Allied course	ZOO-316	Animal Diversity-I (Invertebrates)	3(2+1)
For Chemistry and Botany			

Course Contents:

1. INTRODUCTION

a. Classification of Organisms: b) Introduction to major and minor phyla

2. ANIMAL-LIKE PROTISTS: THE PROTOZOA

a. Characteristics. b. Classification up to class c. Symbiotic Life-styles. d. Locomotion in protozoa, e. Nutrition and Reproduction; f. Economic importance of protozoa. g. Parasitism in protozoa, h. Protozoa and human diseases

3. MULTICELLULAR AND TISSUE LEVELS OF ORGANIZATION

Phylum Porifera

a. Characteristics and classification up to class. Cell Types, Body Wall, and Skeletons; b. types of canal system; c. Reproduction.

Phylum Cnidaria (Coelenterate)

a. Characteristics. b. Classification up to Class. c. The body Wall and Nematocysts, d. Reproduction: Alteration of generations. f. Corals and coral reefs

4. THE TRIPLOBLASTIC ORGANIZATION

PHYLUM PLATYHELMINTHES (ACOELOMATE)

a. Characteristics. b. Classification up to class, c. Parasitic adaptations in platyhelminths

5. PHYLUM ASCHELMINTHS (PSEUDOCOELOMATE)

a. General Characteristics, b. Classification up to class, c. Helminths and human diseases,

COELOMATIC ORGANIZATION

6. PHYLUM ANNELIDA

a. General Characteristics, b. Classification up to Class. c. Maintenance functions d. Economic importance

7. PHYLUM MOLLUSCA

a. General Characteristics, b. Classification up to class. c. Maintenance functions d. Economic importance

8. PHYLUM ARTHROPODA

a. General Characteristics, b. Classification up to class. c. Biological success; d. Insects mouth parts, e. Economic importance of insects, **f.** Reproduction: Development, Metamorphosis;

9. PHYLUM ECHINODERMS

a. General Characteristics, b. Classification up to class. c. Reproduction; Regeneration, Larval forms.

Practical:

Note: *Classification of each phylum up to class with adaptions in relation to habitat of the specimen. Preserved Specimen and or colored projection slide and or CD ROM projection of computer must be used*.

1. Study of Euglena, Amoeba, Entameba, Plasmodium, Trypanosome, Paramecium as representative of animal like Protists.
2. Study of prepared slides of sponges, spicules of sponges, and their various body forms. Study of representatives of classes of Phylum Porifera.
3. Study of principal representatives of classes of Phylum Coelenterate.
4. Study of principal representatives of classes of Phylum Platyhelminthes.
5. Study of representatives of Phylum Nematode.
6. Study of principal representatives of classes of Phylum Mollusca.

7. Study of principal representatives of classes of Phylum Annelida.
8. Study of principal representatives of classes of groups of Phylum Arthropoda
9. Study of representatives of classes of phylum Echinodermta.
10. How to make grade-wise series for preparation of temporary and permanent slides.
11. Field study tour to Insectary, Insect museum, Invertebrates aquaria etc

Recommended Principal Reference Book:

1. Miller, A.S. and Harley, J.B. ; Latest Edition (International), Singapore : McGraw Hill.

Additional Readings:

2. Hickman, C.P., Roberts, L.C/, AND Larson, A., 2018. INTEGRATED PRINCIPLES OF ZOOLOGY, 15th Edition (International), Singapore: McGRAW-Hill.
3. Hickman, C.P., Roberts, L.C/, AND Larson, A., 2007. INTEGRATED PRINCIPLES OF ZOOLOGy, 12th & 13th Edition (International). Singapore: McGraw-Hill.
4. Pechenik, J.A., 2015. BIOLOGY OF INVERTEBRATES, 7th Edition, (International), Singapore: McGraw-Hill.
5. Kent, G. C. and Miller, S., 2001. COMPARATIVE ANATOMY OF VERTEBRATES New York: McGraw-Hill.
6. Campbell, N.A., 2002; BIOLOGY 6th Edition, Menlo Park, California; Benjamin ummings Publishing Company, Inc.

BOOKS FOR PRACTICAL

7. Miller, S.A., 2002. GENERAL ZOOLOGY LABORATORY MANUAL. 5th Edition International), Singapore: McGraw-Hill.
8. Hickman, C.P. and Kats, H.L., 2000. Laboratory Studies in integrated principal of zoology. Singapore: McGraw-Hill