

GUIDELINES FOR PREPARING MECH/MECT/MAK4902 DESIGN PROJECT REPORTS

“Design project” is a project that has open-ended solutions and will result in a product which satisfies design requirements or expectations. The potential readers are faculty of the department to evaluate the merit of the work and approve the design, manufacturing unit to fabricate the product (if any), and other professionals for resolving product related issues. Thus, the problem in the project intends to solve needs to be clearly defined, the methods used need to be specified, the final product needs to be evaluated, and the whole design process needs to be presented. The final document should be self-explanatory. The proposed format will help students prepare the final report and ensure that proper information is included. It will also train students in technical communication skills which are crucial in engineering practice.

Format of the Report:

Title Page

Project Title, Course Name, Department/Program Name, Students Numbers/Names (team), Faculty Advisor Name(s), Sponsors (if any), and due Date or Term (given at the end of this script).

(Note: The same information should also appear on all other presentations, including PowerPoint oral presentations, etc.)

1. Abstract (or Summary)

List the objectives, describe concisely and realistically what the product described in this work is intended to accomplish, and summarize the accomplishments. (1-2 paragraphs)

2. Introduction

Briefly describe the project subject and its background; clearly define the design requirements and expectations; state project objectives. (1-2 pages)

3. Design Constraints

Clearly identify the constraints (technical, economical, legal etc.), other limitations and expectations for the design problem.

4. Work Plan

Critical path, tasks, deliverables, and schedule. Specifically demonstrate project management tools/methods used (e.g. Gantt Chart etc.) and team work details. (1-2 pages)

5. Design Work

Describe the engineering specifications and targets; critically evaluate existing benchmarks and specifically identify the gaps which the project is intended to fill; show how the concepts evolved and were evaluated; describe and justify the formation of the final product; describe the product synthesis; demonstrate the analyses used for product evaluation; show the details of analysis, experiment, or field test results. The content should include the following topics when they apply to the project:

- a. Design specifications development
- b. Competitive benchmarks (performance, intellectual property rights etc.)
- c. Design concept development
- d. Concepts evaluation (e.g. Pugh method etc.)
- e. Product/System design details

- f. Product/System performance evaluation
- g. Used engineering standards and/or codes

6. Impact Statement

State the potential impact of the designed product to environment and society as a whole, and comment on any potential safety-related issues in the use of the product. Explicit statements to each need to be made here, even if there are no environmental, societal or safety concerns.

7. Conclusions

Use evidence to claim major accomplishments. Demonstrate that the final product satisfies the engineering specifications. Also specify that how your design meets the given constraints by using a table.

8. Recommendations

Provide recommendations for future work based on the design made.

9. References – Provide a complete list of literature used in completing the design (all must be referenced in the text with consecutive numbers in brackets like [5] or [5, 6] etc., at the end of each related sentence).

Appendix – Include programming, necessary detailed technical drawings, assembly drawings, and product development files, records (i.e. memos) of weekly team meetings, commercial catalogues of components (if any) etc.

(Note: The text should be written in Times New Roman 12 font with 1.5 line spacing)

Grading Policy of the Course:

i. Midterm Grading (by Advisor):

Program Outcome-1b: 20 %
 Program Outcome-3a: 40 %
 Program Outcome-4a: 10 %
 Program Outcome-6b: 10 %
 Program Outcome-7f: 10 %
 Program Outcome-9a: 10 %

100 %

ii. Final Exam Grading (by Committee):

Program Outcome-1b: 15 %
 Program Outcome-3a: 40 %
 Program Outcome-4a: 15 %
 Program Outcome-7d: 15 %
 Program Outcome-7e: 15 %

100 %

Final Grade:

i. Midterm Grading (by advisor): 50 %
 ii. Final Exam Grading (by committee): 50 %

100 %

CONTRIBUTION of the COURSE to the PROGRAM OUTCOMES

Işık University Mechanical/Mechatronics Engineering Programs Outcomes		1	2
1	a. Adequate knowledge in mathematics, science and engineering subjects pertaining to the relevant discipline.		
	b. Ability to use theoretical and applied knowledge in these areas in complex engineering problems.	●	
2	a. Ability to identify, formulate, and solve complex engineering problems.		
	b. Ability to select and apply proper analysis and modeling methods for this purpose.		
3	a. Ability to design a complex system, process, device or product under realistic constraints and conditions, in such a way as to meet the desired result.	●	
	b. Ability to apply modern design methods for this purpose.		
4	a. Ability to devise, select, and use modern techniques and tools needed for analyzing and solving complex problems encountered in engineering practice.		○
	b. Ability to employ information technologies effectively.		
5	a. Ability to design experiments for investigating complex engineering problems or discipline specific research questions.		
	b. Ability to conduct experiments, gather data, analyze and interpret results for investigating complex engineering problems or discipline specific research questions.		
6	a. Ability to work efficiently in intra-disciplinary teams.		
	b. Ability to work in multi-disciplinary teams.	●	
	c. Ability to work individually.		
7	a. Ability to communicate effectively in Turkish, both orally and in writing.		
	b. Knowledge of a minimum of one foreign language.		
	c. Ability to write effective reports and comprehend written reports.		
	d. Ability to prepare design and production reports.	●	
	e. Ability to make effective presentations.	●	
	f. Ability to give and receive clear and intelligible instructions.	●	
8	a. Recognition of the need for lifelong learning.		
	b. Ability to access information, to follow developments in science and technology, and to continue to educate him/herself.		
9	a. Consciousness to behave according to ethical principles and professional and ethical responsibility.		○
	b. Knowledge on standards used in engineering practice.		
10	a. Knowledge about business life practices such as project management, risk management, and change management.		
	b. Awareness in entrepreneurship and innovation.		
	c. Knowledge about sustainable development.		
11	a. Knowledge about the global and social effects of engineering practices on health, environment, and safety, and contemporary issues of the century reflected into the field of engineering.		
	b. Awareness of the legal consequences of engineering solutions.		
(1) Full Contribution ●		(2) Partial Contribution ○	

COVER PAGE OF THE REPORT



FEYZIYE SCHOOLS FOUNDATION
IŞIK UNIVERSITY
FACULTY OF ENGINEERING &
NATURAL SCIENCES

MECHANICAL ENGINEERING DEPARTMENT

MECH/MECT4902

GRADUATION DESIGN PROJECT

**PROJECT TITLE SHOULD BE WRITTEN HERE
WITH BOLD CAPITAL LETTERS
(14 Times New Roman fonts)**

Team Members

NUMBER NAME SURNAME

NUMBER NAME SURNAME

NUMBER NAME SURNAME

NUMBER NAME SURNAME

Advisor

TITLE NAME SURNAME

2024 SPRING



FEYZİYE OKULLARI VAKFI
İŞIK ÜNİVERSİTESİ
MÜHENDİSLİK VE DOĞA
BİLİMLERİ FAKÜLTESİ

MAKİNE MÜHENDİSLİĞİ BÖLÜMÜ

MAKİ4902

BİTİRME TASARIM PROJESİ

**PROJE BAŞLIĞI BURAYA YAZILACAK
KOYU FONTLARLA
(14 Times New Roman)**

Takım Üyeleri

**NO İSİM SOYİSİM
NO İSİM SOYİSİM
NO İSİM SOYİSİM
NO İSİM SOYİSİM
NO İSİM SOYİSİM**

Danışman

ÜNVAN İSİM SOYİSİM

2024 BAHAR