

Engineering Student Technology Committee

Meeting Minutes for December 1, 2004
Dean's Conference Room, 8:00am

Present: Prof. David Alciatore (ME), David Bryant (ME), Bryce Eldridge (ECE), Ryan Fleming, *chair* (CE), Henrik Forsling (CE), Doug Hopper (ME), Derek Johnson (ChemE), Amanda Kaiser (ME), David Miller (ChemE), Mark Ritschard (ENS), Heidi Shray (ECE), Dr. Tom Siller (Academic Affairs)

Absent: Prof. Jeff Collett (Atmos), Mike Floren (ChemE), Kendra Gabbert (CE), Klaus Hartinger (ECE), Prof. Kevin Lear (ECE), Russ Schumacher (Atmos), Luke Van Roekel (Atmos), Prof. David Wang (ChemE), Civil Engineering faculty (*unfilled*), Intra-departmental undergraduate (*two unfilled*)

Agenda

- Proposals
- Grad Farm
- Microsoft Office in the Internet Cafe
- Photoshop/Dreamweaver
- PC's in the Internet Cafe

Review of Meeting Minutes

The minutes of the meeting on October 27th were accepted.

Proposals

Hopper presented the RAMLab proposal. This proposal included new electrical equipment for the RAMLab in addition to some software packages used for flowchart and PCB layout. It also laid out the plan for using the RAMLab for Urban Search and Rescue Robotics research in the future.

The committee decided that this was a proposal that could be partially funded if that was what made the most sense. There was some discussion of the software licenses, and the number of students they would be able to serve. For Eagle, the PCB layout software, a license for only the RAMLab would cost about \$1300, while a site-license for the entire department would only cost \$6000.

Shawn Klawitter presented a proposal from the Chemical Engineering department about getting a laptop for their students' use in presentations, separate from the ENS laptops. This proposal had been rejected by the committee last year, so the new proposal addressed some of the issues that had come up, including security and verification that the laptop would only be used by students. There was also some discussion about compatibility issues between the ENS laptops and the current ChemE projector equipment. The point was made that this laptop would reduce the load on the ENS loaner pool. Students have requested it and professors in the department support the idea. The major concern was that the department was spending money

on something that was already provided by ENS, so some suggestions on other sources of funding for the laptop were provided. However, the money would come out of the ChemE department allocation and not out of the strategic initiatives fund, so the point was also made that they should be allowed to spend their money on what they want. There was some clarification on the current status of the ENS loaner pool.

Kaiser motioned to approve the proposal, and Dr. Siller seconded. Ritschard added a condition that the laptop be of the same type as the new ENS laptops to make it easier to maintain. The committee voted, and the motion passed.

The committee then looked at the proposal for the EE404 lab upgrade from the Electrical Engineering department. Since the sponsor of this proposal was not present, there was not much discussion, but the committee agreed that it was a good idea and that it would help to increase the quality of the EE curriculum. The committee will further discuss and vote on proposals at the next meeting.

Dr. Abt's Ideas

The committee discussed an e-mail from Dr. Abt which outlined his suggestions for the strategic initiatives fund, which included a "telecom center" in the Lockheed Martin Design Studio. This center would have videoconferencing technology, and would allow students to work on projects with other groups around the world. Points were made that this would be good work experience for students, but that it might take a while for this to be fully utilized and established. Dr. Siller mentioned that companies have offered to support this type of facility, and that it might be a good idea in the future.

Next Meeting: December 10th, 8am

Submitted by
Bryce Eldridge

EE404 laboratory upgrade proposal for the Engineering Student Technology Committee

Introduction

EE404 is an experimental course on optical electronics that is being taught every fall semester as a supplement to the EE441. This course is being offered every year since 1988. This course introduces the basic principles of operation of lasers and photonic devices, as well as teaches essential optical techniques and experimental skills. The course includes 13 experiments covering the HeNe laser principle of operation and alignment techniques, properties of laser emission, laser diodes and LEDs, optical fibers and transmission lines, and holography.

Benefits for the Students of the College of Engineering

Typically the course is attended by 15 - 20 students, mostly from Electrical and Computer Engineering (ECE). However, in the past students from Mechanical Engineering and Physics were taking this course as well. As the departments of Mechanical Engineering and Chemical Engineering carry out significant research programs on laser based fuel ignition and laser spectroscopy we expect that more students from outside of the ECE will benefit from attending the EE404 in the future. We also anticipate larger enrollment of the ECE students due to the expansion of the laser research within the newly formed Engineering Research Center (ERC) for Extreme Ultraviolet Science and Technology.

Requested Equipment

Most of the equipment used in the EE404 laboratory was purchased in the late 80s and early 90s, and have not been upgraded since, despite its heavy use. Specifically, the optical power meters used practically in every experiment are in very bad shape and were never rebuilt or replaced. Also, the HeNe laser tubes that were purchased in 1988 are aging and last year one of them failed and had to be replaced. Currently we are using Pentium II computers that were purchased about six years ago. One of these machines failed and had to be replaced with a computer from our research lab. We therefore propose to replace these essential for the EE404 laboratory parts with new equivalent (or better) ones, along with replacing some other parts listed below.

1. Newport power meters 1815-C, 4 pcs., \$744 each.
2. Newport power meter attenuators 883-SL, 4 pcs., \$132 each.
3. HeNe laser tubes, Jodon CE-252-1.5C-B/W, 2 pcs., \$597 each.
4. Diffraction Gratings, Edmund Industrial Optics H43-005, 4 pcs., \$104 each.
5. Mirrors, Edmund Industrial Optics H43-871, 4 pcs., \$11.50 each.

6. Mirror/grating mount, KM100B, 4 pcs., \$52 each.
7. Pentium IV computers with ISA slots, 4 pcs., \$1050 each.

Total amount ~ \$9568.00 + ~ \$200 shipping charges

Funds Matching

Since one of the goals of the ERC for Extreme Ultraviolet Science and Technology is to promote education in the field of lasers and optical electronics the Center is committed to support the EE404 activities. Accordingly, the Center will cover **21 %** of expenses requested in this proposal. The Center will also contribute by lending expensive experimental equipment (such as high frequency digital oscilloscopes, frequency synthesizers, power supplies, and optics) for the experiments in the EE404 laboratory. This contribution will significantly enhance the technical level of the experiments and will allow the students to learn about lasers and optical electronics using the most up-to-date technology.

Due to the importance of the EE404 the Department of Electrical and Computer Engineering is also committed to support this proposal with an offer to match additional **12 %** of the total requested amount.



Knowledge to Go Places

Department of Chemical Engineering
Fort Collins, Colorado 80523-1370
970.491.5253
FAX: 970.491.7369

November, 2004

To: Engineering Student Technology Committee

RE: Chemical Engineering Proposal

The Department of Chemical Engineering wishes to use Chemical Engineering tech fee funds to purchase a laptop for undergraduate use. The approximate cost will be \$1600. This laptop will only be for the use of undergraduate students.

During the freshman year and again in the junior and senior years students are required to give presentations that require the use of a laptop and projector. In the past the students have requested the items from ENS or the department if available. On occasion problems occur that hinder the students from performing their presentations. Some of these problems include but are not limited to: the laptop being broken or in poor working order when the student receives it; the laptop being incompatible with the department projector; the laptop running a different operating system or not having the proper programs to use with the presentation.

These presentations are a vital part of the Chemical Engineering experience. The freshman presentations prepare the student for future presentations in the major while the Unit Operations presentations give students the opportunity to enhance their presentation skills that they will use not only in industry but also as graduate students.

The department acknowledges that there are six laptops for checkout from ENS at any one given time however, we feel that it is in our students' best interests to have a laptop on hand that is compatible with the projectors and equipment in the department.

If you have any questions or concerns that you would like us to address please contact Shawn Klawitter.

Sincerely,

Claire Lavelle
Department of Chemical Engineering
Executive Assistant and Outreach Coordinator