

# Opplæring forsøksdyrlære

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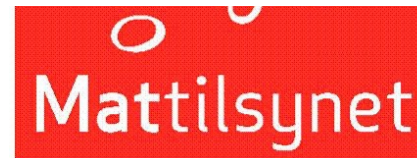
## Principles of Laboratory Animal Science

*A contribution to the humane use  
and care of animals and to the quality of  
experimental results*

REVISED EDITION

Edited by  
**L.F.M. van Zutphen**  
**V. Baumans**  
**A.C. Beynen**

Hvorfor opplæring???



## § 24. *Personell og kompetanse*

Oppdrettere, formidlere og brukere skal sørge for at personene som arbeider med dyr, har tilstrekkelig utdanning og praksis i samsvar med vedlegg E før de utformer forsøk, utfører forsøk, steller dyr eller avliver dyr.

Oppdrettere, formidlere og brukere skal også sørge for at personene opprettholder og dokumenterer kompetansen gjennom kontinuerlig praksis og utdanning, og at personene har relevant faglitteratur tilgjengelig.

*Forskrift om bruk av dyr i forsøk*

### **Vedlegg E. Utdanning og praksis, jf. § 24 annet ledd**

Utdannings- og praksisopplegget skal minst omfatte

1. bestemmelsene i Forskrift om bruk av dyr i forsøk
2. etikk relatert til forholdet mellom mennesker og dyr, livets egenverdi og argumenter for og imot bruk av dyr til vitenskapelige formål
3. grunnleggende og relevant artsspesifikk biologi relatert til anatomi, fysiologi, avl, genetikk og genetiske endringer
4. dyreatferd, dyrehold og miljøberikning
5. artsspesifikke håndteringsmetoder og forsøk
6. dyrehelsearbeid og hygiene
7. gjenkjennelse av artsspesifikk frykt, smerte og annen belastning for de mest vanlige forsøksdyrene
8. bedøvelse, smertelindring og avliving
9. bruk av humane endepunkter
10. krav om erstatning, reduksjon og forbedring
11. desian av forsøk

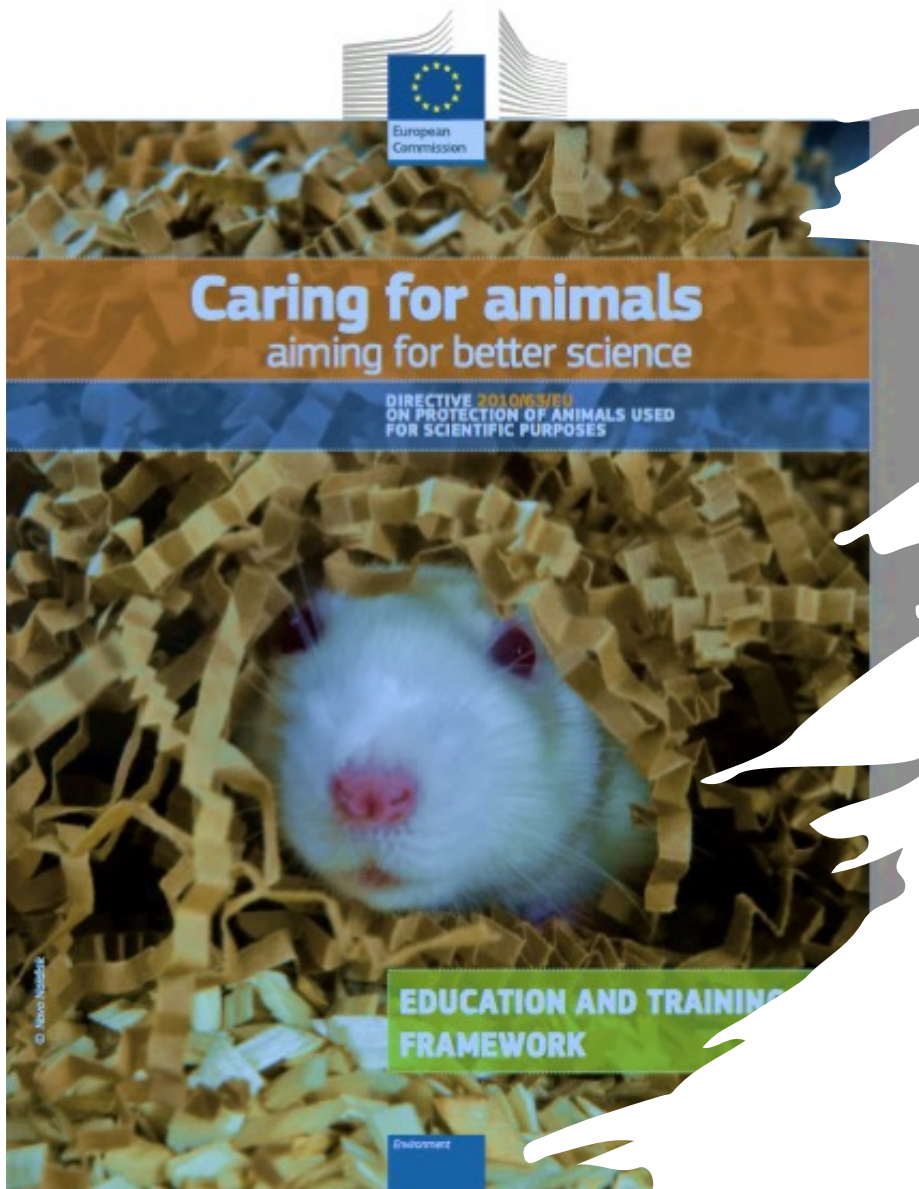
# Forsøksdyrlære kurs

Alle som bruker dyr i sin forskning må gjennomgå tilstrekkelig utdanning og praksis i samsvar med vedlegg E i Forskrift om bruk av dyr i forsøk. Opplæringen skal gjennomføres før man utformer forsøk, utfører forsøk, steller dyr eller avliver dyr. Det settes og krav om dokumentasjon av kompetansen gjennom kontinuerlig praksis og utdanning. Mattilsynet presiserer at det er hver enkelt forsker sitt ansvar å sørge for at sin egen CV er oppdatert i forhold til krav til kontinuerlig oppdatering og etterutdanning i forsøksdyrlære .



Fotos E. Senneset

Foto/ill.: E. Sennesth



Education and training framework adapted to Directive 2010/63 published by the European Commission



# Caring for animals aiming for better science

EU GUIDANCE ON THE IMPLEMENTATION OF DIRECTIVE 2010/63/EU ON PROTECTION OF ANIMALS USED FOR SCIENTIFIC PURPOSES

Contributing to  
the humane use of animals in  
biomedical research and to the collection  
of informative unbiased and reproducible data.

Regulations and ethics

Characteristics of the animal  
Model

Influence of external factors

Planning experiments and  
research design

Managing the human factor

Laws, regulations,  
guidelines, 3R, ethics

Anatomy,  
physiology, genetics,  
microbiology ++

Environmental  
conditions,  
Procedures.++

Experim. Design  
**Statistics,**  
Quality control,

Communication  
Cooperation,  
Coordination

Syntheses by  
BRØNSTAD 2009

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# FELLES TEORETISK NASJONALT KURS

Utviklet i samarbeid mellom de medisinske fakultet ved  
UiB, UiO, UiT, NTNU og også NMBU

Siv Eggen og Anne Åm - NTNU

Henrik Rasmussen, Knut Tomas Dalen, Cathrine Fagernes, Gro Furset Flatekval– OUS/IUO

Siri Knudsen – UiT/NMBU

Aurora Brønstad og Suzanne Brandt - UiB

**Implementert 2023**



UIB > K1 > MED > The Laboratory Animal Facility > Education and training >

COURSE IN ANIMAL RESEARCH (CAREIN)

## CAREiN - Course in Animal Research

The University of Bergen is offering a web-based course in animal research (CAREIN), which is co-created with the University of Oslo, The University of Tromsø and The Norwegian University of Science and Technology. The course amounts to 8 ECTS credits, and meets the requirements stated in the European Union Commission's «Education and training framework», functions A, B and D.



### About the course

The main purpose of the course is to ensure ethical and humane handling of experimental animals, training in experimental design of experiments involving animals, and collection of informative, objective and reproducible research data from conducted animal studies.

The course covers the species groups of rodents, swine and model fish (i.e. zebrafish, medaka) when utilized as model organisms in biomedical research. Adequate training is required by law for personnel who are planning and/or performing animal experiments in Norway. The course meets the **theoretical** requirements for training in functions A, B and D in accordance with the [EU-framework for education and training](#).

Please note that in order to perform procedures on animals (functions A and D), one must also complete practical training accordingly. Modules covering practical training is not part of CAREIN, but is offered as separate courses by the universities.

**Rodents, pigs and model fish**



UNIVERSITETET I BERGEN

## ARTSSPESIFIKK OPPLÆRING VED UIB



# Competence of personnel

**Species Specific Training:** after successful completion of the initial training module for a species/group of species, skills expansion to further species will require demonstration of attainment of learning outcomes for the new species within the same module. However, it may not be necessary to repeat all elements of the initial training module for the new species to achieve the learning outcomes required for the additional species. Module providers will be able to exercise discretion in determining which of the learning outcomes will be required for the new species as these will have to be assessed on a case by case basis.

## Core Modules - Functions A, B, C & D

1	National legislation
2	Ethics, animal welfare and the Three Rs (level 1)
3.1	Basic and appropriate biology – species specific (theory)
4	Animal care, health and management – species specific (theory)
5	Recognition of pain, suffering and distress - species specific
6.1	Humane methods of killing (theory)

## Function Specific (Prerequisite) Modules - Function A

3.2	Basic and appropriate biology – species specific (practical)
7	Minimally invasive procedures without anaesthesia – species specific (theory)
8	Minimally invasive procedures without anaesthesia – species specific (skills)

## Function Specific (Prerequisite) Modules - Function B

7	Minimally invasive procedures without anaesthesia – species specific (theory)
9	Ethics, animal welfare and the Three Rs (level 2)
10	Design of procedures and projects (level 1)
11	Design of procedures and projects (level 2)



# LAS 301 - Grunnmodul forsøksdyrlære

Kursert omfatter første del av kurs i forsøksdyrlære. Denne delen er felles for alle dyrearter.



Foto/ill.: E. Sennesth

# 1.

LABORATORY ANIMAL SCIENCE (LAS)

## LAS 303 Kurs i forsøksdyrlære, spesialdel fisk

UiB tilbyr fordypningsdel på fisk i sine forsøksdyrlære kurs.



Omvisning på Marinelholmen RASlab og er et resirkuleringsanlegg for fiskeforsøk  
Produsent: Frode Ims

# 2.

**Species Specific Training:** after successful completion of the initial training module for a **species**/group of **species**, skills expansion to further **species** will require demonstration of attainment of learning outcomes for the new **species** within the same module. However, it may not be necessary to repeat all elements of the initial training module for the new **species** to achieve the learning outcomes required for the additional **species**. Module providers will be able to exercise discretion in determining which of the learning outcomes will be required for the new **species** as these will have to be assessed on a case by case basis.

### Core Modules - Functions A, B, C & D

1	National legislation
2	Ethics, animal welfare and the Three Rs (level 1)
3.1	Basic and appropriate biology – <b>species</b> specific (theory)
4	Animal care, health and management – <b>species</b> specific (theory)
5	Recognition of pain, suffering and distress - <b>species</b> specific
6.1	Humane methods of killing (theory)

### Function Specific (Prerequisite) Modules - Function A

3.2	Basic and appropriate biology – <b>species</b> specific (practical)
7	Minimally invasive procedures without anaesthesia – <b>species</b> specific (theory)
8	Minimally invasive procedures without anaesthesia – <b>species</b> specific (skills)

### Function Specific (Prerequisite) Modules - Function B

7	Minimally invasive procedures without anaesthesia – <b>species</b> specific (theory)
9	Ethics, animal welfare and the Three Rs (level 2)
10	Design of procedures and projects (level 1)
11	Design of procedures and projects (level 2)

[Forsøksdyrlære kurs](#) | [Dyreavdelingen](#) | [UiB](#)

LAS kurs på UiB for personer som  
planlegger prosedyrer og prosjekter (funksjon B)

Gruppearbeid og eksamen LAS 302/303

LAS 303: fisk  
Anestesi, miljøbetingelser  
Fiskevelferd og fiskeadferd  
Biologi for vanligste fiske arter  
Ernæring, Håndtering  
Stress og Sykdom

Eksamen LAS 301

Gruppearbeid LAS 301

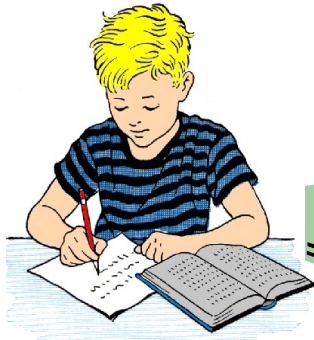
Part 1 - LAS 301  
Lovgivning, administrative prosedyrer, Søknad FOTS, Etikk, 3R  
Generell anestesi, HMS, Humane endepunkter, belastingsgrad  
Design av forsøk

Online forberedelser

Kvalifisert for å planlegge og design forsøk

Kvalifisert for å starte praktisk opplæring

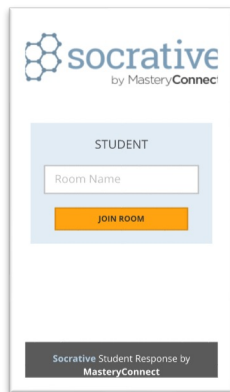
# Undervisningsmetoder



Selvstudier



Online



Diskusjoner



Gruppearbeid

EKSAMEN

# Praksisopplæring

- Nødvendig for dem som skal utføre prosedyrer (Funksjon A)
- Tilleggsmodul til teoretiske opplæringen
- Unik for hvert lærested



Qualified function A for the procedures that are documented



## Training without use of live animals

- [Alternatives lab at Dyreavdelingen | The Laboratory Animal Facility | UiB](#)

At our AltLab (Alternatives lab for work with lab animal models) you can find models that can replace use of live animals for training and education.

The ROKER-rat is useful for learning intubation and blood sampling. The tail is full of "bones" and makes the experience realistic. The flex-jaw rat model shows rat anatomy and is good for dissecting training.

The Squeakies rat helps you to deal with any rat phobia, and to train on handling techniques and ear tagging.

"Minor Skin Procedures" helps you to practice on some surgical techniques.

In the MD-PVC-MODEL film you can see about 25 different surgery techniques like transplantation of ovine and organs and injections.

The AltLab also works as a library for selected DVDs, like: Endotracheal Intubation, Laboratory Animal Anaesthesia, Surgery and Perioperative Care, Laboratory Animal Anaesthesia: Rat & Mouse, Experimental Design, Human Endpoints, and a few brochures on the subject alternatives to the use of laboratory animals.

We recommend the AltLab particularly to new technicians, PhDs and other students who have little experience with laboratory animals.

The AltLab is situated in the lab animal facility at the BB building. Joanna Stormark is responsible for the lab. The AltLab is one of the 3R initiatives from the Lab animal facility at the UiB, and is partly funded by the Norwegian Animal Protection Alliance.

Velkommen!



The Laboratory Animal Facility is accredited by AAALAC International



The guide (for the care and use of laboratory animals) is more helpful with this regard



- All personnel involved with the care and use of animals must be adequately educated, trained, and/or qualified in basic principles of laboratory animal science to help ensure high-quality science and animal well-being
- The institution should provide appropriate education and training to members of research teams—including principal investigators, study directors, research technicians, postdoctoral fellows, students, and visiting scientists—to ensure that they have the necessary knowledge and expertise for the specific animal procedures proposed and the species used (Conarelllo and Shepard 2007).
- Training should be tailored to the particular needs of research groups; however, all research groups should receive training in animal care and use legislation, IACUC function, ethics of animal use and the concepts of the Three Rs, methods for reporting concerns about animal use, occupational health and safety issues pertaining to animal use, animal handling, aseptic surgical technique, anesthesia and analgesia, euthanasia, and other subjects, as required by statute.
- Staff should receive training and/or have the experience to complete the tasks for which they are responsible.

### European Convention for the Protection of Vertebrate Animals used for Experimental and Other Scientific Purposes – Part VII – Education and training

- 3. Procedures referred to in paragraph 1 of this article shall be restricted to those absolutely necessary for the purpose of the education or training concerned and be permitted only if their objective cannot be achieved by comparably effective audiovisual or any other suitable methods.

### Policy by the Animal welfare body at UiB

# Oppfriskning kurs

## Oppfriskningskurs

- Alle som har kurs fra før 1/7-2015 eller for mer enn 5 år siden, eller som har vært borte fra forsøksdyraktivitet en lengre periode bør ta et oppfriskningskurs.
- Kurset består av forberedelser som selvstudier og 1/2 dags samling
- Neste kurs går
  - 10 januar 2023 (gnager/lab dyr)
  - 11 januar 2023 (fisk)
- [Lenke til påmelding her](https://www.uib.no/fg/dyreavdelingen/64685/forsøksdyrlære-kurs#oppfriskningskurs)

<https://www.uib.no/fg/dyreavdelingen/64685/forsøksdyrlære-kurs#oppfriskningskurs>