

CONTENT OUTLINE

OVERVIEW OF THE CONSTRUCTION INDUSTRY

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OVERVIEW

This course stresses the impact the construction industry has on the economy. In addition, attention will be given to the changes in conducting business brought about by concern for the environment and advances in technology.

In order to appreciate the construction process, the function of key players and the interaction between people and various contractors involved in the construction industry, participants will be exposed to a complete project life cycle from concept to closeout.

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.

LEARNING OBJECTIVES

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

- identify the role of the construction industry in the economy;
- define types of contractors;
- identify key elements and players in the construction process;
- identify standards, procedures, protocols, and policies within the industry;
- identify the impact of technological changes on the construction industry;
- explain the role of various industry associations;
- identify environmental requirements;
- identify safety requirements.

CONTENT

1. Identify the role of the construction industry in the economy.

- businesses (small, medium, large, and national / international level)
- types and structures of small businesses
- impact of the construction industry on the national economy
- impact of the underground economy

2. Define types of contractors.

- general contractors
- construction managers
- sub-contractors
- road builders
- heavy civil
- design / build
- home builders
- marine
- insurance reconstruction
- speciality trades
- modular builders
- professional project managers
- facilities managers
- others

3. Identify key elements and players in the construction process.

- rationalization of the need for the project in terms of social, political, and economic impact
- feasibility study
- design and development phase
- tender and award phase
- demolition and re-cycling phase
- project construction phase
- commissioning and acceptance phase
- building maintenance phase
- roles and responsibilities of key players (internal – within a construction firm)
 - o owners (presidents)
 - o general managers
 - o support staff
 - o project managers
 - o accountants
 - o estimators
 - o superintendents
 - o trades people
 - o foremen
 - o field engineers
- roles and responsibilities of key players (external)
 - o buyers
 - o suppliers
 - o end users
 - o consultants

- owners
- construction regulatory authorities (public and private)
- facilities managers
- collaborative

4. Identify the standards, procedures, protocols, and policies within the industry.

- specifications, codes, and standards
- bidding procedures
- awarding of contracts
- warranty requirements
- code of ethics
- union agreements / labour laws
- project organizational hierarchy
- health and safety policies
- jurisdictional differences (federal, provincial, municipal)

5. Identify the impact of technological changes on the construction industry.

- e-bidding
- electronic technology
- management information systems
- electronic plan rooms
- construction materials
- construction procedures
- standardizing
- globalization
- smart and automated building systems
- component building
- construction tools and equipment
- multi-dimensional modelling
- emerging trends in construction methods

6. Explain the role of various industry associations.

- list the roles of various associations at the local, provincial, national, and international level
- describe the role of the construction associations in terms of:
 - labour relations
 - lobbying
 - standard documents
 - ethics
 - rules and regulations
 - plan rooms
 - education

- communication
- bid depository

7. Identify sustainability issues.

- applicable federal and provincial laws and acts
- waste management
- construction site environmental conditions (dust, noise, water and sewer)
- environmental assessment phases
- greening
- emerging trends in construction methods
- energy consumption reduction

8. Identify safety requirements.

- applicable federal and provincial health and safety laws and acts
- internal and external health and safety policies and programs
- due diligence

METHODOLOGY

This course lends itself to lectures by the instructor and guest speakers for the first six objectives while case studies are appropriate for the last two objectives. Instructors may involve the participants in the following specific techniques and activities:

- icebreaker type activity to get students engaged as soon as possible;
- development of a company organization chart;
- development of a project organization chart;
- case studies on environmental and safety issues;
- preparation of a flow chart describing the key elements and players in a construction project.

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 the role of the construction industry in the economy	10
2. Define types of contractors	10
3. Identify key elements and players in the construction process	20
4. Identify standards, procedures, protocols, and policies within the industry	15
5. Identify the impact of technological changes on the construction industry.....	15
6. Explain the role of various industry associations	10
7. Identify environmental requirements	10
8. Identify safety requirements	10
	100

RESOURCES

Reports, Manuals, Textbooks, and Documents

BC Manual on Management of Building Projects (<http://www.bcprojectsmanual.com>)

Utilities Tendering Guide 2002 (http://www.ecao.org/pub_additional.asp) (membership required for access)

Association and Government Websites

Canadian Construction Association (CCA) (<http://www.cca-acc.com>)

Canadian Industrial Relations Board (<http://www.cirb-ccri.gc.ca>)

Canadian Human Rights Commissions (<http://www.chrc-ccdp.ca>)

Canadian Standards Association (<http://www.csa.ca>)

Construction Specifications Canada (<http://www.csc-dcc.ca>)

Government of Canada (<http://www.gc.ca>)

Lean Construction Institute (<http://www.leanconstruction.org> – (fee required to access)

McGraw-Hill Construction (<http://www.sweets.com>)

National Electrical Contractors Association (<http://www.necanet.org> - click on education then on Management Education Institute)

National Research Council (<http://www.nrc-cnrc.gc.ca>)

Royal Architecture Institute of Canada (<http://www.raic.org>)

Statistics Canada (<http://www.statcan.ca>)

Underwriters Laboratory of Canada (<http://www.ulc.ca>)

Other Resources

Biddingo (<http://www.biddingo.com>)

e-Builder Enterprise (<http://www.e-builder.net>)

Local bid depository websites

National Codes (supplemental handbooks, building, electrical, fire, etc.) www.nationalcodes.ca

National labour associations

National professional associations