



# THE FEDERAL UNIVERSITY OF TECHNOLOGY, AKURE

*Department of Fisheries and Aquaculture Technology*

## FAT 303 – LIMNOLOGY AND HYDROBIOLOGY

### COURSE PARTICULARS

**Course Code:** FAT 303

**Course Title:** Limnology and Hydrobiology

**No. of Units:** 2

**Course Duration:** Two hours of theory and two hours of practical per week for 15 weeks.

**Status:** Compulsory

**Course Email Address:** Nil

**Course Webpage:** Nil

**Prerequisite:** Nil

### COURSE INSTRUCTORS

**Dr (Mrs) M. O. Olufayo**

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### COURSE DESCRIPTION

This course is designed primarily for students in fisheries and aquaculture disciplines to teach them properties of natural water and manmade lakes. The scope of this course encompasses of features of natural and artificial lakes, Thermal properties and stratification, Physico- chemical properties of fresh, Brackish and marine waters, Hydrology and water cycle, Identification and study of the characteristics fauna and other flora of importance in tropical and fresh water and coastal swamps, Ecology, utilization and management of aquatic fauna and flora, Control of aquatic weeds, Collection and identification of macro- invertebrates.

## COURSE OBJECTIVES

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

- Identify properties of natural water and manmade lakes;
- Describe thermal properties and stratification of lakes;
- Classify them into groups ;
- Explain physico- chemical parameters/ properties of fresh, brackish and marine waters;
- Describe characteristics of fauna and flora of importance in tropical fresh and coastal swamps;
- Explain ecology ,utilization and management of aquatic fauna and flora;
- Describe various methods use in controlling aquatic weeds;
- Identify macro-invertebrates found in aquatic bodies and collect them.

## COURSE LEARNING OUTCOMES / COMPETENCIES

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

*(Knowledge based)*

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

- Understand limnology and hydrobiology features;
- Know water thermal properties and stratification;
- Explain physico-chemical of fresh ,brackish and marine waters ,hydrology and water cycle;
- Explain identified fauna and flora of importance in tropical and fresh water and coastal swamps;
- Discuss ecological effects of aquatic weeds and how to control them;
- Classify and explain macro- invertebrates collected from the water bodies.

## GRADING SYSTEM FOR THE COURSE

This course will be graded as follows:

|                          |                    |
|--------------------------|--------------------|
| Class Attendance         | 5%                 |
| Assignments /Practical   | 15%                |
| Test(s)                  | 20%                |
| <u>Final Examination</u> | <u>60%</u>         |
| <b><u>TOTAL</u></b>      | <b><u>100%</u></b> |

## 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 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 you zero 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. No noise making during lectures

## READING LIST

<sup>3</sup>Boyd,C.E. 1981:Water Quality in warm water fish ponds .359 pp.

<sup>4</sup>Boyd C.E. and C.S. Tucker .1992: Water Quality and Pond Soil Analyses for Aquaculture. Alabama Agricultural Experiment Station. Auburn University Alabama,USA. 183pp.

<sup>3</sup>Swann,L.1997:A Fish Farmer's Guide to Understanding Water Quality. Sea Grant no.IL-IN-SG-97-2.Illinois Sea Grant Program, Aquaculture Extension.

<sup>4</sup>White,G.F.1992:The handbook of Chlorination. Van Nostrand Reinhold, New York,New York,USA.13008 pp.

### **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      | Introduction and course overview  | The expectation of the students from the course will be discussed.   |
| 2 & 3  | Properties of natural and manmade lakes and their classification  | This topic requires that the students should know the Properties of natural and manmade lakes and should be able to classify them into different groups. |
| 4 & 5  | Physico- chemical properties of fresh, brackish and marine waters   | The students should understand the different physico- chemical properties of fresh, brackish and marine waters   |
| 6      | Hydrology and water cycle   | Students should know hydrological system and how water circulates on earth .   |
| 7 & 8  | Identification and study of the characteristics fauna and other flora of importance in tropical and fresh water and coastal swamps, | Assignment will be given to the students in groups.  |
| 9 & 10 | Ecology ,utilization and management of aquatic fauna and flora  | Students should discuss ecology ,utilization and management of aquatic fauna and flora   |
|        |   | MID-SEMESTER TEST  |

|       |  |  |
|-------|--|--|
| 11    | Control of aquatic weeds                               | Students will be involved in discussing this topic i.e there will be teacher/ student discussion/relationship..  |
| 12    | Collection and identification of macro- invertebrates. | Students will go to the FAT fish ponds to collect macro-invertebrates and identify them.                         |
| 13    | Revision and Evaluation                                | At this time, evaluation will be done to assess how far the students' expectations for the course have been met. |
| 14&15 | Lectures free /Examination                             | This is the week preceding the final examination and Examination starts..  |