SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ON.

COURSE OUTLINE

COURSE TITLE: Building & Construction Estimating

COURSE CODE: ARC 101

PROGRAM: Architectural/Civil Technology

SEMESTER: III (Fall)

AUTHOR: S. Ienco B1164 Phone 759-2554 X 587

DATE: Aug 1996

APPROVED: _____ **DATE:** Aug. 23/96
(DEAN)

TOTAL HOURS PER WEEK: 3

PREREQUISITES: NONE

BUILDING & CONSTRUCTION ESTIMATING **ARC101**
COURSE NAME **CODE NO.**

I. COURSE DESCRIPTION

This course will introduce the student to the fundamental principles of estimating. The topics covered will deal with measurement of construction work, blueprint reading and fundamentals of estimating. Particular emphasis is placed on estimating site work, concrete, formwork, masonry, steel and wood.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE

(Generic skills learning outcomes placement on the course outline will be determined and communicated at a later date.)

A. Learning Outcomes:

1. Effectively apply the principles of mensuration to estimating.
2. Develop a structured and organized quantity take-offs from the accurate determination of material quantities and volumes obtained from working drawings and specifications for a given project.
3. State, define and discuss the general overall process for performing an estimation.
4. Accurately and neatly measure construction quantities for various stages of construction in accordance to current industry standards.

B. Learning Outcomes and Elements of the Performance:

Upon successful completion of this course the student will demonstrate the ability to:

1. Effectively apply the principles of mensuration to estimating.

Potential Elements of the Performance:

- review mathematical formulas for plane geometry
- review mathematical formulas for geometric solids
- perform area calculations for various problems
- perform volume calculations for various problems
- complete an assignment covering above topics

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II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE (Continued)

2. Develop a structured and organized quantity take-offs from the accurate determination of material quantities and volumes obtained from working drawings and specifications for a given project.

Potential Elements of the Performance:

- read and interpret construction drawings
- read and interpret specification documents
- employ C.S.I. organizational format for estimating
- organize and produce a spreadsheet for recording quantity take-offs

3. State, define and discuss the general overall process for performing an estimation.

Potential Elements of the Performance:

- identify the primary parties involved in a project
- identify the different phases that a project goes through
- identify sources of data for preparing an estimate
- differentiate between direct and indirect costs for a project
- identify the various types of estimates
- define types of construction contracts
- review an example of building construction project bid summary

4. Accurately and neatly measure construction quantities for various stages of construction in accordance to current industry standards.

Potential Elements of the Performance:

- calculate and submit estimates for earthwork and sitework for a given project
- calculate and submit estimates for concrete and formwork for a given project
- calculate and submit estimates for masonry for a given project
- calculate and submit estimates for steel works for a given project
- calculate and submit estimates for wood for a given project

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III. TOPICS

Note: Topics inherently overlap and are not necessarily developed as isolated units or in the order presented.

1. Principles of mensuration
2. Working Drawings and Specifications
3. Overview of the Estimating Process
4. Measurement Examples and Exercises

IV. REQUIRED RESOURCES/TEXTS/MATERIALS

Fundamentals of Construction Estimating and Cost Accounting
Keith Collier
Prentice Hall
ISBN 0-13-335613-2 025

V. METHOD OF EVALUATION (GRADING)

Students will be assigned a final grade based on successful completion of tests and assignments, weighted as follows:

Assignments	40%
Tests	60%
TOTAL	**100%**

The course and curriculum are designed and limited to time based competency. Late assignments will receive a C (60) grade maximum. Assignments more than seven days overdue will receive a grade of zero.

A final letter grade will be assigned as follows:

A+	90-100%
A	80-89%
B	70-79%
C	55-69%
R	Repeat

V. METHOD OF EVALUATION (GRADING) (Continued)

X	A temporary grade limited to situations with extenuating circumstances, giving a student additional time to complete course requirements	
U	Unsatisfactory	(mid-term grade only)
S	Satisfactory	(mid-term grade only)

1. Minimum acceptable grade is 55%

2. Each major assignment will carry equal weight.

3. If at the end of the semester your overall average of the combined assignments and tests is below 55%, then it will be up to the instructor whether you receive an "R" grade or a rewrite. The criteria employed at arriving at that decision is class attendance, class participation and overall grade, minimum of 50%.

4. If a rewrite is granted it will cover the entire semester course work and the maximum overall obtainable grade on the rewrite is a "C".

VI. SPECIAL NOTES

- Special Needs
  If you are a student with special needs (eg. physical limitations, visual impairments, hearing impairments, learning disabilities), you are encouraged to discuss required accommodations with the instructor and/or contact the Special Needs Office, Room E1204, Ext. 493, 717, 491 so that support service can be arranged for you.

- Retention of Course Outlines
  It is the responsibility of the student to retain all course outlines for the possible future use in acquiring advanced standing at other post-secondary institutions.