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SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: SURVEYING
Code No.: SUR 200
Program: CIVIL ENGINEERING TECHNICIAN
Semester:
Date: JUNE 17, 1983
Author: G.M. CAMERON

New: Revision:

APPROVED:

Chairperson ^'

Date

SURVEYING
Course Name

SUR 200
Course Number

PHILOSOPHY/GOALS:

See Preamble, Attached Course Outline

METHOD OF ASSESSMENT (GRADING METHOD):

See attached

TEXTBOOK(S):

SURVEYING NOTES, SAULT COLLEGE

CIVIL ENGINEERING TECHNICIAN
MARKING SYSTEM - SURVEYING

CRITERIA EMPLOYED FOR ASSESSMENT PURPOSES

1. TOTAL ASSIGNMENT. PROJECT AND TEST ASSESSMENT - ENTIRE SEMESTER
Late submissions will not be accepted unless prior consultation with instructor discloses unusual difficulty

2. ATTENDANCE
-Attendance will be recorded at the beginning of each class
-Late arrivals will be marked absent
-Chronic late arrivals will be refused admittance
A poor attendance record will work to the detriment of the student where a border line situation is encountered

ASSIGNMENT. PROJECT, AND TEST ASSESSMENT

Individual assignments, projects and tests will be assessed on a basis of 100 marks.

-minimum acceptable grade = 60

BREAKDOWN

TOTAL SEMESTER	=	100 marks
Assignments	=	25 marks
Mid-semester Tests	=	35 marks
Final Semester Tests	=	40 marks

EXAMPLE

8 Assignments at 100 marks each
= 800 possible marks

Assume 640 marks attained

Therefore $\frac{640}{800} \times 25 = 20$

Mid-Semester test
Assume a grade of 74 marks attained
Therefore $\frac{74}{35} \times 35 = 26$

Final Semester test
Assume a grade of 82 marks attained
Therefore $82 \times 40 = 33$

Therefore $20+26+33 = 79$ or a grade of B

MARKING SYSTEM (con't)

INCOMPLETE GRADES

1. Repeat assignments or tests to carry a maximum possible grade of 60.
2. Mid-semester test may be repeated only once. Final semester test rewrites will be scheduled only during the prescribed make up period. Failure to attain a satisfactory grade therein will require repeating the course. Satisfactory completion. Semester 3 will be a prerequisite for entry. Semester 4.

SEMESTER 4

Similar to the above in all respects, excepting as follows

Total Semester 4
100 marks

Assignments	- 25 marks
Mapping Projects	- 25 marks
Final Semester Test	- 50 Marks

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COURSE OF STUDY OUTLINE - SURVEYING - SEMESTER 3 AND 4

The Semester 3 and Semester 4 Surveying courses are designed to augment and expand the basic areas of study covered in the Semester 1 and 2 courses. Specialization topics such as traverse survey computations, highway curves and astronomy are studied with a view to practical field usage. Fundamental concepts are stressed rather than purely theoretical aspects. Modern surveying instruments techniques of making field measurements, methods of notekeeping, office computations and plan preparation are discussed bearing in mind that the technician will be concerned primarily with the practical application of the principles involved.

TIME

SEMESTER 3 - SUR 200-4

4 hours per week, lecture, laboratory and field

SEMESTER 4 SUR 201-4

4 hours per week, lecture, laboratory and field

TEXT

Sault College - SURVEYING NOTES
Sault College Bookstore

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COURSE OF STUDY OUTLINE SURVEYING SUR 200-4 - SEMESTER 3

<u>TOPIC NO.</u>	<u>HOURS</u>	<u>TOPIC INFORMATION</u>
1	2	<u>INTRODUCTION</u> Definitions of surveying, importance of survey types, kinds and purposes of surveys, kinds of survey measurements, accuracy and precision of measurements, treatment of errors in survey of measurements, treatment of errors in survey measurement.
2	18	<u>TRANSITS AND THEODOLITES</u> Types of transits and theodolites, measurement of angles in the field, uses made of the transit field traverse survey.
3	34	<u>SURVEY COMPUTATIONS</u> Units of angular measurement, terms and definitions, angular computations, types of traverse surveys and their application to field problems, angular closures, meridans azimuths and bearings, bearings from field angles, the magnetic compass as a direction finding instrument, review of basic trigonometry, methods of solving triangles latitudes and departures, balancing a closed traverse derivation of coordinates, supplying omitted measurements, locating points by computations, obtaining a bearing reference from prior survey areas by double meridan distances, other methods of determining areas, plotting coordinates.

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COURSE OF STUDY OUTLINE SURVEYING SUR 201-4 - SEMESTER 4

TOPIC NO.	HOURS	TOPIC INFORMATION
16		<u>HIGHWAY CURVES</u> Circular curves defined, alignment and stationing, geometry of the circle, the parts of a simple curve, derivation and application of curve formulae, methods of locating curve on the ground, use of curve table, special curve problems.
10		<u>VERTICAL CURVES</u> Review grade lines and gradients, grade line intersections, vertical parabolic curves, types and application, length of vertical curve, computation of offsets from grade line, curve elevations, location and elevation of high or low point on curve, field procedure for vertical curve layout.
10		<u>PRACTICAL ASTRONOMY</u> Astronomy defined, the celestial sphere terrestrial latitude and longitude, Polaris observation for azimuths, use of the "Star Card", azimuths of reference line, effect of meridian convergence, field observations.
		<u>ADJUSTMENT OF SURVEYING INSTRUMENTS</u> Review precision and accuracy, the importance of correct instrument adjustments, tests for maladjustment, neutralizing instrument errors in field usage.
		<u>SPECIALIZED SURVEYING EQUIPMENT</u> The substance bar, use of traversing equipment, electronic distance measurement, maintenance of surveying equipment.
12		<u>PRACTICAL FIELD PROBLEMS</u> Trigonometric leveling, curve stakeout, setting batter boards, electronic distance measurement.

SURVEYING

BIBLIOGRAPHY - REFERENCE TEXT

1. Philip Kissam - SURVEYING PRACTICE - third edition
McGraw-Hill Book Company
2. Philip Kissam - SURVEYING INSTRUMENTS AND METHODS
McGraw-Hill Book Company
3. Philip Kissam - SURVEYING FOR CIVIL ENGINEERING
McGraw-Hill Book Company
4. Parker and McGuire - SIMPLIFIED SITE ENGINEERING
John Wiley and Sons
5. Davis and Foote - SURVEYING , THEORY AND PRACTICE
McGraw-Hill Book Company
6. Breed and Hosmer - ELEMENTARY SURVEYING
John Wiley and Sons
7. Rubey, Lommell and Todd - ENGINEERING SURVEYS
The MacMillan Company
8. Moffitt and Bouchard - SURVEYING - SIXTH EDITION
In text Educational Publishers
9. Brinker and Wolf - ELEMENTARY SURVEYING - Sixth edition
IEP - A Dun-Donnelly Publisher
10. McCormac - SURVEYING
Prentice Hall Inc.
11. Ives - HIGHWAY CURVES
John Wiley and Sons
12. Hickerson - ROUTE SURVEYS AND DESIGN
McGraw-Hill Book Company
13. Meyer - ROUTE SURVEYING
In text Educational Publishers
14. Herubin - PRINCIPLES OF SURVEYING - Second Edition
Reston Publishing Company, Inc.
15. Nassau - PRACTICAL ASTRONOMY
McGraw-Hill Book Company
16. Allen - SIX PLACE TABLES
McGraw-Hill Book Company
17. Brunns - A NEW MANUAL OF LOGARITHMS
Charles T. Powner Co.
18. Ives - NATURAL TRIGONOMETRIC FUNCTIONS
John Wiley and Sons