COURSE CODE:	FWM 419
COURSE TITLE:	ECOLOGICAL SURVEY
NUMBER OF UNITS:	3 Units
COURSE DURATION:	Three hours per week

COURSE DETAILS:

Course Coordinator:	Dr. Jubril Soaga
Email:	soagaj@unaab.com
Office Location:	
Other Lecturers:	Dr. A. O. Jayeola and Mr. O. Oladoye

COURSE CONTENT:

Field studies of the vegetation, fauna, soil and water types of selected terrestrial and aquatic project areas.

COURSE REQUIREMENTS:

This is a compulsory course for all 400 level students in the Department of Forestry and Wildlife Management. Students must participate in all the course activities especially field work and have a minimum of 75% attendance to be able to write the required report as final examination for the course.

READING LIST:

1. Burkill, H. M. 1985. The useful plants of West Tropical Africa . Families A-Z.
   Royal Botanic Gardens, Kew, UK

2. Akobundu, I..O and Agyakwa, C. W. 1998. A Handbook of West African weeds.
   International Institute of Tropical Agriculture, Ibadan

3. Hickey,   100 Families of flowering plants

4. Keay, R. W. J. 1989.   Trees of Nigeria. Clarendon Press, Oxford, UK

5. Miles, J. 1982.   Vegetation Dynamics. Chapman and Hall, USA.

LECTURE NOTES

LECTURE NOTES

VEGETATION REPORT

This will be completed in the following manner. You are reminded that this is a report and hence the facts should be stated as concisely as possible.

INTRODUCTION

After a preface a brief description of selected area will be given under each of the following headings location, past history, topography including hills and rivers, geology, soils, vegetation, climate.

WORK DONE

PART II

1. Object of survey

2. Area and location of survey

3. Detailed description of how the work was done, i.e the methods used, division of labour, equipment, recording, etc.

RESULT

PART III

1. Brief description of the area surveyed, including topography, streams, rivers, roads and plantation. etc.

2. Brief mention of the vegetation types found and where they occur.

3. Brief mention of the soil types found, and where they occur.

4. Detailed description of each vegetation type.

Each vegetation type will be considered in turn and described under the following heading

1. **Structure:** i.e the number of strata or layer, and their approximate heights.

2. **Composition:** list the species found in each strata.

3. **Frequency:** indicate how often each species occurs by describing it as abundant, frequent, occasional or rare. This can be done as follows: separate the recording forms into the different vegetation types. For the type you are dealing with take each species in turn and add up the number of times it occurs scoring 5 each time it is stated to be abundant, 3 each time it is taken to be frequent and 1 each time it is stated to be occasional. Then divided the score obtained for the species by the number of quadrants sampled.

   Then a species with a score of less than 0.25 is rare, 0.3 to 0.9 occasional, 1 to 2 frequent, 2 plus abundant.

4. **Density:** this is given by number of trees over 3m high per acre, and (b) basal area in m^2. per acre of trees over 3m. high.

5. **Conclusions:** as far as possible, provide answers to the following questions.

i. Is there any relation between soil depth and topography?

ii. Is the present distribution of vegetation types due to (a) soil type? (b) soil depth? (c) topography? (d) past history?

iii. If the area is left undisturbed what changes, if any are likely to occur in each vegetation type.

iv. Are there sufficient economic species (a) large enough for felling or (b) growing up to maturity?

v. Bearing in mind your answers to the above,

vi. Do you think that future forestry work should be towards (a) preserving the high forest, or (b) converting to plantations? If (b), where would these plantations be put?

PART IV

APPENDICES

1. Details of the calculation of frequency, with results.

2. Tabulation of the enumeration data for each vegetation type, with calculation of number of trees per acre and basal area in m^2 per acre. The data will be tabulated as follow:-

Size classes   1-10   11-20   21-30   31-40   41-50   50+ total of

Birth mid-   economics non-all

Point Av.   Econo- sppecies

Basal area   mics

Species

a. Total No's

b. Total basal.area

Then number of trees per acre = $\dfrac{\text{Total no. (x)}}{\text{No. Of quadrants}}$ x 100

And basal area per acre = $\dfrac{\text{Total b.a. (x)}}{\text{No. Of quadrants}}$ x 100

Other totals can be treated in the same way.

3. Profiles of each vegetation type. A separate sheet will be devoted to each vegetation type and on it you will draw, to scale:- (a) a plan of the distribution of the trees in the transect (b) a profile of their arrangement and (c) a profile of the soil pit dug within it.

4. The following maps with the profiles will be done in ink on tracing paper.

   i.   Locality map, showing the location of the reserve in relation to general map and the position of the survey within the reserve.

   ii. A map of the area surveyed showing positions of baseline, grid lines, paths, roads, stream and rivers.

   iii. A map showing the distribution of the vegetation types. Only the baseline will be shown. Each vegetation type will coloured differently.

   iv. A map showing the distribution of the soil types. Again the baseline and the rivers will be the only additional features shown in each soil type and these will be coloured in either blue or red as follows.

Material allowing free passage for roots-blue

   a. Sandy – single hatching

   b. Loamy – crossed hatching

   c. Clayey – solid colour

Material obstructing the passage of roots –Red

a. Lateritic hand pan – single hatching

b. Rocks   - crossed

c. Waterlogged clay – solid colour.

N.B

1. Parts III and IV will carry the most marks, then part II, the least mark going to part I.

2. The calculations and examples will be those done by your group, if necessary, including calculations from other groups where a vegetation type was not found in your line. The general remarks however will be for the surveyed area as a whole (marked whole above).