

<b>Semester:</b>	04		
<b>Course Code:</b>	ZOOL 22742		
<b>Course Name:</b>	Aquatic Ecology		
<b>Credit Value:</b>	02		
<b>Status:</b>	Compulsory		
<b>Pre-requisite:</b>	ZOOL 12703		
<b>Co-requisite:</b>	ZOOL 22752		
<b>Hourly Breakdown:</b>	Theory	Practical	Independent Learning
	30	-	70

#### **Intended Learning Outcomes:**

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

1. describe the structure, types and trophic dynamics of aquatic ecosystems,
2. describe the structure and roles of aquatic communities in relation to the habitat,
3. explain the ecological theories related to communities and populations in aquatic ecosystems,
4. discuss the ecological concepts in relation to the functioning of aquatic ecosystems,
5. explain the relationships between water quality dynamics and animal distribution and abundance in aquatic ecosystems, and
6. demonstrate the skills in relation to conservation and management of the aquatic ecosystems.

#### **Course Content:**

Freshwater ecosystems: properties of water, classification of freshwater ecosystems; Lentic; structure and functioning of lakes and other lentic water bodies, origins and morphometry, physico-chemical parameters of water in lentic ecosystems, habitats and biological communities; Plankton, littoral, nekton and benthic communities, trophic dynamics and energy flow in lentic water bodies; Lotic; physical Structure and water flow, classification of running water systems, water quality of streams and rivers, biological communities of streams and large rivers, habitats and organisms, ecosystem processes and trophic dynamics, aquatic environmental monitoring; Brackish water: Definition, formation of estuaries, classification and importance of estuaries, lagoons and bays; tide and waves, Physico-chemical parameters of estuarine water and their dynamics, productivity in estuaries, biological communities, habitats and organisms, ecosystem processes and trophic dynamics, mangroves ecosystems, salt marshes, nutrient dynamics, Brackish water productivity, impacts of anthropogenic activities on estuaries; Marine /coastal ecosystems: Zonation of the sea, physicochemical parameters, Marine productivity, water mixing in the sea; currents, surface and deep-water currents, upwellings, thermal vents, Marine communities; coral reefs, inter tidal habitats, deep sea organisms, sea grass beds and kelp forests, Marine Protected Areas for fisheries and biodiversity conservation and management.

#### **Teaching /Learning Methods:**

A combination of lectures, computer based learning, self-studies and small group presentations.

#### **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:		Theory 70%	Practical -	Other -
Quizzes	10 %			
Group presentations	10 %			
Assignments	10 %			
<b>Recommended Readings:</b> <ol style="list-style-type: none"> <li>1. Michael, D. &amp; Chris, F. (2009). Ecology of Aquatic Systems. Second edition, Oxford: Oxford University Press.</li> <li>2. Brönmark, C. &amp; L. A. Hansson (2005). The Biology of Lakes and Ponds. Oxford University Press.</li> <li>3. Day, J. W., W. M. Kemp, A. Yanez-Arancibia &amp; B. C. Crump (2012). Estuarine Ecology, 2<sup>nd</sup> Edition, Wiley-Blackwell.</li> <li>4. Tait, R. V. &amp; F. A. Dipper (2000). Elements of Marine Ecology. Butterworth-Heinemann, Oxford.</li> </ol>				