To: EEE193 students

From: Dennis Dahlquist, 5/1/03

Subject: Final Project Report Addition Information, Accreditation Documentation

Our upcoming accreditation visit requires that you include the following information in your Final Project report.

Here are the exact words from ABET:

“…..a major design experience based on the knowledge and skills acquired in earlier course work and incorporating engineering standards and realistic constraints that include most of the following considerations: economic; environmental; sustainability; manufacturability; ethical; health and safety; social; and political.”

Attached is an example being used by CpE prepared by Dr. Becker. Please see the attached page and prepare a supplementary report with your project documentation.

Dr Becker prepared the attached pages as if the project was the micromouse project. He stretched his imagination and the truth a bit……..don’t use his work as a model too much.
Senior Project Considerations

<Project Name insert here>

(For example :)
Micromouse Competition

EEE193, Senior Project
Spring 2003

<Group Number and Member names insert here>

Economic:

Due to the fact that our project was an entry into a regional competition among universities in northern California, and not a product prototype, our primary economic constraints were:

a. we, as students, had to purchase/acquire all of the parts with our own funds/ingenuity
b. under contest rules, we were not allowed to buy a ready made chassis nor any pre-assembled system level components
c. the cost of our mouse was limited to $xxx by IEEE rules (which may or may not be true……RWB)

Environmental:

Our group considered the environmental impact of our micromouse:

a. since the mouse uses batteries, we took precaution to dispose of used batteries in an appropriate manner
b. when the contest is over, we agreed to dismantle the micromouse and salvage the metal for reuse, the microcontroller for reuse, and discard the batteries in an appropriate manner

Sustainability:

The product of our senior project will cease to exist after the contest. As such, there is no need for distributing hardware and software updates and revisions. Our mouse web site will also be shut down.
Manufacturability:

Our micromouse was a one only working project. By contest rules, it can not be manufactured, marketed, sold, etc. as the micromouse contest will continue in future years.

Ethical:

The ethical issues on the project were very substantial. By contest rules we could not use material learned from previous micromouse projects. The temptation to study the mechanics of older mice, previous software, and previous senior project reports existed, but we did not indulge. Our Professor, Dr. Vadhva was crystal clear about this stipulation!

Health and safety:

We studied a couple of health and safety issues on this project:

a. Our mouse uses low power infrared sensors, but we knew nothing about IR safety. We learned, however, that many devices, even those in homes, use IR devices with more power than our sensors. To be sure one of our team members slept with an IR transmitter ‘on’ and stuck in his right ear for a fortnight. He awoke with ear aches but his exam scores went up. He kept the IR device; fortunately we had extras.

b. Years ago, a person stumbled on the mouse maze because the maze was setting on the floor in a lab. As a result, we instituted a practice of storing the maze upright in sections when we are not in the lab doing test trials with our mouse. We caution observers not to step on our mouse as they might easily hurt themselves and destroy our mouse.

Social:

As a group, we feel some intense social pressure to perform well during the multi-university competitions. Dr. Vadhva has told us that our mouse represents all of the students and faculty at CSUS during the competition. Occasionally, TV crews, on a slow day, take video footage of the competition and highlight the local mouse from Sacramento. This social stress has caused friction in our project group.

Political:

Everyone in our group has taken at least one political science course. We pondered if there were any political constraints on our micromouse; if there were any regulatory statues against building robotic mice; if our mouse should be a “he” or a “she” or an “it” mouse; if our mouse should be state supported or non-state supported; and so forth. In true political fashion, we couldn’t reach a conclusion.