

# PRINCIPAL SUBJECT AREA

## ZOOLOGY

### 200 LEVEL COURSES

#### **ZL 201 Animal Embryology (2 credits)**

Gametogenesis; Fertilization; Cleavage; Gastrulation; Neurulation; Early development of amphioxus, frog, chick, and man; Early development of selected invertebrates.  
Practicals based on above.

Recommended Texts:

1. *Animal Biology*. Grove & Newell
2. *Introduction to Embryology*. B.I. Balinsky.
3. *Langman's Medical Embryology*. T.W. Sadler & J. Langman.

#### **ZL 205 Biostatistics (2 credits)**

This course cannot be offered by students who offered ST 101 or ST 201. Some practical assignments will be given for this course.

(Same as ST 202)

Types of data, Data summarization: Histogram, Frequency polygon, Ogive.

Measures of location, Measures of Dispersion, Representation of data using Stem-Leaf diagrams and Box plots. Some Statistical distribution functions and their properties.

Test of hypothesis, Estimation and tests on difference between two means and proportions, Tests on variances.

Simple linear regression and correlation, Lack of fit residual plots, Introduction to Analysis of variance, and analysis of two-way contingency tables.

Recommended Texts:

1. Harper W.M. (1991) *Statistics*, ELBS
2. Moore D.S. (1995) *The basic practice of Statistics*, W.H. Freeman & Company
3. Bluman A.G. (1997) *Elementary Statistics*, McGraw Hill

#### **ZL 206 Invertebrate Diversity (3 credits)**

Levels of body organization in different invertebrate phyla; Characteristic features, diversity, ecology, life history and phylogenetic relationships of the following groups: Protozoa, Porifera, Cnidaria, Ctenophora, Platyhelminthes, Nematoda, Annelida, Arthropoda, Mollusca, Echinodermata and Minor phyla.

Recommended Texts:

1. *Invertebrate Zoology*, E.E. Ruppert and R.D. Barnes.
2. *The Invertebrates: A synthesis*. R.S. K. Barnes, P. Calow, P.J.W. Olive, D.W. Golding and J.I Spicer.
3. *Invertebrate Zoology*, P.A. Meglisch and F.R. Schram.

#### **ZL 213 Animal Ecology (2 credits)**

Structure and the function of Ecosystems; Terrestrial and Aquatic Ecosystems; Introduction to Population Ecology: Population Growth, Life Tables and Fecundity Tables, Population Regulation, Life History Characteristics; Introduction to Community ecology; Interspecific interactions: Competition, Niches and Resource Partitioning, Predation, Herbivory, Mutualism; Species Diversity; Community Similarity; Succession.

Practicals based on above.

Recommended Texts:

1. *Community Ecology*. P.J. Morin.
2. *Ecology: Individuals, Populations and Communities*. M. Begon, J.L. Harper & C.R. Townsend.
3. *Ecology*. S.I. Dodson, et al.

### **ZL 214 Coral Reef Biology and Ecology (2 credits)**

Coral and Coral reefs; Geological history, Formation and form of coral reefs, Distribution of present day coral reefs; Biology of Coral reefs: Basic design. Structural diversity, growth forms, colour, reproduction and growth, food and feeding, associated fauna (causal associations, symbiosis, predators), Zooxanthellae, coral taxonomy, Destruction and recovery of coral reef communities: factors responsible for the destruction of the biota of coral reefs, recovery of coral reef communities devastated by catastrophic events. Conservation of corals and coral reefs

Recommended Texts:

1. *Coral Reef Animals of the Indo-Pacific: Animal Life from /Africa to Hawaii, Exclusive of the Vertebrates.* T.M. Gosliner, D.W. Behrens & G.C. Williams.
2. *Coral Reefs of the World. Vol. 2. Indian Ocean & Red Sea.* Series Eds S. Wells, M. Jenkins & C. Sheppard.
3. *Corals of the World: Reef Building Corals Worldwide.* J.E.N. Veron & M.S. Smith.
4. *Corals of the World, biology and field guide.* E.M. Wood

### **ZL 215 Zoogeography and Sri Lankan Fauna (2 credits)**

Continental Drift and Plate Tectonics; Wegner's Hypothesis; Earth's mantle and core; Tectonic plates and their Motion; The supercontinent cycle; History of zoogeography; Patterns of zoogeography; Biological processes in zoogeography; Ecological zoogeography: dispersal of plants and animals and migrations, barriers for dispersal; Present biogeographic regions: terrestrial and oceanic biogeographic regions and inland waters; Centres of origination and divergence of species; extinction of species; island biogeography; patterns of biogeography. Taxonomy, distribution, habitat and mode of life, conservation status, endemism and threats to selected invertebrates & vertebrates with special reference to terrestrial fauna. Practicals based on above.

Recommended Texts:

1. *Zoogeography: The Geographic Distribution of Animals.* P.J. Jr. Darlington.
2. *Biogeography.* J.H. Brown & M.V. Lomolino.
3. *Plate Tectonics: Unravelling the Mysteries of the Earth.* J. Erickson & E.H. Muller.
4. *The Amphibian Fauna of Sri Lanka.* S.K. Dutta & K. Manamendra-Arachchi.
5. *Manual of the Mammals of Sri Lanka.* W.W.A. Phillips.
6. *Coloured Atlas of Some vertebrates from Ceylon.* P.E.P. Deraniyagala.

### **ZL 216 Vertebrate Diversity (3 Credits)**

Classification and evolution of Chordates; Origin and evolutionary relationships of Vertebrates; Diversity of Protochordates, Jawless fishes, Cartilaginous Fishes, Bony Fishes; Tetrapod origin, their evolution and diversity; Amphibians, Reptiles (including major extinct groups), Aves and Mammals.

Recommended Texts:

1. *The Life of Vertebrates.* J.Z. Young
2. *Evolution of the Vertebrates.* E.H. Colbert and M. Morales