

COLLEGE OF FISHERIES, KISHANGANJ
BIHAR ANIMAL SCIENCES UNIVERSITY, PATNA

Class Schedule for M.F.Sc. 2nd Semester

FNT-506, Feed Ingredients & Additives 3(2+1)

Theory

Sl. No.	Topic	No. of Classes
1.	Unit I Introduction: National and international scenario; present production trend and future requirements of feed ingredients	4
2.	Unit II Ingredient classification: Conventional feed ingredients - protein sources, energy sources; Unconventional feed ingredients - by-products of agro-industry, slaughter house, fruit processing units, seafood industry and forest; Single cell proteins; leaf protein concentrates, gluten meal and grain by-products.	10
3.	Unit III Proximate composition; International coding of feed ingredients; Amino acid profile.	5
4.	Unit IV Anti-nutritional factors: Methods of detection and detoxification.	3
5.	Unit V Feed Processing: Methods; effect of processing on nutritional quality and utilization.	5
6.	Unit VI Storage and quality control: Storage methods; effect of storage on ingredient quality; Factors affecting quality of ingredients; toxins.	5
	Total numbers of classes	32

Practical

Sl. No.	Topic	No. of Classes
1.	Proximate composition, Estimation of Tannin, Protease inhibitors, HCN, Aflatoxin, Available lysine; Storage studies	18



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Class Schedule for M.F.Sc. 2nd Semester
FNT-510, Carbohydrate Nutrition 2 (1+1)

Theory

Sl. No.	Topic	No. of Classes
1.	Unit I Sources: Carbohydrate sources and digestible energy supply, Role of digestible and non-digestible carbohydrates; Dietary levels of carbohydrate for carps and catfishes	6
2.	Unit II Digestibility and interactions with other nutrients: Carbohydrate digestibility, Factors affecting starch utilization, Carbohydrate and Interaction with other nutrients and protein sparing effect	6
3.	Unit III Constraints and utilization: Constraints of carbohydrate utilization in fish, non-starch polysaccharides, Strategy to enhance carbohydrate utilization; Gelatinization, Exogenous amylases, Glucose Intolerance; Carbohydrates and immunity	6
4.	Unit IV Economic importance aquafeeds: Maximum and inclusion levels for different fish species, Uses of carbohydrates for low-cost feed formulations.	4
	Total numbers of classes	22

Practical

Sl. No.	Topic	No. of Classes
1.	Estimation of starch gelatinization in different feed processing methods; Blood glucose estimation; Estimation of crude fiber and non-starch polysaccharides	10



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FNT-511, Vitamin & Mineral Nutrition 2 (1+1)

Theory

Sl. No.	Topic	No. of Classes
1.	Unit I Vitamins: Classification and sources, properties and functions of water- and fat-soluble vitamins; Vitamin as co-enzymes and prosthetic groups of enzymes.	6
2.	Unit II Vitamin requirements and sources: Vitamin requirements of different species; dietary sources of vitamins; factors affecting vitamin requirements; Loss of vitamins during feed processing and storage.	6
3.	Unit III Vitamin deficiency: Manifestation of vitamin deficiency; Vitamin –mineral interactions. Hypo- and hyper-vitaminosis.	6
4.	Unit IV Minerals: Classification and sources, macro, micro minerals and heavy metals toxicity. Minerals requirements for different aquaculture species, dietary sources of minerals, factors affecting mineral requirement; nutrient-minerals interaction; Mineral-Mineral interactions; manifestation of mineral deficiency.	4
Total numbers of classes		22

Practical

Sl. No.	Topic	No. of Classes
1.	Estimation of zinc, phosphorus, magnesium, iron and vitamin A; preparation of vitamin and mineral premix; estimation of vitamin and mineral losses due to leaching.	11



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