

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ON.

COURSE OUTLINE

COURSE TITLE: SURVEYING

COURSE CODE: SUR101

PROGRAM: CIVIL/CONSTRUCTION TECHNICIAN

SEMESTER: I

AUTHOR: D. ELLIOTT

DATE: AUG. 1996

PREVIOUS DATE: SEPT 1994

APPROVED: ^
(DEAN)



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DATE: z^iSa^Z^

TOTAL HOURS PER WEEK: 4

PREREQUISITES: NONE

I. COURSE DESCRIPTION

This course will introduce the student to basic surveying principles. The topics will deal with the theory, application and care of land survey equipment. Emphasis will be placed on contributing effectively as a team member of a survey crew.

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. Identify different types of surveys and survey equipment, and choose the most appropriate equipment for each application.
2. Perform and effectively record linear measurements in the field using several different approved techniques and equipment, within expected parameters and accuracy.
3. Perform and effectively record basic leveling surveys and associated computations.
4. Perform and effectively record basic angle measurement and angle computations.

B. Learning Outcomes and Elements of the Performance

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

1. Identify different types of surveys and survey equipment, and choose the most appropriate equipment for each application.

Elements of the Performance:

- Identify types and purposes of sun/eys
- List and describe the uses of sun/ey instruments and equipment
- Define accuracy and precision of measurements

Perform and effectively record linear measurements in the field using several different approved techniques and equipment, within expected parameters and accuracy.

Elements of the Performance:

- Describe linear measurement terms and definitions
- Differentiate among different methods of linear measurement
- Apply and convert units of measurement
- List the standard conditions of the steel tape
- Identify and utilize taping accessories
- Compute temperature affects on chaining
- Distinguish between the duties of head and rear chainperson
- Demonstrate the use of electronic distance measurement

Perform and effectively record basic leveling sun/eys and associated computations.

Elements of the Performance:

- Identify leveling instruments and their uses
- Identify and use leveling rods and accessories
- Describe the process of differential leveling
- Demonstrate leveling procedures and computations
- Record and reduce field notes to established standards
- Identify sources of error and necessary precautions
- Perform bench mark leveling
- Perform profile leveling

Perform and effectively record basic angle measurement and angle computations.

Elements of the Performance:

- Describe basic principles of angle measurement
- Identify the components of a transit
- Read verniers
- Measure horizontal and vertical angles

Demonstrate proper care of transit
 Perform basic angle computations

III. TOPICS

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

1. Introduction and Surveying Fundamentals
2. Linear Measurement
3. Leveling
4. Engineer's Transit

IV. REQUIRED RESOURCES/TEXTS/MATERIALS

Surveying With Construction Applications
 Barry F. Kavanagh
 Prentice Hall

Hardcover Fieldbook
 (Available at Campus Shop)

V. METHOD OF EVALUATION (GRADING)

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

Field Book and Attendance	20%
Assignments (including Fieldwork	20%
Midterm Test	25%
Final Test	35%
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
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)

Field books will be collected periodically to check for neatness and layout. Field books will be collected at the end of the semester for marking.

If at the end of the semester the overall mark is below 55%, then it will be up to the instructor whether or not a rewrite will be granted. The criteria employed for arriving at that decision is class and field attendance, class participation and overall grade which must be at least 45%.

In the case a rewrite is granted, it will be permitted only once, it will cover the entire course outline and the overall maximum obtainable grade for the course will be limited to 60%.

VI. SPECIAL NOTES

1. Students with special needs are encouraged to discuss required accommodations in confidence with the instructor, or contact the Special Needs Office.

2. The instructor reserves the right to modify the course and course outline as deemed necessary to meet the needs of the students.
3. It is the responsibility of the student to retain all course outlines for possible future use in gaining advanced standing at other post-secondary institutions.

VII. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult with the instructor and/or the Prior Learning Assessment Office. Credit for prior learning will be given upon successful completion of the requirements of the Prior Learning Assessment (PLA) as defined in the Course Analysis Form provided for this course.