Study program: REPRODUCTIVE BIOLOGY

Course title: Fertilisation and embryogenesis

Teacher: Dušan Lalošević

Course status: obligatory

ECTS: 6

Requirements: -

Course objectives

Detailed understanding of the gametogenesis process, in vivo fertilization phases, the formation of the conceptus and embryos, practical recognition of the detailed material of the mammalian gonads under the microscope, whole embryos and embryonic tissues.

Learning outcomes

Upon completion of this course, the student will be able to:
1. explain the development of gametes in human embryos, fetuses and in adults; 2. describe in detail the structure of the gametes and the role in the fertilization process; 3. explain the process of fertilization; 4. define in detail the development of the conceptus through weeks, from zygote to embryo; 5. explain the development of organic systems in the fetus with a special emphasis on the development of the genital tract.

Syllabus

Lectures

Introduction and history of reproductive biology - embryology as a science. Ovogenesis. Spermatogenesis. Phases of fertilization in vivo. Cleavage. Blastulation. Implantation. Gastrulation and neurulation. Branchial system and development of the main part of the embryo. Development of the cardiovascular system. Development of the digestive system. Development of respiratory, urinary, genital and endocrine systems. Basics of teratology.

Practical teaching

Microscopic exercises on animal and human material, analysis of histological preparations of male and female genital system and embryos.

Literature

1. Sadler T., Langman's Medical Embryology. 10th ed. Lippincott, Williams & Wilkins, Baltimore, 2006.
2. Gilbert S.F., Developmental biology. Sinauer Associates, Inc. USA 2003.

Weekly teaching load

Lectures: 3	Practical lectures: 2+0+0

Teaching methods

Lectures, microscopic exercises, seminar, consultations.

Evaluation of knowledge (maximum score 100)

Pre-exam obligation	Points	**Final exam**	Points
Student engagement in lectures	10	Test/Written exam	
Practical laboratory		Oral exam	60
Tests	30		