Study program: REPRODUCTIVE BIOLOGY

Course title: Physiology and endocrinology of female reproductive system

Teacher: Nebojsa Andrić, Kristina Pogrmić-Majkić, Svetlana Fa, Danijela Kirovski, Vladislav Volarević

Course status: obligatory

ECTS: 5

Requirements: -

Course objectives

After completion of this course the students will have expended and balanced knowledge of the physiology and endocrinology of the female reproductive system. The students will be capable to plan and conduct the experiments and analyse the results.

Learning outcomes

It is expected that the students should:
- Describe the ovarian function, folliculogenesis and the role of hormones in the follicular development
- Describe oogenesis and changes in the preovulatory follicle during ovulation
- Explain menstrual cycle, estrus cycle, menopause and control mechanism involved in these processes
- Describe fertilization, immunological and hormonal control of implementation, pregnancy and parturition
- Understand difference in estrous cycle among different animal species
- Understand cellular and molecular mechanisms involved in maternal immune tolerance towards fetal antigens
- Independently select scientific publications and prepare presentation on selected topic

Syllabus

Theoretical instruction

The structure and function of the female reproductive system; Fetal ovary; Gonadotropins and prolactin; The ovarian cycle; oogenesis and ovulation; The ovarian steroidogenesis and steroid hormones; Neuroendocrine control of the menstrual cycle; Neuroendocrine control of the puberty; Molecular mechanism of the fertilization and implantation; Endocrinology of pregnancy, parturition and lactation; Menopause; Comparative physiology of the estrous cycle in domestic animals; Molecular base of the interactions between cells of immune system and female reproductive system; Maternal immune tolerance towards the fetal antigens.

Seminar instruction

Presentation of the selected publication; through research project, the student will describe the scientific problem, methodological approaches and analyse the results.

Literature

1. Yen & Jaffe's Reproductive Endocrinology; Physiology, Pathophysiology and Clinical Management, Strauss JF III, Barbieri RL (Eds.), Elsevier 2014., (7th edition)
2. Knobil and Neill's Physiology of Reproduction, Plant T, Zeleznik A (Eds.), Elsevier 2014., (4th edition)
3. Cupps T Perry, Reproduction in Domestic Animals, Elsevier 1991., (4th edition)
4. Jones R.E. and Lopez K., Human Reproductive Biology, Academic press, 2014.
5. Jonson M.H., Essential Reproduction, Wiley-Blackwell, 2015.
6. Abul K. Abbas, Andrew H. H. Lichtman, Shiv Pillai. Cellular and Molecular Immunology, Elsevier, 2018., (9th edition)
7. Kenneth Murphy, Janeway's Immunobiology, Garland Sciences, 2014., (8th edition)
8. Review papers in the field of reproductive physiology and endocrinology of females

Weekly teaching load	**Lectures**: 2	**Practical lectures:** 0+0+2

Teaching methods

Teaching, consultation; seminars

Evaluation of knowledge (maximum score 100)

Pre-exam obligation	Points	**Final exam**	Points
Student engagement in lectures	5	Test/Written exam	60
Seminars	10 + 25		