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

COURSE OUTLINE

COURSE TITLE:	**SURVEYING**		
CODE NO. :	**OEL 810**	**SEMESTER:**	**I**
PROGRAM:	**CIVIL/ARCHITECTURAL/CONSTRUCTION**		
AUTHOR:	**S. IENCO**		
DATE:	**AUG. 04**	**PREVIOUS OUTLINE DATED:**	**JUN 98**
APPROVED:	**KITTY DEROSARIO**		
TOTAL CREDITS:	**4**		
PREREQUISITE(S):	**NONE**		
HOURS/WEEK:	**4**		

For additional information, please contact Kitty Derosario, Dean
School of Technology, Engineering & Technical Trades
(705) 759-2554, Ext.642

Evaluation Process/ Grading System	Special Notes: Special Needs, Retention of Course Outlines, Plagiarism, Course Outline Amendments, Testing Absence	Prior Learning Assessment	Direct Credit Transfers

I. COURSE DESCRIPTION:

This course will introduce you to basic surveying principles. The topics will deal with theory, application and care of the level, chain and transit. The theory is enhanced with practical field exercises.

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II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. Explain the purpose of surveying by identifying various types of surveys; describing equipment used to perform such surveys; and indicate the interaction of errors, mistakes and field data collection in a survey

   Potential Elements of the Performance:

   - Define surveying.
   - Identify types and purpose of surveying.
   - Identify the basic instruments commonly used in surveying.
   - Distinguish between accuracy and precision.
   - Define errors and mistakes in surveying.
   - Recognize and appreciate the importance of collecting and recording appropriate field notes.

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2. Participate as an active member of a survey team to select and operate leveling survey equipment for the purpose of conducting, measuring, calculating, recording and disseminating data according to given standards.

Potential Elements of the Performance:

- Define leveling.
- Identify leveling instruments and their use.
- Identify and use leveling rods and accessories.
- Describe the process of differential leveling.
- Identify and use the two basic equations of leveling.
- Demonstrate the proper procedure for setting up the level, taking rod readings, and entering data in the field book.
- Record and reduce field notes to established standards.
- Solve problems involving the degree of accuracy
- Perform a field exercise using a single instrument set up.
- Solve and perform *a differential leveling* exercise.
- Solve and perform a *benchmark leveling* exercise.
- Solve and perform a *profile leveling* exercise.
- Solve and perform a *peg test* to ensure proper adjustment of instrument.

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3. Acquire, record and reduce linear measurements using various approved techniques, equipment and procedures.

Potential Elements of the Performance:

- Differentiate among different methods of linear measurement.
- Establish a personal pace.
- Explain the duties of the head surveyor and rear surveyor.
- Explain the various uses for tape accessories.
- State the procedure for making slope measurements.
- List the sources of chaining mistakes.
- Convert slope distances into horizontal distances.
- Compute incorrect tape length effects on chaining.
- Compute temperature effects on chaining.

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4. Identify and describe the functions and parts of a transit; measure and record angular measurements with the transit; perform associated angular calculations for azimuths and bearings of open and closed traverses.

Potential Elements of the Performance:

- Identify the components of a transit.
- Set up a transit over a point.
- Demonstrate the procedure for making angular measurements.
- Read transit verniers.
- Measure horizontal angles singly and doubly.
- Perform angular arithmetic calculations.
- Calculate bearing and azimuths of open and closed traverses.
- Describe and outline the procedure for prolonging a straight line, interlining between two points, intersecting a line and prolonging a straight line past an obstacle.

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III. TOPICS:

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

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IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

WebCT Study Guide

Adobe Acrobat Reader, Macromedia Flash and Microsoft Word Viewer (Downloads are Free!)

Students in Algoma Area
The fieldwork component can take place at Sault College. The facilitator will notify the student of the schedule.

Students Outside of the Algoma Area
An important component of this course is the fieldwork component. It is the student's responsibility to find a professional surveyor or engineer for mentoring and evaluation. The professional will be contacted by the facilitator once notified.

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V. EVALUATION PROCESS/GRADING SYSTEM:

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

- Assignments (3) 10%
- Field Book and Participation 40%
- Midterm Test 25%
- Final Test 25%

TOTAL 100%

Each assignment and quiz carries equal weight. Late submittals receive only a maximum grade of 60%. However, assignments handed in later that one week will receive a grade of 0%.

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

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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.

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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.

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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/program, as may be decided by the professor/dean. 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.

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Course Outline Amendments:

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.

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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 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 with his/her course Professor related to make-up of the missed test.

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) Ext. 600.

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VII. PRIOR LEARNING ASSESSMENT (PLA):

Students who wish to apply for advanced credit in the course should consult the professor. Credit for prior learning will be given upon successful completion of a challenge exam or portfolio.

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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.

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