Study Program/Study Programmes: DAS Agronomy	
Type and level of studies: Doctoral Studies (PhD)	
Course Unit Title: Modern Biotechnologies of Domestic Animals Reproduction Control	
Lecturer (First Name, Middle Initial, Last Name)**:** Prof dr. Saša B. Dragin, Associate Professor	
Course status: Elective	
Number of ECTS allocated: 10	
Prerequisites: None	

Course Aims:

Gaining knowledge about modern methods applied in controlled (assisted) reproduction of animals, in industrial conditions. The aim of the subject is also to form experts capable of scientific research work and the application of scientific achievements and new technologies in the reproduction of animals.

Learning Outcomes:

Creation of highly specialized scientific workers with academic education, who are able to engage in scientific research in the area of modern cattle production, based on expanded and deepened knowledge in the field of biotechnology in reproduction, in order to improve reproductive and production processes.

Theory:

Introduction; Definition of controlled (assisted) reproduction of domestic animals; Induction and synchronization of sexual maturation; Synchronization of oestrous and ovulation of sexual mature animals; Superovulation Induction; Methods of gravidity diagnosis; Induction of partus; Control of establishing of post-partum oestrous cycle; Artificial Insemination; Transplantation of embryo; Gamete and embryo manipulation (production of gametes; in vitro fertilization; cloning of embryos; Gamete and embryo sex determination; Production of chimera; Production of transgene animals; In vitro preservation of gametes and embryos); Control of cattle reproduction; Control of sheep and goats reproduction; Control of pigs reproduction; Control of poultry reproduction.

Practice:

Anatomy and histology of male and female reproductive system of domestic mammals and birds; Classic and new technologies of Artificial Insemination of domestic animals; Gamete production methods; Oestrous synchronization methods; Surgical and non-surgical method of embryo transplantation; Modern evaluation methods of reproductive effectiveness of breeding animals in intensive production.

Required Reading:

1. Saša Dragin, Stoja Jotanović, Ivan Stančić: Biotechnology in animal reproduction, Faculty of Agriculture, Novi Sad, 2016.
2. Gordon, I.: Reproductive Technologies in Farm Animals.CAB Int. Publ., Wallingford, UK, 2005.
3. Feldman, E., Nelson, R.: Canine and Feline Endocrinology and Reproduction. Saunders, Elsevier, 2003.

Number of contact hours: 150

Lectures: 60	Practice: /	Students research work: 90	Other classes: /

Teaching Methods:

Traditional lectures and consultations, seminary work, mentoring, field practice (visits to institutions and/or companies and discussion about production problems related to biotechnology in reproduction).

Knowledge assessment (maximum of 100 points)

Pre-exam obligations	Points (45)	**Final Exam**	Points (55)
Active class participation	10		
Preliminary exam(s)	20	Written exam	30
Seminar(s)	15	Oral exam	25