

## (SYLABUS)

**Name of the department / clinic providing the course:**

Department of Cell Cultures and Genomic Analysis

**Course title:** Międzynarodowa Szkoła Doktorska

**Course profile:** academic

**Speciality:**

**Level of course unit:**

**Course unit title:** Informatic tools for analysis of immunofluorescence and immunohistochemical staining

**Course unit code:** 10012863/13/60/126/222/2/2024

**Course aims:**

Familiarization with known, available and experimentally used organoid models and their practical use.

**Form of study:** Stacjonarne

**Year of study:** 1

**Types of educational activities and number of hours allocated:**

Subject	Language course	Self-study	Lecture	Exercises	Laboratory	Seminar	Practical	e-learning	Profession practice	Other (what?)	ECTS points
						5					

**Number of ECTS credits allocated and their structure according to students' from of learning:**

**Names of course unit's faculty:**

dr hab. n. med. Aleksandra Piechota - Polańczyk

## **Prerequisites:**

Knowledge of English at B2 level required.

## **Learning activities and teaching methods:**

Oral presentation, multimedia presentation, work in groups, panel, discussion.

## **Course unit content:**

Seminar (5h): using selected open informatic tools for an analysis of immunofluorescence and immunohistochemical staining; analysis of gathered results; limitations of selected methods.

## **Course objectives:**

### **Knowledge:**

BM1\_PO\_W01 Has advanced knowledge of selected facts, phenomena and theories in the field of basic medical and pharmaceutical sciences, chemical and biological sciences, mathematics and computer science

BM1\_PO\_W02 Knows at an advanced level the chemical and biological basis of cell functioning

BM1\_PO\_W03 Knows the concepts of physiology and pathophysiology, and understands the basic mechanisms of functional disorders of organisms

BM1\_PO\_W06 Has advanced knowledge of theories explaining the principles of functioning of prokaryotic and eukaryotic cells

BM1\_PO\_W09 Knows methods of cultivating plant and animal cells and the possibilities of their use in biotechnological processes.

BM1\_PO\_W14 Knows research techniques used in biological sciences and basic medical sciences P6S\_WG

BM1\_PO\_W19 Has knowledge of professional ethics in medical biotechnology, especially ethical and bioethical issues raised by the development and research of medical biotechnology

### **Skills:**

BM1\_PO\_U01 In accordance with acquired knowledge, plans and performs research tasks using analytical methods, computer simulations and basic industrial techniques

BM1\_PO\_U02 Is able to formulate and solve research problems, including unusual ones and those related to unusual conditions of biological, chemical or technological processes

BM1\_PO\_U03 Is able to select appropriate sources of information and critically analyze them

BM1\_PO\_U07 Uses and integrates information obtained from literature and electronic databases, analyzes,

interprets and critically evaluates them

BM1\_PO\_U10 Demonstrates the ability to synthesize and draw correct conclusions based on data from various sources

### **Attitudes and transferrable (generic) competencies:**

BM1\_PO\_K01 Speaks English at B2+ level in the field of biomedical sciences, especially medicine, biology and biotechnology, clinical trials and drug production

BM1\_PO\_K02 Is able to critically assess the usefulness and possibility of using new results in the field of biological sciences and basic medical and pharmaceutical sciences, biotechnology and bioinformatics

BM1\_PO\_K04 Is able to communicate with specialists in the field of biological sciences and basic medical and pharmaceutical sciences, biotechnology and bioinformatics using specialized terminology

BM1\_PO\_K05 Fulfills obligations towards society and works for the public interest in further scientific or professional career

BM1\_PO\_K06 Critically evaluates one's knowledge and knows when to turn to experts in case of difficulties in solving a research problem on one's own

BM1\_PO\_K07 Knows how to solve moral dilemmas in professional practice, or at least is able to specify and explain them. Identifies and solves ethical dilemmas while maintaining the principles of professional ethics

### **Required and recommended learning resources (readings):**

#### **Required:**

#### **Recommended:**

1. Image J or Fiji software for Windows or iOS <https://imagej.net/software/fiji/downloads>

### **Assessment methods and criteria:**

### **Rules for making up absences from classes:**

### **Additional information:**

### **Statement and signature of the course leader:**

I hereby state that the content of the curriculum included in the syllabus below is the result of my individual

work completed as part of work contract/cooperation resulting from a civil law contract, and that author rights to this title are not the property of a third party.

**Dean's signature:**

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