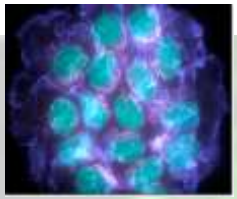
PROGRAMME DETAILS

BASIC COURSES	ECTS	Lectures	Practice
Nuclear domains	6	30	30
Cell border complex and cell contacts	6	45	30
Control mechanisms of cell proliferation	6	30	30
Cell signaling	5	30	30
Stem cells	5	30	30
Pathology of eukaryotic cells	5	30	30
Cellular pathogens	5	30	45
Principles of viral replication	2	15	15
Cell culture	4	15	30
Apoptosis in norm and pathology	4	30	15
Electron microscopy, histochemistry and immunocytochemistry in cell biology	4	15	30
Pre-diploma practicum	15	-	90



OPTIONAL COURSES	ECTS	Lectures	Practice
Recent methods in cell biology	4	30	15
Membrane models-application in cell biology	4	30	15
Current methods in molecular biology	4	15	30
Cancer cell	4	30	30
Control of immune response	4	30	30
Apoptosis	4	30	15
Neurogenetics and neurodegenerative diseases	4	30	15
Somatic cell hybridization and gene mapping	4	30	15

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UNIVERSITY OF SOFIA

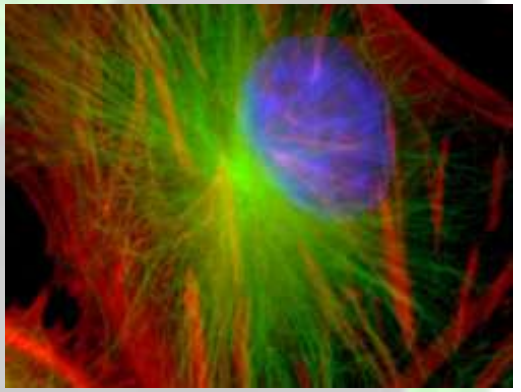
"ST. KLIMENT OHRIDSKI"

FACULTY OF BIOLOGY,

DEPARTMENT OF CYTOLOGY, HISTOLOGY AND EMBRYOLOGY

CELL BIOLOGY AND PATHOLOGY

Master's program



The Department of Cytology, Histology and Embryology offers a master's program in Cell Biology and Pathology leading to a Master of Science degree (MSc) and preparing students for career in the field of cell biology and related areas. It provides opportunities for students graduating with a Bachelor of Science degree to become acquainted with the diverse research areas in this field and to obtain hands-on experience in selected techniques. The program is dedicated to prepare the students for biomedical research at a professional level and to make them successful in the competitive academic and industrial research markets. The program is a research-based one and includes the completion of original in-depth research under the guidance of a highly qualified mentor, writing and defense of a research-based thesis.

Graduating this program the MSc students will obtain opportunities to

- operate professionally with a broad range of modern methods from the cell biology arsenal,
- use these methods in histopathology for diagnosing at cellular and tissue levels,
- participate in biomedical research programs,
- use *in vitro* model test systems for assessment of cytotoxicity of novel drugs and products of pharmaceutical and chemical industries.

Opportunities for realization and future development

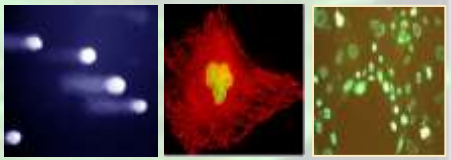
The MSc degree in combination with the broadened knowledge, the extensive research experience, and enhanced research skills in specific areas of cell biology should provide the students with excellent credentials to obtain job in public health institutions, diagnosing and research laboratories and institutes, hospitals, etc. They could find positions in control laboratories in industry as well as in biomedical areas of administration and marketing.

Research facilities

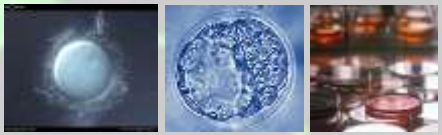
The Department will give the MSc students the opportunity to work in the microscopical and cell culture laboratories, library, the multimedia center in the Biological Faculty, etc. The larger part of the research activities will be carried out in the laboratories of cell culturing, immunofluorescence and histo- and cytochemisty

Fields of research activity

- integrin-mediated signal pathways;
- effect of phytopharmacological agents and nanoparticles on the eukaryotic cell periphery and genome;
- eukaryotic genome organization and functioning;



- apoptosis in eukaryotic cells;
- effect of 3D matrices on the cellular development;
- experimental embryology and developmental mechanisms.



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