DOC.#481

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: SURVEYING

Code No.: SUR 101

Program: CIVIL ENGINEERING

Senester;

Datt JUNE 1989

Author; S. lENCO

New: Revision:

APPROVED:

Chairperson Date-'" z:/?''^" *s /:/^/ y*

CALENDAR DESCRIPTION

SURVEYING	SUR 101-4
COURSE NAME	COURSE NUMBER

PHILOSOPHY/GOALS:

To introduce the student to basic surveying principles. The topics covered will deal with the theory, application and care of a level, transit and chain.

METHOD OF ASSESSMENT:

Field Book	10%
Assignments	10%
Short Quizzes	10%
Mid Term Examination	30%
Final Examination	40%
	100%

A+	90% - 100%
A	80% - 89%
B	70% - 79%
C	55% - 69%
R	Repeat
X	A temporary grade, limited to situations with extenuating circumstances, giving a student additional time to complete the requirements of the course.

1. Minimum acceptable grade is 60%.

2. Each assignment will carry equal weight. Late submissions will oe penalized with a loss of 20% for the first day late and an adaitional 10% for each subsequent late day.

3. The in-class quizzes will cover one or two problems on a specific topic and are worked under examination conditions. Each quiz will carry equal weight.

4. Field books will be collected at the end of each assignment to check for completeness, neatness and layout of work. In addition, the books will be collected at mid-semester and end of semester for a thorough check of one assignment.

SURVEYING SUR 101-4

COURSE NAME COURSE NUMBER

5. If at the end of the semester your overall average of the combined assignments, short quizzes, mid-semester examination ana final examination is below 60%, then it will be up to the instructor whether you receive an "R" repeat or a rewrite. Tne criteria employed for arriving at that decision is class attendance, class participation and overall score.

6. In case a rewrite is granted, it will be permitted only once and will be subjected to the following conditions:

   a. It covers the entire semester's course outline.
   b. The maximum obtainable grade is 60%.
   c. The rewrite grade weight is 100%

TEXT: Surveying: Principles and Applications
Barry F. Kavanagh
Reston, Virginia, 1989

CIVIL ENGINEERING TECHNICIAN

SUR 101-4

TOPIC NO.	PERIODS	TOPIC DESCRIPTION
1.	4	General
		- Introduction - Types, kinds and purposes of surveys - Surveying instruments - Accuracy and precision of measurements
2.	24	Leveling
		Introduction to leveling Leveling instruments and their use Leveling rods and accessories Definitions Theory of differential leveling Leveling procedures and equations Field notes Reduction of field notes Sources of errors and necessary precautions Bench mark leveling Profile leveling
	14	Enngineers transit
		Basic principles Types of transits Method of use Verniers Measuring horizontal angles Care of transit Basic computations involving angles
	14	Linear measurements
		Terms and definitions Different methods of linear measurements Units of measurements Standard conditions of steel tape Taping accessories Temperature affects on chaining Duties of head and rear chainperson

LABORATORY EXERCISES

SUR 101-4

EXERCISE NO.	TOPIC
1.	Leveling demonstration and pratice
2.	Bench mark leveling
3.	Profile leveling
4.	Transit demonstration and practice
5.	Angle measurement
6.	Prolonging a straight line
7.	Chaining demonstration and practice
8.	Chaining corrections for temperature and slope
9.	Grade line intersection computations
10.	Combined chainage and transit exercise
11.	Peg Test
12.	Establishing a proper pace

COURSE OBJECTIVES

SUR 101-4

Leveling

1. Set up the level.
2. Read the leveling rod.
3. Care and maintain the level.
4. Identify the parts of the level.
5. Define backsight, foresight, turning point, height of instrument and bench mark.
6. Set up the field notebook.
7. Record leveling notes.
8. Carry out the duties of a rodperson, instrument person and notekeeper in leveling.
9. Identify sources of error
10. Identify bench marks.
11. Establish bench marks.
12. Transfer grades.
13. Carry a set of elevations from one point to another.

Engineers Transit

1. Care for and maintain the transit.
2. Identity the parts of a transit.
3. Set up a transit.
4. Demonstrate proper use of tangent screws.
5. Read the verniers.
6. Plumo a sight.
7. Measure a horizontal angle.
8. State the basic functions of a transit.
9. Record transit notes.

Chaining

1. Care for and maintain chains.
2. Measure distances with chaining equipment and make proper adjustments.
3. List and perform the basic duties of the head chainperson and rear chainperson.
   Participate within a field crew and act as a head chainperson, rear chainperson and notekeeper.
6. List the sources of error in chaining.
   Perform chaining operations for chains that are too short or
7. too long.
   Reduce slope chaining distances to horizontal distances.

#