Engineering Student Technology Committee

http://www.engr.colostate.edu/ESTC

College of Engineering

Colorado State University

The Engineering Student Technology Committee (ESTC) invites proposals from students, faculty, and staff for technology related equipment to enhance the student educational environment in the College of Engineering at CSU. Each year, the ESTC allocates funding for strategic projects that will have a near-term benefit to students. This year, the committee is soliciting proposals in the $5K - $10K range. Proposals must be primarily for equipment and have a direct benefit to the educational mission of the college. Please review the Charge for Technology (CFT) manual for permissible use of CFT funds: http://ucft.colostate.edu/aspx/www.ucft/pdf/cftmanual.pdf.

The ESTC is particularly interested in intra-departmental proposals or proposals that benefit a large cross-section of students. Partnerships with the ESTC that fund projects beyond the limitations of the CFT are especially compelling. Note that the committee is not, in general, interested in funding projects that are specific to a particular research group or that affect only a small number of students. To submit a project proposal, please complete this form and send it as an e-mail attachment to priedo@rams.colostate.edu by March 29th for full consideration.

1. Title of Proposal: Combined Proposals for **MECH 231** and **MECH 338** with Resulting 25% National Instruments Discounts on Quantity Orders

2. Proposal Participants:

Primary Contact for Proposal

Name: Dr. Patrick Fitzhorn E-Mail: patrick@engr.colostate.edu

Department/Major: Mechanical Engineering

Circle One: **Student** **Staff** **Faculty**

Additional proposal participants: Mike Gogarty, ME Lab Manager

3. Proposal Abstract (limit to 100 words):

If ESTC chooses to fund both ME proposals – for MECH 231 and MECH 338 – there is a cost savings of over $2,500 that results ($1,332 savings to ESTC, $1,332 savings to the department in matching). This is due to the combined quantities (5 or more of each item) of National Instruments cDAQ chassis and modules that trigger NI's 25% cost reduction on quantity orders.

4. Proposal Budget

List of items to be purchased and cost

Item	Description and Use	Unit Cost	Units	Total
NI cDAQ 9174	Modular 4-slot USB data acquisition chassis – holds modules for accelerometers, thermocouples, pressure transducers… organizes signals and sends them to PC over USB *25% discount for 5 or more*	$699 $525	8	**$4,194**
NI 9219	24-bit analog input module *25% discount for 5 or more*	$1,059 $795	5	**$3,972**
NI 9211	4-channel thermocouple input module *25% discount for 5 or more*	$369 $277	8	**$2,214**
NI 9234	4-channel dynamic signal acquisition module for accelerometers *25% discount for 5 or more*	$1,599 $1,199	5	**$5,997**
NI 9263	4-channel analog voltage output module for sensor excitation and control *25% discount for 5 or more*	$390 $293	5	**$1,463**
NI 9201	8-channel 12-bit analog input module for pressure transducers *25% discount for 5 or more*	$390 $293	5	**$1,463**
Monitors	(from ENS)	$200	4	**$ 800**
Computers	(from ENS) – Front end, used with NI cDAQ chassis in conjunction with LabView for data acquisition, experimental control, and data upload for analysis and report writing	$720	4	**$2,880**

TOTAL: $22,981

Dollar or percentage amount requested from ESTC: **50% match by Mechanical Engineering**
$22,981 * 0.50 = $11,491

Total from **MECH 231** proposal with 50% match: $ 7,213
Total from **MECH 338** proposal with 50% match: $ 5,610
$12,822
Total with savings from NI 25% discounts: - $11,491
Total Savings by funding both: **$ 1,332** [1]

[1] This savings is actually double since the ESTC saves $1,332 and the department saves $1,332 in matching – resulting in an actual savings of over $2,500.

5. Full description of proposal:

This proposal outlines the benefits that occur if ESTC chooses to fund both the MECH 231 proposal and the MECH 338 proposal – saving $1,332 for ESTC and $1,332 in departmental matching. This savings is the result of pooling the purchase of NI equipment for the two labs, and adding quantity one to four modules, to have quantities of 5 or over for all NI equipment. This triggers an immediate 25% reduction in price of all items. Funding both proposals results in the following benefits:

1. A substantial department/ESTC cooperative investment in two required undergraduate ME laboratory courses.
2. A significant positive impact on 300-350 or more undergraduate engineers per academic year
3. An increase in the number of NI modules ordered (5 instead of 4 in several cases) providing flexibility for students and ability for immediate replacement if a module fails during class.
4. A savings of over $2,500 from funding both proposals individually.
5. A consistent, supported, state-of-the-art laboratory interface seen by ME students in their junior-level laboratory courses.