



## Biotechnology of bovine reproduction

ECTS: 1.00

### SUBJECT MATTER CONTENT

#### LECTURE

The general purpose of the lectures is to understand the following: Legislation governing the use of methods of biological female reproduction in cows; hormonal regulation of cycle and growth and follicular maturation; factors influencing the development and maturity of oocytes; methods of assessment of oocytes, fertilization biology and early embryos; methods of superovulation and synchronization of the cycle; embryo transfer; methods of embryo evaluation; in vitro fertilization techniques.

#### CLASSES

Students will learn how to control ovarian function, techniques, and practice in the hands-on labs oocytes collection, embryo collection techniques, methods for assessing the quality of oocytes and embryos, embryo transfer techniques

#### TEACHING OBJECTIVE

Acquisition of knowledge and skills in bovine reproductive biotechnology, mainly embryo transfer

#### DESCRIPTION OF THE LEARNING OUTCOMES OF THE COURSE IN RELATION TO THE DESCRIPTION OF THE CHARACTERISTICS OF THE SECOND LEVEL LEARNING OUTCOMES FOR QUALIFICATIONS AT LEVELS 6-8 OF THE POLISH QUALIFICATION FRAMEWORK IN RELATION TO THE SCIENTIFIC DISCIPLINES AND THE EFFECTS FOR FIELDS OF STUDY:

**Symbols for outcomes related to the discipline:**

R/WA\_P7S+++

**Symbols for outcomes related to the field of study:**

A.W17. +, A.U6. +, A.U11. +, K.10.+, A.W10. +, A.U4. +, B.U2. +, K.11.+, K.4.+, A.W12. +, B.U13. +, A.W11. +, A.U12. +, B.U10. +, A.W1. +

#### LEARNING OUTCOMES:

##### Knowledge:

W1 – After the course, the student knows and understands the biologic and hormonal regulation of growth and development of follicles and oocytes, principles and methods of embryo transfer and in vitro fertilization.

##### Skills:

U1 – After the course, the student will learn about the techniques used to assess the condition of the ovaries, the techniques used to collect and evaluate oocytes and embryos, and the embryo transfer technique.

##### Social competence:

**Legal acts specifying learning outcomes:**  
**682/2020**  
**Disciplines:** Veterinary science  
**Status of the course:** Fakultatywny  
**Group of courses:** B - przedmioty kierunkowe  
**Code:** ISCED 0841  
**Field of study:** Veterinary Medicine  
**Scope of education:**  
**Profile of education:** General academic  
**Form of studies:** full-time  
**Level of studies:** uniform master's studies  
**Year/semester:** 4/8

**Types of classes:** Lecture, Classes  
**Number of hours in semester:** Lecture: 5.00, Classes: 10.00  
**Language of instruction:** Polish  
**Introductory subject:** reproduction and obstetrics of farm animals, livestock farming, animal nutrition  
**Prerequisites:** knowledge of animal anatomy and physiology and the basis of animal reproduction, skill clinical examination of animals

**Name of the organisational unit conducting the course:** Katedra Rozrodu Zwierząt z Kliniką  
**Person responsible for the realization of the course:** dr wet. Małgorzata Rudowska  
**e-mail:** malgorzata.rudowska@uwm.edu.pl

**Additional remarks:**

K1 – The student shall demonstrate the initiative and skills in practical activities related to the implementation and implementation of the methods of biomaterials in cattle. He shall cooperate with the breeder and the State veterinary inspection.

### **TEACHING FORMS AND METHODS:**

Lecture(W1;U1;K1;):Multimedial presentation  
Classes(W1;U1;K1;):practical classes, seminars

### **FORM AND CONDITIONS OF VERIFYING LEARNING OUTCOMES:**

Lecture (Part in the discussion) - Participate in the discussion - Assessment based on engagement in class and activity during the discussion. In the case of. the upper suspension of the classroom and the need for remote learning, as stated in the syllabus in the learning outcomes verification method, so the exam and exercise completion patterns may change appropriately -

Classes (Evaluation of the work and cooperation in the group) - Evaluation based on the number of correctly performed descriptions of the gynecological examination of cows. Rating range 2-5, with thresholds as follows: 94-100%, rating: Very good (5,0); 87-93%, rating: Good plus (4,5%); 80-86%, rating: Good (4,0); 73-79%, rating: Sufficient plus (3,5); 66-72%, rating: Sufficient (3,0); 65%, rating: Insufficient (2,0). If you are taking a classroom or need a remote learning experience, the methods you declare in the syllabus to verify that learning outcomes are achieved, so that exam and exercise passing patterns may change in a way that is appropriate to the situation. -

### **BASIC LITERATURE:**

1. Thomas J. Divers, Simon F. Peek, *Choroby bydła mlecznego*, Tom 1,2, Wyd. Elsevier Urban Wrocław, R. 2011

### **SUPPLEMENTARY LITERATURE:**

