

ME EN 4010/4015

Spring 2003

ME EN 4010/4015 is devoted to completing your design project. There will be no formal lectures – only class presentations and various reporting and scheduling requirements necessary in the success of any large group project. To help keep on target, you should schedule weekly meetings with your faculty advisor. For these meetings you are expected have an agenda and type up minutes of the meeting soon after its conclusion.

Four times during the semester your group will give a short oral technical progress report.

Technical Progress Report Presentations

Each group will give an in-class oral technical review 4 times during the semester. The presentations are limited in time and you are asked to strictly follow the time limits. See the schedule for the dates for your group's presentation and note the total allotted time. One or more team members can give the presentation. For larger teams you will need to use multiple presenters as I will expect each team member to talk at least once during the semester. Make sure all group members contribute equally to the preparation and presentation of the reports.

I will not enforce a strict outline for the talks. The talks should accomplish the following:

- 1) Provide a current state of the project
- 2) Describe progress since the last report. Highlight technical and design accomplishments since last report. Show data or test results – don't just provide a list of words. Your first presentation this will cover progress and accomplishments since your final report of last semester.
- 3) Detail technical issues and difficulties that you are facing and plans you have to deal with them.
- 4) Outline tasks and progress expected in the next three weeks
- 5) Briefly describe the task remaining

Please work in a Gant chart in each of your presentations. In this chart, specifically show what task are completed or how far along you are on specific tasks. You can, of course, update this for each progress report. I will bring in a laptop, projector, and zip drive (100 or 250 MB compatible). You may either give your presentation using powerpoint (bring it on a zip) or use overhead transparencies. For your first presentation, you should at least have overhead backups in case there are any issues with electronic compatibility. You may also bring in your own PC. If you are giving an electronic presentation, please arrive to class early so we can get things set up and stay on schedule. Please do not be late!

A written progress report is also due in class of the day of your presentation. This need only cover the information of the presentation or progress over the past two weeks. Be

sure to include specific results. If you have data, display it in plots, charts, or tables. Do not just use descriptive words.

So for each presentation (there are 4 for each group throughout the semester), the following material must be handed in:

1. **Hand in a set of your visual aids (copies of overheads, PowerPoint, slides, etc. MAKE SURE TO PRINT 4-6 SLIDES PER PAGE)**
2. **Hand in a copy of the written progress report.**
3. **Hand in all Advisor meeting agendas and minutes since last presentation (see below)**
4. **Each person should hand in a separate description of his or her individual efforts since the last report.**

You will be giving your presentation on selected days (see schedule) with one or two other groups. Part of the design experience is to see what types of issues come up in a variety of design projects and observe and provide suggestions to deal with these issues. All team members need to show up for all talks on the day of their presentation. With respect to your own group, even if you are not presenting, questions may come up that you are the best qualified to answer. It is also an opportunity to discuss with your group ideas that may come up in the questions and answer period. For the other presentations, you are encouraged to ask questions and provide input (should such input be sought).

MEETINGS WITH ADVISOR

To help keep on target, you should schedule weekly meetings with your faculty advisor. For these meetings you should have an agenda and type up minutes of the meeting soon after its conclusion. Your agenda and meeting minutes should be handed in each time you give an oral presentation.

DESIGN DAY

Your project will be presented on Friday, April 18 in the Student Union. You will be expected to have a visual presentation, which will include poster material, design prototypes, sample parts, or whatever is appropriate for your project. Representatives from the group will need to be available during times that will be announced later – but plan on most of the day.

FINAL DESIGN REPORT

A final comprehensive written report is required of all groups. See guidelines for this at the end of this document.

DATES TO REMEMBER:

Friday, April 1: Draft of Design Day Poster Due
April 9: Final Poster Due in Electronic Format (if you want help from instructor to print it out)
Friday, April 18: Design Day
May 1: Final Design Report Due

COURSE GRADING:

Design Project (includes final report, design objectives met? and input from advisor)	45%
Design Day Display (Poster, faculty input on presentation)	20%
Progress Reports (Oral and Written)	25%
Weekly Advisor Meeting Agenda and Minutes	10%

The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in this class, reasonable prior notice needs to be given to the instructor and to the Center for Disability Services, 162 Olpin Union Building, 581-5020 (V/TDD) to make arrangements for accommodations.

SAMPLE MEETING AGENDA

ANTI-GRAVITY MACHINE
ADVISOR MEETING AGENDA
FEBRUARY 30, 2000
10:45 AM

(Your agenda should be constructed to fit your current needs and will likely be different for each meeting. Below is on a sample)

1. REVIEW PREVIOUS MINUTES
2. CURRENT STATUS AND PROGRESS
3. GOVERNMENT OBSTRUCTION
4. MATERIAL SELCTION FOR OUTER SURFACE
5. POWER SUPPLY TESTING
6. MEDIA RELATIONS
7. OTHER ISSUES

In general, you should prepare a list of issues that you want to discuss with your advisor and among yourselves. Please keep to your agenda. Any other issues that come up can be discussed with OTHER ISSUES. Preparing for you meeting in advance will improve the productivity of the meeting.

SAMPLE MINUTES

During each meeting, one person in the group should keep notes and write up the minutes immediately after completion.

ANTI-GRAVITY MACHINE
ADVISOR MEETING MINUYTES
FEBRUARY 30, 2000

PRESENT: Dr. Julie Doe, Jimmy Doe, Jeffrey Doe, Jennifer Doe

EXCUSED: Jacob Doe

ABSENT: Jerry Doe

Meeting started 10:50 AM

1. APPROVAL OF MINUTES. Minutes from Feb. 23 meeting were discussed. Jeffrey Doe moved Approval. Seconded: Jennifer. Approved unanimously. OR COULD BE: Minutes from Feb. 23 meeting were discussed. Jennifer commented that minutes did not accurately reflect the discussion or the action items agreed

upon. Modifications to the minutes were suggested and the minutes were then approved subject to suggested changes.

2. **CURRENT STATUS.** Jimmy gave an overview of progress. Most aspects are on schedule. Noted group is facing difficulties with power supply and outer surface of machine is delaminating during testing. Fund raising is going well, but group is starting to experience some slow downs due to obstructions in obtaining material and implied threats to family members.
3. **GOVERNMENT OBSTRUCTION.** The group feels held back by bureaucratic roadblocks in obtaining some key materials. Also there is some concern about danger to families. Group felt that openly declaring a change in project scope would alleviate these issues. It was decided to state a change in project to an invisibility machine, but in reality, keep working on the antigravity machine.
4. **SELECTION OF MATERIAL.** Groups discussed issues related to delamination of the outer surface. The material that has been used (futorium) is not behaving as expected and is getting hard to obtain. After lengthy discussion, it was decided that either teflon or a simple carbon composite might have the correct properties. A series of tests was outlined to test these materials. Test results will be discussed at the next meeting.
5. **POWER SUPPLY.** At the previous meeting we discussed issues with the power supply and came up with an alternative. Jennifer reported results of experiments on using a self-contained chemical energy generation mechanism using a mixture of paprika, cumin, and sesame oil. A good ratio was found that gave appropriate energy output for about 15 minutes. The group agreed to go with this.
6. **MEDIA RELATIONS.** The group has been having trouble accomplishing some goals due to spending too much time making public appearances and fielding questions from the media. The group unanimously agreed to decline all offers on Leno and Letterman until after the semester is over. An existing commitment to Geraldo will be honored. Also, all future media contacts will go through Dr. Doe.
7. **OTHER ITEMS.** Several group members are concerned of the lack of performance from Jerry and Jimmy. The group gave out a list of specific issues that should be addressed by both Jerry and Jimmy. Jimmy agreed to comply, but no one has seen Jerry for two weeks. In either case, if performance is not improved, Dr. Doe would recommend a failing grade.
8. Meeting Ended 11:45 AM

Guidelines for Final Design Report

Your final design report should be a complete document describing all aspects of your design project. Each project is different so there cannot be one single format. However, I will be looking for details on the following in each report:

Introduction: Includes overall objectives and motivation

Design criteria

(Can refer to customer needs, research/development objectives, or competition guidelines as appropriate) –

What type of parameter space did you have to work with, and how did you explore it?

Original design specifications resulting from the above

Given the parameter space you had to work with, why did you choose to go the direction you did?

Were other options available

Prototype design and performance

This is your detailed design description

Analysis and testing

What types of testing and analysis were done?

Besides a description, how did the analysis or testing influence your design?

Be sure to include and discuss analysis and testing results.

Did testing and/or analysis result in design modifications?

Final design description

How is it different from initial design

Economic Analysis (Where applicable)

Final performance analysis

Did you meet the specs of your original design or the objectives of your project?

If not, discuss the relevant issues and propose potential solutions.

Overall conclusions, recommendations, etc.

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Your report should contain all design and technical drawings developed as part of your project. Some may appear in the main text. In other cases it may be more convenient to include in an Appendix.

All figures must be numbered with a caption. Each figure should be referenced in the text with enough description for a reader to interpret.

You will have all done a lot of work over the year. Make sure your final reports reflects this.

Turn in 2 copies by 12:00 Noon, May 1.

**4010/4015
Spring 2003**

For each Design group. Please provide me with the following: (Due Mon. Jan. 13)

Design Project Title:

Description and objectives of design project: One paragraph description

Team Members and a description of the main responsibilities of each team member:

e.g., Team member 1: Followed by short description of responsibilities

Team member 2: Description of responsibilities

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Please provide the above in one consolidated, typed document (not a separate paper for each team member). This can be e-mailed to me.

One electronic figure or photograph that illustrates your project. This should NOT be included in the document above. It should be e-mailed to me at:

mcmurtry@eng.utah.edu

**Technical Progress Report Presentation Schedule
And Other Important Dates
(M, W Presentations in 104 EMCB, F in 105 EMCB)**

Mon., January 6	Class Description
Wed., January 8	No class
Fri., January 10	No class
Mon., January 13	
10:45 - 10:58	Walking Machine
11:03 - 11:16	Snow Chair
11:21 - 11:33	Collapsible Ski
Wed., January 15	
10:45 - 10:58	Oil Spill
11:03 - 11:16	HPV
11:21 - 11:33	Elite Composites
Fri., January 17	No class
Mon., January 20	Martin Luther King Day - No Class
Wed., January 22	
10:45 - 10:58	Solar Structural
11:03 - 11:16	Solar Dynamics I
11:21 - 11:33	Solar Dynamics II

Fri., January 24 No class

Mon., January 27

10:45 - 11:05 Fuel Cell

11:08 - 11:28 Rocket Motor

Wed., January 29 No Class

Fri., January 31 No Class

Mon. Feb. 3

10:45 - 11:05 Mini Baja

11:08 - 11:28 Formula

2nd Set of Presentations

Wed., February 5

10:45 - 10:58 HPV

11:03 - 11:16 Oil Spill

11:21 - 11:33 Collapsible Ski

Fri., Feb. 7

10:45 - 10:58 Solar Dynamics I

11:03 - 11:16 Walking machine

11:21 - 11:33 Solar Structural

Mon., Feb. 10

10:45 - 10:58 Elite Composites

11:03 - 11:16 Snow Chair

11:21 - 11:33 Solar Dynamics II

Wed., Feb. 12

10:45 - 11:05 Fuel Cell

11:08 - 11:28 Mini Baja

Fri., Feb. 14 No class

Mon., Feb. 17 Presidents Day – No Class

Wed., Feb. 19

10:45 - 11:05 Rocket Motor

11:08 - 11:28 Formula

Fri. Feb. 21 No class

3rd Set of Presentations:

Mon., Feb. 24

10:45 - 10:58 Walking Machine

11:03 - 11:16 Oil Spill

11:21 - 11:33 Collapsible Ski

Wed., Feb. 26

10:45 - 10:58 Snow Chair

	11:03 - 11:16	HPV
	11:21 - 11:33	Solar Structural
Fri., Feb. 28		No class
Mon. Mar. 3		
	10:45 - 10:58	Elite Composites
	11:03 - 11:16	Solar Dynamics I
	11:21 - 11:33	Solar Dynamics II
Wed. Mar. 5		
	10:45 - 11:05	Fuel Cell
	11:08 - 11:28	Formula
Fri. Mar. 7		No class
Mon. Mar. 10		
	10:45 - 11:05	Rocket Motor
	11:08 - 11:28	Mini Baja
Wed. Mar. 12		No class
Fri. Mar. 14		No class
Mon. Mar. 17	Spring Break – No Class	
Wed. Mar. 19	Spring Break – No Class	
Fri. Mar. 21	Spring Break – No Class	

4th Set Of Presentations

Mon. Mar. 24		
	10:45 - 10:58	Walking Machine
	11:03 - 11:16	Oil Spill
	11:21 - 11:33	Collapsible Ski
Wed. Mar. 26		
	10:45 - 10:58	Snow Chair
	11:03 - 11:16	HPV
	11:21 - 11:33	Solar Structural
Fri. Mar. 28		No Class
Mon. Mar. 31		
	10:45 - 10:58	Elite Composites
	11:03 - 11:16	Solar Dynamics I
	11:21 - 11:33	Solar Dynamics II
Wed. Apr. 2		
	10:45 - 11:05	Fuel Cell
	11:08 - 11:28	Formula
Fri. Apr. 4		No class
Mon. Apr. 7		
	10:45 - 11:05	Rocket Motor

	11:08 - 11:28	Mini Baja
Wed. Apr. 9		No class
Fri. Apr. 18		Design Day (all day)