

Advanced Technology Division

Budget Balancing Ideas

Drafting

Instructional Redesign/Efficiencies

Drafting's sustainability initiative was begun spring term 2006 which entailed the creation of one core program from three emphasis areas. This change was initiated to improve student skill sets and enhance their employability. Both financial benefits and efficiency improvements will be realized by the college through the new core program. It requires 33% fewer part-time TLC's than the original program design and enrollment in second year classes will significantly increase thus improving full-time faculty/student ratios.

Initiate a dialog with Continuing Education to explore integrating credit/non-credit students into a single class setting. Outcomes might include common curriculum for all CAD classes, the ability for students to convert a non-credit class to credit (based on common curriculum/assessment), improved space utilization rates (perhaps more evening &/or weekend offerings), and improved access for non-traditional students (with job or other time restrictions).

Possible Budget Reductions

Traditionally the drafting program purchases the newest version of AutoCAD annually. To contribute to the college's budget reduction efforts, the drafting program proposes the continued use of AutoCAD 2007 (current version) for an extra year thus saving the college approximately \$10K.

Revenue Enhancements

The drafting faculty intend to investigate grant possibilities for curricular and program innovations.

Manufacturing

Concerning Revenue Enhancements, I'd like to follow up on your suggestion of combining programs. What I would see as working would be combining (4) programs: Mfg, Welding Electronics and Drafting under one title. 72 credits total with each program having 18 credits of instruction. I don't know what you would call it - maybe Technology Cluster. Of course Mfg is already taken, not that I wouldn't mind changing ours to Machine Technology but Mfg is already known locally as the "Machinist trade" degree title.

I think this new degree would work best if offered with the RTEC/OIT 4yr Management degree as a likely outcome. The "would be" entrepreneur maybe

attracted also if marketed that way. There should be room to customize their electives. Engineering students may also be attracted.

Other than this there is the usual dead horse that I whip - lets spread differential tuition around for all to enjoy.

As far as program cuts, we have no place to go. We have already combined CNC with CAM and lost a half-time instructor. We are charging the students more and giving them less.

I could save on electricity with new Heat Treat Ovens, so the size of the part matches the size of the oven.

Diesel Technology Program

- Add a 12 credit pre-requisite to Diesel Tech that would be simply "Boot Camp for Mechanical Technologies" offer it every term and make it available at the main campus and at all satellite campuses. It could be offered CBT and online.
- Take on outside repair work through the advisory committee recommendation.
"An example of this would be complete hydraulic hose replacement on a backhoe".
- Obtain certification and begin training for CDL certification
- Develop industry sponsored student program in Diesel Tech.
- Work together with Lane transit district to coordinate a training program tailored to their technician needs.
- Offer **advanced** Diesel technology classes
- Take on outside repair work
- Hire a grant writer for the division
- Faculty can write a grant other than Carl Perkins each year

Electronics Program

It appears there are only two ways to improve the funding process. Increase Revenue or decrease expenditures.

Adding more students to our classes would reduce the cost/FTE.

Changing to one full time and two part time instructors would reduce costs. (Can we do this and get union approval?)

Suggestion #1

Eliminate a full time position. By reducing the number of credits that our students need to take (from 96 to 92 credits) and assigning "Principles of Technology" as part of that load. The daytime E.T. program could be reduced to 79.51 TLC's.

REDUCE TEACHER SALARY COST:

- Have a part-time instructor teach the computer hardware classes to CIT and our students.
 - 2 lecture sessions and 5 lab sessions ~16 TLC (this class is a revenue generator)
- Reduce electronic offering by two classes and reduce to one full time and one part time instructor.
 - Remove EET131 as a class (pick up sections of it in EET129 and EET130, electrical theory)
 - Remove EET282 STAMP computer hardware class. EET151 would pick up some of the basics and MicroComputer class the remainder. The microcontroller would be integrated into most of the second year classes.
 - One full time instructor : 45-46 TLC
 - One part time instructor: 20 TLC
 - Add Principles of Technology (mechanical course) which would round out our students. (needed because losing classes reduced the program from 96 to 88 credits and then adding PT brings it back to 92 credits)

Suggestion #2

Develop online classes to further reduce E.T. Faculty load. Lectures for Shop Practices, Robotics, PLC's, Electrical theory 3, digital 2 and Microcomputer Hardware could be presented online and the instructor could use his/her time for managing the labs associated with these classes. This will require curriculum development funding.

Suggestion #3

Move our daytime E.T. classes from morning to late afternoon and evening. This would expand the offerings for evening E.T. students (currently taking CBT classes) by giving them the opportunity to take second year classes in the same time slots that they are accustomed. The additional advantage is that we will probably be able to design our classes to include some Apprenticeship students which would also increase the student to teacher ratio.

Unknown RISK: how many daytime students would be lost vs. evening student gained.

Fabrication and Welding

Below are ideas we have been considering regarding change of the structure of the Fab/Weld program. These ideas are not commitments, but rather trends in thinking that have yet to pass the test of significant analysis.

1. Addresses retention of first year students into the second year:

First year of program:

- Maintain block time format for the first year

- Reduce fabrication/machine tool training
- Import some welding training from second year of the program
- Modularize some components

Second year of the program:

If block time format is retained:

- Fill time vacated by moving welding training to first year with more fabrication/machine tool training.
- Modularize some components.

If second year block time eliminated:

- Offer second year curriculum as single skill classes
- Offer second year single skill classes in afternoons or evenings
- Modularize some components

Aviation Maintenance

The curriculum change we have been working on will of course make us more efficient but I think I have an additional slant on it ... we teach every subject area to one of three skill levels ... and basically they are skill level 1 --- you must know about the topic area and be able to discuss it ... skill level 2 --- you must have an absolute understanding of the subject area and be able to discuss it with authority, you must be able to demonstrate your knowledge and skill if asked to Skill level 3 --- You must have an absolute understanding and you will demonstrate your knowledge of the subject area skill area 3 and parts of skill area 2 have definite lab time ... which brings me to skill level 1 and parts of skill level 2 ... they can be 100% CBT ... to the point that we (faculty) will not be involved with class room training ... these can be set up as online computer classes ... this will reduce faculty work load, which in turn will allow larger classes ... it will allow off campus students an opportunity to get involved with our program.

Cooperative Education in Advanced Technology

Revenue Enhancements

1. Have every program in the Advanced Technology Division submit a plan for entrepreneurial revenue generation.

Assumptions:

- Students would have actual, useable, real-world products to work on to build their skill sets
- Revenue generated would go directly into the program responsible for its generation
- General fund revenue would not be diminished as a result of the entrepreneurial effort
- Curriculum would be revised/redesigned to include the skills required for the completion of the product/project/service and meet all program outcome goals

- Advisory Committees would be integral to the planning process
- Advisory Committees would be responsible for identifying industries/agencies/ individuals to contract with programs for the manufacture of a /product/project/or service
- The contracting industry/agency/or individual would fund material and/or personnel needed for the manufacture, inspection, and receipt of products completed.
- Payment for the final project would have an agreed upon profit margin built in for program enhancement.
- Advisory committees and other representatives from industry would step-up and provide the resources needed to make the program a success

NOTE: The complexities endemic in this suggestion are many and include such issues as:

- Completion time-lines in an educational setting
- Compensation for completion of projects not completed during the regular school year
- Integrating a management system for the new curriculum

2. Integrate Welding/Fabrication and Manufacturing Technology to form a foundations class in which the basic skills needed for a career in the metals industry can be taught. Foundation academic skills of math, writing, English, as well as career related learning skills such as work habits, job search preparation would also be integrated.

Assumptions:

- There are both technical and academic skills, processes, and information that are common to both content areas such as metallurgical principles, measurement, layout procedures, metal identification, use of machine and hand tools, welding, reading, writing, math, interpersonal relations, etc.
- Students would have a broad understanding of the metals industry to allow them to make career decisions based on information and experience.
- Funding for planning and curriculum development from LCC funds could be leveraged to redesign the programs
- Commitment from advisory committee members for program support and participation would occur
- Full utilization of weld/fab and manufacturing labs could be achieved with an increase in students and consequent FTE
- Other similar integrations could be achieved at the foundations level such as Diesel Tech and Automotive Tech.

3. Cooperative Education Internships made a requirement in all PTE programs

Assumptions:

- Co-op Ed. enriches the educational experiences of students by providing the elements needed to foster student retention, improved program

participation, and improved class performance by providing high expectations, support for learning, immediate feedback, increased student involvement, and increased learning.

- 65 to 70% of students who successfully complete a Co-op internship get hired by the employer with whom they did their internship
 - Increased students can be accommodated in the formal classroom environment when students are on internships
 - Program curriculum is validated when students participate in Co-op internships and demonstrate, or fail to demonstrate the skills needed on the job
 - Co-op students and coordinators are ambassadors of the college, the college staff, and programs while in the community
4. Identify sources of funding dedicated to enhancing PTE programs and workforce development, and systematically apply for funds on an annual basis

Assumptions:

- There are funds available through Foundations, Industries, Governmental Agencies, and individuals for this purpose
- Grants require expertise to successfully apply and be funded
- A grant-writer with the necessary expertise would be hired to provide this service, compensated through a percentage of the grants awarded
- Department grant funds would go to the submitting department. Division grant funds would be distributed according to the components of the grant.
- Departments, Divisions applying for and being awarded grants would not have general fund dollars reduced as a result of being awarded a grant
- The College will support this revenue generating effort through institutional approval and authorization of grant applications.