

APPLICATIONS OF GENETIC ENGINEERING IN VETERINARY SCIENCES

Study programme: MIMV Curricular Year: 1st Semester: 2nd Compulsory Credits: 2,5 ECTS

Lecturer(s): Carlos M.G.A. Fontes (CCP, R), Luís M.A. Ferreira

1. Contact hours:

Lectures - 28 Practicals – 18 Lecture/Practicals – 6 Field work - 4 Total – 56

2. Objectives: The course in Applications of Genetic Engineering in Veterinary Sciences will describe the applications of the recombinant DNA technology to introduce and measure genomic modifications in microorganisms, plants and animals, in order to develop novel biotechnologies in biomedicine, animal production, agriculture, food and environmental protection, and considering the main bioethic, social and economic implications.

3. Programme:

1. Concepts of genetic engineering.
2. Genetic engineering technology: transgene detection, quantification of gene expression.
3. Genetic engineering and animal improvement
4. Genetic engineering and veterinary diagnostics
5. Practical examples of molecular diagnostics
6. Genetic engineering and Biomedicine
7. Applications in Animal Production
7. Legislation, bioethics and risks in genetic engineering

4. Bibliography:

Videira, A. (2011). *Engenharia genética: princípios e aplicações*. Editora Lidel.

Tourte, Y. (2002). *Engenharia Genética e Biotecnologias: conceitos e métodos – aplicações à agronomia e às bioindústrias*. Instituto Piaget, Lisboa.

4. Assessment:

The students' knowledge is evaluated at the end of the term with a written examination including all subjects of the programme.