INDUSTRY ADVISORY BOARDS' ROLE IN THE ACCREDITATION OF ENGINEERING TECHNOLOGY SCHOOLS

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Abstract

The industry advisory board is a partnership between industry and academia. The board is composed of members of various industries which have a vital interest and purpose in the school and/or department. The purpose of an industry advisory board is to help the school/department with the strategic planning and mission while providing advice on various important issues. The industry advisory board can serve as a powerful tool to help the school or department in the accreditation process. The board can also serve as a fund raising mechanism by having its industrial partner give grants for scholarships for incoming freshman, or monies to help purchase equipment and supplies to maintain a laboratory of the department. The industry advisory board members can also serve as mentors on an industry sponsored project. Another important purpose is to advise the department in the area of curriculum development. Industry participation in curriculum development will ensure that ET students are taking the necessary classes to give them the industry skills to compete globally with other engineering technology graduates.

The Industry advisory board played a vital role in the first time accreditation process of the Electronics Engineering Technology department at Southern University, Baton Rouge, Louisiana. This paper will outline the specific functions of the industry advisory board and how the industry advisory board helped the Electronics Engineering Technology (EET) department get their first time accreditation using TC2K Criteria in 2003.

Introduction

The Industry Advisory Board (IAB) or Committee is a select group of representatives from industry, who provide guidance to the academic department on academic issues and strategic planning. The Industry Advisory Board is a forum where ideas are exchanged and recommendations are made. The IAB provides direct linkage and communication between the academic department and industry.

The industry advisory board can also be used for obtaining both equipment and monetary funds to provide a margin of excellence for Engineering Technology programs. This is very important in today's environment, both for public and private institutions, due to decreasing state support to public institutions and the increasing competition that private institutions face.[1]

In addition to the program development, the industry advisory board is used for in curriculum reform, employment prospects for graduates, internships for faculty, applied research opportunities establishing the need for new program, and as an external advocate to the administration.[2]

To reach these goals, it is very important to exercise care in the selection of the companies from which the industrial advisory committee members are taken from. In identifying the companies, it is critical that the business relevance to the program objectives be considered as well as the present and future reliance by program graduates. Their past record of institutional support is also important as this is one of the best indicators of future support. In the selection of actual industrial advisory committee members, it is important to select the appropriate levels of responsibility that the potential members have in their respective companies. For a development council, this level should be at vice president or above so that these members will have the proper influence for making donations possible. They must also understand higher education, be loyal to the program and institution, and appreciate the role on engineering technology.[2]

The role of the Industry Advisory Board (IAB) is expected to: [3]

- Act as an advisory group to the department and college on the direction and growth of the accredited academic programs and curriculum development and to help implement improvements.
- Act as a link between the academic department and its industrial and professional partners, providing an opportunity for communication of current and future industry and professional needs.
- Identify actions the departments and the colleges should take to meet special student and industry needs.
- Provide recommendations on initiatives that the program should undertake to continuously improve and to meet industry needs.

Benefits of an Industry Advisory Board (IAB) [4]

- Availability of well-prepared engineering technology graduates who understand the product realization process.
- Opportunities to evaluate potential employees through internships, collaborative projects and classroom interactions.
- Direct assistance in product and process design problems through sponsorship of senior design projects.

- Professional development of industry personnel through teaching, learning, and curriculum development.
- Technology transfer through Industrial-Academic exchanges- industry engineers in the classroom, and faculty internships.
- Opportunity to improve industry skills of engineers through curriculum reform.
- Provide department with scholarships or grants for maintenance of current laboratories and new equipment.

Southern University EET Industry Advisory Committee (IAC)

The Electronic Engineering Technology (EET) department at Southern University has teamed with two local area industries, Entergy Corporation- Riverbend Station located in St. Francisville, Louisiana and Exxon-Mobil Refinery located in Baton Rouge, Louisiana. In addition, two companies, Lockheed Martin, Dallas, Texas and Raytheon Company located in Plano, Texas have formed academic partnerships with the EET department. All four industries serve on the Industrial Advisory Committee for the department. The IAC is comprised of fifty percent EET alumni who work for Exxon-Mobil and Lockheed Martin respectively. The other fifty percent comprise of an Engineering Director (Entergy) and a HR representative from the Raytheon company. Members serving on the Industry Advisory Committee have direct input into the EET curriculum for technology students. Their input is valuable and helped to develop courses that our students needed in the manufacturing environment. One new course developed with industry input was our new Programmable Logic Controller (PLC) course.[5] Another recommendation made by the IAC was to have students become familiar with fundamentals of the design process, working on design projects before the senior capstone design course. Design projects need to be integrated into the curriculum early on. Projects should be small in scope and increase in design complexity starting from the basic (DC/AC) courses to the senior level electronics courses and ultimately lead to a design project in the senior capstone design course. Students gain a working knowledge on the design process and thus increase skills working on solutions of design problems and project management in the early capstone courses.[5]

Other recommendations included adding a economics course in the curriculum. This would help the student prepare realistic budgets for their project proposal in the senior design capstone course. Students should get more presentation skills in their courses, as this is a weakness of many co-op students. Another recommendation was to have industry to sponsor a senior capstone design project and have faculty to mentor and supervise individual group projects.

Recommendations like these by the Industry advisory committee (IAC) helped prepare the EET department at Southern University to acquire first time accreditation using TC2K criteria by having the academic department and industry work together in partnership. In addition, having EET alumni serve on the Industry Advisory committee was a vital resource to help revise the curriculum to best fit the needs of future EET graduates in industry.

Industry Advisory Board as a Resource Tool for Grant Development

The Entergy Corporation located in St. Francisville, Louisiana has given a grant in the amount of $5,000 per year for the last two years to the college of engineering adopt-a-lab program for the EET department. The board members are asked if their company can support or sponsor a lab to generate funds for laboratory enhancement. That is, monies for new equipment, supplies and maintenance of existing equipment. Through the Adopt-a-lab program, Entergy Corporation has sponsored the PLC and Electrical Machinery Laboratory for the EET department. In addition, Raytheon Company has given about $1500.00 to help buy equipment and supplies for senior capstone design projects.

Conclusion

In conclusion, regardless of who is on your advisory board, it is important that you rely on them for good advice. An Industry Advisory Board or committee is a collection of individuals who bring a connection to industry, as well as unique knowledge and skill needed to complement the knowledge and skill of the program's leadership and faculty.

The Industry Advisory Board or committee can be a very helpful ally when a partnership is formed with the academic department. This is especially true when a department is being accredited for the first time or being reaffirmed by the Accreditation Board of Engineering and Technology (ABET). As was the case with the Electronics Engineering Technology program at Southern University that was accredited for the first time in 2003 using TC2K criteria with the help of a department industry advisory committee.

References

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Biography

Walter O. Craig, III is an Assistant Professor in the Electronics Engineering Technology Department at Southern University in Baton Rouge, Louisiana. He currently teaches basic electronics courses to freshmen and sophomore Electronic Engineering Technology students. He also teaches Semiconductor Device processing which he is currently doing his research.