

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



Sault College

COURSE OUTLINE

COURSE TITLE: PRECISION MEASURING EQUIPMENT
CODE NO. : MCH138 **SEMESTER:** 1
PROGRAM: MECHANICAL PROGRAMS
AUTHOR: Cam Pucci – www.campucci@shaw.ca
DATE: Aug/07 **PREVIOUS OUTLINE DATED:** Aug/06
APPROVED:

DEAN **DATE**
TOTAL CREDITS:
PREREQUISITE(S): None
HOURS/WEEK: 2

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*For additional information, please contact Colin Kirkwood, Dean
School of Technology, Skilled Trades, Natural Resources & Business
(705) 759-2554, Ext. 2688*

I. COURSE DESCRIPTION:

This course is designed to strengthen the student's ability to measure and inspect to precise tolerances, the physical size and shapes of various machined parts. The students will use various measuring equipment and techniques that modern industry uses in the mechanical fields. Precision and accuracy will be the focus of the course.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. Understand the importance of precise measurement and how it affects product and workmanship in industry.
Potential Elements of the Performance:
 - Understand the role of the technician in measurement
 - Use of standards and the need for standards
 - Understand the importance of maintaining accuracy
 - How non precise measurement techniques affect companies
 - Lab assignment / report
2. Use of measuring tools
Potential Elements of the Performance:
 - Discuss the use and care of measurement tools
 - Be able to interpret imperial and metric readings
 - Recognize sources of error in the measuring process
 - Correctly adjust, maintain and store measuring tools
 - Lab assignment / report
3. Be able to transfer measurements accurately
Potential Elements of the Performance:
 - Learn to transfer measurements taken onto a layout project
 - Draw shop floor layout sketches
 - Assignment / report
4. Be knowledgeable in various modern measuring equipment
Potential Elements of the Performance:
 - Discuss modern computerized measuring equipment available today that enhance precise measurement
 - Demonstrate the basic use of laser equipment
 - Discuss measuring equipment available today that is used in vibration analysis, hydraulic testing and other machinery components

5. Discuss the use of Statistical Process Control in industry
Potential Elements of the Performance:
- Discuss Statistical Process Control
 - Discuss the advantages of using Statistical Processes
 - Perform assignments in Statistical Process Control

III. TOPICS:

1. The need for precise measurement
2. The use and care of various measurement tools
3. Simple layout measurement transfer
4. Computerized measurement equipment
5. Statistical Process Control

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:
Industrial Health and Safety Study Guide

V. EVALUATION PROCESS/GRADING SYSTEM:

Activities and Assignments 40% Attendance/Attitude 10%
Tests / Exam 50%

The following semester grades will be assigned to students in postsecondary courses:

Grade	Definition	<i>Grade Point Equivalent</i>
A+	90 – 100%	
A	80 – 89%	4.00
B	70 - 79%	3.00
C	60 - 69%	2.00
D	50 – 59%	1.00
F (Fail)	49% and below	0.00
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field /clinical placement or non-graded subject area.	
U	Unsatisfactory achievement in field/clinical placement or non-graded subject area.	
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.	
NR	Grade not reported to Registrar's office.	
W	Student has withdrawn from the course without academic penalty.	

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 professor and/or the Special Needs office. Visit Room E1101 or call Extension 2703 so that support services can be arranged for you.

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.

Communication:

The College considers **WebCT/LMS** as the primary channel of communication for each course. Regularly checking this software platform is critical as it will keep you directly connected with faculty and current course information. Success in this course may be directly related to your willingness to take advantage of the **Learning Management System** communication tool.

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.

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.

<include any other special notes appropriate to your course>

VII. PRIOR LEARNING ASSESSMENT:

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.

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.