

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY
SAULT STE. MARIE, ON

COURSE OUTLINE

IAH ,^0 ii-'j

COURSE TITLE: SURVEYING

CODE NO : SUR235 SEMESTER: II

PROGRAM: CIVIL TECHNICIAN

DATE: JAN 1995 PREVIOUS OUTLINE DATED: JAN 1994

AUTHOR: H. PIETRZAKOWSKI

APPROVED:

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SURVEYING
COURSE NAME

SUR235
COURSE CODE

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PREREQUISITE(S): SUR101

I. PHILOSOPHY/GOALS:

This course will build upon the surveying principles that the student successfully acquired from Sur101. The student will become more proficient in using chains, levels and transits. In addition, the student will also be introduced to traverse surveying and computations, stadia surveying and computation, and topographic mapping.

n. STUDENT PERFORMANCE OBJECTIVES (OUTCOMES):

Upon successful completion of this course the student will:

- 1) Demonstrate an understanding of differential leveling procedures.
- 2) Differentiate between transits and theodolites, and choose the most appropriate equipment for each application
- 3) Perform and effectively record traverse computations
- 4) Perform and effectively record basic stadia surveys
- 5) Perform and effectively record angular measurement and angle computations.

m. TOPICS TO BE COVERED:

- 1) General Review of Survey Fundamentals
- 2) Angular Bearing and Azimuths
- 3) Traverse Computations
- 4) Transits and Theodolites
- 5) Stadia Surveying

IV. LEARNING ACTIVITIES/REQUIRED RESOURCES

1. General Review of Surveying Fundamentals

Learning Activities: In class instruction and practical illustrations on:

- Differential Leveling (Profile & cross-Section)
- Stationing
- Accuracy and precision of measurements
- Level Peg Test

Resources: Chapter 2 & 3
Handouts and overheads

2. Angular Bearing & Azimuth Measurements

Learning Activities; In class instruction, practical exercises and assignments on;

- Terms and definitions
- Meridians, horizontal angles, bearings, azimuths
- Bearing Calculations
- Azimuth Calculations
- Magnetic Declination

Resources; Chapters 4 and 6
Handouts, overheads and demonstrations

Traverse Computations

Learning Activities; In class instruction, practical exercises and assignments on;

- Types of Traverses
- Angular Closure
- Latitudes and Departures
- Precision & Accuracy of a Traverse
- Traverse Adjustments
- Coordinate Computations
- Area Computations

Resources; Chapter 6
Handouts and overheads

4. Transits and Theodolites

Learning Activities; In class instruction, practical exercises and assignments on:

Basic principles
Types of theodolites
Methods of use
Verniers
Prolonging Straight Lines
Prolonging Lines Past Obstacles
Basic Adjustments

Resources; Chapters 4
Handouts and overheads

5. Stadia Surveying

Learning Activities; In class instruction, practical exercises and assignments on;

- Basic principles
- Definitions
- Applications and Limitations of use
- Field Book Reductions
- Field Procedures
- Plotting of Stadia Topography

Resources; Chapters 7
Handouts and overheads

V. EVALUATION METHODS: (INCLUDES ASSIGNMENTS, ATTENDANCE REQUIREMENTS, ETC.)

A final grade DIII be derived as follows;

Practical Test	15%
Field Book	10%
Assignments	30%
	10%
Tests	35%
Total	100%

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The grading system used will be as follows;

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

- 1) Field books will be collected periodically to check for neatness and layout of work. In addition, field books will be collected at the end of the semester for marking.
- 2) Minimum acceptable grade for this course is 55%.
- 3) Late assignments will be penalized at 5% per calendar day past the due date. Instructor reserves the right to not accept any late assignments once marked assignments have been returned.

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SURVEYING
COURSE NAME

SUR23S
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Vn. REQUIRED STUDENT RESOURCES

<u>Required Text</u>	<u>Surveying: with Construction Applications</u> Barry F. Kavanagh Prentice Hall
	Student's Field Book

Vm. SPECIAL NOTES

Students with special needs (*eg.* physical limitations, visual impairments, hearing impairments, learning disabilities) are encouraged to discuss required accommodations confidentially with the instructor.

Your instructor reserves the right to modify the course as he/she deems necessary to meet the needs of students.