SAULT COLLEGE OF APPLIED ARTg~fc rECTTfTOTOGY

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 AND TWO |
| Date: | JULY, 1987 |
| Author: | J. GIGUERE |

New: Revision:

APPROVED: Chair^efson 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

TooT

Grades ^.

A - 80 - 100%
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 requirment 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 teacher retains the right to modify the course content during the duration of the course, as time constraints may not permit all topics to be covered.

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.

SC1 097

| HOURS | TOPICS |
|---|---|
| | LIFE SCIENCE (UNIT ONE IN TEXT) |
| 3 | PROLOGUE: Introduction to Science |
| 9 | 1. Introduction to Life |
| | 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 |
| 9 | 2. Heredity |
| | 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 |
| 9 | 3. The Human Body |
| | 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 |
| 9 | 4. Ecology |
| | 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 |

SCI 097

| HOURS | TOPICS | |
|---|---|---|
| | 5. | Distribution |
| | 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 |

CHEMISTRY (UNIT TWO IN TEXT)

| | | |
|---|---|---|
| 9 | 6. | Properties of Matter |
| | 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 |
| 9 | 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 |
| 9 | 8. | Chemical Elements |
| | 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 |
| | r9.6 | Rates of Reaction |

SCI 097

| HOURS | TOPICS |
|---|---|
| | 10. Nuclear Reactions |
| | 10.1 Radioactivity |
| | 10.2 Isotopes |
| | 10.3 Radioactive Decay |
| | *10.4 Uses of Radioisotopes |
| | 10.5 Nuclear Energy |
| | 10.6 Nuclear Fission |
| | 10.7 Nuclear Reactors |
| | 10.8 Nuclear Fusion |

* These are enrichment topics which may be skipped.