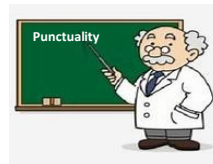


1



Practical time

- **Wednesday 1.00 - 4.00 pm** (3 hours) time slot is reserved for ARM practical sessions and lab reports should be submitted by following **Friday 4.00 pm** (if the submission date is not specifically announced by either lecturer in-charge or practical session in-charge).
- Late submission will be subjected to marks deduction from the total.
- This will be remained regularly throughout two semesters.

2



During the laboratory sessions



• You

- Should wear the lab coat, and shoes and suitable outfit are recommended (Especially when dealing with chemicals)
- Must be calm and give your full attention and maintain silence
- **Not allowed to bring food or beverages to the laboratory**
- Should not leave the laboratory without permission
- Allowed to ask questions without interfering others
- Should actively participate to the lab sessions



3

3

You must have



- Always
 - Relevant practical schedule
 - A4 sheets (80 gsm is recommended)
 - Pencil
 - Sharpener
 - Eraser
 - Ruler etc.
- Some of certain practical sessions,
 - Dissecting sets
 - Glass slides and Coverslips
 - Scientific calculators
 - Graph papers
 - Gloves/ masks/ goggles etc.

Will be noticed prior to the practical sessions

4

4

For each practical session...

- You have to provide practical report
- The lab report doesn't have exact page limit but it should be a handwritten and comprehensive.
- You have to use a pencil for writing and drawings.
- For the virtual practical sessions, a PDF version of the handwritten report should be submitted to the LMS (or any other method that announced by the practical in-charge).
- All the hard copies of the practical reports should be kept safely for further references.

5

5

- Attendance will be marked daily and 100% participation is expected (at least 80%). Absentees **must** contact practical session in-charge or year coordinating demonstrator immediately and need to provide a medical certificate for medical issues.
- Practical sessions will not be repeated for absentees.
- The lab report will be evaluated by demonstrators under supervision of lecturer in-charge and/or practical in-charge. Marks will be allocated in various aspects strict on a marking scheme and will be graded accordingly.
- Absentees are **not allowed to submit** a lab report.

6

Content of the Lab report

A

- Cover page
- Short introduction
- Procedure
- Results/ Observations
- Discussion
- Answers for questions

B

- Cover page
- Short introduction
- Drawings and footnotes
- Discussion
- Answers for the questions

Note: Some of the practical contain both specimens to observe and procedure to follow up. In that particular case, the order to the report will be informed and you need to provide a report accordingly.

7

Cover page

- As you have to provide a handwritten lab report, you are required to maintain almost similar alignments and the page structure.
- Different color themes for years
 - 1st year – Yellow
 - 2nd year – Pink
 - 3rd year - Green

Aquatic Resources Management
ARM JXX X.0
Course name

Practical no:
Practical title:

Name
 Index number
 Date
 First year-First semester

8

Introduction

- Generally, introduction is the approach to the lab report

Date:
Practical no:
Title:


Introduction:

9

Procedure

- Procedure contains the steps that you have followed up.
- This can be point form or paragraphed.
- Diagrams can be drawn ex. Experiment set up
- English - past tense-passive voice should be used

Methodology/ Procedure:
 •
 •
 •
 •



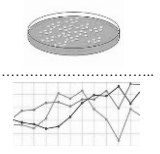
...a b

10

Readings/ Calculations/ Results/ Observations

- Reading s and calculations should be written clearly and the obtained results or observations should be recorded clearly (Tables, diagrams, graphs etc. may include).
- English - past tense-passive voice should be used

Readings/ calculations/ Results/ Observations:
 •
 •



11

Discussion

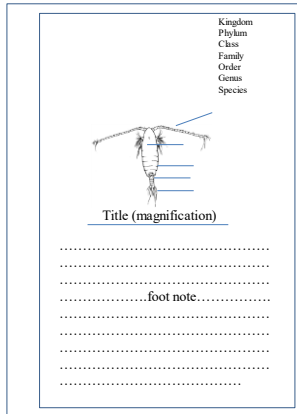
- Discussion can be tabulated or paragraphed.
- Need to discuss theories, principles etc. and justify the obtained results, observations and readings in a scientific way.
- Most important part of the lab report.

Discussion:
 •
 •
 •
 •

12

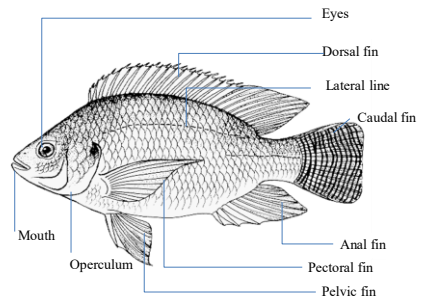
Drawings and footnotes

- All the drawing should be drawn with a sharp pencil, single lined, labelled and clear.
- The title and the magnification should be always written under the drawing
- The footnote should be specific and it should describe the diagram



13

Example 01

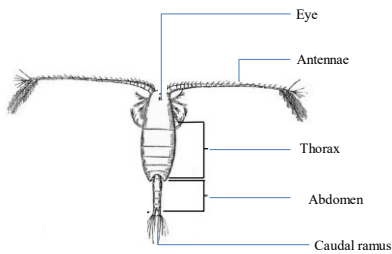


Oreochromis niloticus (Nile tilapia) (1 X 1/2)

Scientific name (underlined or italic) Common name Actual size of the specimen

14

Example 02

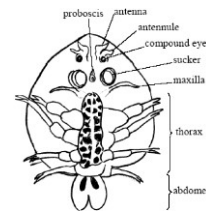


Copepod species (10 x 40 x 1)

Common name Magnification of the eye piece lens Magnification of the objective lens

15

Example 03



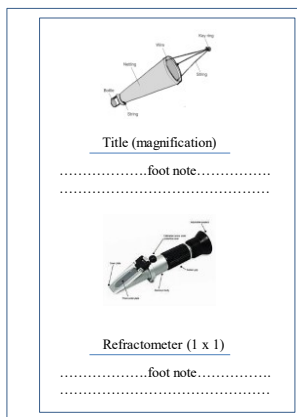
Copepod species (10 x 4)

Common name Magnification of the glass hand lens/ Dissecting microscope

16

Multiple diagrams



- It is recommended that one diagram on one page.
- In some cases, you are allowed to draw two diagrams on one page.
- But separate footnotes should be written and each diagram should not be overlapped.



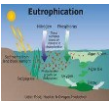

17

First year – first semester practical



Course code	Course name	Practical	
ARM 102 1.0	 Oceanography	1. Introduction to Basic Oceanographic instruments	Virtual
		2. Excel Basics for Oceanographic data analysis	Virtual
		3. Oceanographic data collection – field session in coastal waters	Physical
ARM 105 1.0	 Ichthyology	1. Fish morphology and Identification	Virtual
		2. Internal anatomy of Teleost and Cartilaginous fish.	Physical
		3. Reproductive biology of fish	Physical

18

ARM 101 1.0		1. Morphometry of a Lake	Virtual/ Physical
		2. Physical, Chemical and Biological properties of a water body (DO, BOD, Alkalinity, Plankton Enumeration)	Virtual/ Physical
		3. Physical, Chemical and Biological properties of a water body (Hardness, SO_4^{2-} , NO_3^- , PO_4^{3-})	Virtual/ Physical
ARM 103 1.0		1. Detection and Enumeration of microorganisms	Virtual/ Physical
		2. & 3. Isolation of pure culture of bacteria from the environment & positive and negative staining	Virtual/ Physical
		4. Microbiological analysis for water quality (Membrane filtration and multiple tube fermentation methods)	Virtual/ Physical
		Practical Examination	Virtual/ Physical
One day field visit for Basic Limnology			
Two days field visit for Oceanography			
Three days field visit for Aquatic Microbiology and Water Quality			

19

Thank you

20