

TKM COLLEGE OF ARTS & SCIENCE, KOLLAM

DEPARTMENT OF ZOOLOGY

SHELL FISH CULTURE

SYLLABUS

TOTAL- 30 HOURS

UNIT 1. ANATOMY, TAXONOMY AND BIOLOGY OF SHELL FISHES 15 HOURS

1.1 Anatomy of shellfish 5 hours

Study of internal anatomy of important groups of shell fish; Studies on Digestive system and Associated digestive glands; Circulatory system; Respiratory system; Nervous system; Urino-genital system; Endocrine system; Skeletal systems; Sense organs.

1.2 Taxonomy of shellfish 5 hours

Study of external morphology and meristic characteristics of crustacea and mollusca; Classification of Crustacea and Mollusca up to the level of species with examples of commercially important species.

1.3 Biology of shellfish 5 hours

Qualitative and Quantitative methods of analysis of stomach contents; Age and growth determination by direct and indirect methods; Reproductive biology – maturity stages, gonadosomatic index, fecundity, sex ratio and spawning; Eggs and larval stages and developmental biology of shell fishes.

UNIT 2. SHELL FISH BREEDING 12 HOURS

2.1 Nutritional requirements of shell fishes 2 hours

Candidate species of phytoplankton and zooplankton as food organisms; Biology and culture requirements of important live food organisms.

2.2 Shellfish breeding and hatchery management 5 hours

Natural seed resources; site selection and collection methods; Life cycle of pearl oyster and mussel; Sexual maturity and breeding seasons; maturation stages; brood stock management; breeding and hatchery management; food and feeding of larval stages; health management in hatcheries.

2.3 Diseases and management 5 hours

Disease development process in shellfish; Defense mechanism in shellfish-specific and non specific immune system; Role of stress and host defense mechanism in disease development; Host, pathogen and environment interaction; Pathogenicity and mechanism of bacterial, viral and

fungal infections in shellfish; Morphology, Biology and life cycle of parasites.

UNIT 3. ECONOMICS OF SHELL FISH CULTURE

3 hours

Economically important species of Crustacea and Mollusca; Prospects of shell fish culture in marine; freshwater and brackish water; Shell fish culture as a method of income generation.