

Course title	Molecular biology of the eukaryotic cells		
Course code	Semester	ECTS	Lectures/ classes
13.1.1449	winter/ summer	2	Lectures: 15 hours
Name of the lecturer and contact	prof. dr hab. Anna Herman-Antosiewicz; dr hab. Monika Słomińska-Wojewódzka, profesor uczelni; anna.herman-antosiewicz@ug.edu.pl		
Prerequisites	none		
Course description	Control of DNA replication initiation and progression in relation to the cell cycle, DNA damage, chromatin remodeling. Control of cell cycle progression as a response to stress (DNA damage, spindle defects, lack of growth factors). Molecular mechanisms of cell cycle checkpoints, senescence and cell death. Mutagenesis and DNA repair pathways. Chromatin structure and gene expression. Structure of mRNA and tRNA molecules. Structure and wobble rules of the genetic code. Mechanism of action of aminoacyl-tRNA synthetases. Detailed discussion of the course and mechanisms of initiation, elongation and termination of translation process in eukaryotic cells. Regulation of gene expression at the level of translation process.		
Learning outcomes	<p>Knowledge:</p> <ul style="list-style-type: none"> - describes the molecular mechanisms of expression and variation of genetic information and the importance of these processes in the functioning of cells and whole organisms - explains theoretical foundations of experimental methods investigating cell's responses to DNA damage or other stresses <p>Skills:</p> <ul style="list-style-type: none"> - independently searches for and uses available sources of biological information, including electronic resources 		