

**An Integrated Education for
ABET 2000 :
Experiences from a Small
University**

**Dr. Tom Hill, Dr. Richard Jerz, Dr.
George A. Kanzaki, Mr. Michael Opar**

ABET 2000

One criteria perspective:

- Define purpose and mission of program
- Explain & justify approach to curriculum
- Measure and demonstrate achievement

Overview of Ambrose Institute of Industrial Engineering

- **SAU's mission**
 - Value of the individual
 - Liberal arts (depth and breadth required)
- **IE is only engineering program, it is located in College of Business**

Overview (continued)

● **AIIE Mission**

• **What**

- » Develop Industrial Engineers who possess the modern technical knowledge and practical leadership skills to provide continuous improvement in their employer's processes and products.

• **Principle**

- » Every student is provided strong encouragement and guidance as they build their capability for the application of knowledge to the improvement of human existence.

Overview (continued)

- **Liberal arts needed to assure value in technology implementations**
- **Math & Physics provide support courses (OR and Eng. Fundamentals)**
- **132 Hours Required**
 - **IE Major - 54 hours**
 - **Math., Phys., Chem. - 24 hours**
 - **Engineering Fundamentals - 17 hours**
 - **Liberal Arts - 37 hours**

Curriculum Principles

- **Philosophy: Whole must be greater than sum of parts**
- **Senior project team experience required**
- **Internship required**
- **Integrate course contents and experiences to achieve overall objectives**
- **Writing across the curriculum utilized to assure good communication skills**
- **Practice continuous improvement of courses**
- **Use Advisory Board**

Examples of Principles

● Liberal Arts Components

- 37 hours required
- Electives are here, 21 hours
- Depth in theology and philosophy required

● Integration

- **Introducing topics IE290 Micro Apps**
 - » Introduction to computers
 - » Introduction to IE profession
 - » Introduction to technical writing
 - One winner of APICS International Student Paper competition

Examples (cont'd)

- **Writing Experience**
 - **Writing guide introduced in IE290**
 - **Technical writing class required (English department)**
 - **Two writing intensive courses required in IE**
 - » IE290 - Intro to Microcomputer
 - » IE351 - IE Design Lab
 - **IE courses with significant writing component:**
 - » IE375 - CIM
 - » IE490 - Senior Project

Examples (cont'd)

- **Engineering Graphics**

- **IE110 - Engineering Language/Graphics**
- **IE375 - CIM**

plus

- **IE295 - Material & Processes**
- **IE304 - Intro to Design for IE's**
- **IE490 - Senior Project**

Examples (cont'd)

● Design Experience

- **IE110 - Engineering Language/Graphics**
- **IE304 - Intro to Design for IE's**
- **IE340 - Ergonomics**
- **IE375 - CIM**
- **IE415 - Systems Integration**
- **IE490 - Senior Project**

Examples (Cont'd)

- **Continuous Improvements**
 - **Easy communication and content adjustments among professors**
 - » IE110 & IE375
 - **Some faculty funds available for course improvement**
 - **External grants (not research)**
 - » Faculty development
 - » Title III

Program Operation and Evaluation

- Share all this perspective with students, faculty, and others
- Set “do as we do” example
- Use student evaluations feedback
- Use survey info from graduates
- Continued contact with graduates
- Sharing of graduate’s experiences with current students

Hypotheses:

**We Are Educating Engineers
for the Future!**

**We are Positioned for ABET
2000!**