SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO

Sault College

COURSE OUTLINE

COURSE TITLE: ***CONCEPTS OF PHYSICS***

CODE NO. : **PHY115** **SEMESTER:** **I, II**

PROGRAM: **GENERAL ARTS & SCIENCE**

AUTHOR: **SUBHASH VERMA P. Eng / Marjorie Hall, B.ES, B.Ed.**

DATE: **Aug, 2005** **PREVIOUS OUTLINE DATED** **May, 02** Aug 2004

APPROVED:

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DEAN **DATE**

TOTAL CREDITS: **FIVE**

PREREQUISITE(S): **NONE *although grade 12 general level mathematics is strongly recommended***

LENGTH OF COURSE: **Hours per week: 5**

I. COURSE DESCRIPTION:

This course introduces the student to a number of fundamental concepts of physics. It is designed to satisfy the needs of students who are interested in an *overview* of the *concepts* rather than a *rigorous mathematical analysis* of the topics as might be encountered in a traditional engineering level course in physics.

Topics to be covered include: units of measurement and the metric system, motion, forces, work, energy and power, simple machines, properties of solids, liquids and gases, temperature and heat, basic electricity and magnetism, and the nature of light.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. In his/her own words write basic definitions for the concepts introduced. The definition will demonstrate a fundamental understanding of the concept.

2. Answer questions requiring an understanding of the concepts presented.

3. Respond to questions requiring some extrapolation of the course content.

4. Solve basic mathematical problems requiring an essential understanding of the course theory.

5. Develop an appreciation for physics as a science and its broad impact on the world as we now know it. This impact includes both the technological applications that are a result of the science and a fundamental understanding of our universe made possible by the science.

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III. TOPICS TO BE COVERED: **Approximate Time Frames (Optional)**

1. MEASUREMENT AND THE METRIC SYSTEM
2. MOTION
3. FORCES, WORK, ENERGY, POWER and SIMPLE MACHINES
4. PROPERTIES OF MATTER: SOLIDS, LIQUIDS and GASES
5. TEMPERATURE AND HEAT
6. BASIC ELECTRICITY and MAGNETISM

Note: Coverage of topics 5,6 would depend on the availability of time

V. REQUIRED RESOURCES/TEXTS/MATERIALS:

Paul G. Hewitt, CONCEPTUAL PHYSICS, ninth edition. Addison Wesley Publishers, Toronto. 2002. ISBN 0-321-05160-2

ADDITIONAL RESOURCE MATERIALS AVAILABLE IN THE COLLEGE LIBRARY:

Book Section

You will find the college's collection of physics books on the second floor of the college library. They are located on the shelves under the ***Call Number QC***.

V. EVALUATION PROCESS/GRADING SYSTEM:

Your final grade in PHY 1150 will be determined on the basis of a number of quiz tests to be administered during the semester combined with the results of your laboratory experiment reports. Final mark will be awarded based on the composite score of lab and quiz tests as follows:

Quiz tests	60%
Lab Work	40%

The following semester grades will be assigned to students:

Grade	**Definition**	*Grade Point Equivalent*
A+	90 – 100%	4.00
A	80 – 89%	
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 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.