

Continuing Education at the Ryerson Polytechnical Institute—A Status Report

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Where Do I Begin? was the title of an article in the December 1988 issue of *Cost Engineering* magazine, written by Gord Zwaigenbaum, CCE. It described the steps that had been taken at that point by the members of the Toronto Section to initiate a continuing education program. One of the institutions where the Toronto Section "just began" at that time was the *Project Cost Management* program at the Ryerson Polytechnical Institute in Toronto, Canada.

The purpose of this program is to provide adult learners with an opportunity to acquire a level of knowledge and expertise that will permit them to contribute effectively in the management and control of costs within any project environment.

Background

In 1986, the Toronto Section of AACE International approached Ryerson with a proposal for a series of courses leading to a certificate in project cost management. The proposal included several endorsements by industry and the sponsorship of AACE. The Academic Council at Ryerson was satisfied with the academic content and integrity of the proposed courses and approved the program in December 1990.

Since the first course was offered, there have been 550 registrations, and an average of 21 students per class. All lecturers are selected by the Toronto Section's Education Committee, based on their professional standing in industry and compliance with AACE and Project Management Institute (PMI) standards (some lecturers are also PMI members).

Student Profile

Students fill out questionnaires that provide profiles of their occupations, educational backgrounds, experience, etc. The majority of students are engaged in construction, working for owners, contractors, engineer/architects, and the government. Very few have a background in accounting and/or business administration. Most of them have an engineering background. Their experience is evenly distributed except for those with less than one year of experience (8 percent) and those with over 15 years of experience (18 percent). Over 90 percent intend to obtain the certificate, and about 50 percent say they are looking for new job opportunities.

Administration

The program is administered by the Ryerson Program Director of Technology. The Ryerson Department of Civil Engineering is responsible for the academic integrity of the program. It is explicitly assumed that the program must satisfy the requirements of AACE International to remain viable.

An advisory committee has been established that consists of one representative from AACE (K. Heinze), one representative from industry (K. Bockasten) as appointed by AACE, plus four members from the Ryerson faculty. The advisory committee's role is to provide advice and information to those who coordinate the program. The same group also acts as the curriculum committee.

Ryerson has requested that AACE International provide two appointed members to the advisory committee, and that we provide advice to the Ryerson coordinator through our representative. This advice includes recom-

mendations on industry needs, trends, curriculum content, marketing information, and instructional personnel. The permission to use the name "AACE International" in promoting the program has also been given. AACE is also asked to periodically review, approve, and endorse the program.

Certificate Requirements

The successful completion of 8 one-term courses (14 sessions at 3 hours each per course) with a cumulative grade point average of 2.00 is required to gain the certificate. Admission requirements are six grade 13 credits or the equivalent. Work-related experience and maturity may be considered for persons who lack the above qualifications.

Course Objectives

AACE International provides instructors for 6 core courses. Course objectives and more detailed course outlines are drawn up for approval by the advisory committee and distribution to the students. There are also 2 elective courses added, which are taught by Ryerson faculty.

The course objectives include the following items:

fundamentals of project management

- to present an overview of project management, focusing on the various functions and their importance;
- to discuss established management concepts/techniques and their applications; and
- to give the students a basic knowledge of project management

and to prepare the groundwork for other courses in the program.

capital cost estimation

- to emphasize the importance and nature of cost estimation over the project life cycle;
- to define estimate work breakdown structure and cost types included in the total project estimate;
- to explain estimate basis, including sources of information, estimating allowances, and assumptions required for cost estimation;
- to describe major methods used and typical handling of cost estimation, depending on the nature of the project; and
- to provide practical illustrations to assist students in learning these concepts.

planning and scheduling

- to familiarize students with the basic principles of time management;
- to describe and work on typical planning and scheduling techniques as practiced in industry; and
- to demonstrate practical applications by means of team problem solving.

procurement and contracts

- to present an overview of procurement functions within the framework of Total Cost Management for a project; and
- to emphasize the application on construction and maintenance projects.

cost control

- to explain the methods by which a project manager uses estimates and schedules to control the cost of a project;
- to explain the difference between financial control and cost control;
- to describe conventional cost control and how it evolves into an integrated cost control system;
- to show the importance of life cycle costing and the time value of money as a basis of control during

all phases of a project; and

- to provide practical applications with regard to utilization and control of resources, cost collection, and interpretation of cost reports, and also subsequent actions to keep a project within budget.

cost optimization

- to define the importance of cost optimization to management;
- to identify major opportunities for cost optimization, such as improved resource utilization and productivity;
- to explain the mechanics of techniques applicable to cost optimization work, including method studies and economic analysis; and
- to provide practical applications to assist synthesis of these concepts.

elective courses

Two out of these six are required:

- Communication (short management reports),
- Communication (communication in industry),
- Human Resources (organizational behavior),
- Quantitative Methods (business statistics),
- Computer Literacy (a business perspective), and
- Computerized Business Systems (microcomputers in business).

How Do We Continue?

The Ryerson program is only one of three the Toronto Section is involved in. It had the latest start (1987), yet it is quite well established. But it does not run itself—constant reviewing and updating need to be performed based on the students' feedback. Then there is the difficulty of maintaining a good teaching staff. The most knowledgeable and experienced cost engineers or project managers are also the busiest ones; they are often out of town or on short-term recall. Furthermore, it is not always possible to draw teachers from the members of the local section. Outside applicants, who apply directly to Ryerson, are also

being considered.

Is it a lot of work? You bet it is! But it is very satisfying and those who are involved become increasingly enthusiastic. None of us are professional teachers, so it takes a little practice to get away from making "presentations" to actually working with the students.

Sections that have not yet considered initiating an adult education program should do so now—try it, and you will like it! ♦

Call for Historical Data

AACE is in need of historical data regarding the cost for consulting services in all areas of cost engineering, including planning and scheduling, profitability analysis, life cycle cost, risk analysis, value engineering, estimating, time value of money, return on investment, internal rate of return, forecasting and management science (implementing total quality management). Where several cost engineering tenets were performed, please specify each. All data should include the following: (1) scope of service; (2) size of project in dollars; (3) type of project by standard industry code [SIC] or written description; (4) time required to provide services; (5) cost to provide services in dollars; and (6) the benefits or savings realized.

The data will be used to provide information to support the introduction and successful passage of the *Comprehensive Cost Engineering Act of 1993* in the 103rd United States Congress. Please send data to:

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