

**DEPARTMENT
OF
BOTANY**



DR. E.A. OGIE-ODIA
HEAD, DEPARTMENT OF BOTANY

DEPARTMENT OF BOTANY

DEGREE PROGRAMME

The department offers a degree programme leading to the award of the Bachelor of Science (Botany)

PHILOSOPHY:

The Department aims at training biologists in life processes in plants and micro-organisms as they relate to our natural environment, and to harness these natural resources for national development.

OBJECTIVES

- (a) To produce graduates with the relevant skills and knowledge necessary for product research and teaching
- (b) To produce graduates with the requisite biological knowledge and techniques necessary for industries such as brewing, food processing and preservation, pharmaceuticals, water works, petro-chemicals, forestry, ecosystem conservation and wood processing
- (c) To produce students, with the knowledge for monitoring, environmental pollution.
- (d) To provide courses in Biological Sciences to students of other departments and faculties whose degree options require a working knowledge of Botany.

ACADEMIC STAFF LIST

S/N	NAME	Qualifications	Status
1	E.A. Ogie-Odia	B. Sc; (Ado-Ekiti), M.Sc (Benin), Ph.D (Ekpoma)	Senior Lecturer /HOD
2	E.E. Okoegwale	B.Sc. (Calabar), M.Sc. (Ibadan), Ph.D (Benin)	Professor
3	B.O. Obadoni	B. Sc. (Ekpoma), M.Sc. (Ibadan) Ph.D (Ekpoma)	Professor
4	O. Ekhatior	B.Sc. (Ekpoma), PGDE, M.Sc., Ph.D (Benin)	Senior Lecturer
5	D.A. Eseigbe	B.Sc. (Ekpoma), M.Sc. (Ibadan), Ph.D (Ekpoma)	Senior Lecturer
6	Okooboh Gloria	B.Sc. (Ekpoma), M.Sc, Ibadan, Ph.D (In View)	Lecturer II
7	F.N. Imade	B.Sc. (Ekpoma), M.Sc., (Ibadan), Ph.D (In View)	Lecturer II
8	Omoruyi, Osasere Abike	B.Sc., M.Sc., Ph.D (Benin)	Lecturer II
9	E. Oboh	B.Sc. (Ekpoma), M.Sc. (In View)	Graduate Assistant

TECHNICAL AND ADMINISTRATIVE STAFF LIST

S/N	Name	Qualifications	Status
1	Mr. A.A. Oduwole	HND (Ibadan), M.Sc.. (Ekpoma) FNISLT	Senior Chief Technologist
2	Mrs. O. M. Aigbe	B.Sc, (Ekpoma), M.Sc (Ibadan)	Farm Manager/Curator
3	Mrs. B. Ehiaguina	WASC, B.Sc (Ekpoma)	Senior Executive Officer
4	Mrs. R. Onobhayedo	WASC, Dip. In Sec. Education	Senior Data Processing Officer I
5	Mr. F. Ainojietine	WASC, BSc. (Ekpoma)	Assistant Lab. Supervisor
6	Mr. K. Enaifoghe	WASC, Diploma	Head Lab. Assistant
7	Mrs. .F. Oaikhena	FSLC	Senior. Messenger/Cleaner

UNDERGRADUATE CURRICULUM

100 LEVEL : FIRST SEMESTER				
Course Code	Course Title	Units	Status	Pre-Requisite
BIO 101	General Biology I	3	C	-
CHM 101	General Chemistry I	3	C	-
MTH 101	Elementary Mathematics I	3	C	-
PHY 101	General Physics I (Mechanics)	3	C	-
CSC 101	Intro to Computer Science	2	C	-
GST 101	Use of English and Library Studies	4	C	-
GST 102	Philosophy and Logic	2	C	-
Total Units (Core and Required)		20		

100 LEVEL : SECOND SEMESTER				
Course Code	Course Title	Units	Status	Pre-Requisite
BOT 111	Plant Morphology	3	C	-
BIO 111	General Biology II	3	C	-
PHY 111	General Physics III (Heat/Kinetic Theory)	2	C	-
CHM 112	General Chemistry II	3	C	-
GST 111	Nigerian People and Culture	2	C	-
MTH 112	Elementary Mathematics III (Calculus)	3	C	-
GST 112	History and Philosophy of Science	2	C	-
PHY 103	General Physics (Laboratory)	2	C	-
CHM 102	Practical Chemistry	2	C	-
Total Units (Core and Required)		22		

200 LEVEL : FIRST SEMESTER				
Course Code	Course Title	Units	Status	Pre-Requisite
BIO 201	Introductory Ecology	3	C	BIO 101
BOT 201	Seedless Plants	3	C	BIO 101
ZLY 201	Lower Invertebrates	3	C	-
BCH 201	General Biochemistry I	3	C	-
BOT 202	Intro. Plant Physiology	2	C	BOT 111
CHM 203	Organic Chemistry	3	C	CHM 112
MCB 201	General Microbiology	2	E	-
BIO 202	General Physiology	2	E	-
ENT 201	Entrepreneurship I	2	C	-
MEL 106	Basic French	2	R	-
Total Units (Core and Required)		25		

200 LEVEL : SECOND SEMESTER				
Course Code	Course Title	Units	Status	Pre-Requisite
BIO 211	Genetics I	3	C	BIO 101
BIO 212	Biological Techniques	3	C	-
BCH 211	General Biochemistry II	3	R	-
BOT 212	Plant Systematic Taxonomy	3	C	BOT 111
BOT 213	Seed Plant Anatomy	3	C	-
GST 222	Peace and Conflict Resolution	2	C	-
ENT 211	Entrepreneurship II	2	C	-
MEL 116	Basic French II	2	R	-
Total Units (Core and Required)		21		

300 LEVEL : FIRST SEMESTER				
Course Code	Course Title	Units	Status	Pre-Requisite
BIO 301	Genetics II	3	C	BIO 211
BIO 302	Nematology	3	E	-
BOT 301	Plant Ecology/Field Course	3	C	BIO 201
BOT 302	Mycology I	3	C	BOT 201
BOT 303	Plant Taxonomy	3	C	BOT 111/BOT 212
BOT 304	Metabolic Plant Physiology	3	C	BOT 202
BOT 305	Biostatistics	3	C	-
BOT 306	Plant Pathology I	2	C	-
Total Units (Core and Required)		23		

300 LEVEL : SECOND SEMESTER				
Course Code	Course Title	Units	Status	Pre-Requisite
BOT 311	Industrial Attachment	15	C	-
Total Units (Core and Required)		15		

400 LEVEL : FIRST SEMESTER				
Course Code	Course Title	Units	Status	Pre-Requisite
BOT 401	Plant Breeding	3	C	BIO 211, BIO 301
BOT 402	Soil Science	2	R	-
BOT 403	Seminar	2	C	-
BOT 404	Population Ecology	3	C	BIO 201, BOT 301
BOT 405	Mycology II	2	C	BOT 302
BOT 406	Development of Resources and Afforestation	3	C	BOT 301
BOT 407	Limnology	3	C	BOT 201
BOT 408	Economic Botany	3	C	-
BOT 409	Evolution	2	E	-
Total Units (Core and Required)		23		

400 LEVEL : SECOND SEMESTER				
Course Code	Course Title	Units	Status	Pre-Requisite
BIO 411	Molecular Biology/Biotechnology	2	C	BOT 304
BOT 411	Plant Pathology	3	C	BOT 306
BOT 412	Research Project	6	C	-
BOT 413	Plant Physiology/Tissue Culture	3	C	BOT 202/304
BOT 414	Comparative Plant Anatomy	3	C	BOT 213
Total Units (Core and Required)		17		

COURSE TITLE AND DESCRIPTION

BIO 101: GENERAL BIOLOGY I (3 UNITS) CORE

Cell structure and organization; functions of cellular organelles, diversity, characteristics and classification of living things, general reproduction, interrelationship of organisms; heredity and evolution; elements of ecology and types of habitats.

BIO 111 : GENERAL BIOLOGY II (3 UNITS) CORE

A generalized survey of the plant and animal kingdoms based mainly on study of similarities and differences in the external features; ecological adaptations of these forms.

BOT 111: PLANT MORPHOLOGY (3 UNITS) CORE

A survey of the plant kingdom, structure, reproduction, classification and evolution of different groups. Organization of the plant body. Morphology and modification of plant organs, roots, stem, leaves, flowers, fruits and seeds.

BIO 201: INTRODUCTORY ECOLOGY (3 UNITS) CORE

The general nature of ecosystems; energy flow and biochemical cycles in ecosystems. Ecology of populations and communities. The organization and dynamics of ecological communities. The distribution of plants and animals over the surface of the earth with special reference to Nigeria plants and animals.

BOT 201: SEEDLESS PLANTS (3 UNITS) CORE

The structure, reproduction, ecology, classification and economic importance of algae. Bryophytes and pteridophytes and their inter-relationships.

BOT 202: INTRODUCTORY PLANT PHYSIOLOGY (2 UNITS) CORE

Plant water relations; absorption and translocation of water and mineral ions, transpiration, translocation of organic solutes, mineral nutrition; macronutrients and experiments, nutrient, deficiency symptoms, stomatal physiology, seed germination and dormancies

BIO 202: GENERAL PHYSIOLOGY (2 UNITS) REQUIRED

Physical and Chemical Processes in animal and plant physiology

BIO 211: GENETICS 1 (3 UNITS) CORE

Hereditary and non-hereditary characteristics, Probability and tests of goodness of fit. Quantitative inheritance, variation in genome structure. Introduction to population genetics.

BIO 212: BIOLOGICAL TECHNIQUES (3 UNITS) CORE

Microscopy preparation of microscope slides, photometry, calorimetry, chromatography, conductometry, experimental design

BOT 212: PLANT SYSTEMATIC/TAXONOMY (3 UNITS) CORE

History and development of taxonomy. Taxonomic principles and characters, the classification of selected flowering plant families.

BOT 213: SEED PLANT ANATOMY (3 UNITS) CORE

A general survey of seed plants, general morphology, evolution of the different groups. Organization of the plant body, the roots, stem, leaves, flowers, fruits and seed, plant organs. Reproduction, sexual and vegetative reproduction.

BIO 301: GENETICS II (3 UNITS) REQUIRED

Aspect of human genetics, pedigree analysis, further consideration of various deviations from basic principles of gene interaction.

BIO 302: NEMATOLOGY (3 UNITS) ELECTIVE

Principal characteristics of Nematodes, morphology, position and outline of classification of nematodes. Morphology and Biology of important plant parasitic nematodes and their economic importance. Nematological techniques. General principles and methods of controlling nematodes.

BOT 301: PLANT ECOLOGY/FIELD COURSE (3 UNITS) CORE

Description and classification of vegetation types in Nigeria. Quantitative and qualitative methods for the study of vegetation. Vegetation dynamics, autecology, synecology, ecological groups, hydrophytes, xerophytes, epiphytes and mesophytes. Effect of physical environment on plants climatic, biotic and topographical factors.

BOT 302: MYCOLOGY 1 (3 UNITS) CORE

Structure, life cycles, physiology and classification of fungi. Fungi of economic importance. Physiology of fungal germination and dormancy, growth and sporulation

BOT 303: PLANT TAXONOMY (3 UNITS) CORE

Taxonomy and its significance; principles and concepts in plant taxonomy, construction and use of taxonomic keys. Experimental taxonomy with special emphasis on cytotaxonomy and chemotaxonomy.

BOT 304: METABOLIC PLANT PHYSIOLOGY (3 UNITS) CORE

Enzymes, proteins and amino acids. Photosynthesis, light and dark reactions. C₃ carboxylic acid pathway, crassulacean acid metabolism, formation of sucrose and starch, environmental and agricultural aspects of photosynthesis. Respiration, Krebs cycle, electron transport system and oxidative phosphorylation, the pentose phosphate pathway. Assimilation of nitrogen and sulphur cycles, lipids and aromatic compounds, e.g. phenolic and alkaloids.

BIO 305: BIOSTATISTICS (3 UNITS) CORE

Elements of statistics, experimental design, Data collection, collation analysis and interpretation. Test of significance in research and statistically design experiments; review of research methodology. Filed experimentations, statistical inferences.

BOT 306: PLANT PATHOLOGY I (2 UNITS) CORE

Techniques of plant pathology, principles and practices of plant pathology. Plant infection, causal agents of diseases, types of plant diseases.

BOT 311: INDUSTRIAL ATTACHMENT (15 UNITS) CORE

Industrial experience in any agricultural or plant science related establishment. This is to take place for six months during the second semester of 300 level, proceeding the final year of the programme.

BOT 401: PLANT BREEDING (3 UNITS) CORE

The objectives of plant breeding, origin and domestication as basis for breeding, self-pollinated and cross-pollinated crops. Breeding methods, pure line breeding and mass selection, pedigree method, bulk population breeding, back cross breeding, recurrent selection, heterosis, chromosome manipulation.

BOT 402: SOIL SCIENCE (2 UNITS) REQUIRED

Classification and characteristics of soils. Chemical component and analysis of soil and plant tissue, plant soil water relationships.

BOT 403: SEMINAR (2 UNITS) CORE

Students are to carry out a detailed study of a selected topic. This is to expose the students to independent research experience. The topic will be publicly discussed by the student in an organized seminar setting.

BOT 404: POPULATION ECOLOGY (3 UNITS) CORE

Ecology of populations and communities. The organization and dynamics of ecological communities. The distribution of plants and animals over the surface of the earth with special reference to Nigerian plants and animals. Population growth and regulation.

BOT 405: MYCOLOGY II (2 UNITS) CORE

Structure, classification and physiology of yeast. Fungi in industry: fungal pathogens of animals and man. Cultivation of edible mushrooms.

BOT 406: DEVELOPMENT OF RESOURCES AND AFFORESTATION (3UNITS) CORE The concept of conservation and its biological significance. Conservation policy formulations and means of enforcements. Identification of endangered species; and eco-tourism, principles and objectives.

BOT 407: LIMNOLOGY: (3 UNITS) CORE

Limnology: Past, present and future. The structure of aquatic ecosystems: physico-chemical factors of aquatic ecosystems, nutrients, phytoplankton, zooplankton and zoobenthos, fish and fisheries; food-chain dynamics.

BOT 408: ECONOMIC BOTANY (3 UNITS) CORE

A study of the Botany and cultivation of plant species with particular reference to Nigeria economic plants. At least three members of the following groups: legumes, tubers, vegetables, spices and cereals.

BOT 409: EVOLUTION (2 UNITS) ELECTIVE

Distribution of organisms in time and space. Reviews of theories of evolution e.g Darwinian theory of evolution by natural selection. Neo-lamarckism and Neo-Darwinism. Natural selection and evidence of evolutionary processes of fossils, geographical distribution (speciation) comparative anatomy and embryology; genetic evidence e.g gene factor in the origin of diversity, industrial melanism, sickle cell anemia, future of man.

BOT 411: PLANT PATHOLOGY (3 UNITS) CORE

Plant disease control: quarantine practices, breeding for resistance. Structure and action of fungicides. Resistant mechanisms. Pre-and post harvest diseases of economically important crops. Diseases of crops in storage seed born pathogens.

BOT 412: RESEARCH PROJECT (6 UNITS) CORE

This is designed to give students an opportunity to carry out a small independent research project approved by the Department Board and under the supervision of one of more members of staff

BOT 413: PLANT PHYSIOLOGY/TISSUE CULTURE (4 UNITS) CORE

Plant growth and development. Hormones and growth regulators, auxins, gibberellins, cytokinins, ethylene and abscisic acid. Plant tissue culture. The physiology of flowering: Phytochrome and photomorphogenesis, photoperiodism and vernalization. Principles of environmental physiology and stress physiology.

**BOT 414: COMPARATIVE PLANT ANATOMY OF SEED PLANTS (3 UNITS)
CORE**

Characteristics and classification of tissue. Tissue system, organization of meristems, evolution of vascular tissues, comparative wood anatomy. Anatomy and adaptations to specialized habitats. Applied aspects of plant anatomy.