

**SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY**

**SAULT STE. MARIE, ONTARIO**



Sault College

**COURSE OUTLINE**

**COURSE TITLE:** APPLIED PHYSICS

**CODE NO. :** IIM601

**SEMESTER:**

**PROGRAM:** INDUSTRIAL INSTRUMENTATION MECHANIC

**AUTHOR:** DOUGLAS FAGGETTER

**DATE:** AUG. 2004 **PREVIOUS OUTLINE DATED:**

**APPROVED:**

\_\_\_\_\_  
**DEAN** **DATE**

**TOTAL CREDITS:** 4

**PREREQUISITE(S):**

**HOURS/WEEK:** 3

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*For additional information, please contact C. Kirkwood, Dean*  
*School of Technology, Skilled Trades & Natural Resources*  
*(705) 759-2554, Ext.688*

**I. COURSE DESCRIPTION:****II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:**

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

1. Perform calculations involving unit conversions
2. Perform calculations involving kinetic energy
3. Perform calculations involving pressure, force and area
4. Perform calculations involving force and mass
5. Perform calculations involving density, weight and specific gravity
6. Perform calculations involving absolute and gauge pressure
7. Perform calculations involving the pressure-elevation relationship
8. Perform calculations involving manometers
9. Perform calculations involving the Ideal Gas Law
10. Perform calculations involving heat transfer

**III. TOPICS:**

1. SI units and prefixes
2. Imperial Units
3. Scalar quantities and vector quantities
4. Velocity and acceleration
5. Newton's Laws
6. Force, mass and acceleration (SI units)

7. Force, mass and acceleration (Imperial units)
8. Work
9. Potential energy
10. Kinetic energy
11. Power
12. Trigonometry
13. Pressure
14. Pascal's Laws
15. Mass Density
16. Weight Density (Specific Weight)
17. Specific Gravity
18. Gauge and absolute pressure
19. Relationship between pressure and elevation
20. Pascal's Paradox
21. Manometer
22. Differential Manometer
23. Well type manometer
24. Inclined-well type manometer
25. Barometer
26. Temperature Scales
27. Avagadro's Hypothesis
28. Ideal Gas Law
29. Avagadro's Constant

30. Boyle's Law
31. Charles Law
32. Heat transfer
33. Calorimeter

**IV. REQUIRED RESOURCES/TEXTS/MATERIALS:  
Course Notes**

**V. EVALUATION PROCESS/GRADING SYSTEM:**

**The grading weight for the course is:**  
Theory 100%

The following semester grades will be assigned to students:

| <b>Grade</b> | <b>Definition</b>  | <i>Grade Point<br/>Equivalent</i> |
|--------------|--|-----------------------------------|
| A+           | 90 – 100%  | 4.00                              |
| A            | 80 – 89%   | 3.00                              |
| B            | 70 - 79%   | 2.00                              |
| C            | 60 - 69%   | 1.00                              |
| D            | 50 – 59%   | 0.00                              |
| F (Fail)     | 49% and below  |                                   |
| 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 703 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.

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.