

BENSON IDAHOSA UNIVERSITY
FACULTY OF BASIC AND APPLIED SCIENCES
DEPARTMENT OF BASIC SCIENCES (MICROBIOLOGY OPTION)

COURSE OUTLINE

COURSE TITLE: LOWER PLANTS BOT 211

2018/2019 Academic Session
First Semester

INSTRUCTOR
Dr. Osondu Akoma

Course Description

This course is made up of 3 modules. The modules consist: introduction to Botany, General Structure, Physiology (body function and reproduction), Ecology, Classification and Economic Importance of Algae, Fungi, Bryophytes and Ferns. Similarities and differences of the 4 groups and also economic importance of each group are to be emphasized.

Course Objectives

At the end of this course students will be able to:

- ❖ Identify the major groups of cryptogams
- ❖ Characterize each group of cryptogams
- ❖ Appreciate the diversity of non-seed producing plants
- ❖ Explain the inter- and intra- group features of cryptogams (compare and contrast).
- ❖ Describe the relationship between seedless and seed producing vascular plants.
- ❖ Recognize the contribution of lower plants to ecosystem in general and to our economy in particular.
- ❖ Appreciate the diversity of plants

General Course Information

We aim to provide background information and practical oriented training that should serve the need of biology teachers. The two most important actors in this course would be the facilitators and the students. All major learning modes: **visual** (books, slides, and live specimens), **auditory** (lectures and class interactions), and **manipulative** (“hand on” exercises) would be followed in the process. **The active learning methods that would be employed are group discussion, brainstorming, presentation by students, report of practical activities, and interaction with facilitators during feedback presentation.**

The lecturer would be a facilitator or a guide of the class activity. The students will be the key players in this respect. The laboratory assistants and the instructors will be there throughout the laboratory sessions. Please be friendly, co-operative and avoid shyness so that the teaching and learning process could be smooth.

General Laboratory Information

Always check the lab board for instructions on the activities for each day. The list of samples to study, class exercises and demonstrations will generally be given. A short field trip around the campus to study the ecology of each group of cryptogams would possibly be scheduled. All these would be facilitated by the duo of the instructor and laboratory assistant.

General Information on Examination

Theory exams: There will be two exams on lecture material and classroom activities, a mid-term, from the first two modules, and a final exam. The final exam may contain questions related to some materials from the first two modules, but is not meant to be completely cumulative.

Lab exercises: There will be 30 students per group per lab session and a total of 10 practical sessions will be conducted. Attendance is mandatory. No make up class for lab sessions.

Grading: Lesson exams consist 80% (written exam and assignments). Laboratory examination would be 20% (attendance and lab reports). Letter grades are given depending on the scale of the results

Course Content

Introduction to Botany (Introducing all Modules, 1 Session)

Module I – Algae and Fungi (20 sessions including laboratory)

a. Algae

General characteristics

- Range of structure
- Reproduction and life history

General classification of Algae

- Criteria for classification
- Naming algae
- Major Divisions of Algae

Note: Specific characteristics of each group such as occurrence, plant body (anatomy), reproduction and life history are discussed.

Economic importance of Algae

b. Fungi

General characteristics

Classification

- Criteria for Classification
- Major Divisions
- Economic Importance

Note: Specific characteristics of each class such as occurrence, plant body (anatomy), reproduction and life history are discussed.

Pathology of plant Diseases caused by Fungi (brief treatment)

Economic importance of Fungi

Module II – Bryophytes and Vascular Cryptogams (18 sessions including laboratory)

a. Bryophytes

General characteristics

- Habitat
- Structure
- Reproduction and life history

Classification of Bryophytes

- Class Hepaticae
- Class Anthocerotae
- Class Musci

Note: Specific characteristics of each class such as occurrence, plant body (anatomy), reproduction and life history are discussed.

Origin of Bryophytes

Economic Importance of Bryophytes

b. Vascular Cryptogams

General Characteristics

Classification

- Psilopsida – *Psilotum*
- Lycopsida – *Selaginella*
- Sphenopsida – *Equisetum*
- Pteropsida – Ferns

Note: The following features of each group should be discussed

- General Characteristics
- Anatomy
- Reproduction and life history

Origin of Vascular Cryptogams

Recommended Text books

Moore, R., Clark, W.D. and Stern, K.R. (1995). Botany. Wm. C. Brown Publishers.

Raven, P.H., Eicchorn, S.E. and Evert, R.F. (2004). Biology of Plants. 7th ed. Freeman & Company publishers

Kingsley R. Stern, K.R., Bidlack, J. and Shelley, J. (2007). Introductory Plant Biology. 11th ed. McGraw-Hill Higher Education

Anoliefo, G.O. (2006). Introductory Tropical Plant Biology. Uniben Press