

Level: master				
Course title: CELL SIGNALLING IN REPRODUCTION				
Status: elective				
ECTS: 5				
Requirements: -				
Learning objectives Objective of this course is to enable students to understand and learn basic terms and principles of the communications between the cells and their environment, as well as the molecules and signaling transduction pathways involved in the transfers of the information in the cells till ultimate effectors in reproductive system. Moreover, students will be able to scientifically interpret experimental data in cell signalling.				
Learning outcomes At the end of the course, the students will be able to describe general characteristics of intracellular signalling pathways and types of network for detection, transduction, transmission, propagation and amplification of information to generate adequate reproductive biological response, and apply critically analysis and discuss scientific papers in cell signalling.				
Syllabus <i>Theoretical instruction</i> General review of cell communication types, as basic pathways in signalling transduction in reproductive biology. Receptors and trimeric G-protein mediated signalling pathways. Enzyme receptors and enzyme linked receptors. Membrane phospholipids signalling. Signalling pathways that regulate cell proliferation. Receptors and signalling pathways that include proteolysis. Intracellular receptors. Functional organization of proteins in membranes. Signalling that regulates cell adhesion. Cell death. <i>Practical instruction</i> Students will be introduced to basic approach and methods for studying cell communication. Practical instruction comprises the following analyses: RT-PCR, Western blot; stimulation/inhibition of elements in signalling pathways; up (overexpression)/down (siRNA, dsRNA, antisense); regulation of elements in signalling pathway; phosphorylation analysis of elements in signalling pathway. Individual work on a small scientific project in the field of cell communication mechanism.				
Weekly teaching load				Other: -
Lectures:2	Exercises: -	Other forms of teaching: -	Student research: 3	