Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

SLUkurs

Syllabus

PVS0003 Reproductive biotechnology, 6.0 credits

Syllabus approved

2003-06-25

Subjects

Veterinary Medicine

Education cycle

Third cycle

Grading scale

Pass / Failed
The requirements for attaining different grades are described in the course assessment criteria which are contained in a supplement to the course syllabus. Current information on assessment criteria shall be made available at the start of the course.

Language

English

Prior knowledge

The course is intended for postgraduate students in veterinary medicine or animal science.
Prior knowledge required: Basal knowledge of animal physiology.

Objective, including learning outcomes

The course aims at providing postgraduate students with an overview of biotechnologies applied to reproduction in domestic animals. It covers relevant aspects of

comparative reproduction and developmental biology (mainly in domestic animals), gamete handling, embryo production and embryotechnology. The course is based upon lectures, seminaries and demonstrations and it is given in English.

Content

1) Lectures will be provided in the following areas:

Basic reproductive anatomy and physiology
-gamete production in males and females
-gamete transport
- fertilization

Embryo development in vivo
- basics of early embryo development
- comparative aspects

Gamete handling, comparative
- semen collection
- semen preservation (incl. freezing)
- artificial insemination in vivo
- oocyte collection (incl OPU)
- oocyte maturation and preservation (incl freezing)

Embryo production in vitro
- gamete selection procedures
- In vitro fertilization, ICSI
- in vitro culture (morula/blastocyst production)

Embryo technology
- Embryo transfer (incl MOET)
- embryo preservation (freezing, various methods)
- cleavage, biopsy, sexing
- cloning
- transgenesis and basic tools (microinjection, cell fusion, transfection, etc)

2) Demonstrations and practicals:

- Semen collection (various domestic species)
- Oocyte retrieval (OPU)
- Gamete freezing (incl thawing and comparative AI-technologies)

- IVM-IVF-IVC

3) Within-course seminaries

Each participant will be given a minor review task, selected upon her/his area of interest. The participant should review literature and present (orally) a summary of relevant aspects to the course mates.

Requirements for examination

There will be no formal examination. Presence is required, both during lectures and demonstrations, and students are demanded to actively participate in the within-course seminars.

Additional information

DEADLINE FOR APPLICATION:
September 12, 2003

On-line registration possible at www.og.slu.se/forskning/courserepbio03/

Responsible department

Department of Clinical Sciences