

**Dept. of Zoology, Bankura Sammilani College**

**MODULE BREAKUP OF THE SYLLABUS**

**SESSION 2022-23**

**CLASS : Sem-II ( Zoology GE)**

**(Theory Paper : GE T2- Aquatic Biology)**

<b>Month</b>	<b>Topic</b>
<b>July – August - September</b>	<p><b>Unit 1: Aquatic Biomes</b> Brief introduction to the aquatic biomes: Freshwater ecosystem (lakes, wetlands, streams and rivers), estuaries, intertidal zones, oceanic pelagic zone, marine benthic zone</p> <p><b>Unit 2: Freshwater Biology</b> Lakes: types, Lake as an Ecosystem, Lake morphometry, Physico-chemical Characteristics: Light, Temperature, Thermal stratification, Dissolved Solids, Carbonate, Bicarbonates, Phosphates and Nitrates, Turbidity, dissolved gases (Oxygen, Carbon dioxide). Nutrient Cycles in Lakes (Nitrogen, Sulphur and Phosphorous). Streams: Different stages of stream development, Physico-chemical environment, Adaptation of hill-stream fishes.</p>
<b>October – November - December</b>	<p><b>Unit 3: Marine Biology</b> Salinity and density of Sea water, Continental shelf, Adaptations of deep sea organisms, Coral reefs, Sea weeds.</p> <p><b>Unit 4: Management of Aquatic Resources</b> Causes of pollution: Agricultural, Industrial, Sewage, Thermal and Oil spills, Eutrophication, Management and conservation (legislations), Sewage treatment Water quality assessment- BOD and COD.</p>

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**MODULE BREAKUP OF THE SYLLABUS**

**SESSION 2022-23**

**CLASS : Sem-II (Zoology GE)**

**(Practical Paper : Aquatic Biology Lab)**

<b>Month</b>	<b>Topic</b>
<b>July – August - September</b>	<p>.</p> <ol style="list-style-type: none"><li>1. Identify the important zooplanktons present in a lake ecosystem.</li><li>2. Determine the amount of Turbidity/transparency, Dissolved Oxygen, and Free Carbon dioxide, Alkalinity (carbonates &amp; bicarbonates) in water collected from a nearby lake / water body.</li><li>3. Instruments used in limnology (Secchi disc, Van Dorn Bottle, Conductivity meter, Turbidity meter, PONAR grab sampler) and their significance.</li></ol>
<b>October – November - December</b>	<ol style="list-style-type: none"><li>4. A Project Report on a visit to a Sewage treatment plant/Marine bio-reserve/Fisheries Institute/freshwater ecosystem</li><li>5. Submission of Laboratory Note Book</li></ol>

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MODULE BREAKUP OF THE SYLLABUS

SESSION 2022-23

CLASS : Sem-IV ( Zoology GE)

(Theory Paper : GE T4 - Insect Vectors and Diseases)

Month	Topic
July – August - September	<p><b>Unit 1: Introduction to Insects</b> General Features of Insects, Morphological features, Head - Eyes, Types of antennae, Mouth parts</p> <p><b>Unit 2: Concept of Vectors</b> Brief introduction to Vectors (mechanical and biological vectors), Reservoirs, Host-vector relationship, Adaptations as vectors, Host specificity</p> <p><b>Unit 3: Insects as Vectors</b> General features of orders with insects as vectors - Diptera, Siphonaptera, Siphunculata, Hemiptera</p> <p><b>Unit 4: Dipteran as Disease Vectors</b> 1. Mosquitoes, Sand fly, Houseflies 2. Study of mosquito-borne diseases - Malaria, Dengue, Chikungunya, Filariasis 3. Study of sand fly-borne diseases -Leishmaniasis 4. Study of house fly as important mechanical vector, Myiasis 5. Control of mosquitoes, Sand fly, house fly</p>
October – November - December	<p><b>Unit 5: Siphonaptera as Disease Vectors</b> Fleas as important insect vectors; Host-specificity, Study of Flea-borne diseases - Plague, Typhus fever; Control of fleas</p> <p><b>Unit 6: Siphunculata as Disease Vectors</b> Human louse (Head, Body and Pubic louse) as important insect vectors; Control of human louse</p> <p><b>Unit 7: Hemiptera as Disease Vectors</b> Bugs as insect vectors; Blood-sucking bugs; Chagas disease, Bed bugs as mechanical vectors, Control and prevention measures</p>

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**MODULE BREAKUP OF THE SYLLABUS**

**SESSION 2022-23**

**CLASS : Sem-IV (Zoology GE)**

**(Practical Paper : GE T4 - Insect Vectors and Diseases)**

<b>Month</b>	<b>Topic</b>
<b>July – August - September</b>	. 1. Identification of following insect vectors through permanent slides/ photographs: Aedes, Culex, Anopheles, Pediculus, Cimex, Phlebotomus, Musca through permanent slides 2. Mounting of different kinds of mouth parts of insects (Mosquito/Cockroach)
<b>October – November - December</b>	3. Study of different diseases transmitted by above insect vectors 4. Submission of a project report on any one of the aforesaid insect vectors and disease transmitted 5. Preparation of laboratory note book