SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

COURSE OUTLINE: PROCESS CONTROL II

CODE NO.:   ELR 212-5

PROGRAM: INSTRUMENTATION TECHNICIAN

SEMESTER: FOUR

DATE: JANUARY 1994

**PREVIOUS
OUTLINE DATED:** NONE

AUTHOR: ENO LUDAVICIUS

NEW:__X__ REV.:___

APPROVED: _W. Filipowich_   _Aug 30/94_
              COORDINATOR   **DATE**

              L. P. Chagnith   _94 08 31_
              DEAN   **DATE**

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TOTAL CREDIT HOURS: 90

PREREQUISITE(S): ELR204-5

PHILOSOPHY/GOALS:

THIS COURSE IS AN ADVANCED STUDY OF INDUSTRIAL

MEASUREMENT TECHNIQUES. THE STUDENT WILL KNOW

THE PRINCIPLE AND OPERATION OF SELF-BALANCING

INSTRUMENTS AND SYSTEMS. THE STUDENT WILL DEVELOP·

A WORKING KNOWLEDGE OF PRESSURE, TEMPERATURE,FLOW

LEVEL DENSITY MEASUREMENT DEVICES AND SYSTEMS. THE

THE SKILLS NECESSARY TO TROUBLESHOOT ,CALIBRATE AND

MAINTAIN THESE DEVICES WILL BE DEVELOPED. THE STUDENT

WILL BECOME FAMILIAR WITH THE DIFFERENT TYPES AND

APPLICATIONS OF CONTROL VALVES, CYLINDERS, AND

ACTUATORS. THIS COURSE WILL PROVIDE THE STUDENT

WITH ABILITY TO UNDERSTAND THE ROLE OF THE

INSTRUMENTATION TECHNICIAN IN THE CONTROL OF

INDUSTRIAL PROCESSES.

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STUDENT PERFORMANCE OBJECTIVES:

UPON SUCCESSFUL COMPLETION OF THIS COURSE, THE STUDENT
WILL BE ABLE TO:

1. PROGRAM AND TROUBLESHOOT INDUSTRIAL PROCESS
   CONTROL HARDWARE.
   (ie. MODICON 984 PLC or BAILEY INIFI 90 DCS)

2. PROGRAM AND OPERATE MAN MACHINE INTERFACES (MMI)
   FOR PROCESS CONTROL APPLICATIONS.
   (ie. CONTROL AC FREQUENCY DRIVE WITH PLC INTERFACE)

3. RELATE PROCESS THEORY TO FIELD RELATED APPLICATIONS.
   (ie. TOURING PAPER & PULP, STEEL AND MINING INDUSTRY)

4. PERFORM PID TUNING WITH GERRY ENGINEERING SOFTWARE.
   (ie. TUNE PRESSURE LOOP CONTROLLED BY 5/03 PID BLOCK)

TOPICS TO BE COVERED:

1.

2.

3.

4.

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LEARNING ACTIVITIES	RESOURCE MATERIAL

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METHOD(S) OF EVALUATION

TESTS - TWO WRITTEN TESTS TOTALLING 50%.
    (MINIMUM AVERAGE OF 55% MUST BE MAINTAINED
    FOR A PASSING GRADE IN ALL THREE TESTS.)

PROJECTS - FOUR PROJECTS TOTALLING 50%.
    (MINIMUM AVERAGE OF 55% MUST BE MAINTAINED
    FOR A PASSING GRADE IN ALL FIVE PROJECTS.)

TOTAL   100%

THE GRADING SYSTEM USED WILL BE AS FOLLOWS:

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

R REPEAT

REQUIRED STUDENT RESOURCES:

TEXT BOOKS: 1.FEEDBACK CONTROL SYSTEMS
            C.L. PHILLIPS, R. D. HARBOR
            PRENTICE HALL

ADDITIONAL RESOURCE MATERIALS AVAILABLE IN THE COLLEGE LIBRARY BOOK SECTION:

SPECIAL NOTES:

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COURSE NAME   CODE NO.

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SPECIAL NOTES: