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| Znak univerziteta | UNIVERSITY OF NOVI SADFACULTY OF AGRICULTURE 21000 NOVI SAD, TRG DOSITEJA OBRADOVIĆA 8 | Znak fakulteta2 |
| Study Programme AccreditationUNDERGRADUATE ACADEMIC STUDIES *ANIMAL SCIENCE* |
| Table 5.2 Course specification |

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| Course: | *BIOTECHNOLOGY IN ANIMALS REPRODUCTION* |
| Course id: 3OST5I43 |
| Number of ECTS: |
| Teacher: | Dr Saša B. Dragin, docent |
| Course status | Elective |
| Number of active teaching classes (weekly) |
| Lectures:30 | Practical classes:30 | Other teaching types: | Study research work: | Other classes: |
| Precondition courses | None/ Physiology of Domestic Animals |
| 1. Educational goal

Detailed introduction to contemporary theoretical and practical knowledge in the field of biotechnological methods of control reproductive processes (full maturation, estrous cyclicity, fertilization and pregnancy, partus and lactation) at various animal species. Detailed introduction to modern technologies, artificial insemination and embryo transplantation, as well as the methods of in vitro manipulation of gametes and early embryos (in vitro maturation and fertilization of oocytes, reproductive cloning of early embryos, obtaining identical twins, forming chimera, transgenesis, long-term storage of sperm, oocytes and early embryos, the formation of ex situ gene banks). The application of these findings for understanding and practical problem solving from other related disciplines of animal science and practices. |
| 1. Educational outcomes

Qualifications of students to independently apply modern management methods of reproductive biotechnology functions of domestic mammals, and other species of mammals and birds. After completion of the course, acquired knowledge can be successfully transferred to other persons, and that can have qualify B.Sc. students for studies at higher education levels in the area of biotechnological sciences (master studies). |
| 1. Course content

Theory lessons:1. Functional morphology of the male and female reproductive organs of mammals and birds; Physiology of reproduction: mammals and birds (endocrine regulation of reproductive function; physiology of female sexual function; Physiology male sexual function).
2. Biotechnology of reproduction: artificial insemination of cattle, pigs, sheep, goats, horses, dogs, cats and domestic birds; Embryo transplantation; manipulation of gametes and early embryos in vitro; Induction of estrus; Induction of superovulation; Induction and synchronization of oestrus outside the breeding season of sheep, goats and mares; synchronous induction of parturition; Methods diagnose pregnancy; Determination half of gametes and embryos.

Practical classesa) Laboratory exercises: Anatomy and histology of male and female sexual organs; Endocrinology playback; Control the quality of sperm; Dilution of sperm and formation of insemination doses; Methods for detection of estrus; Development fetal and embryonic sheath material; Methods of diagnosis of pregnancy; Help with normal parturition; Analysis and evaluation reproductive efficiency of the herd.b) Field exercises: Perform on livestock farms and the experimental farm of the Department of Animal Husbandry, and include: Artificial insemination of certain species of domestic animals; Hygiene and health care for certain categories of breeding animals. |
| 1. Teaching methods

Lectures, (oral presentation), slides, ppt-presentation, preparation examination , practical work (laboratories and on farms), consultations, term papers. |
| Knowledge evaluation (maximum 100 points) |
| Pre-examination obligations | Mandatory | Points | Final exam (izabrati) | Mandatory | Points |
| Lecture attendance | Yes | 5 | *Oral part of the exam* | Yes | 50 |
| Test (2) | Yes | 40 |  |
| Exercise attendance | Yes | 5 |
| Term paper | No |  |
| Literature  |
| Ord. | Author | Title | Publisher | Year |
|  | Stančić B. | Reprodukcija domaćih životinja | Poljoprivredni fakultet Novi Sad | 2008. |
|  | Dragin S., Stančić I., Erdeljan M.  | Reprodukcija domaćih životinja (prakticum).  | Poljoprivredni fakultet Novi Sad | 2011. |
|  |  Stančić B., Veselinović S. | Biotehnologija u reprodukciji domaćih životinja  | Poljoprivredni fakultet Novi Sad | 2002. |
|  | Stančić, B. | Tehnologija veštačkog osemenjavanja svinja (practicum) | Poljoprivredni fakultet, Novi Sad | 2006. |
|  | Gordon I.  | Reproductive Technologies in Farm Animals | CAB Int. Publ., Wallingford, UK | 2005. |