

# **Engineering and Technology Industry Council Capacity Investment Plan Biennium from July 1, 2003 to June 30, 2005**

**Campus:** Western Oregon University  
**Contact Name:** Bob Broeg  
**Submission Date:** September 25, 2003  
**Summary of Proposal:** \$250,000

WOU is requesting \$250,000 for the revised ETIC Capacity Investment Plan. This is an increase from our previous investment plan. We originally proposed an investment of \$500,000 for biennium 2003-2005, but it was reduced to \$166,667 because of concerns of raising the 30% required matching funds. We now have a commitment from the administration of WOU to assist, through the Western Foundation, with obtaining the private matching funds. We therefore ask the ETIC council to consider 50% of our original main plan; that is, 50% of \$500,000.

Our proposal has three key goals

- Equip an expanded network laboratory for our CS and IS majors.
- Upgrade the computing environment and infrastructure for faculty and students.
- Retain our adjunct faculty to teach special topic classes and lower division/service classes and to pay overloads to our tenure track faculty.

## **Goals**

We currently have a small, ad-hoc network laboratory that is used extensively by a number of classes. Much of the equipment is aging and is surplus equipment from University Computing Services. Our first goal is to upgrade and expand our current lab.

The computing infrastructure for the faculty and for the students needs updating. For the faculty, office machines need replacing, and new software needs to be purchased for classes. For students, the programming IDE that is on the campus network is several years out of date. A new site license needs to be purchased so that it can be updated.

We rely on adjunct faculty to teach lower division and university-wide service classes; thus, freeing our tenured faculty to teach classes in our majors. We also rely on adjunct faculty from industry to teach special topic classes that may be outside the expertise of our tenured faculty. In times of budget cutting, adjunct faculty are among the first cuts made, so our third goal is to keep our current adjunct faculty.

## **Investment Rationale**

We have had an ad-hoc networking laboratory for several years. Currently it consists of 8 Dell PC's and several surplus hubs and router from University Computing Services. These machines are used extensively, in particular by our Information Systems major, which contains classes in system, database, and network administration. We need to replace the current machines and we hope to expand the number of machines. We would purchase at least one Cisco small classroom lab kit and additional hardware for wireless networking technology, a RAID server, and various firewalls, cables and tools for building and testing network cables. This investment would be approximately 15% of our allocation.

Upgrading networks, replacing machines for faculty use, and purchasing new software is a fact of life for a Computer Science department. In addition to upgrading faculty desk machines, we need to upgrade our facility for parallel computing, complete the upgrade to our LAN and upgrade our departmental server. Our base programming language is Java, and we have an early version of JPadPro on our campus network for students to use as their programming environment. Part of this proposal would be to purchase a new site license from the vendor which will allow us to upgrade to the latest version of the program. The investment in this proposal would be approximately 10% of our allocation.

Given the composition of Western Oregon University, ETIC funds do not help us to expand our tenure track faculty directly. However, we can use ETIC funds to hire adjunct faculty. When we use adjunct faculty to teach our lower division and university-wide service classes, it allows us to make better use of our tenure track faculty to teach upper division classes. And, the use of adjunct faculty from industry allows us to offer special topic classes in cutting edge areas that our current faculty do not have expertise in. We would invest approximately 75% of our allotment in adjunct faculty hires and overloads for tenured faculty.

## **Results**

Our Information Systems major is growing rapidly. This major contains several classes related to server or database administration, and these classes require a lab containing machines with which students can experiment and over which they have administrative rights. In addition, we have expanded our networking classes over the last three years. The quality of these classes increases if the students can have hands-on experiences. In recent quarters we have had three classes competing at the same time for use of our limited current facilities. We expect to accommodate more students and to increase the quality of their education by expanding our network laboratory. In addition, we are not a Unix based campus, but with the advent of Linux and as more of our students express an interest in graduate school, we find the need to bring back our introductory Unix class, which went away—along with our Sequent Balance—three years ago. Some of the additional machines in the network lab will be dedicated to Linux.

The improvement to the infrastructure will help maintain faculty productivity, while upgrading student software will improve their learning experience. In order to teach students cutting edge technology, we must have access to cutting edge technology. We believe that improving our facilities for parallel processing will accomplish this goal.

The number of students in our major has grown significantly over the last several years. At the same time, the number of tenure track faculty has decreased. We need to make very effective use of our current faculty to maintain our program. We believe that the use of adjunct faculty for our large university-wide service classes and paying overloads for our tenure track faculty when they take on extra duties will allow us to maintain the number of student credit hours and the number of degrees granted.

## Proposed Investment and Private Support Forecast (\$M)

	7/1/03- 6/30/04	7/1/04- 6/30/05	Total
<b>Proposed OUS investment (\$M)</b>			
Support of existing faculty (1)	0	0	0
Funds tied to existing programs (2)	0.0925	0.0925	0.185
New programs (3)	0.0325	0.0325	0.065
Subtotal	0.125	0.125	0.25
<b>Expected private support (\$M) (4)</b>	0.0375	0.0375	0.075
<b>Total (\$M)</b>	0.1625	0.1625	0.325
<b>Faculty Supported (FTE)</b>			
Existing (1)	2.5	2.5	2.5
New (5)	0	0	0
<b>Total</b> (N.B. these are adjunct hires)	2.5	2.5	2.5
Notes:			
(1) Hired with ETIC funds through June 2003.			
(2) Programs started with ETIC funds through June 2003.			
(3) Use as many lines as you need to give the proposed new investment(s)			
(4) Consistent with ETIC Private Support Policy dated 1-23-02.			
(5) To be hired with ETIC funds during 2003-2005 biennium.			

## Metrics Forecast:

	Baseline	Projected			
	AY 99	AY04	AY05	AY06	AY09
Average SAT/ACT percentile of incoming freshmen (1)	44/40	44/40	44/40	45/41	46/42
Average GRE percentile of incoming grad. students (2)	N/A	N/A	N/A	N/A	N/A
Women graduating from ECS programs (5)	13%	14%	15%	17%	18%
Minorities graduating from ECS programs (5)(6)	15%	16%	17%	18%	20%
ECS undergraduate student credit hours	7170	7528	7888	8250	9863
ECS bachelors degrees granted	40	42	44	46	50
ECS graduate student credit hours	N/A	N/A	N/A	N/A	N/A
ECS graduate degrees granted	N/A	N/A	N/A	N/A	N/A
Pre-college contact hours (8)	see note below				
We have not tracked pre-college contact hours in the past, we are only now beginning to tack this data					
<b>Notes:</b>					
(1) If your applicants are required to submit SAT scores, use the percentile corresponding to the average composite SAT score of those submitting them. If they have the choice of SAT and ACT, use the average composite SAT score and the average composite ACT score, convert them to percentiles, and compute a weighted average of the two.					
(2) Percentile based on the average quantitative score over those submitting such scores; ignore verbal and analytic scores.					
(3) As a percent of those taking it for the first time					
(4) As a percent of all those entering					
(5) As a percent of all those graduating					
(6) Racial and ethnic minorities who are US citizens or permanent residents					
(7) Forecasts for multiple programs and departments are encouraged. Each ranking should be footnoted with the ranking body or ranking methodology.					
(8) Pre-college students participating in pre-college engineering, technology, computer science, math, and science programs					