



Introduction to chemical dart immobilization - Course Outline

Thank you for your interest in our dart immobilization course! In this course outline you find more information about what this course entails. This course is designed by Dr Ulf Tubbesing.



Why this course?

To capture live wild animals we often make use of chemical dart immobilization. Animals can be captured for a variety of reasons; for treatment, to move the animal, to collect DNA, to collar them etc. The capture obviously has significant implications in terms of animal welfare and safety, but also human safety. The proper treatment of the animal before, during and after the capture is crucial to avoid unnecessary stress, injury and death.

In the course we teach you more about the Namibian legislation surrounding the use of drugs, we give an introduction to the various (remote) drug administration systems, darts, physiology, pharmacology and the drugs we use. We also teach and show you how to monitor an immobilized animal and what to do in emergencies and drug accidents. Practical work will involve practising with a dart gun, and we will immobilize and monitor some animals.

For who?

This course is meant for people involved in wildlife research and/or working with wildlife/game farmers/wildlife veterinarians. When you work with a wildlife vet, maybe as a farmer or vet assistant, you will better understand certain procedures during the capture.

For vet assistants/para-professionals a special note must be made. After the course there might be a possibility to register yourself as a wildlife para-professional via the Veterinary Council of Namibia (VCN), however you must meet certain conditions:

- I. The candidate must have a need (i.e. working in a wildlife sanctuary/research project etc.) where he/she may, from time to time be called upon to URGENTLY immobilise an animal at a time when no registered veterinarian is immediately available to do so, or in the case of a person busy with a legitimate and registered research project where there may be a regular need for the immobilisation of study animals
- II. The candidate must have access to the necessary equipment and drugs, esp. the latter can ONLY be obtained from a SUPERVISING WILDLIFE VETERINARIAN, registered with the Namibian Veterinary Council (NVC) - unconditional - DEDICATED to a specific wildlife para-professional

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- III. Must have a SUPERVISING WILDLIFE VETERINARIAN DEDICATED to a specific wildlife para-professional who will provide drugs, monitor drug register and drug use etc. and essentially be directly responsible for all the para-professional's deeds
- IV. The candidate must pass the test, as proof to the NVC for the basic minimum knowledge for the restricted wildlife work
- V. Successful registration with the NVC as a veterinary para-professional, category wildlife (to pass the course is not an automatic guarantee for successful registration!)

This course is designed to equip you with basic knowledge and to be able to function semi-independently. Be aware that you cannot use opioids, and thus cannot dart animals like antelope, rhinos etc. You will not be allowed to do wildlife veterinary work for remuneration and/or in competition with practicing vets. Once you have done the course and passed the test, there is no guarantee that the NVC will register you as a para/professional, they will decide case per case whether you will be eligible for registration.

The course is given by wildlife veterinarian Dr Ulf Tubbesing and wildlife para-professional Mariska Bijsterbosch.



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Monitoring an African wild dog and lion during the dart immobilization course at Erindi Private Game reserve.

Course schedule

In this 5-day course we will discuss quite a lot of topics the immobilization of an animal; from legislation to monitoring, from physiology to darting.

Below you find a summary of the course schedule (note this may be subject to change):


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Day 1:

Topic	What?
 Introduction lecture	After dinner we will discuss the rules, the programme, aim of the course, NVC registration, legal aspects concerning becoming a wildlife para-professional, regulations as well as legal issues surrounding drug use in Namibia / keeping of a drug register as pertaining to additional professional category (wildlife)

Day 2:

Topic	What?
 Animal Physiology	On day 2 we start with animal physiology. This will be introduction to animal physiology as applied to wildlife immobilisation (CNS, cardiorespiratory, thermoregulation, digestive system).
 Drug administration systems	We discuss the different dart administration systems (e.g. blow pipe, pole syringe, dart guns), their uses, pros and cons.
 Dart sites	In this lecture we explain the dart sites in different species.
 Introduction to pharmacology	In the introduction to pharmacology we discuss drug absorption/distribution/excretion and dosage calculations
 Practical: darting	In the afternoon we have a practical session, in where we practise with different dart systems, loading darts, gun safety and target shooting.

You learn about:

- 🐾 *Namibian legislation surrounding the use of drugs and doing (para)veterinary work*
- 🐾 *The various (remote) drug administration systems, darts etc.*
- 🐾 *Introduction to applied physiology of the heart, lungs, nervous and digestive system*
- 🐾 *Basic pharmacology followed up by specific drug discussions*
- 🐾 *Monitoring of an immobilized patient*
- 🐾 *Anaesthetic emergencies and how to handle them*
- 🐾 *Drug accidents (in humans) and how to handle them*
- 🐾 *Considerations and complications of radio telemetry*
- 🐾 *Practical content: target shooting with a dart gun, assist in the monitoring of immobilized animals*



Target shooting during the dart immobilization course at AfriCat.



Teaching how to load a dart to a group rangers from Niger, at the Cheetah Conservation Fund.









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Day 3:


Topic	What?
 Applied pharmacology	In this lecture we concentrate on drugs and their antagonists used during immobilization; their indications and limitations, drug choices and side effects
 Pre-immobilization preparations	Before we immobilize an animal, what must you think of to get ready? We discuss equipment, permits and a list of samples to be taken.
 Patient examination	In this important lecture we teach you how to monitor an immobilized animal: <ul style="list-style-type: none"> a) Vital clinical parameters to be evaluated before immobilisation (possible indicators for pending complications?) b) Immobilised patient monitoring – phases/depth of immobilisation; parameters to be monitored and their importance c) Use of ancillary tools: pulse oximeter, O2 supplementation etc.
 Common complications	Common complications and Immobilisation emergencies – what to do when?
 Immobilisation – predator specific considerations	We discuss the specific considerations one must make when working with predators. We discuss lions, leopards, cheetahs, hyenas and wild dogs.
 Biomaterials collection	Who is allowed to collect samples in the field? Why is it needed? What can you collect? All these questions will be answered in this lecture.
 Human safety	When working with wildlife, your own safety is of utmost importance. Many things can go wrong, so in this lecture we tell you more about human safety and emergencies during wildlife work.
 Radio telemetry	An important reason for researchers to immobilize an animal is to fit a GPS/VHF collar on them. This does not always end well for the animal, hence this lecture on ethics, concerns and complications of telemetry work.

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Day 4:



Topic	What?
 Practical: Immobilization	Today is a practical session including the dart immobilisation of some predators and possibly an antelope (depending on the need for elective work e.g. telemetry collar fitment etc.) where we will use different immobilisation drugs and then demonstrate the difference in drug effects, reversal, post-immobilisation sedation (the pros and cons of the latter under different practical conditions). During this session participants will be expected to do basic clinical examinations, monitor patient immobilisation depth and vital signs and collect various samples (hair, blood, faeces and urine) from the immobilised animal.


Day 5:

Topic	What?
 Test	The day of the truth 😊 On the last day you will make a test, in where we test you on your knowledge gained during the previous days.

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Venue

To be confirmed.

Costs

To be confirmed. This is inclusive of lecture material (you will get the PPT's and extra useful material in a PDF form on a USB stick), the lectures itself, use of the facilities, and a practical dart and immobilization session. When you complete the course and test, you will receive a certificate.

We will inform you about the location and prices at a later stage.

Only fully paid-up course fee prior to the start of this course will be allowed participation.

More information

If you have any questions or you want more information, please do not hesitate to contact us!

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