

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY  
SAULT STE. MARIE, ONTARIO


COURSE OUTLINE

Course Title: GENERAL SCIENCE (A)  
Code No. SCI 097-4  
Program: GENERAL ARTS AND SCIENCE, 1009,1001  
Semester: ONE OR TWO  
Date: AUGUST, 1988  
Author: ADAM SUGDEN

New:

Revision:

APPROVED:

  
Chairperson

August 31, 1988

Date

GENERAL SCIENCE (A)

SCI 097-4

Course Name

Course Number

PHILOSOPHY/GOALS

This is a preparatory course in general science to give a student a basic understanding of the scientific method, and a specific knowledge of LIFE SCIENCE AND CHEMISTRY.

METHOD OF ASSESSMENT:

Class Participation 25%

- a) Attendance - 80% required
- b) Punctuality in assignments

Laboratory and Homework Assignments 25%

Tests 50%

Topic tests are of equal value

100%

Grades

- A+- 90 - 100%
- A - 80 - 89%
- B - 70 - 79%
- C - 60 - 70%

The minimum passing grade is 60% this being a composite derived from the overall course assessment. Grades from 50% to 60% will allow a student the right to an overall course supplemental provided that the attendance requirement has been met, and all laboratory and homework assignments are complete and submitted. All lower grades or failure to meet other requirements specified above will result in a failure.

The instructor retains the right to modify the course content during the duration of the course.

TEXTBOOKS

- 1) Brockway, C.S.; Gardner, R.; Howe, S.F.; GENERAL SCIENCE, Allyn and Bacon, Inc., Newton Mass.
- 2) Brockway, R. ? Howe, S.F.; Husted, B.; Jones, H.; Rieck, G.W.; GENERAL SCIENCE (ACTIVITY BOOK), Allyn and Bacon, Inc., Newton, Mass.

| HOURS                           | TOPICS                                |
|---------------------------------|---------------------------------------|
| LIFE SCIENCE (UNIT ONE IN TEXT) |                                       |
| 8                               | PROLOGUE: Introduction to Science     |
|                                 | 1. <u>Introduction to Life</u>        |
|                                 | 1.1 Characteristics of Life           |
|                                 | 1.2 The Cell                          |
|                                 | 1.3 One-Celled Organisms              |
|                                 | 1.4 Levels of Organization            |
|                                 | 1.5 Photosynthesis                    |
|                                 | 1.6 Classification                    |
|                                 | 1.7 Variety of Life                   |
|                                 | 1.8 Viruses                           |
|                                 | Test 1                                |
| 7                               | 2. <u>Heredity</u>                    |
|                                 | 2.1 From Generation to Generation     |
|                                 | 2.2 Mitosis                           |
|                                 | 2.3 Asexual Reproduction              |
|                                 | 2.4 Sexual Reproduction               |
|                                 | 2.5 Dominant and Recessive Traits     |
|                                 | 2.6 Genes and Chromosomes             |
|                                 | 2.7 DNA                               |
|                                 | 2.8 Mutations                         |
|                                 | 2.9 Plant and Animal Breeding         |
| 7                               | 3. <u>The Human Body</u>              |
|                                 | 3.1 Skeleton and Muscles              |
|                                 | 3.2 Circulatory System                |
|                                 | 3.3 Breathing                         |
|                                 | 3.4 Digestion and Waste Removal       |
|                                 | 3.5 Nervous System                    |
|                                 | 3.6 Endocrine System                  |
|                                 | 3.7 Alcohol, Tobacco, and Other Drugs |
|                                 | Test 2                                |
| 7                               | 4. <u>Ecology</u>                     |
|                                 | 4.1 Ecosystems                        |
|                                 | 4.2 Food Chains and Food Webs         |
|                                 | 4.3 Food Pyramids                     |
|                                 | 4.4 Populations                       |
|                                 | 4.5 Succession                        |
|                                 | 4.6 Habitat Destruction               |
|                                 | 4.7 Endangered Species                |

| HOURS                        | TOPICS                              |
|------------------------------|-------------------------------------|
|                              | 5. <u>Distribution</u>              |
|                              | 5.1   Adaptations                   |
|                              | 5.2   Biomes                        |
|                              | 5.3   Forest Biomes                 |
|                              | 5.4   The Desert Biome              |
|                              | 5.5   The Grassland Biome           |
|                              | 5.6   Mountain Biomes               |
|                              | 5.7   Life Zones in the Ocean       |
|                              | Test 3                              |
| CHEMISTRY (UNIT TWO IN TEXT) |                                     |
| 7                            | 6. <u>Properties of Matter</u>      |
|                              | 6.1   Mass, Volume and Density      |
|                              | 6.2   States of Matter              |
|                              | 6.3   Solutions                     |
|                              | 6.4   Separating Mixtures           |
|                              | 6.5   Elements and Compounds        |
|                              | 6.6   Combustion                    |
| 7                            | 7.    Atoms and Molecules           |
|                              | 7.1   Dalton's Atomic Model         |
|                              | 7.2   Symbols and Formulas          |
|                              | 7.3   Chemical Equations            |
|                              | 7.4   The Atomic Model is Modified  |
|                              | 7.5   Line Spectra                  |
|                              | 7.6   The Current Model of the Atom |
|                              | Test 4                              |
|                              | 8. <u>Chemical Elements</u>         |
|                              | 8.1   Metals and NonMetals          |
|                              | 8.2   The Noble Gases               |
|                              | 8.3   The Halogens                  |
|                              | 8.4   The Alkali Metals             |
|                              | 8.5   The Periodic Table            |
|                              | 8.6   Bonding Elements              |
|                              | 8.7   Carbon                        |

9. Chemical Reactions

- 9.1 Energy and Changes of State
  - 9.2 Energy and Chemical Reactions
  - 9.3 Oxidation and Reduction
  - 9.4 Electrochemical Cells
  - 9.5 Acids and Bases
  - 9.6 Rates of Reaction
- Test 5