

## **CONTENT OUTLINE**

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### **CONSTRUCTION ESTIMATING**

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## OVERVIEW

This course is designed to provide participants with the knowledge and skills necessary to prepare, assemble and submit a bid. In addition, participants learn how to set up a historical database.

## PREREQUISITE

Although there is no formal educational prerequisite for this course, the participants' chances of success will be enhanced if their reading and comprehension skills are at a high school or equivalent level. Participants must be familiar with basic computer operating and word processing programs.

As well, participants should have previously acquired basic computer competencies.

In addition, participants should be able to interpret drawings, specifications, and codes and have knowledge of materials, construction methods, and systems.

## LEARNING OBJECTIVES

Upon successful completion of this course, participants will be able to:

- identify potential business opportunities
- identify the steps in the bid process
- collect and review documents to scope project
- prepare a preliminary estimate
- prepare a detailed estimate
- submit a bid
- maintain historical data

## CONTENT

### 1. Identify potential business opportunities.

- bid depository
- pre-qualification
- process in developing leads
- promotion
- identifying sources
  - o Internet
  - o construction daily newspapers
  - o newspapers
  - o construction associations

**2. Identify the steps in the bid process.**

- identifying potential business opportunities
- collecting and reviewing documents
- preparing a preliminary estimate
- preparing a detailed estimate
- submitting a bid
- maintaining historical data

**3. Collect and review documents to scope project.**

- obtaining bid documents
- verifying documents for discrepancies, ambiguities, and omissions
- attending pre-bid site visit
- scoping the project
- addenda clarification

**4. Prepare a preliminary estimate.**

- single rate method (elemental)
- multiple rate method
- cost planning

**5. Prepare a detailed estimate.**

- estimate referencing the MasterFormat system
- quantity take-offs
- direct and indirect costs
- unit prices (burdens, rent/lease/buy)
- draft schedule
- soliciting competitive prices and quotations
- analyzing sub-contractor bids
- determining unit costs
- basic electronic spreadsheet formats
- proprietary estimating software packages
- bid depository

## **6. Submit bid.**

- assembling bid package
- bid review
  - o ensuring information is complete (insurance and bid security)
  - o summarizing estimate
  - o analyzing competition
  - o preparing for bid review meeting
- closing the bid
  - o ensuring bid requirements are met
- submitting the bid
- unethical bid practices

## **7. Post award functions**

- maintain historical data
- change process
- organizing bid documents
- storing and retrieving information
- classifications and standards
- using the database
- analysing information
- reviewing bid results
- performing cost analysis

## **METHODOLOGY**

This course lends itself to practical projects and case studies supplemented by short lectures. Instructors may involve the participants in the following specific techniques and activities:

- icebreaker type activity to get students engaged as soon as possible;
- preparing an estimate using a set of drawings and specifications for a commercial or industrial project;
- performing quantity take-offs for various trade divisions ;
- calculating unit pricing;
- visiting a bid depository location;
- having a vendor demonstrate electronic measuring tools and estimating software packages;
- conducting a productivity analysis;
- completing a stipulated sum bid or unit price bid;
- assembling a bid package of standard documents.

## ASSESSMENT

In order to successfully complete this course, participants will be expected to demonstrate that they have achieved the learning objectives. They will be evaluated through various assignments, projects, and/or tests based on each of these objectives. Final assessment for the course will be determined by the following weighting:

Learning Objective	Weighting (%)
1. Identify potential business opportunities.....	5
2. Identify the steps in the bid process .....	10
3. Collect and review documents to scope project.....	10
4. Prepare a preliminary estimate.....	15
5. Prepare a detailed estimate.....	35
6. Submit a bid.....	15
7. Maintain historical data.....	10
	100

## **RESOURCES**

### **Reports, Manuals, Textbooks, and Documents**

CIQS syllabus, textbooks and form of estimates <http://www.ciqs.org>

Estimating in Building Construction by Frank R. Dagostino, Leslie Feigenbaum and Clint Kisson (ISBN: 0-13-039126-3) <http://www.abebooks.com/> ; <http://www.ciqs.org>

Means Estimating Handbook, 2<sup>nd</sup> Edition, 2003. (ISBN: 0876296991)

Means Forms for Contractors, R.S. Means Company, Inc., 1990. (ISBN: 0-87629-214-7)

PMP Exam: Practice Test and Study Guide, ESI International, 1998 (ISBN: 1-890367-11-7)

PMP ©: Project Management Professional Study Guide, SYBEX Inc., 2002  
(ISBN: 0-7821-4106-4)

Paul Gervais et Jean Paradis, "*Estimation*, Éditions Beauchemin, 1997

### **Government / Association Websites**

Association for the Advancement of Cost Engineering (ACE) International  
(<http://www.acei.org/>)

Canadian Institute of Quantity Surveyors (<http://ciqs.org/>)

Frank R. Walker Company (<http://www.frankwalker.com>)

International Cost Engineering Council (<http://www.icoste.org/>)

National Electrical Contractors Association (<http://www.necanet.org>)

RsMeans (<http://www.rsmeans.com>)

### **Other Resources**

Pricing guides

Productivity handbooks

Equipment handbooks

Trade contractor resources

Proprietary estimating software