ME381: Final Project

Prof. Horacio D. Espinosa             Fall 2002

Topics:

1. You can choose any topic related to the content of this class. For examples of previous class projects, check the class web site.

2. The project should address the following items: i) literature review (see references and journals listed in the course syllabus; many papers are available in the NU library, otherwise, request and interlibrary loan as soon as possible; also use the internet to visit company sites). This review should provide background, identify the relevance of the technology, and explain the state-of-the-art on the subject. ii) Outline key features of the MEMS devices as an enabling technology. iii) Explain every significant aspect of the device such as microfabrication, actuation mechanisms, variables being measured, sensitivity, etc. iv) Propose an improvement of the device or a detailed analysis of one particular aspect, e.g., microfabrication or structural response.

Groups: groups of up to 3 students will be allowed. Please choose group members based on background and personal interests. The projects involve features related to stress analysis, electronics, microfabrication, etc.

Proposals: one-page proposals are due on Nov. 5th, 2002. Use single space, font type “Times New Roman,” size 12 points. In your proposal indicate the topic you will be working on, motivation, and the relevance of the selected topic. Also, provide device concepts, fabrication process, and conclusions. You should also state what aspects your group would explore in significant depth.

Final Reports: Written reports must follow the guidelines of the grant proposal preparation guide (NSF 01-2) on the National Science Foundation (NSF) web page: [http://www.nsf.gov](http://www.nsf.gov). Your report should consist of a title, a project summary, a table of contents, a project description, reference cited, and a one page biographical sketch of the group members. You do not need
to include any other proposal section such as budget, etc. No page limit will be enforced. You may want to see previous reports and presentations to obtain a general idea.

The reports are due on **Dec. 6th, 2002.** Please submit a word file to Prof. Espinosa and Yong Zhu.

**Presentations:** Each group will deliver Power Point presentations, on **Dec. 12th, 2002.** Please bring a Zip disk to class and test your presentation in the room PC. The room will be announced later but it will have a projection system available. Technical difficulties will not be a valid excuse. You will need to test your presentation prior to your speaking date. The instructor and your classmate will grade the presentations. *Attendance is required to all presentations!* Each student should provide a letter grade and comments on the group presentations. Submit your power point presentation to the instructor and teaching assistant by Dec. 11, one day before the presentation.

**Grade:** See syllabus.

**Questions or comments:** see Professor Espinosa.