing of master's and doctoral theses and seminar booklets. In accordance with the relevant regulations, the theses and seminar booklets to be submitted to the Graduate School must have the characteristics defined in this Guide.

In the Guidelines, a thesis is defined in four parts: Front Pages, Front Sections, Main Sections and last Sections. The formal structure of each page and section is defined in detail and the qualifications of the sections are stated.

Keywords: Thesis writing guide, Chapters of graduate thesis, MS Word .dotx template, LaTeX template, Mendeley, EndNote

ÖZET

Lisansüstü Tez Yazım Kuralları

Adı SOYADI

Yüksek Lisans Tezi (Semineri) / Doktora Tezi (Semineri)

FIRAT ÜNİVERSİTESİ

Fen Bilimleri Enstitüsü

..... Anabilim Dalı

Eylül 2019, Sayfa: ix + 47

Bilimsel çalışmalardan elde edilen bulguların ve üretilen bilgilerin yaygın etkisinin sağlanması ancak uluslararası standartlara uygun bir raporlama ile mümkündür. Bu tür raporlar sadece içeriği bakımından değil aynı zamanda yazım kurallarına uygunluğu da dikkate alınarak, yazarlarının titizliğini ve etik kurallara bağlılığını, ayrıca, hazırlandığı kurum veya kuruluşun bilimsel çalışma kültürünü, disiplinini ve etik anlayışını da yansıtır.

Fırat Üniversitesi Fen Bilimleri Enstitüsü tarafından hazırlanan bu Tez Yazım Kılavuzu, yüksek lisans ve doktora tezlerinin ve seminer kitapçıklarının şekil ve içerik bakımından sahip olması gereken kuralları içermektedir. Yönetmelikler gereğince Enstitüye sunulacak tez ve seminer kitapçıklarının bu kılavuzda tanımlanan kurallara uygun olarak hazırlanması zorunludur.

Bu kılavuzda bir tez; Ön Sayfalar, Ön Bölümler, Ana Bölümler ve Son Bölümler olmak üzere dört kısımda tanımlanmıştır. Her sayfanın ve bölümün şekilsel yapısı detaylı olarak tanımlanmış ve bölümlerin sahip olması gereken nitelikleri ifade edilmiştir.

Anahtar Kelimeler: Tez yazım kılavuzu, Lisansüstü tez bölümleri, MS Word .dotx şablonu, LATEX şablonu, Mendeley, EndNote

LIST OF FIGURES

	Page
Figure 2.1. Page margins for A4 (a) portrait (normal) and (b) horizontal use	6
Figure 2.2. Configuring chapter and section headings.....	8
Figure 2.3. Paragraph settings in MS Word word processing program for paragraph texts to be used in Pre-Chapters such as Preface, Table of Contents, Abstract, etc.	9
Figure 2.4. Paragraph settings in MS Word word processing program for paragraph texts from Introduction to References	10
Figure 2.5. Overlay of a figure on a page and in text.....	12
Figure 2.6. Layout of equations	13
Figure 2.7. Example for a quotation	13
Figure 2.8. Example for a footnote	14
Figure 2.9. Some examples according to the Surname-Year Method for a single-author and multi-author citations and multiple references	16

LIST OF TABLES

	Page
Table 3.1. Basic features of thesis layout	21

LIST OF APPENDICES

	Page
APPENDIX-1: Sample Thesis with Annotations	24
APPENDIX-2: Frequently Faced Errors.....	45
APPENDIX-3: Checklist for Writing Rules	46

SYMBOLS AND ABBREVIATIONS

Symbols

A4	: 210 mm x 297 mm sized paper
pt	: The unit of measurement for dot (pixel) size is 1 pt = 0.3527 mm.

Abbreviations

SPC	: Refers to a blank line left with a size of 10 pt and single line spacing
LATEX	: A word processing (writing) program
CWNS	: Citing with the number system
FSEC	: Front sections
CWSYS	: Citation with Surname-Year system
TWG	: Thesis writing guide
TDK	: Turkish Language Society
TÜBİTAK	: The Scientific and Technological Research Council of Turkey
YEK	: Publication Ethics Committee

1. INTRODUCTION

This guide has been prepared in order to comply with the principles of scientific data presentation and to set standards in the preparation of master's and doctoral theses and seminar booklets within the scope of graduate education carried out in the departments of the Graduate School, Firat University. Theses and seminar booklets to be submitted to the Graduate School (before defense, paperback) and final (after defense, hardcover) should be prepared according to the rules specified in this Guide in terms of form and content. Theses and seminars that will be prepared after the publication of this guide must comply with the rules and examples given in this guide, not the thesis samples prepared in previous years. The Graduate School cannot be held responsible for any material or moral losses caused by misapplication that does not comply with the rules in this Guide, and the responsibility lies with the author.

1.1. Writing Language of Thesis

Writing language of thesis is primarily Turkish for the theses prepared in the department where the education language is Turkish. Theses to be written in Turkish should be based on the Turkish Language Association (TDK) spelling guide. In the narration, the passive voice ('... has been found.' or '... has been realized.' etc.) should be used instead of the first singular person ('I found ...' or 'I did ...' etc.). If accepted by the Administrative Board of the Graduate School, a thesis can be written in English. In this case, the thesis proposal should be prepared in English.

In the department, where education language is English, thesis writing language is English.

1.2. Ethical Principles

Some of the unethical behaviors defined in Article 9 of the Regulation of TUBITAK Research and Publication Ethics Board are given below:

- a) **False:** Present, report or publish imaginary data,
- b) **Distortion:** Modifying or altering the results of research instruments, procedures or records in order to obtain different data,
- c) **Stealing:** Using others' ideas, methods, data, writings and forms as if they were their own without proper reference or permission from their owners,
- d) **Republishing:** Attempting to publish or to publish the same research results more than once,
- e) **Slicing:** Attempting to publish or to publish a large number of publications in a way that the results of a research are being dissected improperly and disrupting its integrity,
- f) Although it is mandatory, in presentations or publications containing the results of the researches supported by institutions or organizations, not to mention the contributors,

- g)** To include or exclude individuals who do not have active contributions among the authors, to change the order of the author in an unjustified and inappropriate manner, to remove the names of those who have active contributions in subsequent publications, to include the name among the authors by using their influence even if they do not actively contribute.
- h)** In the presentation or publication of the results of researches conducted with more than one researcher, to remove their names without the approval of the contributors, or to add author(s) who do not deserve the title of authorship, or to improperly arrange the author's ordering,
- i)** Quoting from own research without proper referencing,
- j)** Not using the resources provided by the authority in a manner contrary to its purpose or duly,
- k)** To publish data obtained without the explicit consent of the participants in the surveys or attitude researches conducted within the scope of a scientific study or without the permission of the institution if the research is to be conducted in an institution,
- l)** Not obtaining the written permission of the competent units in researches and experiments before the start of the studies,
- m)** Research in legislation or working contrary to the relevant provisions of international conventions to which Turkey is a party,
- n)** Failure to comply with the obligation of researchers or authorities to inform and warn those concerned about possible harmful practices in connection with scientific research,
- o)** To use data that is not actually, or that is falsified in scientific researches, to falsify research records or data obtained, to show the unused devices or materials as if used in the research, to distort or shape the results of the research in line with the interests of the people and organizations supporting the study,
- p)** To depict others' original ideas, methods, data or works as their own work, partially or wholly, without reference to scientific rules,
- q)** To claiming an ethical violation as delusive or unsubstantiated,
- Also; Pseudonyms (coding) should be used instead of real names, as the use of real names may harm individuals or institutions/organizations or cause unfair benefits. Trade names and trademarks, institution/organization names cannot be clearly written.

Some of the ethical principles listed above are also defined in Article 53 of the Law No. 2547 on Disciplinary and Criminal Affairs and require criminal proceedings against those who violate the law. It is primarily the responsibility of the thesis author to ensure compliance with ethical principles in writing thesis and the process of converting the thesis into publication. It should be noted that the thesis supervisor is also a partner in this responsibility.

It should not be underestimated that a written Ethical Statement from the thesis author should be requested during the first submission of the thesis to the Graduate School.

1.3. Layout of Thesis

The thesis booklet is handled in 4 parts. These parts are listed below:

1) Front Pages	(Numbers are hidden on pages)
• Cover Window Page	(No page number and count as pages)
• Inner Cover	(page i, the number is hidden)
• Approval Page	(page ii, the number is hidden)
• Declaration Page	(page iii, the number is hidden)
• Dedication Page	(It is optional. If used, page number is iv and hidden)
2) Front Sections	(The pages are numbered as “iv, v, vi, vii, etc. and appear)
• PREFACE	
• TABLE OF CONTENTS	
• ABSTRACT	
• ÖZET	
• LIST OF FIGURES	
• LIST OF TABLES	
• LIST OF APPENDICES	(List of Appendices is created if suppl. Section exists)
• SYMBOLS AND ABBREVIATIONS	
3) Main Sections (Chapters)	(Pages are numbered as “1, 2, 3, 4, etc.”)
• 1. INTRODUCTION	(Mandatory Headings)
• 2. OPTIONAL CAPTION	(Optional Chapter)
• 3. OPTIONAL CAPTION	(Optional Chapter)
• 4. MATERIAL AND METHOD	(Mandatory Headings)
• 5. RESULTS AND DISCUSSION	(Mandatory Headings, can also be only RESULTS)
• 6. CONCLUSIONS	(Mandatory title, can be DISCUSSION AND CONCLUSIONS)
4) Last Sections	(Page numbers continue from the previous section)
• RECOMMENDATIONS	(Mandatory, Headings do not include list numbers)
• REFERENCES	(Mandatory, Headings do not include list numbers)
• APPENDIX	(Optional)
• CURRICULUM VITAE	(Mandatory, No page number)

The pages and chapters of the thesis should be in the order given with the list mark “●” above. Main Sections start with 1. INTRODUCTION and ends with CONCLUSIONS. There is no separate discussion section. MATERIAL AND METHOD headings should be included in the thesis. The APPENDIX Section may be used if necessary. The list numbers of the headings RECOMMENDATIONS, REFERENCES and APPENDIX are not included. The Dedication page is optional and is limited to 3-4 words. The last page of the thesis booklet is “CURRICULUM VITAE” page and prepared according to the sample (See Appendix-1).

1.4. Scope of Sections

The basic features of the Preface, Summary and Introduction are the general characteristics and the standard for all sciences. The characteristics of the other parts may be changed due to the scientific cultures of the departments. Thus, the main characteristics of the sections are given here.

Preface: The first paragraph should give information about the importance, difficulties, limits and motivation factors of the thesis subject. This information should be written improvised by the thesis author and should not be quoted. If necessary, 2-3 short paragraphs can be formed. In a new paragraph following this information, it should be acknowledged first to the persons, institutions, or organizations that contribute directly to the thesis studies and then to other contributors indirectly, stating the contributions clearly.

In the last paragraph of the preface text, the institutions / organizations providing financial support and / or written permission to the thesis studies are acknowledged by specifying the relevant letter and protocol numbers.

Abstract: The importance of the subject and the purpose of the thesis should be given in the first 1-2 sentences, then the findings should be presented briefly with the method used. Finally, the information produced should be expressed briefly. At the bottom of the abstract, there should be at least 3 (three) and max. 6 (six) keywords that describe the subject. The abstract should not exceed 250 words, and the use of figures, tables, citations, superscripts, equations and symbols should be avoided.

Introduction: The subject of the thesis, importance, problem, main purpose of the thesis, hypotheses and / or assumptions developed for the solution of the problem are given priority in the diagnosis of general concepts. Then, the studies carried out by other researchers, literature information is included. It is important for the reader that most of the resources used in the thesis work are given in this section. The last paragraph of the INTRODUCTION should be focus on the thesis and provide a brief information about the studies.

Material and Method: Materials used (materials, devices, maps, terrain, computer programs, etc.) and methods (experimental systems, theoretical approaches, surveys, analysis methods, etc.) are presented in this section. Information that is not used in the thesis study, which does not support the achievement of the results and does not contribute to the verification or refutation of hypotheses should not be given. Between the Introduction Section and the Materials and Methods Section; up to two main headings related to literature information, material or method may be used.

Results: This is the section where the raw data produced and analyzed only from the thesis work is presented in tables, graphs and/or equations in a way that will establish logical relations between the obtained data and the hypotheses of the thesis. If subheadings are used, the rationale for using the subheading (perhaps repeating a hypothesis) should be given as text. In this section, data is given without comment or conclusions. This section can also be presented under the caption of Results and Discussion. In this case, discussions are

made with the results presented. Discussions should be conducted not only with personal comments but also with the conclusions of other researchers by citation. The use of certain judicial sentences in discussions should be avoided.

Discussion and Conclusions: It is the chapter where the data and analyzes presented in the Results section are interpreted and discussed with the support of the literature, the results confirming or refuting the hypotheses are examined. Also, the information produced from the studies is presented clearly (maybe in items). There should be no discussion without literature support.

Recommendations: The study plans, hypotheses or assumptions that may be useful in the future for the reader or even the thesis author, which are not available during the thesis studies or that come to mind should be listed in this section.

References: The major works and current references related to the thesis subject should be included. All references presented in this section must be cited in the main text of the thesis. It is an important part of ethical violation, so be careful!

Appendix: Information, documents, data, computer codes / flowcharts or equation inferences, which are produced for supporting the findings and which are not analyzed, will disrupt the flow of the subject and confuse the reader if it is given in the thesis text should be presented in the Appendix. The annexes used should be mentioned in the thesis text together with the label numbers.

- In the main structure of the thesis, the chapters “1. Introduction” and “Materials and Methods” are mandatory. A maximum of 2 (two) chapters can be used between them. In this case, the captions of these chapters should be designed to represent literature or materials and/or method.
- Results and Discussion can be prepared under one chapter. In this case, the chapter Conclusion should be prepared separately. An independent Discussion chapter should not be prepared.

Total Number of Pages of Thesis

It is not possible to make a total page limitation for a thesis. It is seen that the master's theses prepared in the fields of science and engineering are in the range of 40 - 80 pages in the world and in the range of 60 - 180 pages for the doctorate theses. These pages may be considered reasonable taking into account the duration of graduate studies. The point that should be considered here is not the total number of pages of the thesis; the number of pages used for Results and Discussion and Conclusions Sections should be the ratio of the number of pages used for Introduction and Materials and Methods. For a thesis that will not bore the reader, it is recommended that this ratio be at least 1 (50-50%). If your results and discussion depth increases, the ratio will increase and will be considered as a good sign for the thesis structure.

2. GENERAL WRITING RULES

MS Word, LaTeX or a computer program which can provide the rules of writing should be used in writing the thesis. During the thesis writing process, the templates and examples in the “Thesis Writing Toolbox” on the Graduate School’s website (<http://fbe.firat.edu.tr>) can be used.

Theses accepted before publication of this Guide should not be used as an example!

2.1. Paper, Reproduction and Binding

Theses should be printed on white paper with a size of 210 mm x 297 mm (A4) and 80-90 g/m². All printouts must be from a laser printer, all text (including figures and tables) in black, only one side of the paper used, or from the original printout with quality (1-2 levels of dark) and 1/1 scale copy (without enlargement or reduction) should be replicated. The bound booklet (after cutting) of the thesis should not be smaller than 208 mm x 295 mm.

The skin cover must be obtained from the Graduate School!

2.2. Page Margins

Page margins should be set to 3 cm from the top of the paper, 3.25 cm from the left edge, 2.5 cm from the other edges. If a horizontal page is required; the same margins should be kept and the text block, figures and tables should be placed in such a way that the thesis can be read by turning clockwise (to the right). The arrangements are shown in Figure 2.1 (a and b). Figures, tables and text should never exceed to the margins. There should be no blank pages in the thesis!

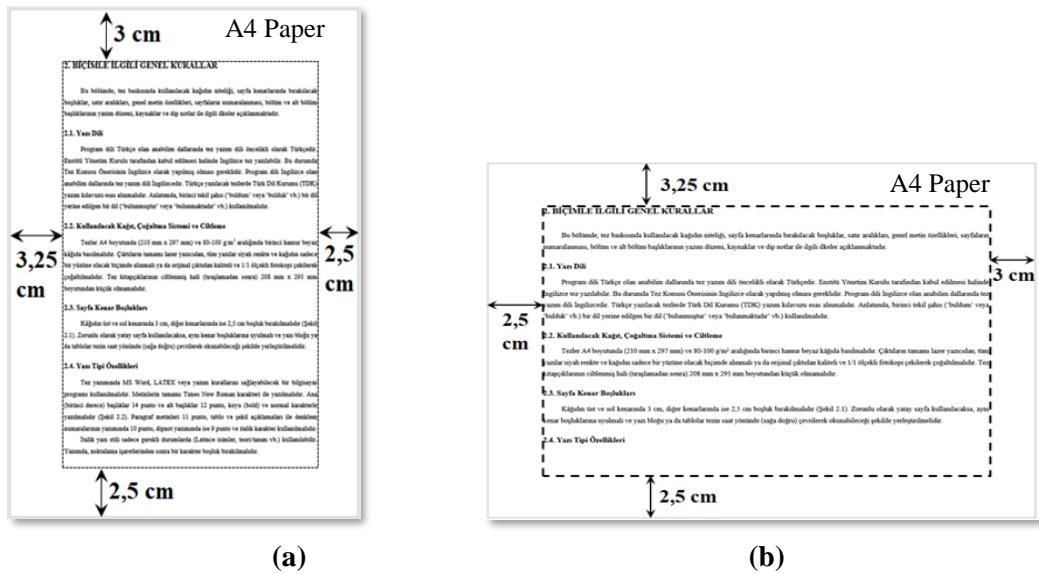


Figure 2.1. Page margins for A4 (a) portrait (normal) and (b) horizontal use

2.3. Configuring Headings

In designing the sections and sub-sections, unnecessary details should not be elaborated, a logical partitioning should be followed and the attention and priority between the sections and sub-sections should be considered.

- After any headings, you should not switch to another subtitle without giving any information or using text. In addition, subsection headings should not be created for a few sentences.
- Punctuation or characters should not be placed at the end of any headings.
- The first letters of the conjunctions “and, or, etc.” or articles like “the, a, an” in all headings must be written in lower case.

2.3.1. Chapter Captions (Heading 1)

Front pages headings is 16 point, bold, “small-caps” is selected (if the first letter is capitalized, the others are written in small letters, then automatically appears large when the “small-caps” font is selected in the Font Type tab of MS Word processor), centered on the page, without list number (no sequence number at the beginning)) is written on a single-spaced line. There are no spaces before, followed by 2 lines with a single spacing of 10 point (24 pt in total).

In the main text, the chapter captions are written in the same style as the front pages headings but include the list number first. Heading numbers are left justified (no left indent), the caption starts with 1 cm left indent. RECOMMENDATIONS, REFERENCES and APPENDIX Captions should be written with bold characters and without list number (see Figure 2.2).

Chapter captions should start on a new page and the page numbers should be hidden.

2.3.2. Section and Subsection Headings (Heading 2 and 3)

In the subheadings, double, triple numbering system should be used. Subheading numbers more than third degree should not be used. If at least two lines of text cannot be written to the same page after writing the subsection caption, the subsection should be shifted to the next page. In all subsection headings, the first letter of each word is written as uppercase and then lowercase. The first letters of the connectors like as “and, or, with, etc.” are written in lower case.

The headings 2 (section) are written in 12 font size and bold. There is no left indent. Single line spacing is set. 10 point single spacing 2 lines (24 pt) between the previous text and 10 point single spacing 1 line (or 12 pt) between the preceding text should be left. The font size is 11 point in the headings 3 and other features are the same as the heading 2.

Sample of Heading 4

Heading 4 is not numbered and is not shown in the TABLE OF CONTENTS.

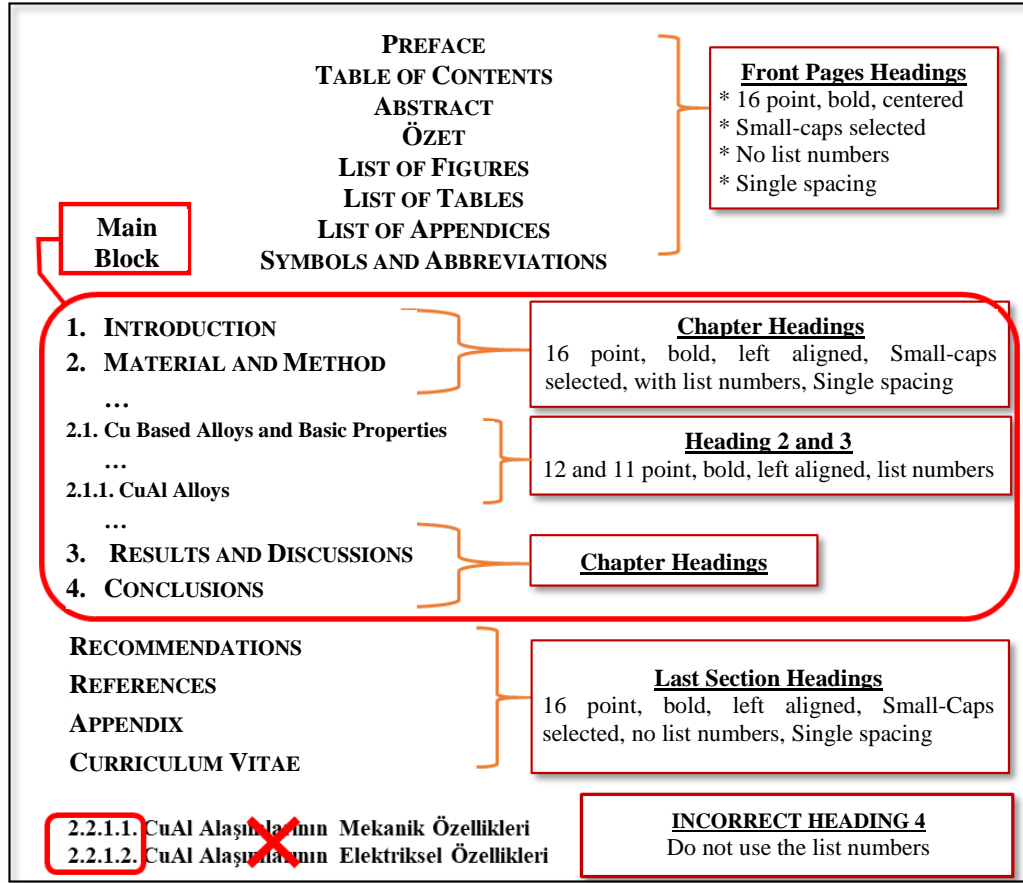


Figure 2.2. Configuring chapter and section headings

2.4. Writing Layout and Font Properties

- Main text character of the thesis is “Times New Roman, 11 point, 1.5 spacing, and aligned two sides. The text of Front Pages, Front Sections and Appendix is used in 10 point size and 1.25 line spacing.
- Cover Window, Inner Cover, Approval and Declaration pages should be prepared in accordance with the samples given at the end of this Guide in terms of writing order and font features.

2.4.1. Paragraph Structure

In all paragraphs, lines should be written in two-sided justified format. In the text, the end of the line should not be broken. Type one space after punctuation. The first line of all paragraphs should start with 1 cm paragraph indent from the left and no spaces should be left between the paragraphs. However, paragraph indentation should not be used in Abstract text and 6 pt space should be left between paragraphs.

Italic typeface can be used only when necessary (Latin names, new concepts, etc.). All texts should be in black color, and if not required, there should be no colored text in tables and figures.

Corrections

All revisions and changes to be made on the text should be made electronically. There should not be any scraping, erasing and scribbling on any page of the thesis, and correction should not be made by hand or by using writing correctors. Theses with such corrections are not accepted.

Front Sections

The paragraph text in the sections PREFACE, TABLE OF CONTENTS, ABSTRACT, ÖZET, LIST OF FIGURES, LIST OF TABLES, SYMBOLS AND ABBREVIATIONS is written with 10 point Times New Roman font and 1.25 line spacing, set to zero “before and after” spacing (Figure 2.3).

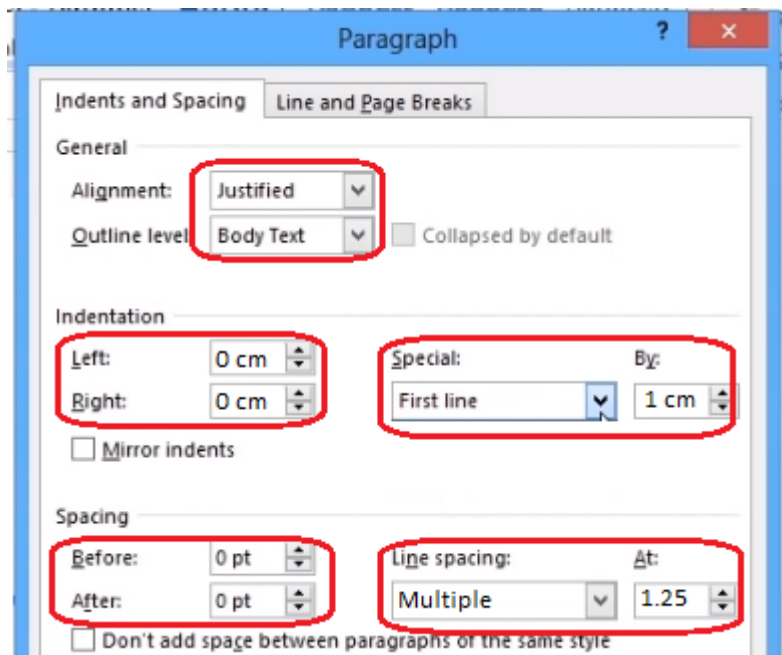


Figure 2.3. Paragraph settings in MS Word word processing program for paragraph texts to be used in Pre-Chapters such as Preface, Table of Contents, Abstract, etc.

Main Sections

Paragraphs in all chapters from INTRODUCTION to REFERENCES should be written in 11 Point Times New Roman font and 1.5 line spacing should be written in normal writing style. The paragraph settings required for this are given in Figure 2.4.

Figures and table captions should be written in 10 Point Times New Roman font and single line spacing. For details, see the relevant sub-headings.

In the theses of the Departments of Mathematics and Statistics; Definition and Lemma expressions should be written in plain form and *Example* and *Proof* is italic.

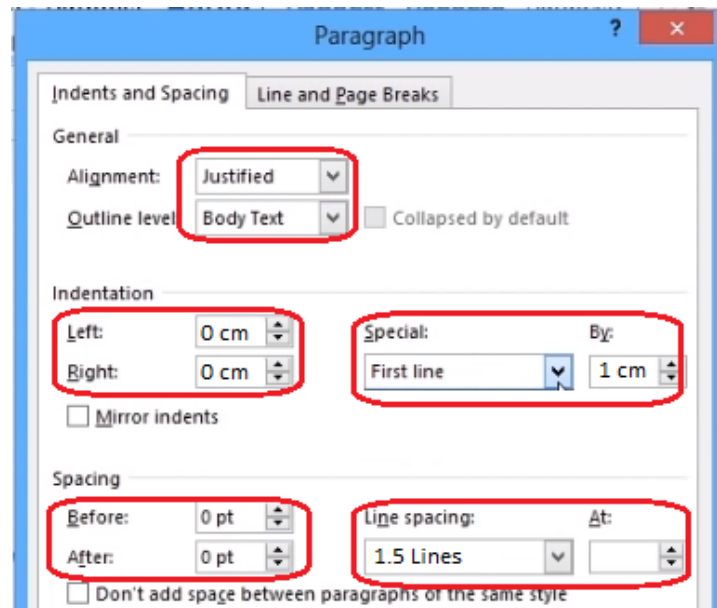


Figure 2.4. Paragraph settings in MS Word word processing program for paragraph texts from Introduction to References

Last Sections

Final Sections should be written with the same characteristics as the Main Sections. However, the font characteristics of the REFERENCES section should be followed in the relevant subsection.

2.4.2. Page Numbers

Page numbers should be given in Times New Roman font and 10 Point, at the bottom of the page, in the middle and 1.5 cm above the bottom edge of the page.

Using horizontal pages mandatorily, the page number should be centered at the bottom of the page in the upright position of the paper, as with any other page.

Cover page and CV page are not counted as part of the pages of the thesis.

Inner Cover is page “i”, but the page number is hidden. The Approval page, Declaration and Dedication pages, if any, are also counted and their numbers are hidden. Preliminary Sections (PREFACE, TABLE OF CONTENTS, ABSTRACT, ÖZET, LIST OF FIGURES, LIST OF TABLES, LIST OF APPENDICES if available, SYMBOLS AND ABBREVIATIONS) are counted in small Roman numerals such as “iv, v, vi, vii, ... etc.” and their numbers are shown on the page.

The main text of the thesis, which begins with the INTRODUCTION section, is numbered with the Latin numbers “1, 2, 3, 4, ... etc.” until the end of the thesis. Numbers are hidden on the first pages of chapters.

The numbers of Appendices pages follow the previous chapter and the numbers appear on the page.

2.4.3. Symbols, Units and Abbreviations

SI unit system should be taken as basis for the units, the same standards should be used for the symbols of the units and no dot should be placed at the end of the symbol indicating the unit.

Symbols that are not used often in the research field or are used for the first time in the thesis should be listed in the SYMBOLS AND ABBREVIATIONS section.

For expressions consisting of more than one word which are used in the thesis, abbreviations can be made by using initials when necessary. Such abbreviations should be written clearly in the first place in the text and given in brackets. All of the abbreviations should be listed in alphabetical order under the SYMBOLS AND ABBREVIATIONS section.

Title of the thesis should not include any abbreviations.

2.5. Use of Figures and Tables

Each figure or table used in the thesis must be mentioned in the text before their placed point, using their labels.

These are visual materials that support the text. Figures or tables not mentioned in the text have no scientific meaning.

All visual materials used in the thesis should be named as Figure; different names such as photographs, charts, graphics, maps should not be used.

Shading, line coloring and colored text should not be used unless necessary. Line density should be reduced as much as possible and the use of vertical lines should be avoided.

2.5.1. Placement

Figures and tables should appear after the sentence mentioned in the text and if possible on the same page, not on the next page. Tables longer than one page should be divided at a suitable place in a page size and the following parts should be given on the next page s with the same table label and “continued” word in parentheses such as “Table 2.1. (Continued)”. Tables and visual materials that prevent the reading flow or structure of the thesis can be given in APPENDIX section. All objects, figures and tables should be centered on the text margins without left indent and should not exceed the margins. The text in figures and tables should not be less than 9 Point.

2.5.2. Labeling (Numbering)

Figure and table labels should start with the chapter number and they should be listed in series in a sequence in the chapter (Examples: Figure 1.1., Figure 1.2., ...; Figure 2.1., Figure 2.2., ...; Table 1.1., Table 1.2., Table 2.1. – to be bold). 3-Digit numbering such as ~~Figure 2.1.4~~ should not be used. After the label, a “Tab” should be and then captions should be written.

2.5.3. Captions

The labels and captions of the figures should be under the figure and on the top for the tables. Labels and captions should be written in 10 Point, Times New Roman and labels are bold. Single line-length captions of figures and tables should be centered on the text margin, captions more than one line should be justified to two sides, and the second line should be indented after the labels (Paragraph → Custom: Hanging adjusted to 1.85 cm). Punctuation should not be used at the end of the figure and table captions. For all figures and tables taken from another research, exactly or modified, citations must be inserted into the captions.

2.5.4. Before and After Blanks

Before and after the table, 10 point-single spacing, 2 lines of space (24 pt) should be left. However, for the figures at the beginning of the page and the tables at the end of the page, this space is not allowed. After the figure captions and before the table captions, two spaces are left (24 pt). Between the bottom edge of the figure and the caption and the table top line and the table caption, a 10-point spacing (10 pt) should be left (Figure 2.5).

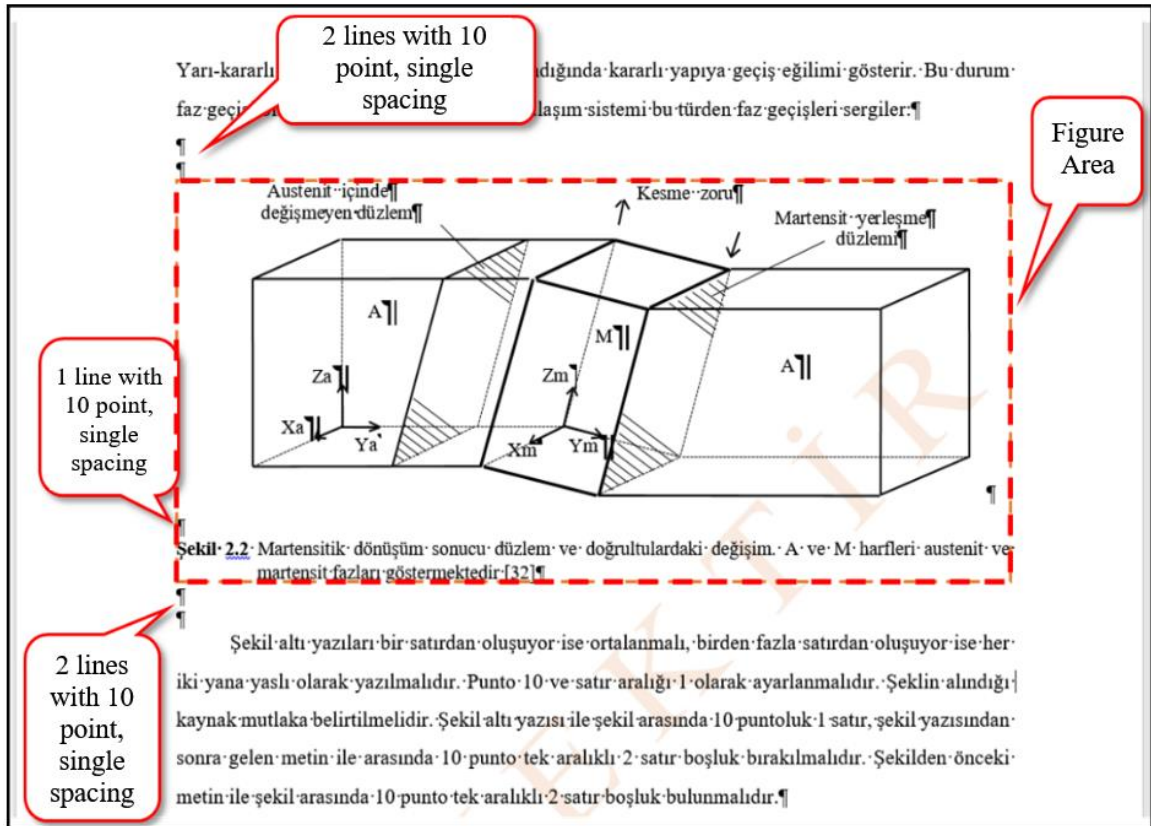


Figure 2.5. Overlay of a figure on a page and in text [23]

2.6. Equations

In the writing an equation, 11 point should be used. 10 point can be used for multi-line equations. Equations should be prepared with an equation editor program and should not be prepared in image format. One space (10 pt) is given between different equation lines in consecutive lines. The equation lines start with 1 cm indentation and the numbers are justified to the right. Before and after equation lines should be left a line with 10 point of single spacing (10 pt). Equations can be written centered for theoretical and mathematical densely theses.

Equation label numbers must be restarted within each chapter, and the first digit should represent the chapter number. Figure 2.6 shows some examples. In the examples, the number 2 in the label of Equation 2.1 represents the chapter number of the equation and the number 1 represents the sequence number of the equation in the same chapter.

$$(1 + x)^n = 1 + \frac{nx}{1!} + \frac{n(n-1)x^2}{2!} + \dots \quad (2.1)$$

$$i\hbar \frac{\partial}{\partial t} \Psi(\mathbf{r}, t) = \left[\frac{-\hbar^2}{2m} \nabla^2 + V(\mathbf{r}, t) \right] \Psi(\mathbf{r}, t) \quad (2.2)$$

Figure 2.6. Layout of equations

All symbols in the equations given in the thesis must be explained in the text in the place where they were first used. This rule is ignored in the thesis aimed to produce equations.

2.7. Quotation and Footnotes

If a paragraph or sentence taken from another source is intended to be quoted without changing the meaning and spelling, the entire quote is written in quotation marks “....”

An example of this quotation is given in Figure 2.7.

- Olhan (1997) expresses his thoughts on supporting organic agriculture as “The personnel who will provide consultancy services to the producers engaged in organic agriculture and make certification process should be trained”.

Figure 2.7. Example for a quotation

Information that distracts the subject and disrupts the reading flow can be given as a footnote at the bottom of the same page in several lines. Footnotes should not be longer than a few sentences and reference rules must be applied. However, footnotes are not recommended unless required.

Footnotes should be separated from the main text by a continuous line drawn from left to right to the center of the page, leaving two lines of space (20 pt) after the main text in the same page. It is numbered according to the order of touch in the page. The number must be given adjacent to a word or period using the superscript, and the footnote description must appear on the page where the reference takes place.

Footnotes should be written in Times New Roman, 9 pt, single spacing and *Italic* style. An example text for footnote usage is given in Figure 2.8.

As the temperature of a solid increases, the amplitude of the atomic vibrations increases and the average distance between the atoms increases¹. As a result, the substance expands (Serway and Beichner, 2000).

¹ *In fact, thermal expansion arises from the asymmetric geometry in the potential energy curves of atoms in solids. If the vibrations is fully harmonic, the average interatomic distance does not depend on the vibration amplitude.*

Figure 2.8. Example for a footnote

2.8. Citations in Text

The information obtained from any source and intended to be used in the text of the thesis, in any way; by changing your own sentences, summarized or as it is, must be used by citing the source from which the information is taken. Since the information in non-cited sentences is deemed to belong to the author, the absence of any reference to the information received from other sources is considered a violation of the code of ethics.

In the thesis or seminar writing, one of the Number Method or Surname-Year Method is preferred for the citation and the method chosen should be used in the entire thesis or seminar.

It may be useful to use ad-ons such as Mendeley or EndNote. In this case, the citation style to be used should be sufficient to provide the examples given in this Guide and the writing styles detailed below. This should be preferred if there is a Citation-Style-Language (or csl file) recommended by the Graduate School (on the official website).

2.8.1. Numbering Method

The citation sources should be given consecutive numbers starting with [1] where the first reference is cited. The citation numbers should be indicated in square brackets (for example: [1],

[2], [3,4], [2-5,7]). Consecutive citations should be given with a hyphen between the first and last numbers of the references such as [2-6], [3-9], in accordance with the following examples:

- [1] : 1 numbered reference in the References list
- [1, 3] : 1 and 3 numbered references
- [1-3] : 1, 2 and 3 numbered reference
- [1, 5, 7] : 1, 5 and 7 numbered reference
- [3-8, 13] : between 3 and 8 (3, 4, 5, 6, 7 and 8) and 13 numbered reference

Examples of citations in the text according to the Number Method:

- It has been suggested that light consists of energy packets with wave characteristics [1].
- According to Einstein [1], light is composed of energy packets with wave characteristics.

2.8.2. Surname-Year Method

In this method, the author's last name (first letter is upper case, the others are lower case) and the year in which the work is published are used. A comma should be placed after the author's last name. For example (Einstein, 1905). If more than one work is to be cited to in the same sentence, a semicolon should be added after the dates. If the reference itself could not be found, but taken from another publication; first the work it is cited on, then the parent in parentheses should be mentioned.

Example: According to Wendl'e (2012), heat conduction occurs in three different ways (Kahraman, 2018).

In the case of citations of works with two authors, they shall be cited as (Surname-1 and Surname-2, Year). When references with more than two authors are cited, the abbreviation "et al." should be used after the surname of the first author. If the works of the same author(s) are published in different years, they should be sorted from old to new. If the same author(s) are published in the same year, distinctive letters such as a, b, c should be used after the year. If there are two or more authors with the same surname, first names should be given before the surname.

In the case of citations to internet sources whose author is not known; the text should be cited as URL-sequence number (such as URL-1, URL-2, URL-3). In the case of citations to certain Internet sources, the Surname-Year system is used exactly.

Personal interviews are cited as (A. Surname, personal interview, 28 September 2020).

Some examples according to the Surname-Year Method for a single-author and multi-author citations and multiple citations are given in Figure 2.9.

- Thermal expansion in metals is associated with anharmonic atomic interactions (Landau, 1976).
- Landau (1976) associates thermal expansion of metals with anharmonic atomic interactions.
- According to Landau (1976), thermal expansion in metals is associated with anharmonic atomic interactions.
- There are many studies on phase transformations with the help of molecular dynamics simulations (Voter and Chen, 1987; Mishin et al., 2001; Kazanç and Özgen, 2008a; Çelik et al., 2013b).

Figure 2.9. Some examples according to the Surname-Year Method for a single-author and multi-author citations and multiple references

2.9. Creating Lists and List Layouts

Figures, tables, appendices, symbols, abbreviations and references used in the thesis should be listed on their pages. The References list is presented at the end of the thesis and the others in the front sections. If the Symbols and Abbreviations cannot fit in one page, the Symbols and the Abbreviations are prepared in sequential pages.

2.9.1. List of Figures, Tables and Appendices

Captions are 16 point, Times New Roman, single spaced, bold and centered (no left indent). The first letters are written in upper case and the others are lower case, but selecting “Small-caps” from the Font Settings makes the lower case appear upper case. Two lines with a single spacing of 10 point (20 pt) are given after the captions.

Labels in the list are written in bold and the captions are written normally. Page numbers are justified to right. Line spacing is 1.25.

In the lists, only the first sentence of the figure or table captions is used, and if there are citations, they are deleted in the lists. If there are (a) (b) (c) parts, only one line field is used in the object captions for listing.

Although there is no line limitation for figure and table captions in the text of thesis, a maximum of 2 (two) line caption should be used in their lists. The space between the labels and captions can be adjusted as (Indent - Custom - Hanging - 1.85 cm).

If there are no appendices in the thesis, the list of appendices is not used

2.9.2. Symbols and Abbreviations

In the page of SYMBOLS AND ABBREVIATIONS, the text should be written with 1 cm left indent and justified to the left with one expression on each line. Definitions or descriptions of symbols and abbreviations should be written after the longest of symbols or abbreviations followed by a character space followed by “:”. The left head of all definition and description should be

aligned vertically. If the symbols and abbreviations do not fit on one page, the abbreviations should be given on the next page under ABBREVIATIONS caption.

2.9.3. List for References

All citations in the text must be included in the REFERENCES and all references in the REFERENCES must be cited in the main text.

As a citation method, if the Number Method is used in the thesis, the references are listed in an order starting from [1] and continued. If Surname-Year Method is used, references are given in alphabetical order according to the surname of the first author and list number is also not used. In the References for both methods, references start from the left edge of the writing area and are written justified on both sides with 10 point and 1.25 spacing. In the Number Method, the identifier of each reference is started from the indented 1.25 cm (Hanging-1.25 cm setting) (after the number, a “Tab” space is inserted). In the Surname-Year Method, references are not listed with list numbers, justified to the left, and have the same indentations as the Number Method. In both method, 6ptspaces are left between each reference lines (Paragraph → Spacing: After = 6 pt). This allows each reference to be easily shown.

Applications or add-ons such as Mendeley or EndNote can be used to prepare the References and citation in the text easier. It is recommended to use the tools provided on the Graduate School website (<http://fbe.firat.edu.tr>) for the use of these materials.

In order to prepare the References list, there are different styles for different type of works such as an article in periodicals, books, papers in proceedings, theses, etc. General styles are illustrated below:

Articles in Periodicals

- [X] Author last name, first letter of author first name., (Year). Title of the Work, *Journal Name*, Volume (No), First page-last page of work. If available DOI.
- [1] Thamburaja, P.; Anand, L. (2001). Polycrystalline shape-memory materials: effect of crystallographic texture, *Journal of the Mechanics and Physics of Solids*, Vol. 49, 709–737.
- [2] Watanabe, T. (2011). Grain boundary engineering: Historical perspective and future prospects, *Journal of Materials Science*, Vol. 46(12), 4095–4115. doi:10.1007/s10853-011-5393-z

Books

- [4] Nishiyama, Z. (1978). *Martensitic Transformation*, Academic Press, New York
- [5] Dikici, M. (1993). *Kristallerin Esneklik Özellikleri*, Ondokuz Mayıs University Press, Samsun

Proceedings

- [7] Karakuzu, R., Orhan, A. ve Sayman, O. (1992). Yarı dairesel çentikli kompozit levhaların elasto-plastik zorlamalar altında mukavemetlerinin artırılması, *V. Ulusal Makina Tasarım ve İmalat Kongresi*, METU, Ankara.

Thesis

- [10] Nelson, M.R. (1988). *Constraints on the seismic velocity structure of the crust and upper mantle beneath the eastern Tien Shan, Central Asia*, PhD Thesis, MIT
- [11] Kazanç, S. (2004). *Bakır Bazlı Alaşımlarda Termoelastik Dönüşümlerin Moleküler Dinamik Benzetimi*, PhD Thesis, Firat University, Graduate School of Natural and Applied Sciences.

Official Reports

- [13] Burke, W.F. ve Uğurtaş, G. (1974). *Seismic interpretation of Thrace basin*, TPAO internal report, Ankara.

Maps etc.

- [16] IOC-UNESCO, (1981). International bathymetric chart of the Mediterranean, Scale 1:1,000,000, 10 sheets, Ministry of Defence, Leningrad.

Standards

- [17] TS-40561, (1985). Çelik yapıların plastik teoriye göre hesap kuralları, Türk Standartları Enstitüsü, Ankara.

Personal Interviews

- [18] Sancar, A. (09 Mart 2019). Personal interview, Ankara.

Web Resources

- [19] Yeniden Yapılanma ve Norm Kadro, www.ogm.gov.tr/T.C. Orman Genel Müdürlüğü, Access: 11 March 2003.
- [20] Citation Styles, http://guides.library.uwa.edu.au/mendeley/citation_styles, Access: 12 Sept. 2019.
- [20] http://guides.library.uwa.edu.au/mendeley/citation_styles, Access: 12 Sept. 2019.

A sample References list prepared according to the Surname-Year Method is given below:

Author last name, first letter of author first name., (Year). Title of the Work, *Journal Name*, Volume (No), First page-last page of work. If available DOI.

Dikici, M. (1993) *Kristallerin Esneklik Özellikleri*, Ondokuz Mayıs University Press, Samsun

Karakuzu, R., Orhan A. ve Sayman, O. (1992). Yarı dairesel çentikli kompozit levhaların elasto-plastik zorlamalar altında mukavemetlerinin artırılması, *V. Ulusal Makina Tasarım ve İmalat Kongresi*, ODTÜ, Ankara.

Kazanç, S. (2004). *Bakır Bazlı Alaşımlarda Termoelastik Dönüşümlerin Moleküler Dinamik Benzetimi*, PhD Thesis, Firat University, Graduate School of Natural and Applied Sciences.

Nelson, M.R. (1988). *Constraints on the seismic velocity structure of the crust and upper mantle beneath the eastern Tien Shan, Central Asia*, PhD Thesis, MIT.

Nishiyama, Z. (1978). *Martensitic Transformation*, Academic Press, New York.

Salaramoli, H., Maleki, E., Shariatnia, Z., Ranjbar, M. (2013). CdS/CdSe quantum dots co-sensitized solar cells with Cu₂S counter electrode prepared by SILAR, *J. Photochem. Photobiol. A Chem.* 271, 56–64. doi:10.1016/j.jphotochem.2013.08.006.

2.10. Appendix and Curriculum Vitae

The last part of the thesis consists of Appendix and CV pages. The following rules apply to the preparation of these parts.

Appendix

The scientific supporting materials distorting the reading flow and disrupting the subject of the thesis, such as photographs, drawings, maps, experimental data, mathematical operations, computer codes and flowchart, audio or video files etc. can be provided in the APPENDIX.

Each material in Appendix should be labelled as APPENDIX-1, APPENDIX-2 etc. and followed by a caption. Each appendix should also be given on a new page. Each one can occupy more than one page (for example, 8-10 page computer codes or flowcharts). The paragraphs in the APPENDIX are written in 10 Point and 1.25 spacing. A separate APPENDIX cover page is not used. In a line following the APPENDIX caption, the first Appendix-1 label and its caption is given. Each supplementary material given in the APPENDIX should be mentioned in the main text of the thesis together with the labels and they should be listed completely under the LIST OF APPENDICES to be given in a new page following the LIST OF TABLES.

Appendices such as pictures, video, audio or computer programs or codes to be given electronically are prepared on a CD and a label containing annotations should be affixed on the CD. The CD should be put in a pocket (maybe an envelope) to be prepared on the relevant page of the APPENDIX.

Large-paged visual materials (maps, flowchart, etc.) to be given by folding are put in the pocket by the method specified for the CD.

Curriculum Vitae

The last page of the thesis consists of the academic CV of the thesis author. It must be in an official format and must not contain photographs or private information. General credentials of the author, foreign language, education, if any, work experience, academic research experience/skills, information systems experience, project experience and academic works should be written.

The publications or symposium activities carried out in order to provide the doctoral publication requirements must be indicated in the curriculum vitae. In addition, if the thesis studies have been carried out with the support of a project, these projects must also be indicated in the relevant field on the CV page.

It is recommended to follow the example given in Appendix-1 of the Guide in order to prepare the Appendix and Curriculum Vitae.

3. THESIS LAYOUT AT A GLANCE

In the preparation of the theses, the following basic rules should be strictly followed:

1. In thesis title and in abstract text, it is not recommended to include italic fonts, tables, figures, graphs, chemical or math formulas, symbols, superscripts, and other non-standard characters, since they are uploaded to the Database of National Thesis Center.
2. All theses should be printed on the paper with 210 mm x 297 mm (A4) size and 80-90 g/m² white paper with a laser printer and reproduced in 1/1 scale with the same quality by a photocopy.
3. For all pages, 3 cm from the top edge of the paper, 3.25 cm from the left edge, and 2.5 cm from the other edges should be left, but for the first four pages, 2.5 cm top and bottom.
4. All texts should be written in Times New Roman font and different fonts should not be used unless necessary (maybe allowed for a few words).
5. The first lines of all paragraphs begin with 1 cm indentation (except Özet).
6. All characters should be black, no colored text used unless necessary, including figures and tables.
7. All chapters and Front Sections start on a new page and their captions should be written with 16 point size and small-caps selected.
8. As a citation style, one of the Number Method or Surname-Year Method can be selected. However, only one is used in a thesis. The References should also be prepared in accordance with the preferred method.

PROCEDURE FOR THE SUBMISSION OF THESIS

1. Approval page is not included in the first submission of the thesis to the Graduate School. After the defense, the Approval page signed by the committee members with a blue ink pen is added to the thesis.
2. In the submission process, the theses with high similarity rates are returned to the author. These are not accepted until the similarity rates drop down to acceptable level defined by the Administrative Board of the Graduate School.
3. After defending successfully, a copy of thesis must be printed for the final submission and checked by the Graduate School control authority. Then 3 copies of bound theses are delivered to the Graduate School. Students who do not deliver their thesis within the maximum period of one month are dismissed from the Graduate School (See Chapter 4).

Most of the formal features of the thesis are given in Table 3.1. The thesis booklet can be prepared formally by following Table 3.1. However, this does not guarantee the suitability of the thesis content. It is the responsibility of the author to properly prepare the contents.

Table 3.1. Basic features of thesis layout

Thesis Pages and Order of Chapters	Captions, Writing and Page Numbering, Sections
<u>FRONT PAGES*</u> <ul style="list-style-type: none"> • Cover Window Page • Inner Cover • Approval Page • Declaration Page • Dedication Page (optional) 	<ul style="list-style-type: none"> • In the preparation of these pages the samples should be followed exactly • The window page is not assigned a number. Inner Cover is the page i, the subsequent pages continue in the same format, but the numbers are hidden • Thesis Approval page includes Jury members' Blue Ink wet signature • Dedication page is optional, it should not exceed 3-4 words and should be written vertically and horizontally on the page
<u>FRONT SECTIONS*</u> <p>PREFACE</p> <p>TABLE OF CONTENTS</p> <p>ABSTRACT</p> <p>ÖZET</p> <p>LIST OF FIGURES</p> <p>LIST OF TABLES</p> <p>LIST OF APPENDICES</p> <p>SYMBOLS AND ABBREVIATIONS</p>	<p>CAPTIONS</p> <ul style="list-style-type: none"> • Centered, 16 Point, bold, small-caps selected • Normal Typing (not italic) • Before and after 0 pt, Single spacing set • Two lines with 10 Pt-Single Spacing (20 pt) after the caption should be left • No list number <hr/> <p>TEXT</p> <ul style="list-style-type: none"> • 10 Point, 1,25 Spacing, Justified to two sides, Normal writing (not italic) • There should be no spaces between paragraphs (6ptspaces for Özet) • Pages are numbered as “iv, v, vi, vii, ... etc” and appear on the page <hr/> <p>CAPTIONS</p> <ul style="list-style-type: none"> • List numbered, 16 pt, Bold, Small-Caps selected, Single spacing • Justified to left (no left indent), • After captions, two lines each of 10 Pt.-Single Spacing should be left (24 pt) • The page number is hidden on the page of Chapter Captions <hr/> <p>TEXT</p> <ul style="list-style-type: none"> • 11 pt, 1.5 Spacing, Justified to two sides, Normal Type (not italic) • No space between paragraphs • Pages are numbered as “1, 2, 3, ...etc.” and 10 pt Times New Roman <hr/> <p>FIGURES, TABLES and EQUATIONS</p> <p>(Figures and tables must be mentioned in the text with their labels)</p> <ul style="list-style-type: none"> • Figure captions are written in 10 pt single spaced, with 1 space at the bottom edge of the figure. If there is text before the figure, 2 spaces (24 pt) are left between the text and the upper edge of the figure. If there is text after the figure caption, the text starts after 2 spaces (24 pt). Labels are written in bold. • Table captions are written with the same features as figure captions, but 1 space (10 pt) between the table upper edge and the table caption, if there is text before and after the table, it is spaced with 2 spaces (24 pt). Tags are written in bold. • Equations are written by the editor program, pictures (or images) are not accepted. A single spacing of 10 Point is left between the equations and paragraph texts with 1 blank line (10 pt). Equations are labelled with first chapter number then sequence number in that chapter like the figures and tables. The label numbers are justified to the right. Equations and numbers are written in 11 point. Equations can be written 10 point. <hr/> <p>CAPTIONS</p> <ul style="list-style-type: none"> • Left-aligned, Bold, 16 Point, Small-Caps selected • Regular text (not italic), No List number • After captions, two lines each of 10 pt.-Single Spacing should be left (24 pt) <hr/> <p>TEXT</p> <ul style="list-style-type: none"> • Recommendations 11 Pt., 1.5 Spacing, References and Appendices 10 pt., 1.25 Spacing, Justified to two sides, the page numbers continued as before • No page number on the CV page and it does not count as a page of thesis
<u>MAIN SECTIONS (CHAPTERS)</u> <ol style="list-style-type: none"> 1. INTRODUCTION 2. CAPTION (Optional) 3. CAPTION (Optional) 4. MATERIAL AND METHOD 5. RESULTS AND DISCUSSIONS 6. CONCLUSIONS 	
<u>LAST SECTIONS</u> <p>RECOMMENDATIONS</p> <p>REFERENCES</p> <p>APPENDIX</p> <p>CURRICULUM VITAE</p>	

* The layout of the Front Pages and Front Sections must comply exactly with the sample in this Guide.

4. PROCEDURE FOR THE SUBMISSION OF THESIS

The procedures for first and final submission of theses to the Graduate School are defined below. It has been recommended that Appendix-2 and Appendix-3 are examined by the authors.

4.1. Procedure for Master's Thesis: First and Last States

First Submission (FORM-40, -41, -42)

- One paperback printed copy of the thesis must be checked by the thesis control staff of the Graduate School. After given reproduction permission and the approval of the *Thesis Submission Form (FORM-41)* by the supervisor;

Until the thesis complies with the Guidelines, reproduction permission is not given

- 1) 6 (six) copies of thesis in plastic locked packages without binding, and one labeled CD containing electronic copy of the thesis in MS WORD and PDF format,
 - 2) *Thesis Evaluation and Defense Committee Members Form (FORM-40)* (prepared with supervisor). The date of the defense exam is offered as early as 30 (thirty) days later and
 - 3) *Ethical Statement Form (FORM-42)* delivered to the chair of the department.
- These documents (FORM-40, 41 and 42) and the board decision of the department are forwarded to the Graduate School by the chair of the department.

After the approval of the Administrative Board of the Graduate School;

- 4) Student should prepare the *Thesis Delivery Report to the Defense Committee Members (FORM-45)*.
- 5) Student should deliver the copies of the thesis to the committee members (**including the replacement members**) by signing FORM-45. Shipments for cargo or e-mail are given together with FORM-45. FORM-45 and its supplements should be submitted to the Graduate School within five working days.

Procedure for Final Submission and Graduation (Form-23, -45, -48, -13)

After successful defense,

- 1) One paperback printed copy of the thesis is checked by the thesis control staff of the Graduate School and the reproduction permission certificate and the covers are given by the Graduate School. Until the thesis complies with the rules specified in the Guidelines, reproduction permission is not given. Theses reproduced and bounded without the permission, are not accepted by the Graduate School.
- 2) After the permission for reproduction is obtained, **3 (three) bounded copies** of the thesis (Approval Page signed with a blue ink pen by the committee members),
- 3) *Academic Participant List (FORM-23)* (Thesis defense checkbox selected),
- 4) *Thesis Delivery Report to Committee Members (FORM-45)*,
- 5) *Thesis Final Check Form (FORM-48)*,
- 6) One labeled CD containing the final version of the thesis in PDF format and Turkish-English abstracts (in separate files),
- 7) National Thesis Center Data Entry Form, obtained from <http://tez.yok.gov.tr> ,
- 8) *Graduation Form (FORM-13)*

must be submitted to the Graduate School no later than one month after the defense exam. Students who fail to submit their documents and thesis within the maximum period shall be dismissed from the Graduate School. Documents of defense exam should be sent to the Graduate School by the chair of the department within 3 (three) business days following the defense exam.

4.2. The Procedure for Doctoral Thesis Submission: First and Last States

First Submission (FORM-40, -41, -42, -43)

- One paperback printed copy of the thesis must be checked by the thesis control staff of the Graduate School. After given reproduction permission and the approval of the *Thesis Submission Form* (FORM-41) by the supervisor;
- 1) 8 (eight) copies of thesis in plastic locked packages without binding, and one labeled CD including the electronic copy of thesis in MS WORD and PDF format,
- 2) Thesis Evaluation and Defense Committee Members Form (FORM-40) (prepared with supervisor). The date of the defense is offered as early as 30 (thirty) days later and
- 3) Ethics Statement (FORM-42), and
- 4) Publication Condition TIK Approval Form (FORM-43) delivered to the chair of the department.
- These documents (FORM-40, -41, -42 and -43) and the board decision of the department are forwarded to the Graduate School by the chair of the department.

After the approval of the Administrative Board of the Graduate School;

- 5) Student should prepare the Thesis Delivery Report to the Committee Members (FORM-45).
- 6) Student should deliver the copies of the thesis to the committee members (including the replacement members) by signing FORM-45. Shipments for cargo or e-mail are given together with FORM-45. FORM-45 and its supplements should be submitted to the Graduate School within five working days.

Procedure for Final Submission and Graduation (Form-23, -45, -48, -13)

After successful defense,

- 1) One paperback printed copy of the thesis is checked by the thesis control staff of the Graduate School and the reproduction permission certificate and the covers are given by the Graduate School.

Until the thesis complies with the rules specified in the Guidelines, reproduction permission is not given. Theses reproduced and bounded without the permission, are not accepted by the Graduate School.
- 2) After given the reproduction permission, 3 (three) bounded copies of the thesis (Approval Page signed with a blue ink pen by committee members),
- 3) Academic Participant List (FORM-23) (Thesis defense checkbox selected),
- 4) Thesis Delivery Report to Committee Members (FORM-45),
- 5) Thesis Final Check Form (FORM-48),
- 6) One labeled CD containing the final version of the thesis in PDF format and Turkish-English abstracts (in separate files),
- 7) National Thesis Center Data Entry Form, obtained from <http://tez.yok.gov.tr> ,
- 8) Graduation Form (FORM-13)

must be submitted to the Graduate School no later than one month after the defense exam. Students who fail to submit their documents and thesis within the maximum period shall be dismissed from the Graduate School. Documents of defense exam should be sent to the Graduate School by the chair of the department within 3 (three) business days following the defense exam.

APPENDIX

APPENDIX- 1: A SAMPLE THESIS WITH ANNOTATIONS

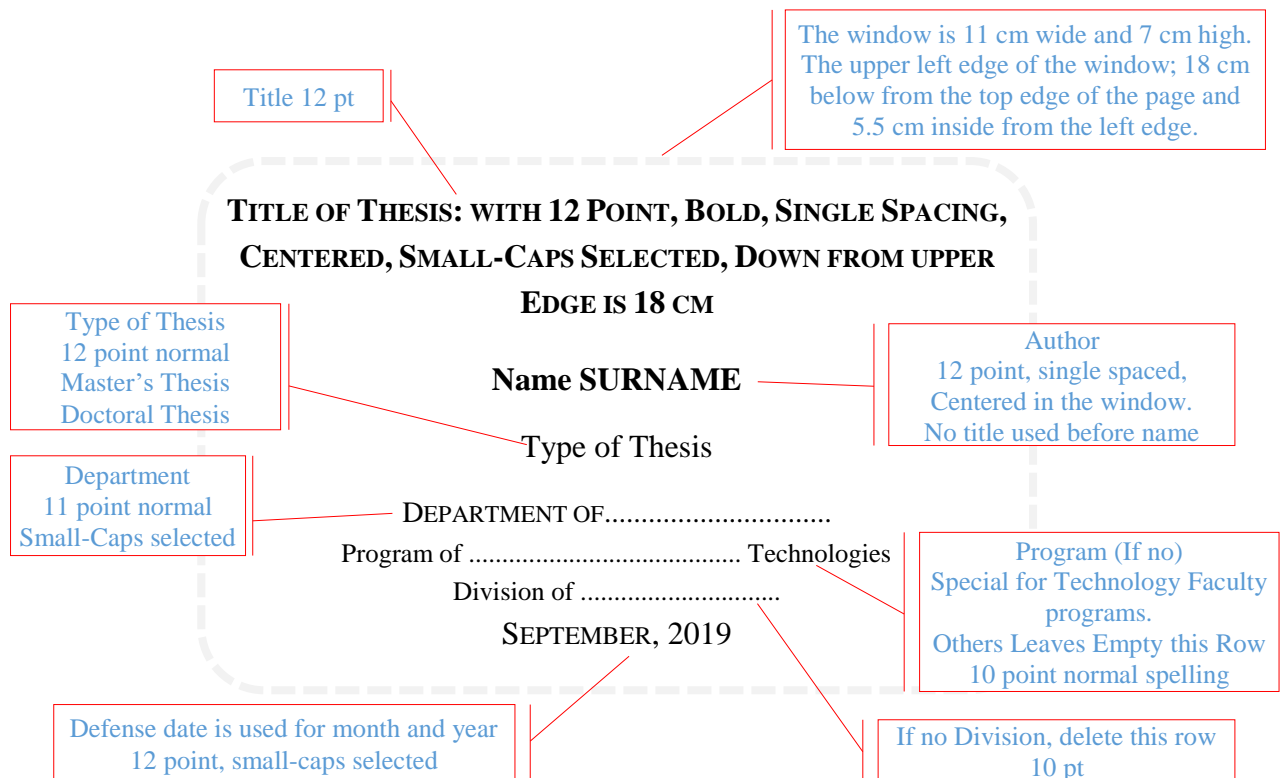
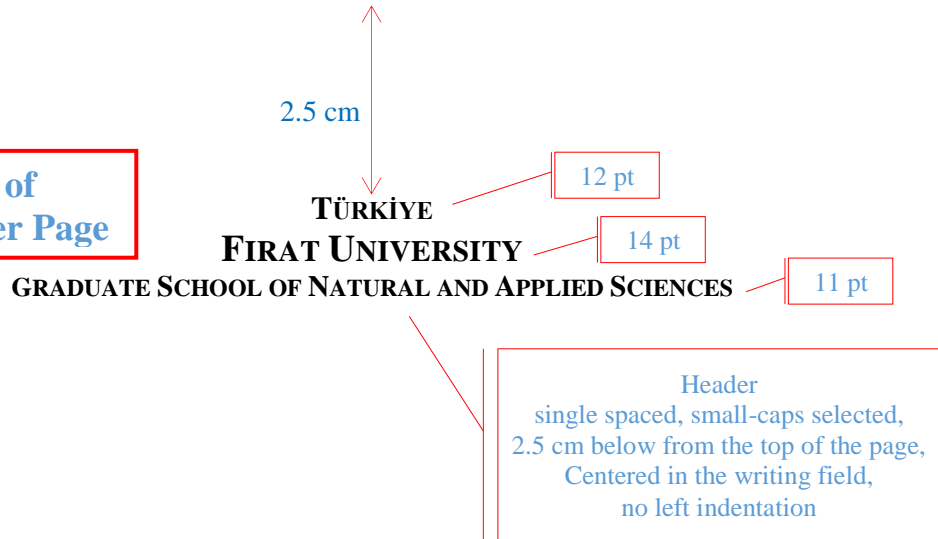
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Preface
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Table of Contents Sample Page

TABLE OF CONTENTS

	Page
PREFACE.....	iv
TABLE OF CONTENTS.....	v
ABSTRACT.....	vi
ÖZET.....	vii
LIST OF FIGURES.....	vii
LIST OF TABLES.....	ix
LIST OF APPENDICES.....	x
SYMBOLS AND ABBREVIATIONS.....	xi
1. INTRODUCTION.....	1
2. MATERIAL AND MOTHOD.....	5
2.1. Heading 2 (Section).....	5
2.2. Heading 2 (Section).....	7
2.2.1. Heading 3 (Sub-Section).....	7
2.2.2. Heading 3 (Sub-Section).....	8
2.2.3. Heading 3 (Sub-Section).....	9
2.3. Heading 2 (Section).....	9
2.4. Heading 2 (Section).....	18
2.5. Gear Algorithm.....	20
2.6. Embedded Atom Metod.....	23
2.6.1. Binary Alloy Systems.....	27
2.6.2. Ternary Alloy Systems.....	29
2.7. Structural Analysis.....	30
2.8. Molecular Dynamics Algorithms.....	32
2.9. Algorithmic Stability.....	35
3. RESULTS AND DISCUSSIONS.....	39
3.1. Heading 2 (Section).....	39
3.1.1. Heading 3 (Sub-Section).....	40
3.1.2. Heading 3 (Sub-Section).....	49
3.2. Heading 2 (Section).....	51
3.2.1. Stability of Static Lattices.....	51
3.2.2. Dynamical Analysis of Lattice.....	59
3.3. Model Systems for Ternary Alloys.....	65
3.4. Structural Phase Transformations in CuAl Alloy Models.....	76
4. CONCLUTIONS.....	84
RECOMMANDATIONS.....	91
REFERENCES.....	96
APPENDIX.....	97
CURRICULUM VITAE.....	

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Table of Contents should be precisely adjusted like it is as here.
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ABSTRACT

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LIST OF FIGURES

	Page
Figure 2.3. Basic Structure of lattice.	5
Figure 2.4. Primitive cell of L1 ₀ super lattice.....	7
Figure 2.5. Phase transformation in alloys	9
Figure 2.6. Organization of initial conditions in molecular dynamics simulations	11
Figure 2.7. Crystal structures of DO ₃ super lattice	13
Figure 2.8. Basic structures of 6 different types of atomic layers in closed-packed structures after transformation of Fe ₃ Al type super lattice to martensite phase.....	13
Figure 2.9. The crystal structure of B2 lattice, A ₂ and B2 atomic stacking planes.....	13
Figure 2.10. Stacking of atomic layers in closed-packed structures after transformation.....	14
Figure 2.11. Variation of atomic layers in closed-packed structures.....	16
Figure 2.12. Phase diagram.....	17
Figure 3.1. Stability of atomic layers in closed-packed structures.....	32
Figure 4.1. Forming of atomic layers in closed-packed structures.....	36
Figure 4.2. Change of thermodynamic quantities of CuAl model with 12450 atoms by integration step	38
Figure 5.1. Volume-dependent change of Rose energy and interatomic force for Cu.....	41
Figure 5.2. Change of cohesive energy with atomic volume for 4 different structures of Cu	42
Figure 5.3. Change of cohesive energy with atomic volume for 4 different alloy structures depending on the concentration of Al element.....	43
Figure 6.1. Change in cohesive energy versus Bain strain for Cu	44
Figure 6.2. Change in cohesive energy versus Al Bain strain	44
Figure 6.5. Variation of cohesive energy with atomic volume for 4 different alloy structures depending on the concentration of Al element.....	43
Figure 6.6. Clustering of atomic layers in tight-pack structures formed after martensite transformation from CuAl Super mesh	52

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Citations in the captions are hidden.
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EXAMPLE:

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Figure 4.8. Change of thermodynamic quantities for CuAl alloy model with 12450 with integration step [5]. **a)** Temperature, **b)** potential energy, **c)** volume, **d)** internal pressure ve **e)** mean square displacements.

The caption should be used in the List :

Figure 4.2. Change of thermodynamic quantities of CuAl alloy model with 12450 by integration step.....38

LIST OF TABLES

Sayfa

Table 2.1.	Placement probability of atoms for structure B2	10
Table 2.2.	Order of probability of the atoms on the sub-lattices in DO ₃ super lattice	10
Table 2.3.	Various alloy properties of super-lattice with closed-packed layered structures	11
Table 3.1.	Parameters of embedded atom potential function of some FCC metals	27
Table 3.2.	Representation of elastic constant tensor	33
Table 4.1.	Theoretical and optimized potential energy function parameters for CuAl, CuNi and AlNi alloy systems	34
Table 4.2.	Optimized potential energy function parameters for binary atomic interactions of CuAl alloy system.....	35
Table 4.4.	Changes in thermodynamic quantities for the CuAl alloy system stabilized at 125000 integration steps	37
Table 4.5.	Potential energy variation by number of particles for CuAl Model.....	37
Table 5.1.	Some experimental properties of Cu, Al and Ti metals	50
Table 5.2.	Structural properties of Cu ₆₂ model with 14562 lattice point	66

Same as the List of Figures

LIST OF APPENDICES

	Sayfa
1: Appendix-1: Caption	98
2: Appendix-2: Caption	99

Same as the List of Figures

SYMBOLS AND ABBREVIATIONS

Symbols

a, b, c	: Unit cell lattice parameters.
$\mathbf{a}, \mathbf{b}, \mathbf{c}$: Unit cell lattice axis vectors.
A, B, C	: Axis lengths of molecular dynamics cell.
A_f	: Completion temperature of Martensit \rightarrow Austenite transition.
A_s	: Starting temperature of Martensit \rightarrow Austenite transition.
B_m	: Bulk modulus.
E_C	: Cohesive energy.
e/a	: electron / atom ratio.
f_j	: Atomic scattering factor of atom j .
\mathbf{F}_i	: Total force acting on atom i .
$g(r)$: Radial distribution function.
\mathbf{G}	: Metric tensor ($\mathbf{G}=\mathbf{h}^T\mathbf{h}$).
\mathbf{h}	: 3x3 Matrix for defining the molecular dynamics cell shape.
m_i	: Mass of atom i .
M_s	: Starting temperature of Austenite \rightarrow Martensite forward transition.
$n(r)$: Coordination number.
ε	: Applied stress.
$\phi_{\alpha\beta}$: Potential energy function between A(α)ve B(β) type atoms.
Ω	: Volume of molecular dynamics cell.
$\dot{\Omega}$: Ratio of volume changes of molecular dynamics cell.
Π	: Tensor of microscopic stress.
σ	: Tensor for defining the surface of molecular dynamics cell.
ξ_i	: Position of atom i , with respect to molecular dynamics cell axis.

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The first line has a 6 pt interval before the line.
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(Constants is Normal, variables is Italic, Vector-Tensor-Matrix are bold)

Abbreviations

SPC	: A blank line with 10 point, single line adjusted, before and after set to zero
BCC	: Body Centred Cubic.
FCC	: Face Centered Cubic.
$L1_0$: Cu_3Au –I type unit cell.
ICOMAT	: International Conference on the Martensitic Transformations.
IPS	: Invariant Plane Strain.

If Symbols and Abbreviations Do Not Fit on one Page
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1. INTRODUCTION

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..... then remains the same [1, 2]. In these
transformations, the high temperature phase is called the Main Phase and the low temperature phase
is called the Product Phase.

The first observations of diffusion-free phase transformations were made by Sorby in 1864,
Tschernoff in 1866 and Martens in 1878 in iron-based alloys [3-5]. However, in 1895, Osmond made
an observation in accordance with Martens' description and named the product phase Martensite, its
high temperature phase Austenite and this transformation was defined as Martensitic Phase
Transformation [6].

..... changes its energy [7].

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..... observed. From the findings, it was concluded that

2

2. MATERIAL AND METHOD

Sub-Headings should be created after a brief information consisting of at least 4-5 lines of paragraph after the main section headings. Sub-headings should not be used without any explanation just below the main section captions.

A substance consists of a collection of atoms in equilibrium under the influence of bond forces. The part of the substance whose properties and composition is homogeneous and which can be physically distinguished from the rest of the system is called a phase. Changes in the environmental conditions cause changes in the atomic order and the atoms move to form a more stable atomic configuration. Stability of the system at constant temperature and pressure given by Equation 2.1

$$G = H - TS \quad (2.1)$$

It is determined by the Gibbs free energy [13]. Here H enthalpy, T absolute temperature, entropy of the S system, E is the internal energy of the system, P pressure and V volume. Internal energy is the sum of the kinetic and potential energies of atoms in the system.

The most stable state of a system is called the "Balance State". The low temperature solid phases form the most stable phase. Changes in conditions on the system cause the system to prefer the lowest internal energy atomic configuration. The typical Gibbs free energy of a system that is stable in two different atomic configurations such as A and B is shown in Figure 2.1. According to Figure 2.1, the configuration does not have the lowest energy and therefore the A configuration system is described as

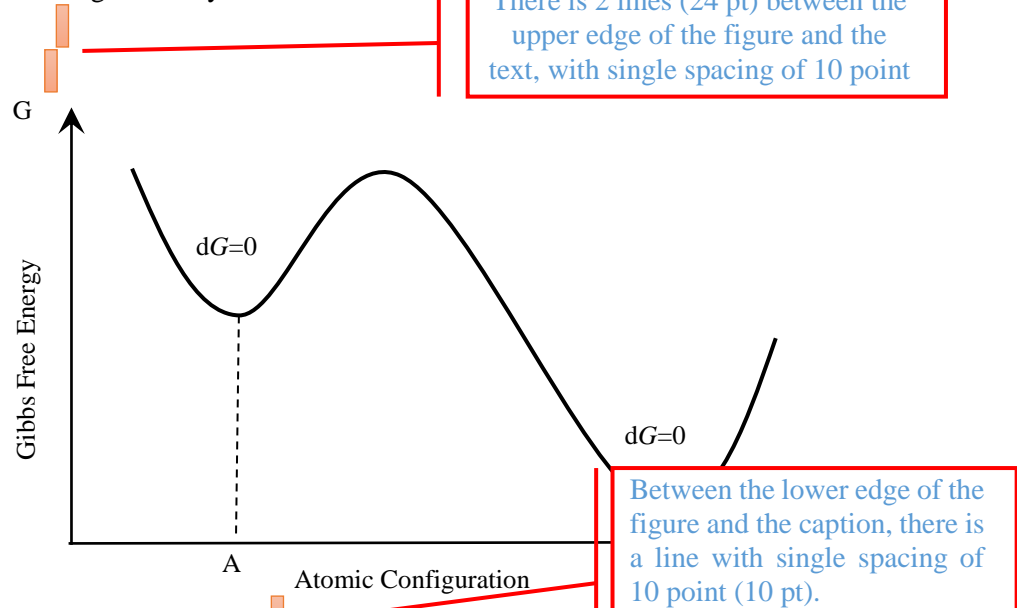


Figure 2.1. Typical variation of Gibbs free energy depending on atomic configuration [13]

A semi-stable system tends to switch to a stable structure when sufficient energy is supplied. This is called a phase transition, and many alloy systems exhibit such phase transitions:

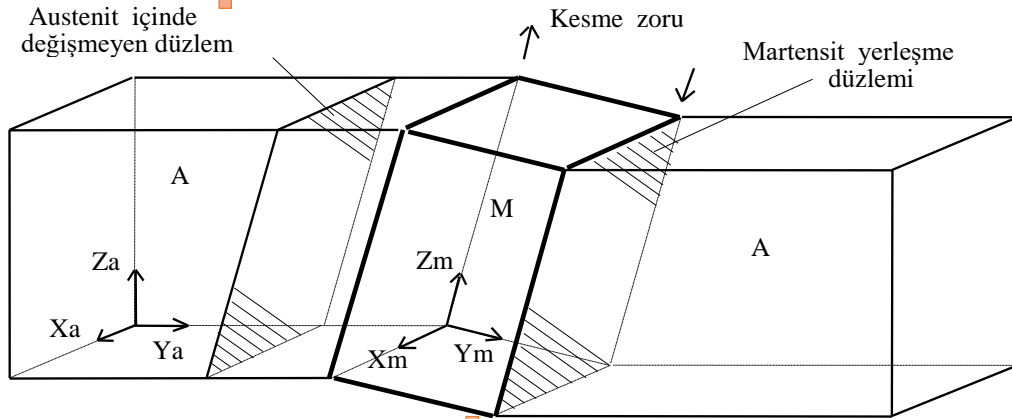


Figure 2.2. The change in plane and direction as a result of martensitic transformation. The letters A and M indicate the austenite and martensite phases [32]

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2.1. Heading 2 (12 point, bold)

Most solid solutions form regular structures at low temperatures. At the time of the formation of these structures, the atoms do not occupy positions in a certain order, not randomly. The possibility of such placement is given in Table 2.1 for B2 type superlattice [10]

Mentioning to Table 2.1

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Table 2.1. Regular arrangement of atoms in B2 lattice [10]

Element atom	Sub-lattice I	Sub-lattice II
Cu	$1 - (1 - W_{B2}) (C_{Al} + C_{Ni})$	$1 - (1 + W_{B2}) (C_{Al} + C_{Ni})$
Al	$(1 - W_{B2}) C_{Al}$	$(1 + W_{B2}) C_{Al}$
	$(1 - W_{B2}) C_{Ni}$	$(1 + W_{B2}) C_{Ni}$

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The stability of the stoichiometric composition varies with the type of bonding between atoms. Accordingly, the stoichiometric composition cannot be stable if metallic bonding between the atoms is dominant. The stoichiometric composition tends to be more stable if more ionic binding is present.

The character of the bonding between atoms can be changed by adding a third element to the alloy. Therefore, the electronic structure in the alloys is important in the controlled realization of the SME.

It is important to determine the austenite and martensite structures in explaining the shape recall event and thermoelastic behavior of the martensite plates [16]. As a result of experimental studies, the composition range of the alloys chosen to observe the shape recall event is within the beta phase region [17]. It is seen from Table 2.1 that the

2.2. Heading 2

The beta phases in the alloys are transformed into the martensite phase by the change of lattice according to the shear systems $\{110\} \langle 10 \rangle$ as the temperature decreases.

Elastic anisotropy of beta phases is much higher than normal metals and alloys and increases as they approach the martensitic transformation [18-21]. it causes the formation of martensite plates or variants [22]. The composition ranges and temperature ranges exhibiting thermoelastic martensitic phase conversion are given in Table 2.2.

Theoretically, the shape recall event can be achieved by converting the shape strain in the microscopic nature to the macroscopic shape strain by limiting the forward and reverse path in any diffusion-free phase transformation. Using this idea, the similarities between various shape recall events can be easily demonstrated.

Shape recall was observed in some alloys obtained by mixing various metals in certain ratios. Information and properties related to these alloys are given in Table 2.2.

Table 2.2. Composition intervals, structure changes, temperature hysteresis zone and order conditions of some alloys showing thermoelastic martensitic transformation [23]

Alloy	Composition (at. %)	Structural Changes	Temperature Hysteresis °C	Order State
Ag-Cd	44~49 Cd	B2→2H	~15	Ordered
Cu-Zn	38.5~41.5Zn	B2→9R, rhombohedral M9R	~10	Ordered
Cu-Au-Zn	23~28 Au 45~47 Zn	Heusler→18R	~6	Ordered
Cu-Al-Ni	28~29 Al 3~4.5 Ni	$DO_3 \rightarrow 2H$	~35	Ordered
Cu-Sn	~15 Sn	$DO_3 \rightarrow 2H, 18R$	---	Ordered
In-Tl	18~23 Tl	FCC→FCT	~4	Disordered

Table 2.2. (Continued)

Alloy	Composition (at. %)	Structural Changes	Temperature Hysteresis °C	Order State
In-Cd	4~5 Cd	FCC→FCT	~3	Disordered
Mn-Cu	5~35 Cu	FCC→FCT	----	Disordered

Table 2.2 is specifically divided to show the division of tables that do not fit on a page (larger than one page). Dividing tables shorter than a page is not correct.

2.2.1. Heading 3 (11 point, bold, Capital of first letter)

One of the high potential alloys for commercial use of shape memory alloys is the Ni-Al alloy. Ni-Al alloys are a good candidate for high temperature and coating applications. It also has a very high melting temperature, a lower density than other alloys, high temperature corrosion and oxidation resistance. Because of these properties, it has a wide usage area [43]. NiAl alloys have five different intermetallic compounds [44].

2.2.2. Heading 3

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Heading 4 (11 Point, bold, capital of first letter, No list number)

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- [1] Zhao, Z.T., Liu, T., Liu G.W., Ma, R.Z. (1996). Reverse Martensite Transformation Induced by Strain in Fe-Mn-Si Alloy”, *Journal of Materials Science Letters*, 15, pp. 1427-1428
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- [19] Yeniden Yapılanma ve Norm Kadro, www.ogm.gov.tr/T.C. Orman Genel Müdürlüğü, Erişim: 11 Mart 2003.
- [20] Citation Styles, http://guides.library.uwa.edu.au/mendeley/citation_styles, Erişim: 12 Eylül 2019.

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APPENDIX- 2: Common Errors

1. The thesis title on the thesis booklet is not the same as the registered thesis title as in transcript.

Although there is no statement that the thesis title has been changed in the joint committee decision after the thesis defense, it is seen that the title of the thesis (registered in the student transcript) and the title written on the thesis booklet are not the same. If the committee proposes a change in the title of the thesis, it must be clearly stated on the joint decision of the committee.

2. First Submission Date and the Date of Defense on the thesis booklet are incorrect.

The first submission date of the thesis should be the date of the advisor's letter indicating the completion of the thesis and the official letter proposed by the thesis defense committee to the Graduate School.

3. Not to mention the figures and tables in the text, or mentioning them in the text after the figures or tables.

4. Lack of citations to the figures or tables prepared by others researchers. This is a violation of the code of ethics.

All the figures and tables used in the thesis booklet, taken from other sources, should be cited and their citations should be given in the References. It should be noted that many works, including figures and tables taken from the internet, might be copyrighted. This is also considered a violation of the code of ethics.

5. For tables and figures that do not fit on one page, the parts that are moved to the other page are not specified to be a continuation of the corresponding table or figure.

For tables and figures that exceed one page, only the labels such as Table 5.1 (Continued) or Figure 4.1 (Continued), should be placed on the top of the following pages centered above the object part moved to the other page (as the first line of the page).

6. Use of the main section and sub-section numbers in the label numbers of tables, figures and equations.

In the enumeration of tables, figures and equations, only the main section number should be considered. For example, the numbering in Chapter 2 should be 2.1, 2.2, 2.3 ... and the text should be addressed (for example, as given in Equation 2.1, ... is shown in Figure 6.3., etc.). No triple or quadruple numbering should be performed, such as Figure 3.2.1 or Table 4.3.2.

7. Figures, Tables and Equations lower and upper spaces do not comply with the Thesis Writing Guide

APPENDIX- 3: Checklist for Writing Rules

After writing the thesis, this file should be printed and the thesis should be checked for each item.

The thesis should not be submitted until the errors are corrected.

FRONT PAGES (Window Cover, Inner Cover, Thesis Approval, Declaration)	TRUE	FALSE
Page Margins	<input type="checkbox"/>	<input type="checkbox"/>
Letterhead	<input type="checkbox"/>	<input type="checkbox"/>
Thesis Title	<input type="checkbox"/>	<input type="checkbox"/>
Names	<input type="checkbox"/>	<input type="checkbox"/>
Department	<input type="checkbox"/>	<input type="checkbox"/>
Dates, Month and Year information	<input type="checkbox"/>	<input type="checkbox"/>
Layout and hidden page numbers	<input type="checkbox"/>	<input type="checkbox"/>
PREFACE		
Margins	<input type="checkbox"/>	<input type="checkbox"/>
First paragraph contents	<input type="checkbox"/>	<input type="checkbox"/>
Line spacing	<input type="checkbox"/>	<input type="checkbox"/>
Author name, city and date	<input type="checkbox"/>	<input type="checkbox"/>
Page Number (–iv (or v) centered at the bottom of the page)	<input type="checkbox"/>	<input type="checkbox"/>
Support notices with protocol numbers	<input type="checkbox"/>	<input type="checkbox"/>
TABLE OF CONTENTS		
Page margins	<input type="checkbox"/>	<input type="checkbox"/>
Caption (Small-caps, line underline and bold), and next spaces	<input type="checkbox"/>	<input type="checkbox"/>
Line Spacing and Indents	<input type="checkbox"/>	<input type="checkbox"/>
Comparison of the page numbers given in Table of Contents with the thesis pages	<input type="checkbox"/>	<input type="checkbox"/>
Chapter Captions (small-caps, bold, list numbers, 11 point)	<input type="checkbox"/>	<input type="checkbox"/>
Attachments and Curriculum Vitae, order, without list number, CV page number	<input type="checkbox"/>	<input type="checkbox"/>
ABSTRACT and ÖZET (in Turkish)		
Page margins	<input type="checkbox"/>	<input type="checkbox"/>
Captions (small-caps selected, bold and centered), next spaces, underline	<input type="checkbox"/>	<input type="checkbox"/>
Thesis title, Author Name SURNAME, University, Department, Date, Page	<input type="checkbox"/>	<input type="checkbox"/>
Paragraph layout (1 point left indent in the ÖZET, written in 10 point with 1.25 spacing)	<input type="checkbox"/>	<input type="checkbox"/>
Keywords (minimum 3, maximum 6)	<input type="checkbox"/>	<input type="checkbox"/>
Abstract and Özet should be limited to one page	<input type="checkbox"/>	<input type="checkbox"/>
LISTS (Figures, Tables, Appendices, Symbols and Abbreviations)		
Page margins	<input type="checkbox"/>	<input type="checkbox"/>
Headings (small-caps, bold and centered), next spaces	<input type="checkbox"/>	<input type="checkbox"/>
Line spacing and font size, use of underline	<input type="checkbox"/>	<input type="checkbox"/>
Writing (first sentence rule for captions, hidden citations, indents, bold)	<input type="checkbox"/>	<input type="checkbox"/>
Accuracy of page information	<input type="checkbox"/>	<input type="checkbox"/>
Alphabetical order of abbreviations	<input type="checkbox"/>	<input type="checkbox"/>

INTRODUCTION and MAIN HEADINGS	TRUE	FALSE
Page margins	<input type="checkbox"/>	<input type="checkbox"/>
Chapter Captions (16 point, small-caps selected, bold) then two spaces	<input type="checkbox"/>	<input type="checkbox"/>
Must be at most Sub-heading 3, not deeper	<input type="checkbox"/>	<input type="checkbox"/>
Sub-headings should be bold and left justified with 12 point	<input type="checkbox"/>	<input type="checkbox"/>
Font size and line spacing, paragraph indents	<input type="checkbox"/>	<input type="checkbox"/>
The page numbers on the first pages of the Chapter should be hidden	<input type="checkbox"/>	<input type="checkbox"/>
Page numbers is centered at the bottom of the page, 1.5 cm above the bottom	<input type="checkbox"/>	<input type="checkbox"/>
For the number method, references are listed in the number order	<input type="checkbox"/>	<input type="checkbox"/>
Pages should not contain scrapes, erasures, scratches or somehow closed areas	<input type="checkbox"/>	<input type="checkbox"/>
Are all figures taken from other sources cited?	<input type="checkbox"/>	<input type="checkbox"/>
Are all references listed in the References cited in the text?	<input type="checkbox"/>	<input type="checkbox"/>
FIGURES, TABLES and EQUATIONS		
Label numbers must be re-initialized within each chapter, must be sequential	<input type="checkbox"/>	<input type="checkbox"/>
Figure captions under figure, table captions over tables, with a space	<input type="checkbox"/>	<input type="checkbox"/>
Captions longer than one line should be single-line spaced, indented on the second line, justified to two sides	<input type="checkbox"/>	<input type="checkbox"/>
Single-line captions should be centered horizontally in the text field	<input type="checkbox"/>	<input type="checkbox"/>
Figures and tables should not extend to page margins	<input type="checkbox"/>	<input type="checkbox"/>
All figures, tables and equations should be mentioned with their labels in the text.	<input type="checkbox"/>	<input type="checkbox"/>
All figures and tables taken from other sources should be cited	<input type="checkbox"/>	<input type="checkbox"/>
3th order labelling should not be done	<input type="checkbox"/>	<input type="checkbox"/>
Equations must start with paragraph indent, 1 cm	<input type="checkbox"/>	<input type="checkbox"/>
Equation labels should be aligned to right edge of the text, given in parentheses	<input type="checkbox"/>	<input type="checkbox"/>
REFERENCES		
Distance between caption and text	<input type="checkbox"/>	<input type="checkbox"/>
Font size should be 10 point and 1.25 spacing	<input type="checkbox"/>	<input type="checkbox"/>
There should be 6 pt spacing between two sources	<input type="checkbox"/>	<input type="checkbox"/>
The references should be listed according to the method of citation	<input type="checkbox"/>	<input type="checkbox"/>
If the citation method is based on Surname-Year; so in alphabetical order	<input type="checkbox"/>	<input type="checkbox"/>
LAST PAGES (APPENDIX and CURRICULUM VITAE)		
Distance between caption and text	<input type="checkbox"/>	<input type="checkbox"/>
Text font size should be 10 point and 1.25 spacing	<input type="checkbox"/>	<input type="checkbox"/>
Each Appendix must have a caption	<input type="checkbox"/>	<input type="checkbox"/>
CV must match the sample	<input type="checkbox"/>	<input type="checkbox"/>
Academic Background	<input type="checkbox"/>	<input type="checkbox"/>
Appendices must have regular page numbers, but CV has no page number	<input type="checkbox"/>	<input type="checkbox"/>