

**SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY**

**SAULT STE. MARIE, ONTARIO**



Sault College

**COURSE OUTLINE**

**COURSE TITLE:** Building and Construction Estimating

**CODE NO. :** ARC 101                      **SEMESTER:** III

**PROGRAM:** Civil, Construction & Architectural

**AUTHOR:** S. Ienco and B. Sparrow

**DATE:** Aug. 01              **PREVIOUS OUTLINE DATED:** Aug. 00

**APPROVED:**

	_____	_____
	<b>DEAN</b>	<b>DATE</b>

**TOTAL CREDITS:** 3

**PREREQUISITE(S):** None

**LENGTH OF COURSE:** 16 weeks              **TOTAL CREDIT HOURS:** 48

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*For additional information, please contact*  
School of  
(705) 759-2554, Ext.

**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, masonry, steel and wood.

**II. 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 topics above

2. Develop 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 CSI 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 different project phases
- Identify data sources for estimating
- Differentiate between direct and indirect project costs

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- Identify various types of estimates
  - Define different types of construction contracts
  - Review an example of a project summary bid
4. Accurately and neatly measure construction quantities for various stages of construction in accordance with 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 and other components for a given project

**III. TOPICS:**

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:**

Simplified Estimating For Builders and Engineers

Joseph E. Helton  
Prentice Hall  
ISBN 0138129673

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**V. EVALUATION PROCESS/GRADING SYSTEM:**

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

Laboratories/Assignments	40%
Three tests of equal weight	<u>60%</u>
TOTAL	100%

Each laboratory or assignment carries equal weight. Late submittals receive only a maximum grade of 60%. However, laboratories or assignments handed in later than one week will receive a grade of 0.

An average of 60% on laboratories/assignments and 60% on tests is required for successful completion of this course.

The following semester grades will be assigned to students in postsecondary courses:

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
A+	90 - 100%	4.00
A	80 - 89%	3.75
B	70 - 79%	3.00
C	60 - 69%	2.00
R (Repeat)	59% or below	0.00
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field placement or non-graded subject areas.	
U	Unsatisfactory achievement in field placement or non-graded subject areas.	
X	A temporary grade. This is used in limited situations with extenuating circumstances giving a student additional time to complete the requirements for a course (see <i>Policies &amp; Procedures Manual – Deferred Grades and Make-up</i> ).	
NR	Grade not reported to Registrar's office. This is used to facilitate transcript preparation when, for extenuating circumstances, it has been impossible for the faculty member to report grades.	

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Code No.**VI. SPECIAL NOTES:**Special Needs:

If you are a student with special needs (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your instructor and/or the Special Needs office. Visit Room E1204 or call Extension 493, 717, or 491 so that support services can be arranged for you.

Retention of course outlines:

It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

Plagiarism

Students should refer to the definition of “academic dishonesty” in *Student Rights and Responsibilities*. Students who engage in “academic dishonesty” will receive an automatic failure for that submission and/or such other penalty, up to and including expulsion from the course, as may be decided by the professor. In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

The Professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Substitute course information is available in the Registrar's office.

### Testing Absence

If a student is unable to write a test on the date assigned, the following procedure is required:

- ◆ The student shall provide the Professor with advance notice preferably in writing of his/her need to miss the test.
- ◆ The student may be required to document the absence at the discretion of the Professor.
- ◆ All decisions regarding whether tests shall be re-scheduled will be at the discretion of the Professor.
- ◆ The student is responsible to make arrangements, immediately upon return to the College with his/her course Professor related to make-up of the missed test prior to the next scheduled class for the course in question.
- ◆ In the event of an emergency on the day of the test, the student may require documentation to support the absence and must telephone the College to identify the absence. The college has a 24 hour electronic voice mail system (759-2554)

### **VII. PRIOR LEARNING ASSESSMENT:**

Students who wish to apply for advanced credit in the course should consult the instructor. Credit for prior learning will be given upon successful completion of the following:

### **VIII. DIRECT CREDIT TRANSFERS:**

Students who wish to apply for direct credit transfer (advanced standing) should obtain a direct credit transfer form from the Dean's secretary. Students will be required to provide a transcript and course outline related to the course in question.