

SYLLABUS

Summer semester 2018/2019

(Lectures will be held Wednesdays starting on 27 February 2019 in lecture hall of the Institute of Human Genetics Polish Academy of Sciences)

Course	Cutting edge methodologies in molecular human genetics
Host Institution	Institute of Human Genetics Polish Academy of Sciences Strzeszyńska Street, 32
Language	English
The expected effects of teaching in terms of: knowledge, skills and social qualifications	Ph. D. student is supposed to: 1. Gain knowledge in several cutting edge methodologies which are currently in use in various studies of molecular basis of human diseases In particular, the following specific topics will be elaborated: - PAR-CLIP (Photoactivatable Ribonucleoside-Enhanced Crosslinking and Immunoprecipitation) and similar approaches in global identifications of RNA-protein interaction in the cell - Mass Spectrometry in proteomic research - Induced pluripotent stem cells (IPS) generation and modelling - Flow cytometry and cell sorting (FACS) - RNA and chromatin immunoprecipitation - Cutting edge imaging methods - CRISPER-Cas9 - Lipid droplet single cell RNA-seq analysis
Type of course	Facultative
Semester/year	Summer semester 2018/2019
First name/family name of the person responsible for the course	Prof. dr hab. Jadwiga Jaruzelska

First name/family name of the person responsible for the exam	Prof. dr hab. Jadwiga Jaruzelska
Format	Lecture will be held in English with usage of audio-visual equipment. Lecture will be followed by discussion
Basic and additional requirements	Skills in English and knowledge in molecular biology
Number of ECTSs	2 ECTS
ECTSs summary	1 ECTS corresponds to 25-30 hours of personal studies focused on broadening knowledge based on suggested bibliography (<i>vide</i> bibliography list below).
Method of teaching	Lectures will be held using power point presentation and a multimedia projector
Method of evaluation	Oral exam
Prerequisite for passing	Positive score at the exam
Topics	<ul style="list-style-type: none"> -PAR-CLIP (Photoactivatable Ribonucleoside-Enhanced Crosslinking and Immunoprecipitation) and similar approaches in global identifications of RNA-protein interaction in the cell - Mass Spectrometry in proteomic research - Induced pluripotent stem cells (IPS) generation and modelling - Flow cytometry and cell sorting (FACS) - RNA and chromatin immunoprecipitation - Cutting edge imaging methods - CRISPER-Cas9 - Lipid droplet single cell RNA-seq analysis
Additional material	<p>Presentation of each lecture in PDF format</p> <p>Bibliography related to each lecture</p>
Bibliography	will be given later