ETAS ADVISORY COMMITTEE MEETING MINUTES

MEETING DATE – 4-14-09
MEETING TIME – Dinner Served at 6:00PM. Meeting - 7:00 to 9:00 PM
MEETING ATTENDEES –

1. Andrew Dahlen – ETAS instructor
2. Mo Opsahl – Technical Supervisor – Digikey Corporation
3. Eric Wold – Automation Engineer – Arctic Cat Corporation
4. Matt Schaumburg – Second Year Student in the ETAS Program
5. Bruce Holte – First Year Student in the ETAS

AGENDA

1) CURRICULIUM –

Aligning Curriculum of ETAS program with Pre-Automation Certificate offered through 360˚ Multi-Institutional Program.

360˚ is in the process of developing an online pre-automation certificate.

Below is a side by side comparison of the 360˚ Pre-Automation Certificate and the existing ETAS classes that would be subject to change. Classes have been grouped by row into similar courses.

360˚ Pre-Automation Certificate		**ETAS Existing Classes**	
AC Power DC Power	3 credits 3 credits	Electricity 1 Electricity 2	2 Credits 3 Credits
Digital Electronics	3 credits	Digital Electronics	5 Credits
Analog Circuits	3 credits	Analog Electronics	5 Credits
Motor Controls	3 credits	NA	
Total	15 Credits	Total	15 Credits

These are the reasons Northand College is considering the modification to the ETAS Curriculum.

- Better alignment of ETAS program with other institutions throughout the state.
- In the face of declining enrollment in the ETAS Program, the online classes offer the opportunity to increase enrollment.
- Online courses provide flexible locations and scheduling.

Noted responses to this curriculum suggestions –

- Concerns over the quality of the online courses.
- Concerns about how to handle the labs. Discussion included the use of simulation software, kits (breadboard, DMM, and necessary components to performs labs), as well as condensed meeting times for labs.
- The ETAS courses (Electricity, Analog, Digital) are based on the needs of the local industry. Will the 360˚ Pre-automation classes adequately meet industries needs? Mo made the comment that Digikey hires graduates from other institutions, and their performance has been equal to Northland's graduates.

Motor Controls Course. – One of the biggest differences between the ETAS courses and the 360˚ Multi-institutional Program is the omission of the Motor Controls Course.

- The ETAS AAS can't exceed 72 credits. Adding a 3 credit motor controls class would require dropping credits from other courses.
- Reference the side by side comparison table above to see how the credits would be shuffled to accommodate a 3 credit motor controls class.

Discussion of motor controls class

- Motor controls are used across many industries. ETAS graduates would benefit from having knowledge and skills in motor controls.
- The class would cover topics including: Types of motors, DC motor control, AC motors, 3 phase motors, motor starters, H bridge, stepper motors, frequency drives, synchronous motors, servo motors, open and closed loop systems.
- A common course outline will be sent to the advisory committee members for review.
- Electricians study motor controls in terms of wiring and connecting devices to meet NEC specifications. Much discussion was had about NEC code and preparing the graduates to be "Power Limited Technician" or journeyman electricians. The Power Limited Technician may not be part of the motor controls class, but it would be worthwhile to investigate further. Andrew will look into taking the Power Limited Technician training and exam. It may be a valuable piece to add into the curriculum.
- Knowledge of motor controls would be useful for graduates working at Digikey. Digikey sells many products used for motor control applications.

Solid Modeling Course – Last year the print reading course was dropped and a Solid Modeling Class was added.

- Initial feedback from the students is positive.
- Eric commented that being able to find 3D CAD files for purchased components is increasingly important. Downloading files saves time and reduces opportunity for error in the design process.
- Andrew has some improvements for next year. Students will be required to download the software on their home computers or use school computer labs to complete assignments beyond scheduled class times.

2) STAFF DEVELOPMENT

- Andrew expressed interest in attending any training, internships, or seminars.
- Please let Andrew know about any upcoming opportunities.

3) CAREER DEVELOPMENT AND WORK BASED LEARNING

- Communicate any internship or part time employment opportunities for students.
- Given the current economic times, committee members didn't think there would be as many opportunities available. Students are encouraged to find employment even at entry level positions within companies. Even an entry level position exposes students to company culture, workplace ethics and employee expectations. This is especially true for students fresh out of high school.

4) MARKETING AND ADVOCACY

- Public Relations ideas.
- Microcontrollers Technology Fair. – Place more effort and organization into marketing and promotion of this event. Contact all regional high schools. Use the radiogram to promote this event.
- Summer camps – This summer we will have three summer camps: Thief River Falls, East Grand Forks, and we are adding another camp in Roseau. These events have been extremely popular and our feedback has been excellent.
- Possible robotics / electronics club. – Mo thought this would be an excellent idea. There are many people at Digikey that have projects or ideas they would like to explore outside of work. The club would allow students to interact with people in the industry, and provide an outlet for the electronics hobbyist / enthusiast. Look for this to be started in September 2009.
- Center for Manufacturing Excellence - 360mn.org

5) STUDENT RECRUITMENT, MENTORING, AND PLACEMENT

- Discuss recruitment strategies. – Some of this was talked about under the technology fair and the electronics club.
- High School visits. Continue efforts here.
- Scholarships – Andrew would like to share scholarship information with prospective students as part of the recruitment efforts.
- Need to generate strategies.

6) PROGRAM RESOURCES

- Equipment
- Resources

- New technologies. –
    - Mo would like to see more RF and wireless technologies built into the program. The Intro to Microcontrollers class would be a good place to include this content.
    - From Arctic Cat's perspective Eric would like to see more data collection, Ethernet conductivity, and touch screen applications. The equipment used in the PLC course has some Ethernet capability.
    - Matt thought that the Lab Volt equipment used in the robotic programming course was too simple and did not provide a relevant learning opportunity. The programming language is not an industry standard and it felt like they were playing with a toy. Matt would like to have seen more programming of the Motoman Welding robot. This feedback will be used to change the way the course is structured. We have some equipment limitations, but it would be worthwhile to do more problem solving and system integration between the robots and other equipment in the lab.
- Facilities

7) EVALUATION

Note - Meeting was running late. Not enough time left to discuss these items.

- Performance of graduates –
- Suggestions for program enhancements. –