

2023/2024. ACADEMIC YEAR							
PROGRAM OF STUDY							
Full (Hungarian) name of the subject: Biológia I.							
Program: Undivided program (pharmaceutical)							
Schedule: full-time							
Short name of the subject: Biol I							
English name of the subject: Biology I.							
German name of the subject: Biologie I							
Type of registration: obligatory/obligatory elective/elective/criteria requirement							
Neptun code of the subject: GYKGEN269E1A							
Responsible Department: Department of Genetics, Cell- and Immunbiology							
Responsible tutor Prof.Dr. Edit Buzás				Title, academic degree: DSc			
Course coordinator: Dr. Orsolya Láng				Ph.D.			
Contact information: - phone: 2102940/56251 - email: lang.orsolya@med.semmelweis-univ.hu							
Name of the persons responsible for the teaching of the subject: Dr. András Kristóf Fülöp Dr. Hargita Hegyesi Dr. László Kőhidai Dr. Eszter Lajkó Dr. Marianna Csilla Holub Dr. Zoltán Wiener Dr. Tamás Visnovitz András Försönits Dr. Pálma Porrogi				Title, academic degree: Associate Professor, CSc Associate Professor, Ph.D. Associate Professor, CSc Research Fellow, PhD Associate Professor, Ph.D. Associate Professor, Ph.D. Assistant Professor, Ph.D. Research Assistant Assistant Professor, Ph.D.			
Class per week: Lecture 2hrs Practice 2hrs				Credit point(s):4			
Professional content, intent of acquirement and it's function in order to implement the goals of the program: The basics of classical and molecular cell biology and techniques applied in the field of modern cell biology are discussed. The subject provides the theoretical background for Biochemistry, Physiology, and Anatomy.							
Short description of the subject: The subject Biology I. discusses the close relation of the function and structure of eukaryotic cells. It discusses the most significant phenomena of cell compartmentalization, function, aging, and cell death. In practices the following topics are studied: light- and electronmicroscopy and histotechniques, relevant techniques of cell biology applied to detect basic cell physiological activities.							
Course data							
Recommend ed term	Contact hours (lecture)	Contact hours (practice)	Contact hours (seminar)	Individu al lectures	Total number of contact hours/sem ester	Normal course offer	Consult ations
1 semester	28	28			56	Autumn semester* Spring semester Both semesters (* Please underline)	6 (exam period)--

Program of semester**

Topics of theoretical classes (pro week):

1. week: The cell membrane: structure and function
2. week: Structure and function of nucleus I.
3. week: Structure and function of nucleus II.
4. week: Endoplasmic reticulum and the ribosome
5. week: Golgi complex, secretion, and protein transport
6. week: Lysosomes, endocytosis, vesicular transport
7. week: Structure and function of mitochondria and peroxisomes
8. week: The cytoskeleton and cellular movement
9. week: Cell adhesion, cell junction
10. week: Extracellular regulation of the cells, signal transduction I.
11. week: Extracellular regulation of the cells, signal transduction II.
12. week: Cell cycle and its regulation I.
13. week: Cellular aging and programmed cell death
14. week: Stem Cells and differentiation

(The order of lectures may vary.)

Topics of practical classes (pro week):

1. week: The light microscope in use
2. week: General view of the cell; Light microscopic microtechnique
3. week: Plasma membrane; Electronmicroscopic microtechnique
4. week: Cell nucleus; Cyto(histo)chemistry
5. week: Endoplasmic reticulum
6. week: Midterm I. Golgi complex
7. week: Immunohistochemistry and super-resolution microscopy
8. week: Secretion
9. week: Endocytosis; Cellular digestion;
10. week: Cell and tissue culture
11. week: Store and supply of energy; Mitochondria; Peroxisome
12. week: Cell surface differentiation, the ultrastructure of cellular junctions. Enzyme-histochemistry.
13. week: Midterm II.
14. week: Cell death (apoptosis and necrosis)

(The order of lectures may vary.)

Schedule of consultations: in exam period once a week

Course requirements

Prerequisites: no

Conditions of attending the classes, amount of acceptable absents, way of presentation of leave, opportunity for makeup:

Students must visit 75% of the classes. More than three absences from the practice invalidate the semester, no signature is given. There are no extra practices.

The grading method; the conditions for getting the signature; the number, topic(s) and date(s) of the mid-term assessments, (reports, term tests), and the process in which they contribute to the final grade; and the possibility of their retake or their upgrading retake (as provided in §§ 25-28 of the STUDY AND EXAMINATION REGULATIONS):

Number, topics, and dates of tests during the semester, opportunities of makeup and improvement of results*:**

The ability to set a light microscope for sample examination is controlled by the practice teacher.

Students will write two Midterm tests (Moodle tests) during the semester. Writing the tests is not compulsory. Students who achieve 75% of the total score, in case of a successful examination (obtain more than 50% of the total score in the exam), will get one better mark. This option is only available until the end of the regular examination period, and cannot be transferred to the extended exam period, CV, and FM courses.

<p>Requirements of signature(as provided for in STUDY AND EXAMINATION REGULATIONS § 29): Less than three absences from the practice class.</p>
<p>Number and type of projects students have to perform independently during the semester and their deadlines: -</p>
<p>Type of the semester-end examination: signature*/practical grade*/<u>semi-final</u>*/final* (<i>Please underline</i>)</p> <p>Examination requirements: as published by the education-research department on the MOODLE interface by the start of the academic term. Written test in MOODLE</p>
<p>Form of the semester-end examination: <u>written</u>*/oral*/combined examination/practical examination/the assessment of completing project work (according to STUDY AND EXAMINATION REGULATIONS 30.§)* (<i>Please underline</i>)</p>
<p>The possibility and conditions for offering grades: -</p>
<p>A list of the basic notes, textbooks, resources and literature that can be used to acquire the knowledge necessary to master the curriculum and to complete the assessments, ****with exact description about which of them is required to acquire which part of the syllabus (e.g. description based on topics)), as well as the main technical and other aids and study aids that can be used: The Department of Genetics, Cell- and Immunobiology (DGCI) activity includes teaching, research, and diagnostics. Our scientific work focuses on a broad scale in the fields of immunology, cell biology and genomics. The main research groups of the Department: National Heart Program, Extracellular Vesicle; Medical Genomics; Chemotaxis; Experimental Translational Immunology and Molecular Cancer Biology. The applied methodologies include cell- and molecular biological, immunological, genomic, and bioinformatic techniques and procedures.</p>
<p>In the case of a subject lasting more than one semester, the position of the teaching/research department on the possibility of parallel enrolment and the conditions for admission****: yes*/no*/<u>on and individual assesment basis</u>* (<i>Please underline</i>)</p>
<p>The course description was prepared by:: Prof. Dr. Edit Buzás and Dr. Orsolya Láng</p>