



COMPARATIVE MEDICINE

CKF3214, Function B- to Design Procedures and Projects Involving Research Animals, 3 credits (hec)

Funktion B - att uforma procedurer och projekt med försöksdjur, 3 högskolepoäng

Third-cycle level / Forskarnivå

Approval

This syllabus was approved by the The Committee for Doctoral Education on 2023-12-01, and was last revised on 2024-09-05. The revised course syllabus is valid from spring semester 2025.

Responsible department

Comparative Medicine, Faculty of Medicine

Prerequisite courses, or equivalent

Previous education in laboratory animal science to carry out scientific procedures on animals Function A.

Certifications from the previous named courses (Function A), must be sent to las-edu@km.ki.se.

Purpose & Intended learning outcomes

Purpose

The course provides education to doctoral students and scientists who will be involved in the design of scientific procedures involving research animals as part of their research. This course also provides education in laboratory animal science to doctoral students who are not necessarily directly involved with studies using in vivo models but would like to learn how to better interpret and analyze scientific data generated from animal studies.

Intended learning outcomes

After completion of this course, students should be able to meet the defined learning outcomes outlined by the Swedish Legislation (L150) and the EU Education and Training guidelines, specifically for modules 7 (rodents), 9, 10,11, as well as encompassing learning outcomes from EU modules 1 and 2, 6.1, 20,21, 22, 25, 52 and 60. The list of suggested learning outcomes by the EU guidelines is extensive but in summary, participants will acquire the knowledge required to

design and evaluate scientific procedures involving research animals.

The learning outcomes includes the following areas:

- Legislation (Swedish laws and regulations and EU directive), ethics, laboratory animal welfare, and the principles of the 3Rs.
- Procedures pertaining to animals utilized in scientific research, with a particular emphasis on rodents, but also covers Zebrafish.
- Experimental design and the statistical analysis of animal studies.
- Adherence to good scientific practices in animal research.

Course content

This course follows the EU guidelines for the education and training of persons designing scientific procedures and projects using animals, i.e. Function B, as stated in the Swedish Legislation (SJVFS2019:9) and the EU Directive 2010/63 on the protection of animals used for scientific purposes. In particular, this course will cover the Function B specific modules established in the European Union guidelines such as modules EU 7 (Minimally invasive procedures without anesthesia for rodents and lagomorphs), EU 9 (Ethics, animal welfare, and the 3Rs - level 2), EU 10 (Design of procedures and projects - level 1), EU 11 (Design of procedures and projects - level 2), EU 12 (Severity Assessment), EU 25 (Project Evaluation), EU 52 (non-animal alternatives), EU 60 (Developing in vitro methods and approaches for scientific and regulatory use).

Forms of teaching and learning

This course adopts a blended learning approach, combining in-person seminar lectures, e-learning, independent study, group tasks and presentations (evaluation and assessment of ethical applications) and in-class discussions.

Language of instruction

The course is given in English

Grading scale

Pass (G) /Fail (U)

Compulsory components & forms of assessment

Compulsory components

Full course attendance and active participation are mandatory. To be eligible for the final exam, students must have attended a minimum of 70% of the live sessions. Any missed parts of the course must be compensated in agreement coordination with the course leader.

Forms of assessment

The acquired knowledge will be assessed through the participants' oral presentations, including feedback and discussions with the examination board. Furthermore, a multiple-choice test is done.

To pass the multiple-choice test, a 70% quote must be reached. In case of failure of the test, an extra multiple-test will be done.

Course literature

Handouts and e-learning material will be made available online at the learning platform Canvas. As the key reference material, the students are referred to:

1. Swedish legislation on the Protection of Animals Used in Science (2018). L150, SJVFS 2019:9.
2. EU legislation on the Protection of Animals Used in Science (2010). Directive 2010/63/EU.
3. Handbook of Laboratory Animal Science: Essential Principles and Practices. Hau, Jann; Schapiro, Steven Jay 3. ed.: Boca Raton: CRC Press, cop. 2011 - 723 s. ISBN:978-1-4200-8455-9 (vol.1) LIBRIS-ID:12096142
4. Lab Animal Welfare. <https://flairelearning.com/course/recognition-and-prevention-of-pain-suffering-and-distress>
5. Lab Animal Anaesthesia. <https://flairelearning.com/course/anaesthesia-for-minor-procedures/>
6. Lab Animal Euthanasia. <https://flairelearning.com/course/humane-methods-of-killing-laboratory-animals/>
7. Experimental design and statistics of animal studies. <http://www.3rs-reduction.co.uk/>
8. <https://learn.etplas.eu/>
9. <https://norecopa.no>