

Engineering Student Technology Committee
Technology Fee Project Proposal
Must be submitted on or before February 9, 2001

Please use this form to request technology fee expenditures for equipment in classrooms, computer laboratories, or other instructional or research laboratories, in keeping with the State Board of Agriculture Charges for Technology Manual guidelines found at <http://www.colostate.edu/services/acns/itec/fee.html>. Technology committee members are available for assistance, the names of whom appear in Section IV. Also see Section IV for submission information.

Section I. Overview

1. Title of proposal

Proposal for PCs in the Linear Circuits Laboratory

2. Submitted by (Name & contact information of primary submitter(s) – up to three)

Gary Robinson (491-6575), Tom Aurand, Derek Lile

3. Proposal supported by*

Department of Electrical and Computer Engineering

* Proposals with wide-spread support from a cross-section of the college will be given preference. Although this form may be submitted electronically with a list of supporters, actual signatures are required for all supporters beyond the original submitter(s).

4. This project request is

- for student wages
- for software
- to maintain and/or upgrade existing facilities (replacement equipment only requested)
- to augment and maintain existing facilities (some new equipment requested)
- to provide a new facility (all new equipment requested)

5. Brief summary of proposal (Please limit answer to no more than one paragraph)

We are requesting funds to purchase 12 personal computers (PCs) and supporting equipment for the Linear Circuits Laboratory. The equipment will be used primarily for computer-controlled measurements in the laboratory sessions of EE 201 Circuit Theory and EE202 Circuit Theory Applications.

6. Location for proposed equipment or software:

Room C105 Eng

6a. Equipment/Software requested (complete only if proposal is for equipment and/or software):

Specific equipment needed	Number Requested	Unit Cost	Total Cost
Personal Computer HP Vectra VL800 Intel® Pentium® 4 processor at 1.5GHz, 128MB RDRAM®, 20GB HD, 48X CD-ROM, and Windows® 2000 (part # P2074T)	12	\$2425 (with educational discount)	\$29,100
GPIB Interface Card Agilent 82350A PCI High-Performance GPIB Interface Card for Windows 95/98/NT/2000 (part # 82350A)	12	\$495	\$5940
Printer hp LaserJet 8150dn (part # C4267A)	1	\$2657 (CSU price agreement)	\$2657
Shipping		\$200	\$200
Specific software needed	Number Requested	Unit Cost	Total Cost
None			0
Total cost:			\$40,354

Section II. Pedagogical considerations

1. What are the pedagogical goals of this proposal? (Please limit answer to no more than three paragraphs)

EE 201 and EE 202 are required ECE courses and are taught 4 times per calendar year with a total of 14 laboratory sessions per calendar year. Currently, there are no PCs in the Linear Circuits Laboratory (room C105 Engr). When an experiment requires computer control, the EE 201/202 students are shifted temporarily to room C107 Eng, where PC-measurement set-ups exists, and the students normally in C107 are moved to C105. This exchange of lab locations limits the number of PC-controlled experiments in EE201/202 to one per semester. With PCs installed in room C105, we will be able to greatly expand the number of PC-controlled experiments in EE 201/202. The new PCs will also be used by students for lecture-related assignments, including circuit simulation and report preparation.

Most of the existing equipment in room C105 can be remotely controlled via the IEEE488/GPIB bus. And we are planning to seek a gift of GBIB instruments from industry to update the current lab instrumentation. Thus we are also requesting funds from ESTC for a GPIB board for each PC. If there are suitable GPIB cards not currently being used in other College of Engineering labs (i.e., the HP Kayak 2 PCs), then the proposal request could be reduced by the corresponding amount.

Note that we are requesting funds sufficient to purchase HP Vectra VL800 computers. We believe it prudent to purchase the HP brand because of high reliability and to make a positive impression with HP representatives when soliciting future computer donations to our instructional labs. The higher performance model VL800 was chosen to provide longevity. Further note that we are not requesting funds for purchase of video monitors, since we have been informed that a sufficient number of surplus HP monitors are available from ENS.

2. Why is the request appropriate for the goals stated in #1, above?

(complete only if proposal is for equipment and/or software):

The PCs requested will be used to control the measurement instruments.

3. Planned course/research benefit:

<u>Course No./Research projects</u>	<u>Number of students affected/semester</u>
EE201 (3 credits) and EE202 (4 credits)	about 90 students/semester about 20 students/summer (total of 201 students in 2000-2001)

4. How will this proposal improve instruction (specific lessons, experiments, exercises affected, etc.)?

(Please limit answer to no more than three paragraphs)

The existing experiments will be revised to include the use of available HP VEE and National Lab View software for control of measurements and to display results. Furthermore, the current use of MathCad for theoretical calculations and PSpice for circuit simulation will be integrated into the laboratory exercises. Experiments using operational amplifiers and RLC circuits (both frequency response and transient response) will be revised to include computer-controlled measurements.

The requested PCs will also be available, when EE201/202 labs are not in session, for general purpose computing. When special software which requires local installation is needed for ECE courses, the requested PCs will be available.

Section III. Operation, Maintenance, and Funding

1. What functionality will this equipment provide that is not already available elsewhere in the college?

PCs in other locations are not available for the intended use in C105 Eng.

2. How many hours per week (M-F, between 7am and midnight) will this equipment be accessible for general student use? (complete only if proposal is for equipment and/or software)

92.5 hours/week, including weekends.

3. How will students be made aware of this project? (complete only if proposal is for equipment and/or software)

It will be obvious to the students using the Circuits Labs that PCs have been added.

4. Complete either A or B:

A. If this request is for student employee wages, who will be the supervisor of those students?
(the supervisor must sign here if name does not appear in Section I, #2 or #3)

B. If this request is not for student employee wages, who will be responsible for oversight and any installation, ongoing maintenance, or repair for this project?
(the responsible party must sign here if name does not appear in Section I, #2 or #3)

Tom Aurand

5. What operation & maintenance services would be needed from ENS staff? from department staff?

ENS - software configuration and image loading, and printing supplies.
ECE Dept (Tom Aurand) - installation, oversight, maintenance, and repair.

6. What modifications of current space will be necessary to install the new equipment (remodeling, wiring, security, furniture, etc.) and what is the source of funding for those modifications?

NONE

7. What is the estimated cost of operational expenses (supplies, maintenance, supervision, student assistance, etc.) and how will those expenses be funded?

ENS - Additional expense for printer supplies (approximately 5 toners/year + \$500)
ECE Dept - No additional expense.

8. What other sources of funding (and how much) exist for this project (outside grants, equipment donations, reallocation of existing equipment, etc.)?

None at this time. Donations of test equipment will be sought for Agilent, Fluke, and other instrument makers.

9. What attempts have been made to obtain the funding from other sources?

ECE Departmental Chairman (Derek L. Lile) has contacted HP, but HP is not accepting gift requests at this time.