



THE FEDERAL UNIVERSITY OF TECHNOLOGY, AKURE

Department of Fisheries and Aquaculture Technology

FAT 308: WATER QUALITY AND AQUATIC TOXICOLOGY (2 UNITS).

COURSE PARTICULARS

Course Code: FAT 308

Course Title: Water Quality and Aquatic Toxicology

No. of Units: 2

Course Duration: Two hours of theory per week for 15 weeks.

Status: Compulsory

Course Email Address: NIL

Course Webpage: NIL

Prerequisite: NIL

COURSE INSTRUCTOR

Prof. Lawrence. C. NWANNA

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COURSE DESCRIPTION

Water Quality and Aquatic Toxicology is a course that will introduce the students to the management of water quality in fisheries environments. The course synopsis is as follows: Physical properties of water bodies; water chemistry, nutrient cycles and aquatic productivity; sampling methods and analysis. Effects of pesticides and industrial contaminants on fish, crustaceans and molluscs within Nigeria coastal waters. Ecological toxicology, responses of aquatic species to excess nutrients, diseases and chemical stressors. Pollution and its effects on aquatic life, ecological characteristics of polluted waters and methods for maintaining and improving water quality (chemical, mechanical, biological). Fate and biomagnification of micropollutant, Nutrient behaviour, phytoplankton and algal nuisance.

COURSE OBJECTIVES

The objectives of this course are to:

- make the students understand the importance of water quality management in fisheries environment and how to achieve that.
- to equip the students with good knowledge about ecosystem dynamics; nutrient cycles
- to make students understand how pollution can affect fisheries production
- and how to prevent and control pollution in aquatic environments.

COURSE LEARNING OUTCOMES / COMPETENCIES

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

(Knowledge based)

- explain water quality management
- how to maintain standard water quality variables to enhance fish production
- The students should be able to prevent water pollution and how to manage same when occurred

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. 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 same as soon as possible with any of 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 earn the person 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. Short break (5 minutes) will be given to students after the 1st one hour of lecture.

READING LIST

- Water quality in pond Aquaculture, Boyd (2009).
- Different books by Boyd on water quality management.

Legend

- 1- Available in the University Library
- 2- Available in Departmental/School Libraries
- 3- Available on the Internet.
- 4- Available as Personal Collection
- 5- Available in local bookshops.

COURSE OUTLINE

Week	Topic	Remarks
1	Course overview	During this first class, the students will be given an explanation of what the course looks like and what is expected of them.
2 and 3	<ul style="list-style-type: none"> Physical properties of water bodies; water chemistry 	This topic requires that the student understand the basic physical and chemical properties of water bodies.
4 and 5	Nutrient cycles and aquatic productivity; sampling methods and analysis..	The students should understand the dynamics of water ecosystem and the various methods used in water samplings
6,7and8	<ul style="list-style-type: none"> Effects of pesticides and industrial contaminants on fish, crustaceans and molluscs within Nigeria coastal waters. Ecological toxicology, responses of aquatic species to excess nutrients, diseases and chemical stressors. 	Students should be able to learn how industrial chemicals affect the fisheries resources and fishes react to such contaminants.
9,10,11, and 12	Pollution and its effects on aquatic life, ecological characteristics of polluted waters and methods for maintaining and improving water quality (chemical, mechanical, biological). Fate and biomagnification of micropollutant, Nutrient behaviour, phytoplankton and algal nuisance.	<ul style="list-style-type: none"> Students will be requested to submit an assignment. Students should understand pollution, characteristics of polluted water; and the effects of pollution on aquatic life.
		MID-SEMESTER TEST

13 & 14	<ul style="list-style-type: none">• General Revisions	General group discussions by student in preparation for final examination.
15	REVISION	Students' general evaluation.