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

COURSE OUTLINE

Course Title: BIOLOGY/ECOLOGY

Code No.: BIO 114-3

Program: FOREST TECHNICIAN

Semester: I

Date: SEPTEMBER, 1987

Author: H. COOPER/G. L. STONE

New: \_\_\_\_\_ Revision: X

APPROVED: *[Signature]*  
Chairperson

*02/28/87*  
Date

CALENDAR DESCRIPTION

BIOLOGY/ECOLOGY

BIO 114-3

COURSE NAME

COURSE NUMBER

**PHILOSOPHY/GOALS:**

This is an elementary course in biology and ecology designed for resource management students. It covers the organization of life and the vital processes of plants, animals, and ecosystems. Emphasis is on structure and function of cells, plant growth and development, and energy flow through forest ecosystems. Field and laboratory work are stressed.

**METHOD OF ASSESSMENT (GRADING METHOD):**

Final marks will be based on:

Four term tests	50%
Quizzes	10%
Labs	30%
Report(s)	10%
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	100%

**GRADING:**

A+=	90%-100%
A =	80%-89%
B =	70%-79%
C =	60%-69%

**REWRITES:**

Students receiving a final grade of 60% based on term tests and lab results will pass the course. Students receiving a final grade between 55-59% will rewrite the unit test on which performance was poorest. Students receiving less than 55% or failing a rewrite will write a final exam on the total course.

Successful completion of a rewrite will be given a "C" grade.  
Successful completion of a final exam will be given a "C" grade.

**TEXTBOOK(S):**

Andrews, W.A. and D. K. Moore, 1986. Investigating Terrestrial Ecosystems. Prentice-Hall, Canada, Scarborough. 293 p.

Biology/Ecology Lab Manual



BIOLOGY/ECOLOGY 114-3 COURSE OUTLINE

UNIT	HOURS	TOPIC	REFERENCE
I	5	<u>Introduction to the Biological Background</u>	
		Biology vs. Ecology	Section 1.1
		The Scientific Method & Problem Solving	1.3
		Levels of Organization of Matter	
		The Origin of Life	
		Organic Molecules	Lab 1
II	6	<u>Life and Basic Life Processes</u>	
		Characteristics of Living Organisms	
		Photosynthesis	Section 3
		Respiration	Section 5
		The Fixed Energy Cycle	Lab 2
III	4	<u>Cell Structure and Function</u>	
		Components and Functions of Typical Animal & Plant Cells	Lab 3
		Specialization in Cells	Lab 4
IV	3	<u>Specialized Plant Cells &amp; Tissues</u>	
		Cell and Tissue Development in Plants	Lab 5
		Specialized Cell Types	
		Tissue Differentiation - Epidermis, Vascular Tissue, Cambium, etc.	
V	5	<u>A. Plant Development &amp; Primary Growth</u>	
		Importance of Primary Growth in Roots and Stems	Lab 6
		Growth of Leaves and Branches	
		Leaf Colouration and Fall	

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<u>UNIT</u>	<u>HOURS</u>	<u>TOPIC AND DESCRIPTION</u>	<u>REF.</u>
	5	<u>B. Secondary Growth in Plants</u> Importance in Woody Plants Development of Secondary Tissue and "Wood" Wood Structure - hardwoods vs. softwoods - diffuse vs. ring-porous hardwoods	Lab 7    Lab 8
VI	4	<u>Nutrition of Plants</u> Cell Membranes and Material Movement Transport of Water and Food Through Plant Cells and Tissue	Lab 9
VII	7	<u>Community &amp; Ecosystem Study</u> Components of Communities, Ecosystems Flow of Energy in Food Chains, Webs, Pyramids Factors Affecting the Environment Adaptations to the Environment Interrelationships among Organisms	Sec. 2   Sec. 3 Sec. 5
VIII	10	<u>Characteristics of Communities &amp; Ecosystems</u> Habitats and Niches in a Forest Field Trip Comparing Micro- habitats Ecosystem Development & Succession Stratification	Sec. 3 Sec. 5  Sec. 4
IX	5	<u>Energy Flow in Different Ecosystems</u> Energy flow budgets Comparison of Aquatic vs. Terrestrial Ecosystems, and Adaptations	Sec. 3 & 4