Semester:	05		
Course Code:	ZOOL 31703		
Course Name:	Fish Biology, Population Dynamics and Fisheries		
Credit Value:	03		
Status:	Optional for the BSc degree. Compulsory for the BSc Honours in Zoology degree .		
Pre-requisite:	ZOOL 12703		
Co-requisite:	None		
Hourly Breakdown:	Theory	Practical	Independent Learning
	30	45	75

Intended Learning Outcomes:

After completion of this course unit, the student will be able to:

1. describe morphology and biology of fish,
2. describe the characteristics of fisheries and major aspects of fisheries biology,
3. discuss issues and concerns relevant to fisheries,
4. identify common food fishes of Sri Lanka using morphological features,
5. apply qualitative and quantitative methods to identify food and feeding habits and breeding season of fish, and
6. apply appropriate models to assess fish stocks.

Course Content:

Fish Biology and Population Dynamics: Morphological characters of fish: snout, mouth, teeth, fins, and types of scales. Morphometric and Meristic characteristics of fish. Food and feeding. Reproductive Biology. Habitats of fish. Fish migration. Concept of unit stock. Fish stock identification. Age and Growth. Asymptotic length. Growth coefficient. Growth models. Natural and fishing mortalities. Recruitment of stocks. Stock-recruitment relationships. Maximum sustainable yield (MSY).

Fisheries: Characteristics of fisheries. Fishery as a common pool resource and a renewable resource. Production trends and crisis in world fisheries. Artisanal and commercial fisheries. Discrepancy in fish consumption. Sustainable Development Goals (SDG) and fisheries. Fishing gear and methods. Electrofishing. Destructive fishing practices. Illegal, Unreported and Unregulated (IUU) fishing. Utilization of fishery resources: status, issues and concerns: Impacts of human activities, natural disasters and climate change on fisheries. Fisheries of Sri Lanka: Inland, brackish water and marine fisheries. Coastal and offshore fisheries. Common food fishes of Sri Lanka. Exclusive Economic Zone **(**EEZ). International maritime zone. Territorial user rights for fisheries. Shared stocks. Conflict resolution. Fisheries regulations.

Laboratory and field studies on: Morphometric and meristic characteristics. Morphometric diversity of fish. Gut analysis; food and feeding habits of fish. Feeding adaptations. Reproductive biology/strategies of fish. Length weight relationships. Condition factor. Estimation of growth and mortality parameters of fish; Von- Bertalanffy plot, Gulland and Holt plot, Age based catch curves, Beverton and Holt's Z equation, Estimation of maximum sustainable yield using Schaefer model and Fox model. Fishing gear and gear characteristics. Identification of fish harvested using harmful fishing techniques. Identification of common edible fishes of Sri Lanka: freshwater, brackishwater and marine fishes. Field study at a fish market/fish landing site.

Teaching /Learning Methods:
A combination of lectures, Laboratory and field practical sessions, Assignments, Self-studies, Computer based learning, Group discussions, Tutorial discussions.

Assessment Strategy:
Continuous assessment and end of semester examination. Percentage given for each sub-component indicates the percent contribution to the final marks.

Continuous Assessment 30 %	Final Assessment 70 %		
Details: Assignments 10 % Group Presentations 10 % Field /Laboratory reports 10 %	Theory 50 %	Practical 20 %	Other -

Recommended Readings:

1. King, M. (2007). Fisheries Biology, Assessment and Management, Fishing News Books, Oxford. Second edition.
2. Hart, P. J. B. & J. D. Reynolds (2002). Handbook of Fish Biology and Fisheries: 2 Volume Set. John Wiley and Sons.
3. Jennings, S., M. Kaiser & J. D. Reynolds (2001). Marine Fisheries Ecology. Wiley-Blackwell.
4. https://www.fisheriesdept.gov.lk
5. www.fao.org
6. Selected scholarly review and research articles.