


Infusing Photonics to Increase Enrollment in Electronics Engineering Technology



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Decrease in Enrollment of Electronics Engineering Technology Programs

- In Florida five out of fifteen community colleges that were offering EET in 1990 have closed their programs by 2007.
- The remaining ten colleges are experiencing problems with enrollment.

What are the Reasons?

- Today's students are not as excited about electronics as we were in the 70's and 80's (consumer electronics)
- Today's students do not understand the depth and breath of the electronics industry
- Today's students need to be reached with modern and intensive marketing methods

How can we excite today's students?

- Using modern technologies such as Lasers, fiber optics, or in general Photonics.
- Photonics has the potential to become what electronics was in the 1970's – 90's
- Not only is Photonics attractive to new students, but the job prospects are excellent, and starting salaries are way above average.
- Photonics is a niche technology that will help keep US as the world technology leader.

The Private College Paradox

- While public Community Colleges were closing their electronics programs, private colleges were expanding.
- Learning from private colleges
 - Intensive marketing
 - Recruiters at every high school
 - TV, Radio, and print marketing campaigns

Plan of Action

- Update curriculum and introduce programs that are attractive to today's students
- Change the image of the program to make it appealing to the new generation
 - Lab equipment and furniture
 - Lab layout, color selections
 - Project a high tech image
- Intensely market and recruit

Infusing Photonics in the EET Program

- EET program consists of 68 credit hours
- 15 hours are general education courses
- 53 hours are technical courses
 - 34 of the 53 hours make the electronics core
 - 19 hours make up different specializations

AAS Degree in
EET
68 Credits

General
Education
15 Credits

Technical Core
Courses
34 Credits

Major Field Electives
19 credits

Major Field Elective
Courses
19 Credits

Photonics

Robotics

Biomedical

Nuclear Power
Plant Technology

Photonics Specialization

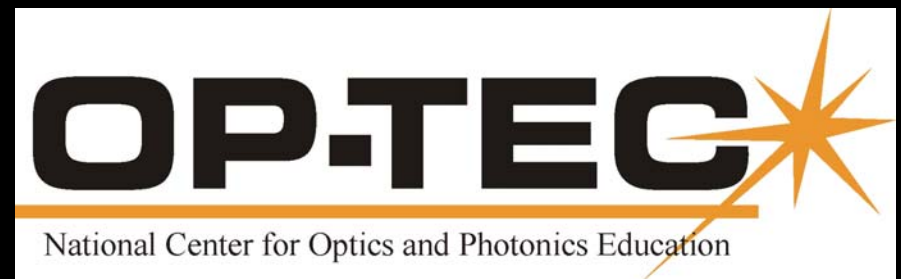
- Introduction to Photonics
- Geometrical Optics
- Laser Technologies
- Fiber Optics and Data Communications
- Special Topics in Electronics/Photonics

Photonics Curriculum and Training Challenges

- Most photonics, electro-optics texts were written for bachelors level or higher
- Photonics equipment is very expensive
- Where can an engineer get quick training in photonics?

Solutions to Challenges

- OP-TEC, the National Center for Optics and Photonics education has curricula developed for the technician level
- The OP-TEC curricula are designed with cost in mind. The lab equipment needed is carefully selected to make photonics infusion affordable



Creation of the Photonics and Robotics Institute

- A combination of 12 credits from the photonics specialization and 7 credits from the robotics specialization
- Meets Monday – Thursday from 8:00 am to 12:30 pm
- An application for admission is required
- Commitment from the student to be full-time
- Guarantee from the college that no classes will be cancelled due to low enrollment

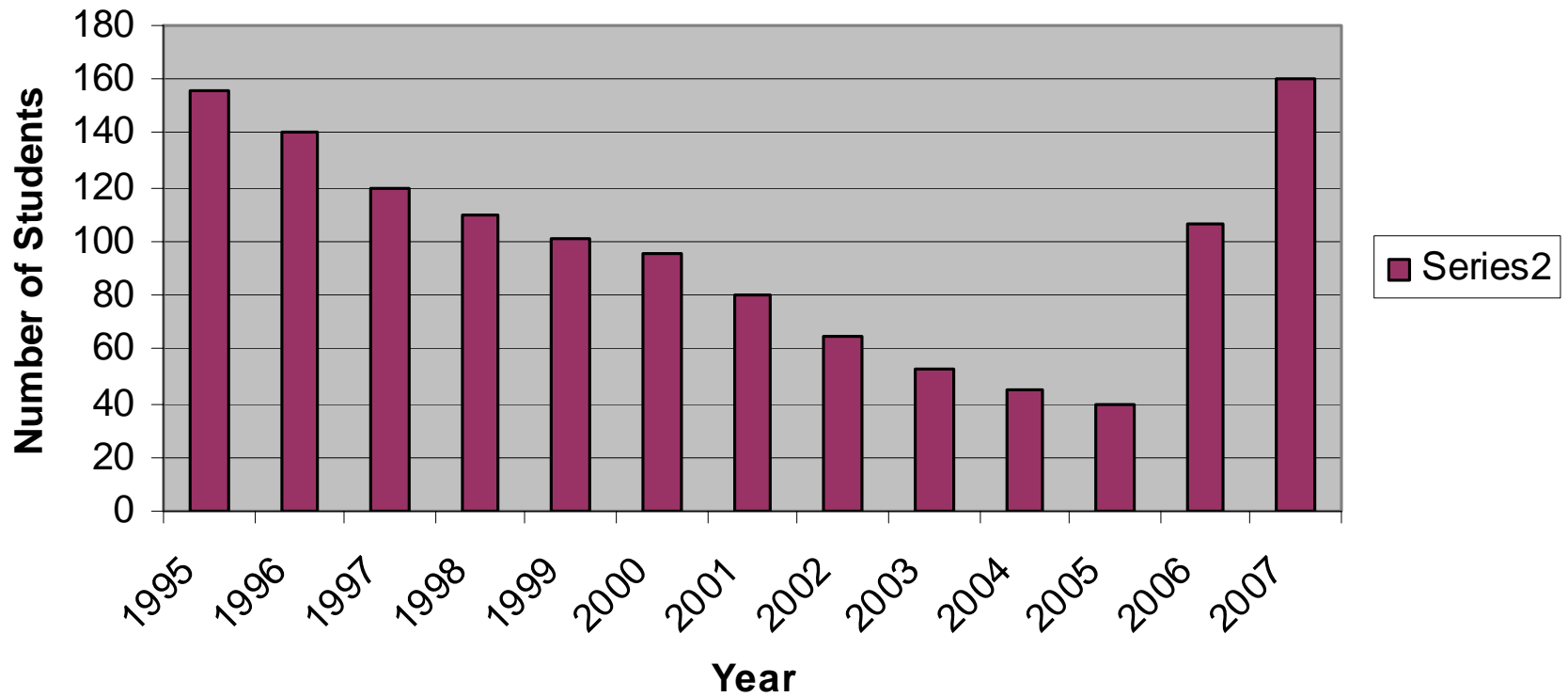
Marketing and Recruiting

- Colorful and attractive print materials were produced
- Articles were written and published in local papers
- A part-time recruiter was hired with the goal of having the first institute full to 24 student capacity for the Fall 2006 semester

Results

- In the Fall 2006 semester the institute was 100% full and many students were directed to evening classes
- Our evening enrollment increased by 80%
- The recruitment for Fall 2007 ended on May 30th with 24 new students (100% capacity) and 11 on a waiting list
- We are now examining the possibility of having an evening institute with 24 more students for the Fall 2007 semester

Enrollment of EET Department



Lessons Learned

- Electronics Engineering Technology is a moving target. Constant updating of the curriculum is a must.
- Add modern technologies such as Photonics, Robotics, Biotechnology, etc, that resonate with the new generation of students
- Create attractive marketing materials and aggressively present them to prospective students.

Lessons Learned Continued

- Hire a part-time recruiter and make it his goal to fill your classes with students
- Take advantage of the free advice and help from organizations like OP-TEC or other NSF ATE centers to add specializations to your electronics program
- Be on the lookout for new emerging technologies to add to your program

For More Information Contact



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