ATILIM UNIVERSITY
CHEMICAL ENGINEERING AND APPLIED CHEMISTRY DEPARTMENT

Graduation Project Form

Student Number :

Name, Lastname :

Semester :

Project Plan Submitted : ☐

Students Signature :

Date :

Project Title:

……

Adviser

Name, Lastname :

Signature :

NOTES:

- 3copies of this form should be filled, signed and submitted to the Graduation Project committee chair along with the project plan latest on **March 10, 2017**. Student keeps a signed copy.
- The "Rules of Conduct" and the " Report Writing Guide" can be found on department's web page, **ceac.atilim.edu.tr,** under "announcements" menu.

CEAC 404 Graduation Project

Rules of Conduct

1. Determination of the Project

- Graduation projects can be experimental, design- or model-based, and students are encouraged to apply for projects sponsored by TUBITAK or other partnerships between industries and universities, if available.
- Students choose a faculty member to work with, within their interest area. The topic is finalized upon the discussion between the student and the faculty member, and a signed form with the Project Title is submitted to the graduation project committee*.
- Students who study in a double major program can prepare an interdisciplinary graduation project, subject to the approval by the graduation project committee of the Chemical Engineering and Applied Chemistry Department. Interested students should prepare a 2 page proposal to explain the purpose and the relevance of the project into both disciplines, and submit it to the committee chair to be evaluated by the committee. This process should not extend beyond the add/drop week period.
- By the end of the add/drop week, students are assigned to their adviser.

2. Report Submission

- Due date for the written reports is the last day of the final exams. They are submitted to the graduation committee chair as a bound hard copy and soft copy. Students must also give their signature at the time of submission, by 5:00 pm at the latest.
- After collection of all the reports, the committee delivers the printed reports to the advisers. Students should deliver the articles and/or other resources he/she used in the preparation of the report to their adviser.

- The correct Report Writing Format is posted on the department's web page.

3. Examination

- Exam will be open to all the academic staff and students.
- Exam will be given a week before the end of the academic semester
- There will be a poster presentation all day (on May 12, 2017; between 9:00-17:00) and an oral presentation exam (on May 15, 2017; starting at 10 am).
- Oral exam jury is composed of two faculty members, and the student's adviser. Academic advisers of the students form the exam jury list, and this list is announced by the committee before the oral exam date.
- Evaluation is done according to the criteria given in Table 1. Total evaluation score is converted to letter grade by the adviser.

TABLE 1. Evaluation Criteria

Scientific Adequacy of the Graduation Project **(Evaluated by the adviser) (40 points)**
1. Setting objectives of the project and completing the project regarding to these objectives
2. Analyzing the project in accordance with these objectives
3. Applying correct methods to achieve these objectives
4. Compatibility of the results and discussion parts with literature research and proficiency of the comments
5. Adequate and well-selected literature sources
6. Performance analysis of the student during the Project work by the adviser
Student's Comprehension of the Project, and Presentation Performance **(Evaluated by the jury members) (40 points)**
7. Giving satisfactory answers to the questions at the end of the presentation
8. Presentation of the project, quality of the poster presentation and efficiency of speech
Writing Quality of the Report **(Evaluated by the adviser) (20 points)**
9. Spelling check, format of the report and printing quality
10. Verification of the references

* Graduation Project Committee:

Prof. Dr. Seniz Ozalp
Assist. Prof. Dr. Hakan Kayı
Assoc. Prof. Dr. Nesrin E. Machin (Chair)

ATILIM UNIVERSITY

DEPARTMENT OF CHEMICAL ENGINEERING AND APPLIED CHEMISTRY

GUIDELINES FOR GRADUATION PROJECTS

TABLE OF CONTENTS

General Rules

All graduation projects reports, presentations and posters must be prepared according to the instructions in this booklet.

1. Selection of the Project

Graduation projects can be experimental, design- or model-based, and students are encouraged to apply for projects sponsored by TUBITAK or other partnerships between industries and universities, if available. Students choose a faculty member to work with, within their interest area. The topic is finalized upon the discussion between the student and the faculty member, and a signed form with the Project title is submitted to the graduation project committee. Students who study in a double major program can prepare an interdisciplinary graduation project, subject to the approval by the graduation project committee of the Chemical Engineering and Applied Chemistry Department. Interested students should prepare a 2 page proposal to explain the purpose and the relevance of the project into both disciplines, and submit it to the committee chair to be evaluated by the committee. This process should not extend beyond the add/drop week period. By the end of the add/drop week, students are assigned to their adviser.

2. Execution of the Project

Starting point should be Atilim University on-line library, which has a very rich database. Other sources available but not limited to; http://www.ulakbim.gov.tr, TUBITAK National Network and Information Center and other research institues. The references required can also be requested from the related authors' postal adress. Also, most recently published works contain their authors' fax or e-mail addresses, or the organization or university in which they are affiliated with.

Literature surveys must include all the latest studies and reviews. Referencing should be done sufficiently and thorough enough. After the abstract part of the report, selected references should be given. The following steps are to be taken;

1. All available journals and books in the library are reviewed and the releted references' abstracts are categorized alphabetically according to the name of the journal.
2. Selected references are then written according to the format given in this guide.

3. Writing the Report

The very first and the most important step of any writing is to outline the content. A good project/report has a main idea. Generally speaking, each paragraph starts with one sentence summarizing the paragraph followed by additional sentences explaining the main idea. All paragraphs appear in more or less the same order and when a reader looks at the first sentence, s/he should be able to grasp the essence of the paragraph. Sentences are written in short, simple, and reader-friendly fashion. In the written work, less relevant and basic information extracted from reference books should not appear more than once. In addition, the writer should use clear and unambigious language throughout the work.

The report should be organized according to the chart below.

ORIGINAL RESEARCH
Outer Cover
Inner Cover
Abstract[1]
Table of Contents
List of Tables
List of Figures
Introduction
Literature Research
Materials and Methods
Results and Discussion
Conclusions
References
Acknowledgments[2]
Appendices

[1]Represents the report outline and contains maximum 300 words. Both the abstract and the project are written in the same language

[2] It's optional.

Additional guidelines for writing appear in APPENDIX 1. The subsections are written in the following way; any information, quotation or extracted information of any nature taken from any other source must be provided with reference and appear in the reference section as well.

Information regarding the references appear in parantheses and assigned a number, or include the first author(s) last name and year of publication inside the text. If numbering is used, the same number is provided in the reference list. If the last name is used, the references are given in alphabetical order.

Inner and Outer Cover

Please find examples of such covers in APPENDIX 2.

Abstract

Subject is introduced in approximatelly 300 words and not exceed one page. Research methods and substantial results are given briefly. No references appear in the abstract. The summary section includes a short brief of each part of the project. The abstract should indicate the scope and essential objectives of the project. Naturally, new information or results other than those appearing in the project cannot be provided here. Past tense should be used while referencing to other completed projects. No abbreviations can be used throughout the paper unless those words appear in full form within the abstract at least once.

Table of Contents

The heading within the table of contents are to be identical to those within the text and reflect the corresponding page number on the right side. For example:

TABLE OF CONTENTS

Lists of Tables and Figures

In this section, abbreviations, tables, figures and symbols are given with their page numbers. See examples in APPENDIX 2.

Introduction

The introduction part is intended to answer questions as to what, why, how and wrap-up. The answer to 'what' sheds light on the nature of work. The 'why' explains the importance of the topic and the motivation behind the research using references as well. The answer to 'how' clarifies the methods deployed by the references and the author. The last paragraph, wrap-up, is almost a map of the report since it summarizes the purpose of the project and its sections. This part indicates the author's approach. To write a standard introduction section, these hints are helpful to consider. The scope and the feasibility of the study need to be stated. In addition, the research method should be indicated together with the reasons for choosing them.

Sections

The writing in a project is divided into sections in a logical order. Generally, it is better to divide into relevant subsections as following the text is easier in this way. It is important to sufficiently discuss the collected information, facts, evidences or history from references. In this respect, the literature review can shed light on the subject from every possible perspective.

If the graduation project is an experimental one, then it naturally contains a section dedicated to materials and experimental methods written in past tense and containing all the details. The purpose of this section is to describe the experimental set-up and provide all the details to repeat the experiment in another time.

The results and discussion section include all opposing views about the subject followed by the authors opinion. In this way, the author states his/her through awareness of the different angles regarding to the topic. It is suggested that the disscussion be written with the help of supporting evidence from other sources with relevant arguments.

Conclusion

In the conclusion section, the results of the debates and their implications are provided. This part should be sufficiently informative and leave no questions in the readers mind. It may contain a brief summary of the research. Followed by future directions and pending questions with respect to the topic.

References

Reference list should be comprehensive and up-to-date and prepared by considering the following order. References should be updated.

Journals

- Surname of the author, first and second initials of the author, title, journal name (italic), volume, page numbers, published year.

Examples:

1)Kaplan, H., Hutkins, W.R., "Fermentation of Fructooligosaccharides by Lactic Acid Bacteria and Bifidobacteria", *Journal of Applied and Environmental Microbiology*, 66 (6), 2682-2684, 2000.

2)Vignais, P.M., Magnin, J.P., Willison, J.C., "Increasing biohydrogen production by metabolic engineering", *International Journal of Hydrogen Energy*, 31 (11), 1478–1483, 2006.

Books

- Surname of the author, first and second initials of the author, title of the book, edition, place of publication, publisher, year of publication.

Examples:

1)Fogler, H.C., Elements of Chemical Reaction Engineering, 3rd Edition, New York, Prentice Hall, 1999.

2)Jackson, A.T., Process Engineering in Biotechnology, United Kingdom, Open University Press, 1990.

Chapter in a book:

- Surname of the author, first and second initials of the author, title, in: book title, (Last name of the editor, first and second initials of the editor), edition, place of publication, publisher, year of publication.

Examples:

1)Rechenberg, I., Artificial bacterial algal symbiosis (project ArBAS): sahara experiments, in: Biohydrogen (editor: Zaborsky, O.R.), New York, Plenum Press, 1998.

2)Tabita, F.R., The biochemistry and metabolic regulation of carbon metabolism and CO_2 fixation in purple bacteria, in: Anoxygenic Photosynthetic Bacteria (editors:

Blankenship, R.E., Madigan, M.T., Bauer, C.E.), The Netherlands, Kluwer Academic Publishers, 1995.

Thesis

- Surname of the author, first and second initials of the author, thesis title, thesis type, place of submission, year of submission.

Examples:

1) Kaplan, H., "Fermentation of Fructooligosaccharides by Lactic Acid Bacteria and Bifidobacteria", Ph. D. Thesis, Department of Biology, University of Nebraska-Lincoln, 2002.
2) Tabanoğlu, A., "Hydrogen production by *Rhodobacter sphaeroides* O.U.001 in a solar bioreactor", MSc. Thesis, Department of Biotechnology, Middle East Technical University, 2002.

Proceedings

- Surname of the author, first and second initials of the author, presentation title, event, place, year.

Examples:

1) Higier, A., Liu, H., "An in-situ and ex-situ investigation of current density variations in a PEM Fuel cell", 10th International Conference on Clean Energy, North Cyprus, 2010.
2) Gök, O., Sponza, D., "Petrokimya endüstrisi atıksularının arıtımı ve toksik olan poliaromatik hidrokarbonların giderimi", 16. Ulusal Biyoteknoloji Kongresi, Antalya, 2009.

4. Submission of the Report

During the control of the report, student may present the references to the advisers if it is necessary. Due date for completed reports is the last day of the final exams. Graduation projects are submitted as printed copy and electronic copy (DVD/e-mail) to the graduation project chair. After collecting all the reports, the committee delivers the printed reports to the advisers. All reports are archived and the adviser keeps the electronic copy. The student should deliver the articles and other resources he/she used in the preparation of the report to the adviser if necessary.

5. Final Exam

Graduation project course exam date is announced by the head of committee on the department's web site. It is open to the academic staff and students. There will be an all day long poster presentation, and oral presentation. The oral exam jury is composed of two faculty members, and the student's adviser. Academic advisers of the students form the exam jury list, and this list is announced by the committee before the oral exam date. The graduation project exam is evaluated according to the criteria given in Table 1. The adviser's opininon generate 60% of the grade and 40% comes from the other jury members. Total grade is equal to 100 and evaluation score is converted to the letter grade by the student's adviser.

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9. Spelling check, format of the report and printing quality
10. Verification of the references

* Graduation Project Committee: Prof. Dr. Seniz Ozalp
Assist. Prof. Dr. Hakan Kayı
Assoc. Prof. Dr. Nesrin E. Machin (Chair)

6. Poster Writing Rules

1) Posters should be 60 cm width x 90 cm height and designed vertically. It is prepared either by printing from standard printers on regular sheets and pasted on a carton, or directly printed on poster sheets.

2) In posters, any kind of font and font size can be used. However, posters should be read from 1 meter distance.

3) Logo of Atılım University should be on the left top corner of the poster and on the right top corner, "Chemical Engineering and Applied Chemistry Department Graduation Project" should be written. In the middle, the title of the project and under the title, names of participated students and adviser should be written.

4) In the poster, the aim and scope of the study (work done, analyses, studies), methods (process steps, course, equipments, materials), outcomes (quantitative and visual data like photographs, figures, etc.) should be presented. In a similar manner with the report, poster should contain sections like abstract, introduction, experimental methods, results and discussions and references. References are given in brackets as in the report. In the poster presentation, photographs, figures, tables should be used as much as possible. There is no restrictions about colors of the poster. Poster should be prepared by giving attentions to spelling and punctuation rules.

5) During poster presentation session, students should stand by their posters and answer the questions coming from audience all day.

APPENDIX 1. Report Writing Rules

- Report should be typed in a computer and printed by laser or ink jet printer on A4 white paper (21x29.7 cm, 80 g/m^2).

Font:

- Times New Roman with 12 font size or Arial with 11 font size or correlated font type and size should be used.
- The font size can be decreased by one size under necessary conditions. In tables and figures, font size can be reduced up to 8. Text is not written italic and bold letters are used for titles. After comma and dot, 1 space should be left. Latin words are written as *italic* in text, tables and figures.

Page Layout:

- Page margins should be 3.0 cm left, 2 cm right. Footnotes should be inside these lines.

Line Spacing and Alignment:

- Line spacing should be 1.5 space.
- Main titles should be written in capital letters. And initial letters of subsections should be written in capital. All titles should be bold.
- Main titles and subtitle should have a number. To give a number, there should be multiple subtitles. For instance; 1.1, 1.2, and 1.3 ..... or 1.1.1., 1.1.2 ve 1.1.3 etc.

Examples: Main Title: **1. METHODS**

Subtitles: **1.2. Methods**

Subtitles**:** **1.2.1. Protein Analysis**

Page Numbers:

- The beginning of the report should be numbered by Roman letters (i, ii, iii, ...) and the body should be numbered as (1, 2, 3 .....) at the bottom of the page.

- Page numbers start from the abstract and arranged at the bottom of the pages with font size 10.
- Symbols or abbreviations should be explained in the brackets when they are used for the first time. For example; "... in food industry HACCP (Hazard Analysis at Critical Control Points) applications...". After explaining the abbreviations, there is no need to explain it again in the rest of the report. However, commonly known abbreviations do not need explanations. These abbreviations are: TSE, AOAC, AACC, ICC, FAO, WHO, FDA, CAC.

Tables and Figures:

- The first table number should be the section number (letter in appendices) and second number should be the sequence number of that section. For example; in main sections, "Table 1.2, "Figure 1.1", and in appendices "Table A.1", "Figure B.1"...
- Tables should be ordered with (1,2,3...) and aligned horizantally to the page (center aligned command).
- The first letter of the table references in the text should be uppercase. To illustrate; ".....Table 2 shows the change of the protein....." or".....is given (Table 2).....". If the table is taken from another source, then this reference should be placed at the end of the table. Example: "Table 2. The changes of the proteins (Pomeranz, 1987). "
- Explanations of each figures and figure numbers are given after the figure and explanations of each tables and table numbers are given before the table.
- Figures should be drawn in Microsoft Excel, Lotus Freelance or any other graphic program. Figures should be numbered and aligned in the center of the page horizantally. The figure should be cited inside the text and should be placed to the most suitable place after the citation. Inside the text, the first letter of the figure references should be uppercase. For example; ".....Figure 2 shows the changes of the protein ....." or ".....is given (Figure 2) .....". The references of the figures should be placed at the end of the figures. For example: Figure 2. The changes in the SDS-PAGE proteins (Pomeranz, 1987).

Equations:

The space between equations and text should be 12 font size. Equation numbers should be given in order as [(1.1), (1.2), ..., (2.1), (2.2), ...] (and if necessary, subnumbers of the same equation as (1.1a) , (1.1b)).

APPENDIX 2. Cover, Figure and Table Lists Examples

FRONT COVER SAMPLE

ATILIM UNIVERSITY

FACULTY OF ENGINEERING

DEPARTMENT OF CHEMICAL ENGINEERING AND APPLIED CHEMISTRY

TITLE OF THE GRADUATION PROJECT

SUBMITTED BY

ADVISER

NAME SURNAME

PLACE, YEAR

INNER COVER SAMPLE

ATILIM UNIVERSITY

FACULTY OF ENGINEERING

DEPARTMENT OF CHEMICAL ENGINEERING AND APPLIED CHEMISTRY

TITLE OF THE GRADUATION PROJECT

SUBMITTED BY

ADVISER

NAME SURNAME

PLACE, YEAR

COMMISSION

MEMBERS	DATE	SIGNATURE
1.		
2.		
3.		

LIST OF FIGURES SAMPLE

Page No

LIST OF TABLES SAMPLE

Page No