DOC. NO. 222

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

COURSE TITLE: FOREST BIOLOGY

CODE NO.: BIO 126-3 SEMESTER: II

PROGRAM: FORESTRY TECHNICIAN / NATIVE RESOURCE TECHNICIAN

AUTHOR: H.A. COOPER/D. HALL

DATE: JULY 1992 PREVIOUS OUTLINE DATED: JAN. 1992

APPROVED: _____ July 16/92
DEAN DATE

FOREST BIOLOGY — **BIO 126-3**

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TOTAL CREDIT HOURS: 48

PREREQUISITE(S): SCI115 - Environmental Science

I. PHILOSOPHY/GOALS:

A study of the science of life essential to a career in resource management. Includes the classification of living organisms, cell reproduction, prokaryotic and eukaryotic cells. Evolution and life cycles of viruses, bacteria, algae, higher plants and animals in fresh-water and terrestrial ecosystems are studied. Basic anatomy and physiology of representative groups of animals are examined through dissection.

II. STUDENT PERFORMANCE OBJECTIVES:

Upon successful completion of this course, the student will:

1. Describe the scientific classification system for any group of living organisms.
2. Distinguish between the processes of mitosis and meiosis, and their roles in cell division.
3. Compare the major characteristics of viruses, bacteria, blue-greens and protista.
4. Describe the life cycles and importances of fungi.
5. Discuss the similarities and differences between the life cycles of mosses, ferns, gymnosperms and angiosperms.
6. Distinguish between monocots and dicots.
7. Discuss the growth development of animal structures and functions in flatworms, tapeworms and roundworms.
8. Distinguish among the following groups of invertebrates: annelida, mollusca, arthropoda.
9. Dissect and identify (internal and external features of the earthworm, insects, and crayfish.
10. Discuss body system similarities and differences among agnatha, chondrichthyes, osteichthyes, amphibia, reptilia, aves and mammalia.
11. Dissect and identify internal and external features of an amphibian and a fish and a mammal.

FOREST BIOLOGY	BIO 126-3
COURSE NAME	CODE NUMBER

III. TOPICS TO BE COVERED:

1. Cell division
2. Prokaryotic cells and Viruses
3. Protista-Single-celled plants and animals
4. Higher, Plant Life - Green algae
5. Primitive Land Plants - Mosses, Liverworts, horsetails, ferns
6. Gymnosperms and Angiosperms
7. Fungi
8. Primitive animals - Sponges, Coral, jellyfish, roundworms, tapeworms
9. Worms and Molluscs
10. Arthropods - Crustaceans, Insects and Arachnids
11. Chordates - Fish classes
12. Chordates - Amphibians and Reptiles
13. Chordates - Birds
14. Chordates - Mammals

IV. EVALUATION METHODS:

3 Term Tests	60%
Quizzes & attendance	15%
Lab Mark	25%
	100%

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

Rewrites:

Students achieving a final grade of 60% or over will pass without a rewrite. Students achieving a grade of 50% - 59% may be given an opportunity to do a rewrite (depending on apparent effort during the semester, attendance etc.). Students successfully completing a rewrite exam will be given a "C" grade.

FOREST BIOLOGY | BIO 126-3

COURSE NAME | CODE NUMBER

V. REQUIRED STUDENT RESOURCES:

Text required - Nil
Laboratory manual/Workbook/Study sheets - required for laboratory sessions.
Dissecting kit
Laboratory coat recommended for dissections
Plain (unlined) paper and pencils for lab drawings
Laboratory drawing book

VI. ADDITIONAL RESOURCE MATERIALS:

Books: There are a wide variety of college-level Biology text books available in the L.R.C. In addition, there is a smaller selection of Biology books available for short-term loan in the glass case in the rear of the Biology Laboratory. Consult with your instructor if you wish to borrow these.

Periodicals/Journals: The following periodicals are available in the LRC and are recommended for interested student readings in Biology:

Nature Canada
Seasons
Scientific American
Others as suggested by the instructor.

VII. SPECIAL NOTES:

Generally the student should come to labs prepared to perform dissections. Lab coats and dissecting kits will be required. Procedures for laboratory drawings will be explained prior to Laboratory Session 1.

Students with special needs (e.g., physical limitations, visual impairments, hearing impairments, learning disabilities) are encouraged to discuss required accommodations confidentially with the instructor.

Your instructor reserves the right to modify the course as he/she deems necessary to meet the needs of students.

ATTENDANCE at all classes is an essential component of this course, due to Laboratory portion.

LAB DRAWINGS - use only plain bond paper, one side only. All drawings will be done with an H pencil. All lettering will be freehand. Staple pages together (see guide for lab drawings).

FOREST BIOLOGY | BIO 126-3

COURSE NAME | CODE NUMBER

GUIDE FOR LAB DRAWINGS

General

Our purpose is not to produce artists. What is desired is a clear-cut delineation of material seen and studied in the lab. Showing its proper form and proportion. As you study the material and make the drawings, checking the specimens for various parts, you will realize that drawings are excellent aids to learning. Your powers of observation should develop quite quickly.

Draw the material as you see it! The drawings must show what you see, and what you know. Do not copy from the textbook or other students work! All work should be done in the lab.

Format

All lab drawings shall follow the format of the attached sample drawing.

Title (see illustration)

1. Scientific name - must be underlined.
2. Common name.
3. Condition of specimen
   (is it living, preserved, wet mount, prepared slide?)
4. Portion of specimen
   (is it a whole mount or a section; x-section, longitudinal section or a radial section?)
5. View
   (What view are you looking at - dorsal, ventral or lateral?)
6. Sex
   (male or female?)
7. Scale
8. What is the purpose of the drawing/lab?

FOREST BIOLOGY | BIO 126-3

COURSE NAME | CODE NUMBER

Shading (Stippling Style Only)

Keep drawings as simple as possible. Only stipple when necessary to show a difference in texture, colour or depth. Stipple deliberately holding pencil vertically. Placing the dots close together or further apart will give a variety of shading.

N.B. - FOLLOW THESE INSTRUCTIONS CAREFULLY UNTIL YOU ARE ABLE TO PUT THEM INTO EFFECT AUTOMATICALLY.

SUBMISSION OF BIOLOGY LABS

1. All lab drawings must be completed before the end of the lab period.

2. Drawings may be requested at <u>any</u> time:
   - at the end of a lab
   - next week or at any later lab
   - keep all completed labs in your lab book, and bring to each class. Lab books may be requested for grading at anytime and must be complete.

3. Any labs requested to be handed in will be marked out of <u>10</u>. Labs not received when requested will receive a <u>0</u>.

4. Lab drawings are part of the course material and could be on a test.

5. Not all labs will be requested for marking. Labs not requested, will be discussed in class to allow students to correct and complete drawings.

6. Some labs will be marked using other procedures; eg., a quiz or labs may be inspected and checked as completed.

7. All labs must be completed before a grade can be given.

8. Individual labs and your lab book will be graded for accuracy, neatness, completeness and format.