

**SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY**

**SAULT STE. MARIE, ONTARIO**



**SAULT  
COLLEGE**

**COURSE OUTLINE**

**COURSE TITLE:** Concepts Of Physics

**CODE NO. :** PHY115 **SEMESTER:** 12F

**PROGRAM:** General Arts & Science

**AUTHOR:** Updated by Douglas McKinnon for GAS Department  
**INSTRUCTOR:** Vanessa O'Dell

**DATE:** Sept 2013 **PREVIOUS OUTLINE DATED:** Sept 2012

**APPROVED:** "Colin Kirkwood" August 20/13

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	<b>DEAN</b>	<b>DATE</b>
<b>TOTAL CREDITS:</b>	5	
<b>PREREQUISITE(S):</b>	N/A Although Grade 12 Technical Mathematics is strongly recommended	
<b>HOURS/WEEK:</b>	5	

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*For additional information, please contact Colin Kirkwood, Dean*  
*School of Environment, Technology and Business*  
*(705) 759-2554, Ext. 2688*

**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, sound, 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. Measurement and the Metric System

Potential Elements of the Performance:

- a) Describe and define base units of measure
- b) Convert units of measure within the various systems of measure

## 2. Motion

Potential Elements of the Performance:

- a) Describe and define distance, speed, velocity, and acceleration
- b) Work with equations describing free fall and projectile motion

## 3. Forces, Work, Energy, Power and Simple Machines

Potential Elements of the Performance:

- a) Awareness and quantification of various types of forces
- b) Define and quantify units of Work, Energy and Power
- c) Define, describe and quantify mechanisms and forces of Simple Machines

4. Properties of Matter: Solids, Liquids and Gases

Potential Elements of the Performance:

- a) Awareness of the various physical properties of matter in liquid, solid and gaseous states
5. Temperature and Heat

Potential Elements of the Performance:

- a) Define and describe heat
  - b) Awareness of the various temperature scales
6. Basic Electricity and Magnetism

Potential Elements of the Performance:

- a) Understand and quantify the various attributes of electricity
- b) Differentiate between alternating and direct current
- c) Differentiate between series and parallel circuits
- d) Describe the characteristics of Magnetism

**III. TOPICS:**

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

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

***Conceptual Physics, by- Paul G. Hewitt, 11<sup>th</sup> edition***  
Pearson Addison Wesley Publishers; 2010  
ISBN-13: 978-0-321-56809-0, ISBN-10: 0-321-56809-5

***Scientific Calculator***, similar to Sharp – EL520W

**NOTE:** Cell/smart phones and graphic calculators are not allowed!!!

**Additional resource materials are available in the college library.**

## V. EVALUATION PROCESS/GRADING SYSTEM:

Final grade will be awarded based on the composite score of labs, assignments, quizzes, and tests as follows:

Tests	45%
Quizzes	10%
<u>Labs, Attendance and Assignments</u>	<u>45%</u>
Total	100%

(The percentages shown above may have to be adjusted to accurately evaluate student skills. Students will be notified of any changes made.)

The professor reserves the right to adjust the mark up or down based on attendance, participation, leadership, creativity and whether there is an improving trend.

- a) Students must complete and pass both the test and lab portion of the course in order to pass the entire course
- b) All assignments must be completed satisfactorily to pass the course
- c) Make-up tests are solely at the discretion of the Professor and will be assigned a maximum of 50%
- d) The Professor reserves the right to adjust the number of tests, practical tests, labs and quizzes based on unforeseen circumstances. Students will be provided with sufficient notice to any changes and the reasons thereof
- e) A student who is absent for 3 or more times without prior notification, a valid reason or no effort to resolve the problem will result in action taken  
NOTE: If action is taken, it will range from marks being deducted, to a maximum whereby the student may be removed from the course and assigned an "f" grade

The following semester grades will be assigned to students:

<b>Grade</b>	<b><u>Definition</u></b>	<i>Grade Point Equivalent</i>
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:

### Attendance:

Sault College is committed to student success. There is a direct correlation between academic performance and class attendance; therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies arriving on time and remaining for the duration of the scheduled session.

***Once the classroom door has been closed, the learning process has begun. Late arrivers will not necessarily be granted admission to the room. This decision lies solely with the Professor.***

## VII. COURSE OUTLINE ADDENDUM:

### 1. 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.

### 2. 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.

3. Prior Learning Assessment:

Students who wish to apply for advance credit transfer (advanced standing) should obtain an Application for Advance Credit from the program coordinator (or the course coordinator regarding a general education transfer request) or academic assistant. Students will be required to provide an unofficial transcript and course outline related to the course in question. Please refer to the Student Academic Calendar of Events for the deadline date by which application must be made for advance standing.

Credit for prior learning will also be given upon successful completion of a challenge exam or portfolio.

Substitute course information is available in the Registrar's office.

4. Accessibility Services:

If you are a student with a disability (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your professor and/or the Accessibility Services office. Visit Room E1101 or call Extension 2703 so that support services can be arranged for you.

5. Communication:

The College considers ***Desire2Learn (D2L)*** 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 this Learning Management System (LMS) communication tool.

6. Plagiarism:

Students should refer to the definition of “academic dishonesty” in *Student Code of Conduct*. 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.

7. Tuition Default:  
Students who have defaulted on the payment of tuition (tuition has not been paid in full, payments were not deferred or payment plan not honoured) as of the first week of November will be removed from placement and clinical activities due to liability issues. This may result in loss of mandatory hours or incomplete course work. Sault College will not be responsible for incomplete hours or outcomes that are not achieved or any other academic requirement not met as of the result of tuition default. Students are encouraged to communicate with Financial Services with regard to the status of their tuition prior to this deadline to ensure that their financial status does not interfere with academic progress.
8. Student Portal:  
The Sault College portal allows you to view all your student information in one place. **mysaultcollege** gives you personalized access to online resources seven days a week from your home or school computer. Single log-in access allows you to see your personal and financial information, timetable, grades, records of achievement, unofficial transcript, and outstanding obligations, in addition to announcements, news, academic calendar of events, class cancellations, your learning management system (LMS), and much more. Go to <https://my.saultcollege.ca>.
9. Electronic Devices in the Classroom: Students who wish to use electronic devices in the classroom will seek permission of the faculty member before proceeding to record instruction. With the exception of issues related to accommodations of disability, the decision to approve or refuse the request is the responsibility of the faculty member. Recorded classroom instruction will be used only for personal use and will not be used for any other purpose. Recorded classroom instruction will be destroyed at the end of the course. To ensure this, the student is required to return all copies of recorded material to the faculty member by the last day of class in the semester. Where the use of an electronic device has been approved, the student agrees that materials recorded are for his/her use only, are not for distribution, and are the sole property of the College.