ENEE 646: Fall 2003
Project

You are required to do a project for this course, which will account for 25+% of your grade. As this is a fairly advance course in computer architecture, the emphasis on the project will be on putting into practice what is taught in class. You are expected to investigate some facet of computer architecture in much greater depth than covered in class. You are also encouraged to explore new ideas, rather than simply re-examine previously published work.

The end product of the project is a term paper, which will be due on November 30, 1999. You are encouraged to select a project as early as possible. The most common reason for not doing well on the project is not starting it early enough. If you wait until October end to start, you may not be able to finish it. Plan to do some work on the project every week. Also, plan to have it finished about 2 days ahead of the due date—many unexpected problems arise during programming, especially in the debugging phase. The computing sites can become crowded as deadlines approach, making it difficult to get a computer. Plan for these things to happen.

Topic
You are free to pick a topic related to the subject matter of this course (uniprocessors, branch prediction, dynamic scheduling, memory system, multiprocessing, ...), subject to my approval. The project could be hardware-oriented (design), software-oriented (compiler), or simulation-oriented (experimental). I would be happy to give suggestions. A good place to look for hints to select potential projects are the recent proceedings of the following conferences:

- International symposium on microarchitecture (MICRO conference proceedings)
- International symposium on computer architecture (ISCA proceedings)
- International symposium on high performance computer architecture (HPCA proceedings)
- International conference on Parallel Architectures and Compilation Techniques (PACT proceedings)

Some Example Projects:
Some example projects are given on the course web site.

Progress Reports
Progress reports (1-2 paragraphs in length) are due November 4 and November 18. You should have a topic picked up, and some work done when you submit the first progress report. You should have made substantial progress in your work when you submit the second progress report.

Demonstration
You will have to schedule an appointment with me during the period December 1 - December 5, and do a demo of the work that you have done. A substantial part of the project grade depends on the outcome of this demo.

Final Report/Paper
The end product of this project is a report describing your work. It should have a research paper format, with a short abstract (100-200 words), and about 15 pages single-spaced. You must turn in your report on or before December 9 (a 5-day extension of the deadline specified in the syllabus).
Writing skills are important: if a student/researcher who is not working on the same topic cannot understand your report, then chances are that your report will get a poor review. A good work could be improved and published in one of the special interest group news letters (e.g., Computer Architecture News).
Project Grade Breakup

<table>
<thead>
<tr>
<th></th>
<th>Due Date</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Progress report 1</td>
<td>November 4</td>
<td>5%</td>
</tr>
<tr>
<td>Progress report 2</td>
<td>November 18</td>
<td>5%</td>
</tr>
<tr>
<td>Demo and Quiz</td>
<td>Dec 1 - Dec 5</td>
<td>30% + 30%</td>
</tr>
<tr>
<td>Final report</td>
<td>December 9</td>
<td>30%</td>
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<tr>
<td><strong>Total</strong></td>
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<td>100%</td>
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Doing an excellent job in the project enhances your chances of getting extra credits, which can be applied to the overall course grade.

**Working in Teams**

You can work in groups of size 1-2. The bigger the group, the more work expected from the group as a whole. Each member of the group **has to do a different part of their combined project**. The group is responsible for splitting the work appropriately. Although a group will submit the term paper and make presentations collectively, the report should clearly state what each member did. Also, the demo + quiz part will be held independently for each member of a group. During the demo + quiz time, the student will be asked questions to ascertain the contributions he/she made to the project. Please notice that the grades obtained for the demo + quiz part by individual members of a group may be different.