HONOURS IN ZOOLOGY
PROSPECTUS 2016

DEPARTMENT OF ZOOLOGY, UNIVERSITY OF JOHANNESBURG
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INTRODUCTION
The Honours course is only presented on a full-time basis. Therefore, students must be available full-time from Monday to Friday for lectures from Mid-January until the end of November.

In the Zoology Department it is assumed that no student should leave the University before obtaining at least four years of training (Honours). Therefore, courses are developed to run from the first year to the fourth. Since standard and competition increase gradually, all potential students cannot be accepted and therefore prospective students should apply for admission, no later than the last Friday in October of the year proceeding the study year.

Financial Aid
Prospective students should note that a number of bursaries are available for students with merit and you must apply on the dates specified by the bursar. See information elsewhere on the CD.

You may also additionally to the bursary apply for an assistantship in the department. Successful candidates will be deployed as demonstrators, research assistants or for general maintenance in the department.

Projects
In addition to the various courses, each student must hand in a project. Lecturers provide the various themes and under their supervision each student must complete the project and present it orally and as a project report. A list of previous projects presented over the last four years, is attached. Subject to approval, students are welcome to submit their own projects.

Assessment
Assessments are not limited to exam periods but are also of a continuous nature.
HONOURS COURSE

1. B.Sc Hons: Zoology comprises of 11 modules: ZOO01-11

   NQF Level: 8
   Credits: 126

Rules of access: B.Sc degree with Zoology as a major.
Conditions of acceptance: A restricted number of learners (approx.12) will be accepted annually. This number is determined by the available places in the department. **Learners will be subjected to selection based on previous academic performance and a written submission.**

**Summary of modules in Zoology honours**

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<th>Module</th>
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<td>ZOO09</td>
<td>Population Genetics and Biosystematics</td>
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<td>ZOO10</td>
<td>Fish Histology and Histopathology</td>
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<td><strong>TOTAL</strong></td>
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Module ZOO01: **Laboratory and Field Skills**

NQF Level: 8  
Credits: 4  
Purpose: 
A candidate credited with this module will be able to effectively handle 4x4 vehicles, boats and various fish sampling methods. He/she will be able to efficiently use and manage aquarium and controlled environmental facilities. He/she will also be able to prepare tissues for histological observation and reference specimens for standard analyses and conservation. The learners will be able to create a biological data set, apply and interpret appropriate basic statistical techniques to the data. The learner will be able to formulate a hypothesis, test a hypothesis and interpret the results obtained. The learner will also be able to determine and interpret the association between variables and represent it graphically. He/she will furthermore be able to interpret the results of a few multivariate statistical techniques relevant to biological data.

Specific outcomes:
- Practically demonstrate the functioning and handling of 4x4 vehicles.
- Practically demonstrate the functioning and handling of boats.
- Explain and demonstrate various fish sampling methods.
- Explain and demonstrate the use, functioning and managing of the aquarium and controlled environmental facilities.
- Practically demonstrate techniques for preparing tissues for microscopical investigation.
- Prepare reference (herbarium, museum, DNA, etc.) specimens for standard analyses and conservation, demonstrate photographic techniques and map reading.
- Create a data set in Excel.
- Distinguish between nominal, ordinal and continuous (interval and ratio) variables.
- Interpret uni- and bivariate descriptive statistics and graphs.
- Formulate a null- and alternative hypothesis.
- Test basic statistical hypotheses and interpret the results.
- Determine a simple linear regression equation and interpret the results.
- Interpret the results of logistic regression and CHAID.

Module ZOO02: **Philosophy and Research Methodology in Zoology**

NQF Level: 8  
Credits: 4  
Purpose: 
A candidate credited with this module will be able to discuss the origin and development of ideas and concepts related to the scientific method. He/she will be able to critically analyse the contributions of 20th century science philosophers to the modern scientific method and also be able to write a scientific manuscript according to the prescriptions of the scientific method.

Specific outcomes:
* Discuss the origin and further development of ideas and concepts related to the scientific method.
* Critically analyse the contributions of 20th century science philosophers to the modern scientific method.
* Write a scientific manuscript according to the prescriptions of the scientific method.
Module ZOO03: Ecophysiology
NQF Level: 8
Credits: 12
Purpose: A learner credited with this module will be able to demonstrate an understanding of the basic principles of stress physiology and be able to explain the effects of environmental change on physiological processes. He/she will also be able to explain the effect of environmental stimuli on integrated physiological systems.
Specific outcomes:
- Demonstrate an understanding of basic principles in physiology.
- Explain the effect of environmental change on physiological processes.
- Discuss the effect of environmental stimuli on integrated physiological systems.

Module ZOO04: Mammal Diversity
NQF Level: 8
Credits: 12
Purpose: A learner who successfully completed this module will be able to identify the different mammal orders and most important families and to classify the most important South African mammals up to Family level. The learner will be able to explain the origin and the diversification of mammals. The learner will also be able to explain the distribution and influence of mammals upon their environment.
Specific outcomes:
- Identify the most important mammal species of Southern Africa.
- Explain mammal classification.
- Explain the origin and diversification of mammals.
- Explain the distribution of mammals and adaptation to habitats.
- Describe the influence of mammals on their environment.

Module ZOO05: Nature Conservation
NQF Level: 8
Credits: 4
Purpose: A learner credited with this module will be able to gain theoretical and practical knowledge of environmental education and reserve management. He/she will understand and integrate aspects of conservation and ecology, including animal health and grazing capacities. He/she will be able to access, interpret and integrate information necessary for long-term conservation and sustainable utilization of natural resources.
Specific outcomes:
- Gain theoretical and practical knowledge of environmental education and reserve management.
- Understand and integrate aspects of conservation and ecology, including animal health and grazing capacities.
- Access, interpret and integrate information necessary for long-term conservation and sustainable utilization of natural resources.
Module ZOO06: Aquatic Parasitology
NQF Level: 8
Credits: 12
Purpose: Learners credited with this module will be able to understand, explore and explain the effect of host-parasite interactions, the ecological niche and the structure of parasite communities on the distribution of parasites in their microhabitat (host) and macrohabitat (environment). He/she should be able to reflect on the use of parasite distribution as an indicator of environmental health.

Specific outcomes:
- Understand, explore and explain host-parasite interactions.
- Understand, explore and explain the effects of ecological niche and parasite community structures on parasite distribution.
- Reflect on the use of parasite distribution as an indicator of environmental health.

Module ZOO07: Research Project
NQF Level: 8
Credits: 30
Purpose: To enable learners to generate and collect experimental data on a specific aquatic health problem, interpret them in terms of current subject information, make inferences and recommendations and present them in the form of a written report and an oral presentation.

Specific outcomes:
- Gain theoretical and practical knowledge of the field of the project.
- Collect experimental data on the aspects motivated in the project proposal.
- Interpret the results obtained.
- Make inferences and recommendations.
- A written and oral presentation of the project and results will have to be prepared/compiled.

Module ZOO08: Indices for the Biotic Integrity of Aquatic Ecosystems
NQF Level: 8
Credits: 12
Purpose: Learners credited with this module will be able to evaluate the biotic integrity of aquatic ecosystems by using abiotic and biotic indices.

Specific outcomes: The learner must be able to:
- Determine the biotic integrity of an aquatic ecosystem by analysing abiotic aspects.
- Determine the biotic integrity of aquatic ecosystems by analysing biotic aspects.
- It is expected from learners to be able to use macro-invertebrates, fish health, fish community structure and fish blood as indicators of biotic integrity.

Module ZOO09: Population Genetics and Biosystematics
NQF Level: 8
Credits: 12
Purpose: A learner credited with this module will be able to effectively access levels of biodiversity variation within- and differentiation between taxa. He/she will be able to interpret and analyse results correctly and compare it logically with other data sets. He/she will be able to define genetic markers for stock identification, geographic variation, gene flow, hybridisation, speciation and to identify the processes that are involved in evolutionary changes; use phenetic and cladistic methods of
data analyses to define phylogenetic relationships; and to predict the cumulative effects of evolutionary processes on successive generations.

Specific outcomes:
- Effectively access levels of biodiversity variation and differentiation.
- Interpret and analyse results correctly and compare it logically with other data sets.
- Methods used to define genetic markers are discussed.
- The use of phenetic and cladistic methods to analyse data for phylogenetic inferences is explained.
- Methods to predict the effects of evolutionary processes on successive generations are examined.

Module ZOO010:  Fish Histology and Histopathology
NQF level: 8
Credits: 12
Purpose: This module serves as an introduction to fish histology and fish histopathology. A learner credited with this module will be able to distinguish normal fish tissue from diseased or abnormal tissue, discuss artifactual changes in tissues not related to a disease process, describe basic pathological processes, identify possible causes for the pathology found during microscopic examination and be able to collect, prepare and stain fish tissue for histopathological investigation.

Specific outcome: The learner must be able to:
* Distinguish normal fish tissue from diseased or abnormal tissue.
* Investigate and discuss artifactual changes in tissues not related to a disease process.
* Describe basic pathological processes.
* Identify possible causes for the pathology found during microscopic examination.
* Collect, prepare and stain various fish tissues for histopathological investigation.

Module ZOO011:  Conservation Genetics
NQF Level: 8
Credits: 12
Purpose: To enable learners to gather genetic and general conservation information and data, assess these critically applying the latest conservation genetic principles, and apply the outcomes to conservation and management issues.

Specific outcomes:
- Gain an understanding of the theoretical approaches to and the placement of genetics in the context of conservation biology;
- Understanding genetic diversity and its characterization;
- Understanding the effects of population reduction and loss of genetic diversity in small or fragmented populations;
- Defining management units and understanding the genetic management of wild and captive populations.
PAST PROJECTS
The following projects were done over the past four years in the Department:

2009

3. STUDY OF THE VOMERONASAL ORGAN AND OLFACTORY ORGAN IN FOSSORIAL SKINS.
4. HISTOPATHOLOGICAL STUDY OF THE LIVER, PANCREAS AND KIDNEYS OF JUVENILE RATS.
5. THE TAXONOMY AND BIODIVERSITY OF FRESHWATER FISH BLOOD PARASITES.
6. ASSESSMENT OF THE ECOSYSTEM HEALTH AND INTEGRITY OF A SEMI-URBAN WETLAND RESERVE.
7. AQUATIC BIODIVERSITY OF FLOODPLAIN WETLANDS ASSOCIATED WITH THE HARTS RIVER, NORTHERN CAPE
8. HISTOPATHOLOGICAL EFFECTS OF ENVIRONMENTAL POLLUTION.
9. THE ASSESSMENT OF THE EFFECT OF ENVIRONMENTAL POLLUTION ON AQUATIC ANIMALS — A SAFE PROTOCOL.
10. THE EFFECT OF COAL MINING AND AGRICULTURAL ACTIVITIES ON THE WATER QUALITY OF PANS IN Mpumalanga.
11. DNA BARCODING FISH FROM THE Okavango Delta and Southern Africa.

2010

1. THE Pongola River using a semi-quantitative approach.
2. INTERSPECIES BIOMARKER RESPONSE COMPARISON BETWEEN Tilapia rendalli and Oreochromis mossambicus.
3. BIOACUMULATION OF METALS IN THE LIVER AND MUSCLE OF Oreochromis mossambicus and Tilapia rendalli in the Jozi Dam.
4. THE ASSESSMENT OF MINING ACTIVITIES ON ENDORHEIC WETLANDS USING BIOLOGICAL TRAITS AS METRICS.
5. WATER QUALITY AND AQUATIC INVERTEBRATE DIVERSITY IN SELECTED FREE-STATE PANS.
6. ESCAPE RESPONSES OF DIFFERENT SIZED LIMPETS TO PREYERS IN THE ROCKY SHORE INTERTIDAL ZONE OF Tsitsikamma National Park.
8. MICROFAUNA OF THE GROUNDWATER OF THE Bakwena Cave (Irene) Karst System.
9. NEMATODES ASSOCIATED WITH NATAL LONG-FINGERED BAT (Miniopterus natalensis) colony in Bakwena Cave.
10. A MORPHOLOGIC AND MORPHOMETRIC STUDY OF THE AVIAN LUNG BY LATEX INJECTION.
11. IS THE AVIAN LUNG AN ISOTROPIC OR ANISOTROPIC ORGAN? A STEREORELOGICAL STUDY OF THE MAIN STRUCTURAL COMPONENTS OF THE LUNG OF THE DOMESTIC FOWL, Gallus gallus variant domesticus FROM LONITUDINAL AND TRANSVERSE SECTIONS.
12. COPPER UPTAKE RATES IN ARTIFICIAL AND MEDITERRANEAN MUSSELS.
13. OBSERVATIONS ON THE PATHOLOGY OF Ergasilids from Lake Tanganyika on the gills of Lamprichthys tanganicanus.
14. STUDY AND DESCRIBE THE DAMAGE CAUSED BY THE ATTACHMENT CLAMPS IN Diplozoon on Labeo umbratus gills BY MEANS OF LIGHT AND SCANNING ELECTRON MICROSCOPY.
15. AN EFFECTIVE CULTURING METHOD OF SOUTH AFRICAN HYDRA UNDER CONTROLLED CONDITIONS.
16. AN INVESTIGATION TO SEE THE EFFECTS TO PAWPAW SEEDS (Carica Papaya) ON THE LIVER AND GONADS OF MALE Tilapia fish (Oreochromis mossambicus).
17. FINE NEEDLE ASPIRATION AND BIOPSY TECHNIQUES IN FISH HEALTH RESEARCH.
2011

1. A MORPHOLOGICAL STUDY OF *OXYSTELE VARIAGATA* AND *O. IMPERVIA*.
2. A GENETIC STUDY OF *OXYSTELE VARIAGATA* AND *O. IMPERVIA*.
3. EVALUATING OF THE *ARGULUS JAPONICAS* AS A SENTINEL FOR METAL ACCUMULATION IN THE VAAL DAM.
4. DESCRIBING THE HOOKS AND CLAMPS OF *DIPLOZOON* WITH LIGHT AND SCANNING MICROSCOPY.
5. A STUDY TO COMPARE THE USE OF DAPHNIA AND HYDRAS AS POSSIBLE TEST ORGANISM FOR TOXICITY ANALYSIS.
6. A COMPARATIVE HISTO-CYTMORPHOLOGICAL STUDY OF *OREOCHROMIS MOSSAMBITCUS* LIVER WITH THE USE OF H&E, PAPANICOLAOU AND SILVER SOLUTION STAINS.
8. EFFECT OF COMMERCIAL FARMING ON SELECTED PANS IN MPUMALANGA.
9. BIOMARKERS OF STRESS IN FISH AFFECTED BY MINING EFFLUENT.
10. ACTIVE BIO-MONITORING USING HISTOPATHOLOGY OF MOZAMBIQUE TILAPIA IN A EUTROPHIC AQUATIC ECOSYSTEM IN THE NORTH-WEST PROVINCE.
11. A STUDY OF THE LIFE CYCLE AND FEEDING BEHAVIOR OF THE TENEBRID BEETLES IN MAMELODI CAVE, GAUTENG.
12. THE DETERMINATION OF ROOST SIZE OF THE BAT *MINIOPTERUS NATALENSIS* IN IRENE AND MAMELODI CAVES BY MEANS OF A STUDY OF GUANO PATCHES AND PHOTOGRAPHIC COUNTS.
13. A COMPARATIVE HISTOLOGICAL STUDY OF THE MIDDLE AND INNER EAR OF THE SKINS ACONTIAS AND MABUYA.
14. THE IMPLEMENTATION OF MESOCOSM TO STUDY THE EFFECT OF SELECTED PESTICIDES ON AQUATIC ECOSYSTEMS.

2012

1. FROGS IN THE KRUGER NATIONAL PARK AS BIOINDICATORS OF ENVIRONMENTAL POLLUTION.
2. FISH REPRODUCTIVE HEALTH BASED ON SPERM MOTILITY PARAMETERS (COMPUTER ASSISTED SPERM ANALYSIS).
3. A FIELD GUIDE OF NAMIBIAN COMMON MARINE MOLLUSCS.
4. DNA BARCODING OF INVASIVE AND ALIEN SOUTHERN AFRICAN MOLLUSCS AND FISH.
5. THE USE OF PHYTOTOX TEST KITS TO EVALUATE SEDIMENT TOXICITY IN A PREDETERMINED RIVER SYSTEM IN GAUTENG.
6. CORRELATION OF HOST SIZE VS PARASITE SIZE IN MONogenea.
7. *ERGASILUS* FROM THE AMAZON.
8. A COMPARATIVE HISTO-CYTMORPHOLOGICAL STUDY OF *OREOCHROMIS MOSSAMBITCUS* LIVER USING THE H&E, PAPANICOLAOU, SILVER STAIN SOLUTION, MAY-GRUNWALD (GIEMSA) AND PAS REACTION.
9. A HISTOLOGICAL ASSESSMENT OF THE REPRODUCTIVE ORGANS OF THE AMPHIPOD *SYPHONARIAS* IN ACID.
10. MOVEMENT PATTERNS OF HIGH SHORE *SYPHONARIAS* (LIMPETS) IN TSITSIKAMMA INTERTIDAL REGIONS.
11. METAL BIOACCUMULATION IN TWO EDIBLE FISH SPECIES FROM THE NYL RIVER SYSTEM (LIMPOPO PROVINCE).
12. APPLICATION OF ARTIFICIAL PASSIVE MONITORING DEVICES AS BIOACCUMULATION INDICATORS IN ACID.
13. THE NERVIOUS SYSTEM OF THE AMPHIPOD *SYPHONARIAS*.
14. THE SPIDER POPULATION OF BAKWENA CAVE.
15. AN ASSESSMENT OF THE BIOLOGICAL INTEGRITY OF TWO PONDS AT THE ADULLAM MISSION NEAR SECUNDA: A COMMUNITY OUTREACH PROJECT.
16. PROTOCOL VERIFICATION STUDY FOR THE DETERMINATION OF FISH KILL ASSESSMENTS IN SOUTH AFRICA.
17. USE OF SELECTED BIOMARKERS TO ASSESS FISH HEALTH IN THE NYL RIVER SYSTEM, LIMPOPO.
18. TOPOLOGICAL MAPPING OF THE AIRWAYS THE DOG AND RABBITS LUNGS FROM LATEX CAST PREPARATIONS.
2013

1. A STUDY OF THE LIFE CYCLE, MORPHOLOGY AND FEEDING BEHAVIOUR OF THE ASSASIN BUGS IN BAKWENA CAVE, GAUTENG.
2. A STUDY OF THE LIFE CYCLE, MORPHOLOGY AND FEEDING BEHAVIOUR OF THE AMPHIPOD (STERNOPHYXINX FILARIS) FROM BAKWENA CAVE, GAUTENG.
3. A HISTOLOGICAL ASSESSMENT OF THE REPRODUCTIVE ORGANS OF THE AMPHIPOD STERNOPHYXINX CALCEOLA.
4. USING PHYTOTOX TEST KITS TO EVALUATE POSSIBLE SEDIMENT CONTAMINATION IN IMPOUNDMENTS IN THE GREATER JOHANNESBURG AREA.
5. A MORPHOLOGICAL STUDY OF TWO FRESHWATER FISH SPECIES IN SOUTHERN AFRICA.
6. HEAVY METAL CONCENTRATIONS IN TWO POPULATIONS OF MOPANE WORMS IN THE KRUGER NATIONAL PARK (KNP).
7. BASELINE METAL ASSESSMENT OF Perna Perna ALONG THE NAMIBIAN COAST LINE.
8. SPIDER DIVERSITY OF THE TSITSIKAMA NATIONAL PARK.
9. GENETIC HEALTH OF THE AFRICAN LION POPULATION IN THE SOUTH-EAST LOWVELD OF ZIMBABWE.
10. GENETIC STRUCTURE IN LESUEUR'S HAIRY BAT: IMPLICATIONS FOR TAXONOMY AND CONSERVATION.
11. AN ASSESSMENT OF THE BIOLOGICAL INTEGRITY OF SELECTED SITES WITHIN THE KLIP RIVER SYSTEM.
14. COMPARATIVE MORPHOMETRIC AND MICROSCOPIC STUDY OF THE GASTROINTESTINAL SYSTEM OF AN EXTREME TIAPINE FISH, ALCOLAPIA GRAHAMII OF LAKE MAGADI (KENYA).
15. GENETIC ANALYSIS OF THE DIFFERENT POPULATIONS OF LAKE MAGADI FISH, ALCOLAPIA GRAHAMII.
16. THE EFFECTS OF SELENIUM EXPOSURE ON THE HISTORMORPHOLOGY OF OREOCHROMIS MOSSAMICUS LIVER.
17. WATER POLLUTION AFFECTS FISH HEALTH AND INDUCES PATHOLOGICAL CHANGES. A PROTOCOL TO ASSESS THE EFFECT OF POLLUTANTS OF FISH HEALTH.
18. AGE ESTIMATION AND SIZE AT SEXUAL MATURITY OF FRESHWATER FISH.
19. A COMPARISON OF INVERTEBRATE COMMUNITIES OF PANS BETWEEN THE NORTH WEST, FREE STATE AND MPUMALANGA PROVINCES.
20. BIOMARKERS OF POLLUTION IN Tilapia rendalli FROM THE NYAMITI PAN AND PHONGOLOPOORT DAM. A COMPARATIVE STUDY.
21. WATER QUALITY ASSESSMENT OF THE LEEUSPRUIT RIVER IN THE WEST RAND, GAUTENG, SOUTH AFRICA.

2014

1. HEAVY METALS IN MOPANE WORMS FROM KRUGER NATIONAL PARK (KNP).
2. DNA BARCODING OF TWO SPECIES OF DEEP-SEA RED CRABS FROM NAMIBIA.
3. COMPARATIVE HAEMOTOLOGICAL ASSESSMENT OF THE MOZAMBIQUE TILAPIA Oreochromis mossamicus (ALBASINI DAM) BETWEEN LABORATORY EXPOSED AND WILD FISH.
4. ACETYLCHOLINESTERASE ACTIVITY IN THE BRAIN OF THE TILAPIA.
5. HIGHWAY OR BYPASS? A GENETIC INVESTIGATION OF THE ROLE OF THE AGULHAS CUREENT IN DRIVING LONG-SHORE DISPERSAL.
6. POPULATION STRUCTURE OF BROWN MUSSELS, Perna Perna, IN THE WESTERN INDIAN OCEAN.
7. A STUDY OF THE LIFE CYCLE, MORPHOLOGY AND FEEDING BEHAVIOR OF THE AMPHIPOS (STERNOPHYX CALCEOLA) FROM MATLAPITSE CAVE, LIMPOPO PROVINCE.
8. A SURVEY OF THE MACROSCOPIC AQUATIC INVERTEBRATES IN THE AMD AFFECTED TWEELOPIESPRUIT, RIETSPRUIT AND BLOUBANKSSPRUIT ON THE WEST RAND.

9. WATER QUALITY AND INVERTEBRATE DIVERSITY IN SELECTED PANS IN GAUTENG.

10. THE USE OF SELECTED BIOMARKERS TO DETERMINE THE PHYSIOLOGICAL EFFECT OF GROWTH STIMULANTS ON FISH.

11. A HISTOLOGICAL STUDY ON TWO FRESHWATER FISH SPECIES FROM THE ROODEPLAAT DAM.

12. A FISH HEALTH STUDY OF SHARPTOOTH CATFISH FROM THE KLIPSPRUIT RIVER WETLAND SYSTEM, SOWETO.

13. EVALUATION OF POSSIBLE SEDIMENT CONTAMINATION IN IMPOUNDMENTS IN THE GREATER JOHANNESBURG AREA USING PHYTOTOX TEST KITS.

14. THE EFFECT OF SELENIUM EXPOSURE ON THE HISTOMORPHOLOGY OF Oreochromis mossambicus GONADS.

15. A COMPARATION CYTO-HISTOMORPHOLOGICAL STUDY OF Oreochromis mossambicus LIVER USING THE H&E, PAPANICOLAOU, PAS REACTION.

16. BARCODING OF DEEP-SEA RED CRABS IN NAMIBIA.

17. GENETIC DIVERSITY IN SOUTHERN AFRICAN ROAN AND SABLE ANTELOPE.

18. NEMATODES OF FISHES IN THE VAAL RIVER.

19. STUDY OF MORPHOLOGY OF Dolops FROM THE AMAZON RIVER IN ORDER TO DESCRIBE THE ACCESSORY REPRODUCTIVE STRUCTURES.

20. STUDY OF THE GAS DIFFUSING CAPACITY OF THE AVIAN EGG.

2015

1. Liver histopathology as a biomarker to evaluate the effect of pollution in Albasini Dam, Limpopo Province, South Africa.

2. An assessment of the water quality and fish health of the Klipspruit River.


4. Morphometric study of the testes of Oreochromis mossambicus (Peters, 1852) acutely exposed to different concentrations of selenium.

5. A comparison of the diversity of nocturnal flying insects in Soweto, a highly urbanized area, and Krugersdorp Game Reserve, a grassland on the urban edge.

6. Bats diversity in the Albertine Rift with a specific focus on the eastern Democratic Republic of Congo.

7. A comparative study on the diversity and activity of bats inhabiting the center of an urban area (Soweto) and those that inhabit the urban edge of Krugersdorp.

8. The evaluation of possible sediment contamination in impoundment in the greater Johannesburg area using a Phytotox kit.

9. Metal accumulation in House Sparrows (Passer domesticus) from Thohoyandou, Limpopo Province, South Africa.
INFORMATION REGARDING FINANCIAL AID

1. Bursaries
   Please consult the PDF document on the CD and respond by applying for an NRF before 14 August bursary and applying for the UJ special bursary and apply for the UJ merit Bursary

   Alternatively forms are available from Ms Marie Scheepers or Andile Tlou at E-Ring 110. Closing date 26 Feb. 2016.

2. Student Assistantships
   It is expected that all honours students will avail themselves for assistantships in the Zoology Department. These can take the form of demonstrating to Zoology 1st year students, for general maintenance (e.g. in the aquarium/library) or as a research assistant. A small stipend is paid for the services and students are encouraged to add the experience to their Curriculum Vitae.

   In order to gain admission to the Honours course in the Dept. of Zoology, contact Ms Nakani for forms and information (011-559-2441) or complete the attached forms and return to Ms Nakani or e-mail to thumekan@uj.ac.za
### APPLICATION FORM FOR ADMISSION TO B. Sc HONOURS IN THE DEPARTMENT OF ZOOLOGY in 2016

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**PLEASE ATTACHED A COPY OF YOUR STUDY RECORD TO APPLICATION FORM:** (Available from the Faculty’s office, C-Ring 2)

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<td>UJ</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Other</td>
<td></td>
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<tr>
<td>If yes: where?</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Are you interested in a student assistantship (10 hrs/ week)</th>
<th>Yes</th>
<th>No</th>
</tr>
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<tbody>
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<table>
<thead>
<tr>
<th>Type of assistantship you would prefer: (please tick box where applicable)</th>
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</thead>
<tbody>
<tr>
<td>Demonstrator (1st years &amp; 3rd years)</td>
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<tr>
<td>Research Assistant</td>
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<tr>
<td>Maintenance (Aquarium/Library, etc...)</td>
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</tbody>
</table>

**Students who want to be considered for Honours in Zoology should complete and hand in:**
- Appointment of temporary employees (Annexure 1)
- Registration for a tax number (Annexure 2)
- Completed application for admission form.

HAND IN at the SECRETARY or mail to: THE HEAD OF DEPARTMENT, Dept of Zoology, University of Johannesburg, Auckland Park Kingsway, P.O. Box 524, Auckland Park 2006, **ON/OR BEFORE THE LAST FRIDAY IN OCTOBER.**