

ENVIRONMENTAL SCANNING FOR INDUSTRIAL ADVISORY COMMITTEE PLANNING IN A CONSTRUCTION MANAGEMENT EDUCATIONAL PROGRAM

George D. Ford¹, Walter W. Buchanan²

¹Construction Management Department
Western Carolina University

Email: gford@wcu.edu

²Engineering Technology and Industrial Distribution
Texas A&M University

Email: Buchanan@entc.tamu.edu

Abstract

During the fall semester of 2009, the construction management program faculty at Western Carolina University in Cullowhee, North Carolina performed a website review of programs in North Carolina and South Carolina which are accredited by the American Council for Construction Education (ACCE). This scan was completed in preparation for the program's industrial advisory committee meeting planned for the spring semester of 2010. The faculty hope to gain insight from the advisory committee to determine what program changes, if any, are required to respond to the recent bust in residential construction and a decline in the construction industry overall. This paper discusses aspects of the four ACCE accredited programs in the Carolinas, the missions of Western Carolina University and the Construction Management program, ACCE advisory committee requirements, trends of industrial advisory committee effectiveness, and recommendations of issues for discussion to include in the industrial advisory committee meeting agenda.

1. Introduction

Western Carolina University is a regional, comprehensive university located in Cullowhee, North Carolina in the western, mountain region of the state. The University provides over 230 undergraduate and graduate programs for over 9400 students. Western Carolina University is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools [1]. At Western Carolina University, the Kimmel School of Construction Management and Technology provides six undergraduate programs and one graduate program in engineering, engineering technology and construction management for about 650 students. The construction management (CM) program has experienced a minor drop in the number of enrolled students assumed to be related to the recent downturn in the construction industry. The program is guided by an industrial advisory committee (IAC). Western's CM faculty hopes to discuss the downturn in business and student enrollments with their IAC at the soonest opportunity to gain insight into potential actions needed to maintain the program at appropriate levels.

Advisory committees for post-secondary educational programs such as engineering, engineering technology and construction management are required by their accrediting bodies, such as the Accreditation Board of Engineering and Technology (ABET) and the American Council for Construction Education (ACCE). The purpose of these advisory boards are typically to advise technology program administrators on matters related to new degree programs and options, long-range planning, marketing/community relations, development, and other local policy matters [2]. During the fall semester of 2009, the faculty in the Construction Management Department performed an environmental scan to provide information for the planned spring semester 2010 industrial advisory committee (IAC) meeting. Specific areas of interest for the scan included aspects of the four ACCE accredited programs in the Carolinas, the missions of Western Carolina University and the Construction Management program, ACCE advisory committee requirements, trends of industrial advisory committee effectiveness, and recommendations of issues for discussion to include in the industrial advisory committee meeting agenda.

2. ACCE accredited programs in the Carolinas

There are three bachelor degree programs accredited by the American Council for Construction Education (ACCE) in North Carolina and one in South Carolina, Western Carolina University, East Carolina University, North Carolina A&T, and Clemson University, respectively.

The construction management program at Western Carolina University was started during 2002 [1]. There were about 260 undergraduate students enrolled in the program in the fall semester of 2009. The program was first accredited by ACCE in 2009. The emphasis of the program is in commercial and industrial construction. A graduate degree in Construction Management, as well as a minor in Land Development are offered. The program employs about ten fulltime professors.

The construction management program at East Carolina University in Greenville, North Carolina was started during 1982 [3]. There were about 640 undergraduate students enrolled in the program in the fall semester of 2009. The program was first accredited by ACCE in 1994. The emphasis of the program is in commercial construction. A graduate degree in Construction Management is offered. The program employs about fifteen fulltime professors.

The Department of Construction Management at North Carolina Agricultural and Technical State University is located near Greensboro, North Carolina. There were about 150 undergraduate students enrolled in the program in the fall semester of 2009. The emphasis of the program is in general construction. The program employs about ten fulltime professors [4].

The construction management program at Clemson University in Clemson, South Carolina was started during 1962 [5]. There were about 180 undergraduate students enrolled in the program in the fall semester of 2009. A graduate degree in Construction Science and Management, and a doctorate program in Environmental Planning are offered. The program employs about seven fulltime professors.

The four programs combined provide instruction for over 1200 students. In addition, the University of North Carolina in Charlotte recently started a program with about 165 students enrolled [6]. Program administrators intend to obtain accreditation after the program produces graduates.

3. Mission statements at Western Carolina University

Mission statements provide guidance to assist establishment of program outcomes and goals [2, 7]. The construction management program mission must be compatible with the university mission. The Western Carolina University mission statement is:

“Western Carolina University creates engaged learning opportunities that incorporate teaching, research and service through residential, distance education and international experiences. The university focuses its academic programs, educational outreach, research and creative activities, and cultural activities to improve individual lives and enhance economic and community development in the region, state and nation” [1].

Teaching, research and service are the central themes of the University’s mission statement. The Construction Management Department mission statement supports the University mission statement which is:

“As a regional comprehensive university, the mission of the construction management program is to educate students to be ethical, motivated and professional leaders in the construction industry, the community, and society.

Goals:

1. To provide a continually improving and advancing undergraduate curriculum that prepares students to be future leaders in the construction industry.
2. To provide students a medium to participate closely with industry through such processes as student organizations and internship opportunities.
3. To provide an education that involves students in opportunities of service learning.
4. To provide service and outreach to the local, regional, and national construction industry and construction associations.
5. To provide faculty opportunities for continued professional growth. [1]

The mission of the construction management program is “to educate” supporting the teaching arm of the University mission. Goal #5, “to provide faculty opportunities for continued professional growth” is the research arm, and Goals #3 and #4 are the service arms of the department mission. The mission statements appear to be compatible.

4. ACCE Advisory Committee Requirements

*Proceedings of the 2010 ASEE Gulf-Southwest Annual Conference, McNeese State University
Copyright © 2010, American Society for Engineering Education*

The primary accrediting body for construction management programs is the American Council for Construction Education (ACCE). Many construction management programs are administered in departments in schools or colleges of engineering or technology. The ACCE Document 103 outlines the requirements for an industrial advisory committee which are active support from industry, support for industry and student-industry relations:

“Support from Industry

Construction is a practice oriented profession. Therefore, it is imperative that an advisory committee, consisting of representatives from the construction industry, be actively involved in an advisory role for the construction program.

The committee should meet at least once a year for the purpose of advising and assisting the development and enhancement of the program. Although the composition of the committee should change periodically, there should be provisions to ensure continuity. The composition of the committee should be representative of the potential employers of the graduates of the construction program.

Support for Industry

There should be an active program of continuing education and research (where required by the institution) directly applicable to and in support of the construction industry. The construction program should maintain continuous liaison with the various constituencies it serves for the purpose of establishing educational and professional development activities for the construction industry.

Student-Industry Relations

Communication and participation among faculty, students and the construction industry should be well documented through industry involvement such as field trips and speakers for student organizations. Students should actively participate in activities of construction related organizations, including associations and institutes. They should also work to obtain construction related experience through participation in internships and cooperative education programs.” [8]

These requirements may be compared with those of Accreditation Board of Engineering and Technology (ABET) which are:

An advisory committee representing the organizations that employ graduates must be utilized to advise the program in establishing, achieving, and assessing its goals. The committee must periodically review program curricula and provide advisement on current and future needs of the technical fields in which graduates are employed. [9]

The IAC and the faculty together should review the ACCE requirements and decide whether the objectives are addressed sufficiently. The ABET industrial advisory committee requirements are similar to the ACCE requirements and support the practicality of the ACCE directives pertaining to IACs. The review should be documented to support the construction management department’s assessment program and to provide a record for future meeting reference.

5. Areas of Effectiveness of Industrial Advisory Committees

During 1998 and again in 2003, Fox and Hundley [10,11] surveyed four year education program faculty and administrators to determine their perceptions of the most effective areas of industrial advisory committee (IAC) program support. They found that the majority of those surveyed perceived that IACs could be very helpful in the areas shown below:

Area of support	1998 % positive	2003 % positive
Curriculum guidance	96%	95
Co-op employment	73%	73
Placement for graduates	86%	78
Equipment resources	73%	53
Field trips or training material	83%	75

Table 1: Industrial advisory committee (IAC) helpful areas

They found that the majority of those surveyed perceived that IACs may be less helpful in the areas shown below:

Area of support	1998 % positive	2003 % positive
Summer employment for faculty	42%	39%
Sponsoring research for faculty	20%	34%
Student scholarships	30%	39%
Recruiting students	48%	31

Table 2: Industrial advisory committee (IAC) less helpful areas

These areas of support may provide the IAC and faculty some ideas to increase the effectiveness of the construction management program and curriculum. There may also be additional areas of support which were not included in the original surveys, but could enhance program and student successes.

6. Issues for Discussion

The environmental scans discussed in this paper were fact-finding exercises, and the authors purposely did not provide an evaluation of each facet of the information disclosed. The purpose of the scan was to provide pertinent information for the IAC and faculty to consider to facilitate potential program improvements. Specific areas of interest for the scan included aspects of the four ACCE accredited programs in the Carolinas, the missions of Western Carolina University and the Construction Management program, ACCE advisory committee requirements, and trends of industrial advisory committee effectiveness.

The four CM programs varied in the number of majors from about 150 to about 640 students. The program at Western Carolina University fell in the middle of the sample. The faculty/student ratios also varied widely, again with Western Carolina University in the middle of the sample. The IAC and faculty might discuss the ratios of teaching, research and service loads of the construction management faculty. The mission statements should be discussed to ensure they meet the needs of the IAC and the community served. A review of the trend studies may help the IAC and the CM faculty in a brainstorming exercise to improve IAC and program effectiveness.

7. Conclusion

The environmental scans discussed in this paper could provide more detailed, useful information with allocation of additional resources and time, but will provide a sufficient, fact based outline for the next IAC meeting as done here. Any conclusions derived from the scan in discussions during the IAC meeting should be recorded and needed assignments made to individual faculty and IAC members for follow-up or implementation. The environmental scan should only be considered a step within, not a substitute for, the strategic planning process, and in this case should only be used to guide the IAC meeting as initially intended. The ACCE does not specifically require that IACs drive strategic plans.

8. References

- [1] Western Carolina University, 2009. Website. Retrieved on October 4, 2009 from <http://www.wcu.edu>
- [2] Summers, M., 2002. Developing a college–industry relationship: The use of industrial advisory boards. Proceedings of the 2002 American Society for Engineering Education Annual Conference & Exposition. Retrieved on October 4, 2009 from www.asee.org .
- [3] East Carolina University, 2009. Website. Retrieved on October 4, 2009 from http://www.tecs.ecu.edu/departments/construction_management/newsletters/CMGT1_2008-09.pdf
- [4] North Carolina Agricultural and Technical State University, 2009. Personal conversation with Dr. Robert Pyle on October 5, 2009.
- [5] Clemson University, 2009. Website. Retrieved on October 4, 2009 from www.clemson.edu.
- [6] University of North Carolina in Charlotte, 2009. Personal conversation on October 5, 2009.
- [7] Nakayama, S., 2009. A systematic process to validate safety, health, and environmental management curriculum through academic advisory committee. Proceedings of the 2009 American Society for Engineering Education Annual Conference & Exposition. Retrieved on October 4, 2009 from www.asee.org .
- [8] American Council for Construction Education, 2009. Document 103, Standards and criteria for accreditation of postsecondary construction education degree programs. Retrieved on October 4, 2009 from <http://www.acce-hq.org/>.
- [9] Accreditation Board for Engineering and Technology, 2009. Criteria for evaluation engineering technology programs. Retrieved on October 4, 2009 from www.abet.org .
- [10] Fox, P, and Hundley, S., 2002. Trends and developments in engineering technology: Who are we and

where are we going? Proceedings of the 2002 American Society for Engineering Education Annual Conference & Exposition. Retrieved on October 4, 2009 from www.asee.org .

- [11] Fox, P, and Hundley, S., 2004. Trends and developments in engineering technology: Who are we and where are we going What Can The Past Tell Us About Our Future? Trends and Developments in Engineering Technology? Proceedings of the 2004 American Society for Engineering Education Annual Conference & Exposition. Retrieved on October 4, 2009 from www.asee.org .