



THE FEDERAL UNIVERSITY OF TECHNOLOGY, AKURE

Fisheries and Aquaculture Technology Department

FAT 301 – Aquatic Ecology

COURSE PARTICULARS

Course Code: FAT 301

Course Title: Aquatic Ecology

No. of Units: 2

Course Duration: Two hours of theory per week for 13 weeks and two hours of Practical for 2 weeks.

Status: Compulsory

Course Email Address: Nil

Course Webpage: Nil

Prerequisite: NIL

COURSE INSTRUCTORS

Mrs. A.O Abidemi-Iromini

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COURSE DESCRIPTION

This course discuss Aquatic Ecology with special references to distribution and Natural history. Characteristics of the aquatic environment, organic production in aquatic fauna and flora, algal blooms and eutrophication; benthos biomass assessment. Niche concept. Habitat studies of fish communities in major aquatic ecosystems of Nigeria. Distributions, structures and dynamics of aquatic ecosystems in tropical Africa. Food interrelationship in fish populations. Fish behaviour, marine fish and invertebrate community and behavioural ecology, energy exchange between habitats through fish invertebrate migrations and use of fish vocal patterns as a tool to study their behavioural ecology and to identify essential fish habitats.

COURSE OBJECTIVES

The objectives of this course are to:

- introduce students to Aquatic Ecology which entails knowledge of the interrelationship of fish with its environment which include the biotic factors and abiotic factors.
- to know the different aquatic environments in Nigeria, their distribution, structure, organic production, dynamics of aquatic ecosystem; and the fishes endemic to the respective environment
- to know the niche concept of a fish, its food and feeding habit, behavioural attitude within the ecosystem.

COURSE LEARNING OUTCOMES / COMPETENCIES

Upon successful completion of this course, the student will be able to:

(Knowledge based)

- know the importance ecology as a study to show the relationship between abiotic and biotic factor within a given environment.
- classify the aquatic environment in Nigeria using the abiotic and biotic components, and the fish endemic to them.
- understand methods of assessing state of being of aquatic life, the environment, and the behavioural relationship in the aquatic environment.

(Skills)

Students should be able to:

- carry out biotic and abiotic parameter assessment in aquatic environment.
- Different the aquatic environment in Nigeria, and the basis of their differentiation.
- Identify families of fish in the Gulf of guinea.

GRADING SYSTEM FOR THE COURSE

This course will be graded as follows:

Class Attendance	10%
Assignments	10%
Test(s)	20%
<u>Final Examination</u>	<u>60%</u>
<u>TOTAL</u>	<u>100%</u>

GENERAL INSTRUCTIONS

Attendance: It is expected that every student will be in class for lectures and also participate in the practical exercises. Attendance records will be kept and used to determine each person's qualification to sit for the final examination. In case of illness or other unavoidable cause of absence, the student must communicate as soon as possible with the instructors, indicating the reason for the absence.

Academic Integrity: Violations of academic integrity, including dishonesty in assignments, examinations, or other academic performances are prohibited. You are not allowed to make copies of another person's work and submit it as your own; that is plagiarism. All cases of academic dishonesty will be reported to the University Management for appropriate sanctions in accordance with the guidelines for handling students' misconduct as spelt out in the Students' Handbook.

Assignments and Group Work: Students are expected to submit assignments as scheduled. Failure to submit an assignment as at when due will result to zero mark for that assignment. Only under extenuating circumstances, for which a student has notified any of the instructors in advance, will late submission of assignments be permitted.

Code of Conduct in Lecture Rooms and Laboratories: Students should turn off their cell phones during lectures. Students are prohibited from engaging in other activities (such as texting, watching videos, etc.) during lectures. Food and drinks are not permitted in the laboratories. Students should put on laboratory coat during laboratory work.

READING LIST

Bolen, E.G.(1999). Wildlife Ecology and Management. 4th edition. 187p

Roger M.M, (2005). Field methods in Remote Sensing. A division of Guilford publications. 159p.

Roy, C. (2003). Marine geochemistry. Blackwell Publishing. 310p

Legend

- 1- Available in the University Library
- 2- Available in Departmental/School Libraries
- 3- Available on the Internet.

COURSE OUTLINE

Week	Topic	Remarks
1	Introduction to the course: Aquatic Ecology.	During this first class, the expectation of the students from the course will also be documented.
2 & 3	Introduction to fish ecology, distribution and Natural history.	Lecture will be disseminated on relationship between fish and its environment. Factors of distribution of aquatic environments (abiotic and biotic environment) and Natural history of the aquatic environment will be discussed in detail.
4 & 5	<p>Characteristics of the aquatic environment.</p> <p>Distributions structures and dynamics of aquatic ecosystems in tropical Africa.</p>	<p>Students will be taught on the various characteristics that differentiate the aquatic environments (salinity, temperature, rate of flow, tidal movement, sediment type, fish composition et.c)</p> <p>The marine and fresh water environment will also be discussed.</p> <p>The lecture on distribution structures and dynamics of aquatic ecosystems entails the type of the water body i.e lakes, rivers, streams et.c in Africa, and in Nigeria aquatic ecosystem.</p>
6 & 7	<p>Organic production in aquatic fauna and flora, algae blooms and eutrophication, benthos biomass assessment.</p> <p>Niche concept, habitat studies of fish communities in major aquatic ecosystem of Nigeria.</p>	<p>Organic production in aquatic environment in relation to biotic and abiotic factors will be discussed in detail with the students. Phenomenon of upwelling will be mentioned and layers within the aquatic environments will be discussed.</p> <p>The activities of species of fish or organism in relation to its environment will be discussed. The responsiveness of the habitat members to various activities will also be discussed.</p> <p>Assignment will be given to students on the above topics.</p>

8 & 9	Students' Assessment (Mid-Semester Test) Food interrelationship in fish populations.	Test will be used to examine the status of students understanding of the course Lectures will be given on the food and feeding relationship within the ecosystem. Tropic level will be discussed. And fish will be categorised based on either they are herbivorous, carnivorous, or omnivorous. Food chain, and food web will be discussed.
10 & 11	Fish behavioural ecology, energy exchange between habitats through fish invertebrate migrations	Students will be lecture on fish behavioural attitude during reproduction, migration, courtship parasite and disease, et.c.
12 & 13	Vocal patterns as a tool to study their behavioural ecology and to identify essential fish habitats. Practical class (1)	Lectures will be disseminated on behavioural ecology in relation to activities that are carried out within an ecosystem. Use of vocal patterns will be study in reproduction study, territoriality, et.c.
14	Practical class (2)	Students will be divided into groups to carry out assessment of aquatic planktons.
15	REVISION	This is the week preceding the final examination. At this time, evaluation will be done to assess how far the sstudents' expectations for the course have been met