FAT 304 – Fish and Shell Fish Nutrition

COURSE PARTICULARS

Course Code: FAT 304
Course Title: Fish & Shell Fish Nutrition
No. of Units: 2
Course Duration: One hour of theory and three hours of practical per week for 15 weeks.
Status: Compulsory
Course Email Address:
Course Webpage:
Prerequisite: NIL

COURSE INSTRUCTORS

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COURSE DESCRIPTION

This course deals with the nutritional requirements of fish (shell and fin fish) and different sources of meeting them. The course encompases different topics viz; Principles of fish nutrition, feeding methods, factors affecting the nutritive value of feeds. Nutrient requirement of fish and shrimps. Natural and artificial feeds, supplementary feeds, concentrates, purified, semi-purified and practical diets. Conventional and non-conventional sources of feedstuffs. Processing of fish feeds; toasting, autoclaving, extrusion and pelleting. Use of plant and animal wastes in fish feeds and other products as substitutes in fish diet. Importance of fish meal in fish feeds and development of alternatives to fish meal and fish oil. Factors affecting fish growth and importance of anti-nutritional factors.

COURSE OBJECTIVES

The objectives of this course are to:

- introduce students to principles of fish nutrition;
- identify their feeding methods, different fish diets available and their processing; and
- the need for each nutrient and effects of their limitations.

COURSE LEARNING OUTCOMES / COMPETENCIES

Upon successful completion of this course, the student will be able to:
(Knowledge based)

- know the nutrient requirements of fish and shell fish and nutritional factors affecting growth;
- explain the factors affecting the availability of nutrients in feed;
- identify and differentiate between available feeding methods;
- know the differences between conventional and non-conventional feeds stuffs, advantages and the limitations;
- compare the importance of fish meal in aquafeeds with alternatives available.

(Skills)

- analyse the proximate composition of feed and fish; and
- compare the effects of processing methods on some feed ingredients.

GRADING SYSTEM FOR THE COURSE

This course will be graded as follows:

Class Attendance	10%
Practical	10%
Test	20%
Final Examination	60%
TOTAL	**100%**

GENERAL INSTRUCTIONS

Attendance: It is expected that every student will be in class for lectures and also participate in all 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 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 Practical: Students are expected to submit assignments as at when due, failure to do so will earn such a student 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. All students are also expected to participate in group practicals when ever they are fixed.

Code of Conduct in Lecture Rooms and Laboratories: Students should turn off their cell phones or at least put them in discreet mode during lectures. Students are prohibited from engaging in other activities (such as texting, watching videos, *etc*.) during lectures. Food (chewing gums inclusive) and drinks are not permitted during classes.

READING LIST

[3]Balogun, A. M. and Babatunde L. F. (1989). Anti-nutritional components of some lesser-known leguminous crop seeds in Nigeria. Pp 303 - 308 . In: *Biological Wastes* 0269-2483. Elsevier Science Publishers Ltd, England.

[3]Apata, D. F. and Ologhobo A. D. (1994). Biochemical evaluation of some Nigerian legume seeds. *Food Chemistry* **49**: 333 – 338.

[3]Gabriel, U. U., Akinrotimi, O. A., Anyanwu, P. E., Bekibele, D. O. and Onunkwo, D. N. (2007). The role of dietary phytase in formulation of least cost and less polluting fish feed for sustainable aquaculture development in Nigeria. African Journal of Agricultural Research vol. 2(7), 279 – 286.

[1]Hardy, R. W. and F. T. Barrows, (2002). Diet formulation and manufacture. Pp 505 – 600. *In:* Fish Nutrition. 3rd Ed. Elsevier Science. New York, USA.

[4]New, M.B., Tacon, A.G.J. & Csavas, I. 1995. Farm-made aquafeeds. FAO Fisheries Technical Paper No. 343.

[1]National Research Council (NRC), (1993). Nutrient Requirements of Domestic Animals. Nutrient Requirements of warm water fishes and shell fishes. Revised Edition. National Academy Press, Washington DC, USA, 114 p.

Useful Links:

[3]NRC (1993) Nutrient requirements of fish. National Academy Press, Washington DC.http://www.nap.edu/books/0309048915/html/

[3]New, M.B., Tacon, A.G.J. & Csavas, I. (1993) Farm-Made Aquafeeds. Published by RAPA 1993/18, AADCP/PROC/5, ISBN 974-89097-8-6, 434p http:// www.fao.org/DOCREP/003/V4430E/V4430E00.HTM

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
1	• General introduction of course synopsis • The need for fish nutrition
2 & 3	• Feeding methods • Factors affecting the nutritive value of feeds
4 & 5	• Nutrient requirement of fish and shrimps • Natural and artificial feeds,
6	• Supplementary feeds, concentrates, purified, semi-purified and practical diets • Conventional and non-conventional sources of feedstuffs
7	**Test I**
8	**Practical I** • Analyse the proximate composition of feed and fish.
9 & 10	• Processing of fish feeds; toasting, autoclaving, extrusion and pelleting. • Use of plant and animal wastes in fish feeds and other products as substitutes in fish diet.
11 & 12	• Importance of fish meal in fish feeds and development of alternatives to fish meal and fish oil. • Factors affecting fish growth and importance of anti-nutritional factors.
13	**Practical II** • Analyses of differently processed feed ingredients.
14	**Test II**
15	Revision: Overview of course topics.