STAFF PROFILE

Name: Syprine A. Otieno

Title/ Qualifications: M.Sc., Ph.D

Department: Zoological Sciences

Position: Lecturer

Area of Specialization: Physiology

Professional affiliation: Kenya DAAD Scholars’ Association (KDSA), ARPPIS Scholars’ Association (ASA), African Association of Insect Scientists (AAIS)

Research Interests: Biological control of pests, Reproductive Physiology of animals

Consultancies: None

Publications:


Recognitions: External Examination for Walter Sisulu University, South Africa.

Conference/Workshop Presentations: Participated in a workshop on Agricultural Research Management in Mananga Centre, Mhlume, Swaziland in October 1999.
COURSE OUTLINES

COURSE CODE AND TITLE: SZL 100 GENERAL ZOOLOGY

Required Learning Materials:
Texts:


Equipment: Dissection kit

Recommended Learning Materials


Course Goals:
The goals of the course are to:
♦ To equip students with the knowledge of modern scientific methodological procedure.
♦ To equip students with the background knowledge to enable them fit all into any other specialized area of Zoology.
♦ Enable students to recognize the diversity of animal life.
Learner outcomes
At the end of the course, the student should be able to:
♦ Describe the structure and functions of various animals.
♦ Describe the habitats of various animals.
♦ Classify different animals.
♦ Discuss the evolutionary relationships between various animal groups.

Assessment
Assessment will be in the form of two written continual tests (theory), as indicated in the course calendar. The first CAT will cover the first six topics (5th week) while the second CAT will cover work up to the 11th week. The two CATs are mandatory. Any student who does not meet this requirement will re-take the unit. Students will also compile laboratory reports, to be submitted after every practical session. The final examination will be done from 30th March to 11th April 2009 according to the Kenyatta University 2008-2009 Academic Calendar.

Format of Assessments
The CATs will consist of short answer structured questions. The final examination will be set according to the departmental format for final examinations.

Evaluation Procedure
| Average of 2 CATs (theory) | 30% |
| Final examination          | 70% |
| Total                      | 100 marks |

Attendance and Tardiness
All students are expected to attend all classes. Practical reports will be accepted only from students present in the practical session. All students must complete all assignments and sit all announced examinations. Any occasional absence must be reported to the Dean of Students and the lecturer informed in advance.

Academic Integrity
Plagiarism, fabrication, abuse of internet, cheating and academic misconduct in all assessments and practical reports will not be tolerated. Cheating of any form in any assessment will lead to discontinuation of studies at Kenyatta University.
<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Detailed outline</th>
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<tr>
<td></td>
<td>Evolution</td>
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<tr>
<td>Week 4</td>
<td>Kingdom Animalia</td>
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<td></td>
<td>Phylum Porifera.</td>
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<td>The acoelomate animals: Phylum Platyhelminthes</td>
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<td>The pseudocoelomate animals: Phylum Nematoda</td>
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<td>CAT One (Marked out of 30)</td>
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<tr>
<td>Week 5</td>
<td>The coelomate animals: Phylum Annelida</td>
<td>Functions of the coelom. Characteristics of the annelids. Classification of the phylum. Feeding, gas exchange, transport, support, coordination, reproduction and development.</td>
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<td>Week 6</td>
<td>Phylum Mollusca</td>
<td>Distinguishing features of molluscs, their Classification, feeding, support, exchange, transport, reproduction and development. Origin of molluscs.</td>
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<td>Week 7</td>
<td>Phylum Arthropoda</td>
<td>Characteristics, habitats of various arthropods, classification of the phylum. Feeding, support, gas exchange, transport, coordination, reproduction and development in arachnids, centipedes, millipedes, insects and crustaceans; Phylogeny</td>
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<td>Week 8</td>
<td>Phylum Echinodermata</td>
<td>Characteristics and classification of the phylum.</td>
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<td>Week 10</td>
<td>Subphylum: Vertebrata-The Pisces</td>
<td>Characteristics of chordates, their classification. The Agnathans, Chondrichthyes, Osteichthyes and their distinguishing features. Support, transport, gas exchange, reproduction and development</td>
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<td>Class Amphibia</td>
<td>Characteristic features, classification, transport, exchange, coordination, reproduction and development. Phylogeny</td>
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<td>Week 11</td>
<td>Class Reptilia and Aves</td>
<td>Characteristics of reptiles and birds. Feeding, respiration, support, coordination, circulation, reproduction. Adaptations. Origin of reptiles and of birds</td>
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<td>Week 12</td>
<td>Class Mammalia</td>
<td>Characteristics, classification, reproduction. Evolutionary adaptations of mammals.</td>
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<td>CAT Two (Marked out of 30)</td>
<td>Distinguishing features of each class. Feeding, transport, support, coordination, reproduction and development.</td>
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<td>Phylum Hemichordata</td>
<td>Features of hemichordates. Relationship with the chordates. Feeding and reproduction. Diagnostic chordate features, classification. Feeding, support, transport, reproduction and development of urochordates and cephalochordates</td>
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<td>Phylum Chordata: Urochordates</td>
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<td>and Cephalochordates</td>
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1. Introduction: The concept of Neuroendocrinology

2. Neurophysiology
   - Structure of the nervous system
   - Impulse transmission
   - Synapses
   - Neurotransmitters
   - Integrative functions of the central nervous system

3. Locomotion
   - Structure and functions of the skeletal system
   - Structure and functions of the skeletal muscles
     - Mechanisms of muscle contraction and regulation

4. Sensory reception
   - Photoreception
   - Chemoreception
   - Mechanoreception
   - Touch

   **CAT ONE**

5. Neuroendocrine interrelationships

6. Neurosecretions
   - Invertebrate neuroendocrine system
   - Hypothalamus

7. Endocrine glands and hormonal integration
   - Pituitary gland
   - Thyroid glands
   - Parathyroids
   - The adrenals
   - The Gonads
   - Placenta
   - Pineal gland
   - The Pancreas
   - Gastrointestinal tract hormones
   - Urophysis

   **CAT TWO**
REFERENCES


SZL 416: PHYSIOLOGY OF WILD MAMMALS

1. Introduction
   • Scope
   • Significance

2. Gastrointestinal system
   • Adaptations of digestive systems
   • Comparative gastric morphology and function
   • Dentition and its importance in identification
   • Adaptive radiation of teeth

3. Respiratory systems
   • Significance of respiration
   • Structure of the respiratory system
   • Adaptations
   • Regulation of breathing
4. The cardiovascular system
   - Functions of blood
   - The heart
   - Adaptive hypertension
   - Diving mammals
   - Regulation of the cardiovascular system

5. Thermoregulation
   - Thermoregulatory taxonomy
   - Reactions of mammals to cold stress
   - Adaptive hypothermia
   - Reactions of mammals to heat stress
   - Adaptive hyperthermia

   **CAT ONE**

6. Skeletomuscular system
   - Structure and functions of the skeletal system
   - Structure and functions of the muscular system
   - Locomotor adaptations

7. Reproduction
   - Reproduction in non-placental mammals
   - Reproduction in placental mammals
     - Estrous cycles
     - Pregnancy
     - Parturition
     - Lactation
     - Neuroendocrine interrelationships

8. Sexual behaviour
   - Courtship and mating
   - Mating strategies

9. Fertility
10. Sterility
11. Efficiency of reproduction

   **CAT TWO**
REFERENCES


