1989-90
Hythe

BIOLOGY 120

COURSE OUTLINE

INSTRUCTOR: SANDRA HUTCHEON

LESSONS:

There are 12 lessons to be submitted. Most of the work in the lessons involves short answer and multiple choice questions. The lessons will be graded, then returned to you.

LABS:

The following labs will be done at the Hythe Campus:

Lesson 2: GPRC Lab Manual- Microscope

ACS Lab Manual - Bacterial Cells

Lesson 6: Field Work; Ecology Study

Lesson 7: GPRC Lab Manual - Lab2; Cell Structure

Lesson 8: GPRC Lab Manual- Lab 5; Mitosis and Meiosis

Lesson 9: Probability and Mendelean Genetics.

TEST AND EXAMS

There will be two tests/exams;

1) Ecology Exam -(Lessons 1 - 5)

2) Genetics Exam - (Lessons 7 - 11)

MARKING SCHEME

| | |
|---|---|
| Lessons: | 20% |
| Labs: | 20% |
| Project: | 20% |
| Exams: | 40% |
| | 100% |

SEMINARS

Seminars will be held approximately weekly. It is recommended that you do the lesson, at least as much as possible, before the seminar. This way, you can ask questions about things you don't understand and make better use of the discussions.

COURSE OUTLINE

ECOLOGY

Lesson 1: Populations and Ecosystems

Lesson 2: Interactions

Lesson 3: Succession in Terrestial Ecosystems

Lesson 4: Freshwater and Marine Ecosystems

Lesson 5: People and the Enviroment

Lesson 6: Field Work: Major Project

GENETICS

Lesson 7: The Genetic Code

Lesson 8: Mitosis and Meiosis

Lesson 9: Principles of Heredity I

Lesson 10: Principles of Heredity II

Lesson 11: Mechanisms of Genetic Change

Lesson 12: Review

TEXTBOOK: Biology; Smallwood and Alexander, 1984

Biology 120

## Guidelines for Major Field Project

(Lesson 6)

These notes are meant to accompany the instructions in your ACS lesson book. Follow the procedures outlines except as noted below. If you feel you wish to make significant deviations from the outlined procedures, check with me.

### II Study Area

A square 30 m by 30 m is recommended. If you feel that a different size of area is appropriate, make a rough sketch of your proposed area and submit it for approval.

The sketch should include:
- approximate overall dimensions
- major - structures
  - landforms
  - trees and ground cover

### III Stake out the Study Area

- make $90^0$ corners
- use a grid, if desired
- you can borrow a magnetic compass if needed

### V Field Information

A General Information
B Mapping Data (possibly include heights of trees)
C Sunlight - omit
D Length of Day - newspaper information is acceptable
E Precipitation
F Temperature - minimum needed, 2 days - 1 sunny, 1 cloudy
G Soils
H Wind - record prevailing wind direction
  - try to get a wind speed for - sunny day
    - cloudy day

### VII Field Notes

The field notes should be as described in the lesson, with the above changes.

VIII Compiling Date from Field Notes

A Construct Map - well drawn reconstruction

B Plot Graphs - precipitation
- temperature (2)
- wind (2)

IX Report

1,2 Abiotic Factors For each of the abiotic factors listed on page 1 of lesson 5, list them, define and describe how each is measured. If there are other factors specific to your area, list and discuss them as well.

3 Interaction of Factors

Consider the following areas (10 are not necessary)

- water erosion
- wind erosion
- soil building
- exposure (aspect)
- wet areas
- dry areas
- lakes and rivers
- others relevant to your study area

For each of these interactions, list the abiotic factors which are involved.

Which of these interactions occur in your study area? Where? How were they formed? Will they change over time?

4 Instead of climate, look at the biota of the area. Why do things grow where they do? Use concepts of succession, communities and the relevant interaction of factors to explain why your area looks as it does.

General Comments

You make work in pairs or groups if you wish. However, each person must submit a complete, original report. In addition, the detail and quality from those working with other people is expected to be greater than those working alone. If you work with other people, list their names in your report.

Keep track of your sources, and footnote important information. List a bibbliography of books or articles you referred to.

Finally, if you need help interpreting an area (would like me to have a look at your field area) let me know. Projects can be done any time between the end of the ecology section (lesson 5) and June.

Have fun!!