

GUIDELINES FOR PREPARING ME490 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 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 (given at the end of this script).

(Note: The same information should also be 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 background of the project; clearly present the design requirements and expectations; identify project boundaries (constraints); state project objectives. (1-2 pages)

3. Work Plan

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

4. Design

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 may include the following topics if they apply to the project.

- a. Design specifications development
- b. Competitive benchmarks
- c. Design concept development
- d. Concepts evaluation (e.g. Pugh method etc.)
- e. Product detailed design
- f. Product performance evaluation

5. 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.

6. Conclusions

Use evidence to claim major accomplishments. Demonstrate that the final product satisfies the engineering specifications.

7. Recommendations

Provide recommendations based on the design work.

8. References – Provide a complete list of literature used in completing the design (all must be referenced in the text).

Appendix – Include programming, detailed drawings, assembly drawings, and product development files, records of meetings, commercial catalogues of components (if any) etc.

(Note: The text should be written in Times New Roman 12 font)

Grading:

i. Midterm Grading (by Advisor):

<i>Program Outcome-3:</i>	<i>15 %</i>
<i>Program Outcome-4:</i>	<i>5 %</i>
<i>Program Outcome-6:</i>	<i>5 %</i>
<i>Program Outcome-8:</i>	<i>30 %</i>
<i>Program Outcome-9:</i>	<i>15 %</i>
<i>Program Outcome-10:</i>	<i>10 %</i>
<i>Program Outcome-11:</i>	<i>10 %</i>
<i>Program Outcome-13:</i>	<i><u>10 %</u></i>
	<i>100 %</i>

ii. Final Exam Grading (by Committee):

<i>Program Outcome-8:</i>	<i>40 %</i>
<i>Program Outcome-9:</i>	<i>20 %</i>
<i>Program Outcome-11:</i>	<i><u>40 %</u></i>
	<i>100 %</i>

Final Grade:

<i>i. Midterm Grading:</i>	<i>50 %</i>
<i>ii. Final Exam Grading:</i>	<i><u>50 %</u></i>
	<i>100 %</i>

***Mechanical Engineering Program Outcomes and the
Contribution of the “Design Project” to the Program Outcomes***

	Mechanical Engineering Program Outcomes	1	2	3
1	Adequate knowledge in mathematics, science and mechanical engineering basic subjects			
2	A comprehension of statistics, linear algebra and engineering sciences (mechanics, thermodynamics, materials science)			
3	An ability to apply knowledge of mathematics, science, and engineering to mechanical engineering problems		○	
4	A comprehension of professional and ethical responsibility		○	
5	The broad education necessary to discuss the impact of engineering solutions in a global and societal context. Knowledge about contemporary issues and the global and societal effects of engineering practices on health, environment, and safety; awareness of the legal consequences of engineering solutions			
6	A recognition of contemporary issues; information about business life practices; awareness of entrepreneurship, innovation, and sustainable development		○	
7	An ability to design and conduct experiments, as well as to analyze and interpret data			
8	An ability to design thermal and mechanical systems, components, or processes to meet desired needs under realistic constraints and conditions			●
9	Ability to identify, formulate, and solve complex engineering problems (open ended problems/ design!); ability to select and apply proper analysis and modeling methods for this purpose			●
10	Ability to work efficiently in intra-disciplinary and multi-disciplinary teams; ability to work individually			●
11	An ability to communicate effectively with written, oral, and visual means; knowledge of a minimum of one foreign language			●
12	A recognition of the need for and an ability to engage in life-long learning; recognition of personal needs and ability to improve him/herself			
13	An ability to use modern engineering techniques, skills, and computing tools necessary for engineering practice; ability to employ information technologies effectively		○	

Contribution degree: 1-low, 2-medium, 3-high



FEYZİYE SCHOOLS FOUNDATION

IŞIK UNIVERSITY

FACULTY OF ENGINEERING

MECHANICAL ENGINEERING DEPARTMENT

ME 490 SENIOR DESIGN PROJECT

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

Team Members

2XXMEXXXX YYYYYYYYYY YYYYY

2XXMEXXXX YYYYY YYYYYYYYYYY

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Advisor

Ass. Prof. Dr / Prof. Dr. YYYYYY YYYYYYYYYYY

FALL / SPRING, 201X