

**Written Reports & Oral Presentations
for Midterm and Final of MAE171B/126B**

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April 21, 2008

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**Written Reports & Oral Presentations
for Midterm and Final of MAE171B/126B**

- **Midterm Exam:** 30% of grade and consists of
 1. an oral **five to ten minutes** presentation (10%)
 2. a written **8 page max.** report detailing project outline, goals, work to date (20%)
- **Final Exam:** 70% of grade and consists of
 1. an oral **ten to fifteen minutes** presentation by entire group (30%)
 2. a written **20 page max.** report detailing entire project description, analysis of design and experiment, errors and limitation, accomplishments, and future work recommended (40%)

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In this lecture

- **Written reports**

1. What have we learned from MAE171a/126a?

2. Contents & grading of written reports

- **Written and Oral material**

- **Oral presentations**

1. Contents & grading

2. Tips on how to give a presentation

Role of report and presentation: report is essential material and oral presentation should be used to present and illustrate the work in your report.

See midterm as a progress report and final as an end report.

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Written Reports

What have we learned from MAE171a?

- **Written reports need structuring**

(abstract, introduction, theory, methods, results, conclusions, appendices)

- **Each section has its specific contents**

(introduction to introduce the reader to the subject, theory section for reviewing the important mathematics, etc.)

- **Figures, formulae and tables are very important**

(proper labeling, legend, line styles, colors)

- **Assume the reader is lazy**

(structure your text, highlight important conclusions, repeat important statements and conclusions)

- **Report writing is a skill**

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Written Reports

Typical contents of midterm/progress report

1. Title

Short and concise and describe the contents or major objective of the report.

2. Table of Contents

3. Project Definition and Objectives

Short introduction to your project, what are the main objectives, give a *problem formulation* and what are the sub-problems to address.

4. Project Task Descriptions

According to the objectives and the sub-problems, *specific project tasks* can be motivated and described. These tasks should address the solvability of the main problem or objective.

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Written Reports

5. Team Assignments and Organization

How is the *group organization*? According to the different tasks in the project, the group can be structured. Specific skills can be used to assign the different tasks to the group members.

6. Work Schedule/Gantt Chart

Given the project task descriptions and the assignment of the group, propose a *realistic work and time schedule*.

7. Experimental/Theoretical/Design Methods

Give a short indication of the *methodologies* planned to be used in the project. One can distinguish experiments, theory and design methods (if applicable).

8. Progress to date on tasks

It is a progress report, so what has been *done so far*?

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Written Reports

Contents of final/end report is similar to 171a/126a reports

Typical contents:

1. **Title**

Short and concise and describe the contents or major objective of the report. Include title page with full identification including class, names, group number, experiment, and dates. identification including class, names, group number, experiment, and dates.

2. **Abstract**

A stand alone condensation of the entire report into a paragraph or two which will enable the reader to get a summary view of the report. It should help the potential reader to understand what to expect in the report.

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Written Reports

Contents of final/end report:

3. **Table of Contents**

4. **List of Figures and/or tables**

5. **Introduction**

Introduces the reader to the material contained in the report. Should provide the *general objective* of the experiment to be described. The objective should be concisely stated using complete sentences.

6. **Theory**

The important theoretical ingredients and contributions, pertinent principles, laws, and equations should be stated, and specialized or unfamiliar terms should be defined here. Analytical diagrams such as theoretical cycles, flow diagrams, or dynamic response diagrams should be included here.

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Written Reports

Contents of final/end report:

7. Experimental Setup/Procedure

- How is the experiment designed and conducted.
- Accurate identification of the equipment. A generalized sketch or block diagram of the equipment such as models, test specimens, transducers, computer interface, software, etc.
- Description of how the experiment was conducted (test procedures or calibration processes).
- Someone familiar with the general area of investigation should be able to reproduce your experiments

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Written Reports

Contents of final/end report:

8. Data and Results

- Summarized general results of the experiment in a few short paragraphs, supported by such tables and graphs that are significant.
- Make a distinction between important data/results and supporting data/results in the appendix!
- Comment and conclude on your data/results.

9. Discussion

- Present the results of the experiment in the context of the analysis of the data.
- Recommendations should be made for any changes or further work that would more adequately accomplish the original objective.

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Written Reports

Contents of final/end report:

10. Conclusions

The conclusions wraps up your final report. Conclusions should *refer back to the problem formulation* and main objectives stated in the introduction. The conclusions should be concisely stated using complete sentences.

11. Error Analysis

If applicable, include a formal analysis of the propagation of errors from the raw data measurements thorough the analysis scheme into the final results.

12. References

Listing of bibliographic material used throughout the report.

Written Reports

Contents of final/end report:

13. Appendices (very important too!)

Summary of **Hardware**, **Software** and **Raw Data**.

HARDWARE

- Schematics/drawings of electronic circuits designed for experimental setup
- Listing of components purchased/used to construct experimental setup
- Schematics/drawings of electronic circuits designed for experimental setup

Written Reports

Contents of final/end report:

13. [Appendices](#) (very important too!)

SOFTWARE

- Listing of files located on a separate CD-rom.
- Copies of code listings or other special reference material.

RAW DATA

- Summary of calibration and reference data.
- spread sheets with data, drawings, and detailed derivations required in the analysis.

Written & Oral Material

What applies to **written material**, mostly holds also for **oral presentation**.

- Oral presentations need structuring (opening, introduction, motivation, body of the talk, results, conclusions/closure)
- Each part has its specific contents (introduction to introduce the audience to your subject/problem formulation, body of the talk to present your work, conclusions to wrap up the talk, etc.)
- Figures and formulae are very important (>1K words) (proper labeling, explain your figure!, legend, line styles, colors). Usually, you don't use tables: not very informative in a talk.

Written & Oral Material

What applies to written material, mostly holds also for oral presentation (and more)

- Assume the audience is lazy and is about to fall asleep (structure your talk, guide the audience through your talk, highlight important conclusions, repeat important statements and conclusions)
- A written report is restricted in size, so is your presentation (avoid a presentation that is too long or too short)
- An oral presentation is a skill and probably even harder than a written report! (direct interaction with audience)
- Anticipate and prepare questions from your audience. . .

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Oral presentations

[Midterm presentation](#) should be seen as a presentation of your [progress report](#). Hence, it will have to cover the following topics in a formal presentation:

1. Title of your talk
2. Project Definition and Objectives
3. Project Task Descriptions
4. Team Assignments and Organization
5. Work Schedule
6. Experimental/Theoretical/Design Methods
7. Progress to date on tasks

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Oral presentations

Final presentation is a **synopsis of your final/end report**. The final presentation can be accompanied by a poster.

Presentation is recommended to be organized as follows:

1. Project Definition and Objectives
2. Experiment Set-up and Experiments
3. Design and Analysis Tools/Theory
4. Discussion/comparison of Data and Theory
5. Conclusions and Recommendations

Oral presentations

Who is giving the presentation?

- The oral presentations (midterm and final) should be divided among your group members
- Suggestion:
 - the group leader introduces and outlines the presentation
 - the appropriate group members present their areas
 - the group leader closes the presentation
- Make sure that every group member has an even share in the presentation

Some tips

Oral presentations

Reasons why people don't like to give a presentation

- Fear of public speaking
- Fear of failure
- Fear of making a mistake
- "I don't know the subject well enough"

Reasons why you should give a presentation

- Feeling of accomplishment and recognition
- Motivating your audience
- Networking and presenting yourself & your work
- Education
- etc. etc.

Some tips

Oral presentations

Preparation of your presentation

- Select your topic: you should be familiar with and able to make it interesting to other people.
- Be aware of your audience: who are you trying to address and at what level.
- What are your rhetorical goals: your presentation should not replace your report, but want to make your audience read it.
- Practice(!) your presentation: see where the pitfalls are and examine the length of your presentation.
- Prepare: gather information, create presentation/slides, rehearse/practice, anticipate questions, possible backup slides

Some tips

Oral presentations

Suggestions for a good talk can be best illustrated by listing the things you shouldn't do ("How to give a bad talk", by David A. Patterson, UC Berkeley)

I. Thou shalt not be neat

Why waste research time preparing slides? Ignore spelling, grammar and readability.

II. Thou shalt not waste space

Transparencies and slides are costly to make, so fill them.

III. Thou shalt not covet brevity

Always use complete sentences, never just key words. If possible, use whole paragraphs and read every word.

IV. Thou shalt animate thy slides

Make it look like a movie, so people get distracted from the content.

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Some tips

Oral presentations

V. Thou shalt not write large

Use a small font. Important people sit in the front.

VI. Thou shalt not use color

Flagrant use of color indicates uncared research.

VII. Thou shalt not illustrate

"A picture = 1000 words" or "Pictures are for weak minds."?

VIII. Thou shalt not make eye contact

Just look at the screen and block it to add mystery.

IX. Thou shalt not skip slides in a long talk

You prepared the slides; people came for your whole talk; so just talk faster. Skip your summary and conclusions if necessary.

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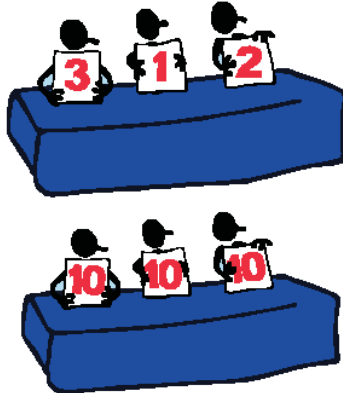
Some tips

Oral presentations

X. Thou shalt not practice

How can you appear spontaneous if you practice?

Take these “suggestions” into consideration!



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Final remarks

- The Midterm oral presentations will be given over three lecture times: **Monday April 28, Wednesday April 30 and Friday May 2** in **YORK 2622** from **5:00pm till 6:50pm**.
- All written midterm reports will be due on **Monday April 28, 2008** at the beginning of the class.
- Stick to the allowed time and # pages for your midterm, final presentations and reports.
- For schedule of midterm presentations, see <http://maecourses.ucsd.edu/labcourse/advanced/midterm.html>
- In case you have a time conflict, please email Prof. de Callafon at callafon@ucsd.edu (with a good excuse).
- The location, schedule and instructions for the final presentations will be posted on the MAE171b website at <http://maecourses.ucsd.edu/labcourse/advanced/final.html>

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