

2023/2024. ACADEMIC YEAR

PROGRAM OF STUDY

Full (Hungarian) name of the subject: Biológia II.							
Program: Undivided program (pharmaceutical)							
Schedule: full-time							
Short name of the subject: Bioll							
English name of the subject: Biology II.							
German name of the subject: Biologie II							
Type of registration: obligatory/obligatory elective/elective/criteria requirement							
Neptun code of the subject: GYKGEN269E2A							
Responsible Department: Department of Genetics, Cell- and Immunobiology							
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 :2 hrs Practice: 2 hrs				Credit point(s): 4			
Professional content, intent of acquirement and it's function in order to implement the goals of the program: Besides the basics of Mendelian genetics and cytogenetics, pharmacogenetics and genomics are discussed as well as the main molecular genetic techniques are presented. The subject provides the theoretical background for Microbiology and Immunology.							
Short description of the subject: The subject Biology II. discusses Mendelian genetics, molecular genetics and genomics. The most significant characteristic of inheritance in humans and the techniques applied in the medical field are studied.							
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
2 semester	28	28			56	Autumn semester* Spring <u>semester</u> Both semesters (* Please underline)	6 times in exam period

Program of semester**

Topics of theoretical classes (pro week):

1. week: Transmission of the genetic information. Meiosis
2. week: Introduction to human genetics. The human genome.
3. week: Cytogenetics
4. week: Genetic variation I.
5. week: Genetic variation II.
6. week: Epigenetics
7. week: Autosomal inheritance I.
8. week: Autosomal inheritance II.
9. week: Role of sex in inheritance; Genetics of sex
10. week: Introduction to genomics; Methods in genomics
11. week: Genetics and genomics of complex trait and disorder
12. week: Pharmacogenetics and nutrigenomics
13. week: Genetics of biological processes (tumor biology)
14. week: Gene and genome manipulation

(The order of lectures may vary.)

Topics of practical classes (pro week):

1. week: Mitosis
2. week: Meiosis and gametogenesis
3. week: Cytogenetics I.
4. week: Cytogenetics II.
5. week: Midterm I. Mutagenic tests
6. week: Study of monogenic inheritance; Pedigree analysis
7. week: Molecular genetics I.
8. week: Molecular genetics II.
9. week: Molecular genetics III.
10. week: Monogenic inheritance I. (Autosomal Dominant)
11. week: Monogenic inheritance II. (Autosomal recessive)
12. week: Monogenic inheritance III. (Sex-linked)
13. week: Midterm II. Prenatal genetic testing
14. week: Complex inheritance

(The order of lectures may vary.)

Schedule of consultations: weekly in the exam period

Course requirements

Prerequisites: Biology I

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

Student must visit 75% of the classes. More than three absences from the practice or more than four absences from the lecture 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*:**

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): Practice class attendance should be over 75%.</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: <u>signature</u>*/practical grade*/semi-final*/<u>final</u>* (<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.</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: no</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 activity of the Department of Genetics, Cell- and Immunobiology (DGCI) 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 Immunomics 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****: <u>yes</u>*/no*/<u>on</u> and individual assesment basis* (<i>Please underline</i>)</p>
<p>The course description was prepared by:: Prof. Dr. Edit Buzás and Dr. Orsolya Láng</p>