

FIȘA DISCIPLINEI

1. Date despre program

1.1 Instituția de învățământ superior	UNIVERSITY OF MEDICINE AND PHARMACY "VICTOR BABEȘ" TIMIȘOARA
1.2 Facultatea	FACULTATEA DE MEDICINĂ-FACULTATEA DE MEDICINĂ DENTARĂ FACULTATEA DE FARMACIE
1.3 Departamentul	II Microscopic Morphology
1.4 Domeniul de studii de ¹⁾	Health + Sector Reglementation in the European Union
1.5 Ciclul de studii ²⁾	Licență
1.6 Programul de studii/ Calificarea	Dental Medicine

2. Date despre disciplină

2.1. Denumirea disciplinei	Genetics							
2.2 Titularul activităților de curs	Assoc. Prof. Dr. Stoicănescu Livia Dorina							
2.3 Titularul activităților de laborator	Assist. Dr. Chiriță Emandi Adela							
2.4 Anul de studiu	II	2.5 Semestrul	3	2.6 Tipul de evaluare	Exam	2.7 Regimul disciplinei	Conținut ³⁾	FD
							Obligativitate ³⁾	ID

3. Timpul total estimat (ore pe semestru al activităților didactice)

3.1 Număr de ore pe săptămână	4	3.2 din care: curs	2	3.3 laborator	2
3.4 Total ore din planul de învățământ	56	3.5 din care: curs	28	3.6 laborator	28
Distribuția fondului de timp					ore
Studiul după manual, suport de curs, bibliografie și notițe					20
Documentare suplimentară în bibliotecă, pe platformele electronice de specialitate și pe teren					5
Pregătire seminarii/ laboratoare/ proiecte, teme, referate, portofolii și eseuri					7
Tutoriat					
Examinări (1 practical exam, 1 final exam)					2
Alte activități					
3.7 Total ore studiu individual	32				
3.8 Total ore pe semestru	90				
3.9 Numărul de credite ⁵⁾	3				

4. Precondiții (acolo unde este cazul)

4.1 de curriculum	Cell biology
4.2 de competențe	Not aplicable

5. Condiții (acolo unde este cazul)

5.1 de desfășurare a cursului	<ul style="list-style-type: none"> • Telephone conversations are not tolerated during the course. • Delay of students in the course will not be tolerated, as it proves to be disruptive to the educational process. • Mandatory attendance is required, a maximum of 30% absences being accepted in the course.
5.2 de desfășurare a seminarului/ laboratorului/ proiectului	<ul style="list-style-type: none"> • Telephone conversations are not tolerated during the labs. • Delay of students will not be tolerated, as it proves to be disruptive to the educational process. • Mandatory attendance is required in the labs, a maximum of 15% absences being accepted. • Recovery is allowed up to 15% of the total number of paid absences in the last week of the semester, before the practical examination (except for medical cases that will require individual Dean's approval). • Practical exam will be held in the last week of the semester or in the regular session, from the topics of the labs previously displayed.

6. Competențe specifice acumulate

Competențe Profesionale	<ol style="list-style-type: none"> 1. Acquisition of terminology in genetics. 2. Understanding structure and functioning of hereditary material. 3. Knowledge of inheritance patterns for disorders involving oro-maxillo-facial region. 4. Ability to explain the occurrence of clinical signs and symptoms, changes in genetic investigations in disorders involving oro-maxillo-facial region. 5. Ability to highlight the effects of environmental factors on the genome and the consequences on the structures of the orognathic apparatus. 6. Knowledge of clinical genetics concepts, main clinical signs of genetic diseases with oral-maxillo-facial involvement, of genetic etiology. 7. Knowledge of main genetic risk categories. 8. Developing an assessing plan for a patient with a genetic disease presenting oro-dental-facial abnormalities.
Competențe transversale	<ol style="list-style-type: none"> 1. Preoccupation for professional development by engaging critical thinking skills demonstrated by active participation in the course and laboratory. 2. Involvement in scientific research activities by participating in the elaboration of papers, studies, specialty articles. 3. Effective use of information sources and communication and assisted training resources (Internet portals, specialized software applications, databases, on-line courses, etc.) both in Romanian and in an international languages; 4. Ability to work in a team, to interact socially and to carry out their duties with responsibility and professionalism. 5. Openness to learning and continuous medical education.

7. Obiectivele disciplinei (reieșind din competențele specifice acumulate)

7.1 Obiectivul general al disciplinei	Acquiring the fundamental notions of genetics and understanding the structure and functioning of genetic material.
7.2 Obiectivele specifice	<p>Knowledge of inheritance patterns and interpretation of the pedigrees.</p> <p>Explaining some clinical genetics notions and medical indications for genetic testing.</p> <p>Knowledge of and understanding the main categories at genetic risk.</p> <p>Knowledge of main methods used in clinical, molecular cytogenetics and DNA diagnostic methods and implementation of applications using the acquired genetic concepts.</p> <p>Acquisition of abilities to perform specific laboratory preparations.</p> <p>Application of the general principles of bioethics in genetics.</p>

8. Conținuturi

8.1 Curs	Metode de predare	Număr de ore	Observații
1. Role of genetics in medicine. Classification of genetic disorders. Study levels in medical genetics. Topology of DNA structure. DNA replication.	INTERACTIVE LECTURE	2	<ul style="list-style-type: none"> • Interactive oral lecture also presented in Power Point, systematic, accompanied by an extremely rich and suggestive iconography. • Available on University's Moodle e-learning platform . • The course is annually updated with the latest information from the international specialized literature. • Each course presents the educational objectives at the beginning and ends with summarizing the notions presented.
2. Transcription. Translation. Genetic code. Central dogma of molecular biology. Chromosomal theory of heredity.		2	
3. Gene—fundamental element of heredity. Definition. The organization of genomic DNA. Gene structure in eukaryotes. Types of genes. Multiple alleles. Genetic basis of protein synthesis. Gene-protein relationship		2	
4. Mutations. Mutagens-effects on oro-facial structures.		2	
5. Mendel's laws. Mechanisms of gene expression in single-gene inheritance. Single-gene inheritance of some disorders involving oro-maxillo-facial region.		2	
6. Non-classical patterns of inheritance. Particularities of single-gene inheritance. Multifactorial inheritance.		2	
7. Clinical cytogenetics. Cytogenetic abnormalities of the autosomes and sex chromosomes - oro-facial manifestations.		2	
8. Metabolic disorders with oro-facial		2	

anomalies.			
9.Genetic basis of cancer. Oral cancer genetics.		2	
10.Teratology: definition, classification of congenital anomalies, teratogens, oro-facial congenital defects caused by teratogenic agents.		2	
11.Genetic basis of enamel development. Hereditary enamel abnormalities. Hereditary dentin abnormalities.		2	
12.Anomalies of tooth eruption. Abnormalities of teeth number. Abnormalities of teeth shape. Abnormalities of teeth size.		2	
13.Oro-facial anomalies: maxillary anomalies, oro-facial clefts. Mandibular anomalies.		2	
14.Strategies for the treatment of genetic disorders. Bioethics in genetics.		2	

Bibliografie obligatorie:

1. Genetics in Clinical Dentistry. Dorina Stoicanescu, Nicoleta Andreescu, Ed. Eurostampa, 2013

Bibliografie facultativă:

1. Emery's Elements of Medical Genetics. Turnpenny PD, Ellard S. 15th ed. Elsevier Limited, 2017

8.2 Laborator	Metode de predare-învățare	Număr de ore	Observații
1. Glossary of genetic terms.	LECTURE+DEBATE+STUDIES-CASE PRESENTATION	2	<ul style="list-style-type: none"> •Presentation of investigative methods used in medical genetics in the form of diagrams, diagnostic algorithms to guide thinking of the future medical practitioner toward targeted investigations necessary to establish a correct diagnosis. • Demonstration of several techniques used in cytogenetics and molecular cytogenetics. • Interpretation of bulletins of molecular and cytogenetic analysis, interpretation of results of genetic screening tests, establishment of their significance. • Drawing a family tree. • Identification of clinical manifestations suggestive for the genetic etiology of some congenital defects and establishment of the inheritance of a
2. The chromosomal basis of inheritance. Human chromosome morphology. Principles and technology for cytogenetic analysis. Chromosome nomenclature.		2	
3. Chromosome banding. Human chromosome classification.		2	
4. Karyotyping. Interpretation of karyograms. Evaluation.		2	
5. Chromosomes during mitotic division. Chromosomes during meiotic division.		2	
6. Gametogenesis.		2	
7. Dysmorphic aspects suggestive for dental syndromes of genetic nature.		2	
8. Chromosomal disorders: abnormalities of the autosomes, oro-facial manifestations.		2	
9. Chromosomal disorders: abnormalities of the sex chromosomes, oro-facial		2	

manifestations.			genetic disease in an affected family, based on extensive iconographic material.
10. Inheritance of some physiological traits.		2	
11. Inheritance of some morphological traits.		2	
12. Genetic counseling: Methodology. Drawing and interpreting human pedigrees in disorders involving oro-maxillo-facial region. Assessment of recurrence risk of diseases with oro-dental involvement		2	
13. Genetic screening. Prenatal diagnosis, prenatal identification of orognathic apparatus modifications.		2	
14. Diagnostic algorithms in genetic and congenital disorders with oro-dental impact.		2	
Bibliografie obligatorii: 1. Practical Application of Medical Genetics. Dorina Stoicanescu, Ed. Eurostampa, 2013 Bibliografie facultativă: 1. Smith's Recognizable Patterns of Human Malformation, K. Jones. Published by Saunders, 2013			

9. Coroborarea conținuturilor disciplinei cu așteptările reprezentanților comunităților epistemice, asociaților profesionale și angajatori reprezentativi din domeniul aferent programului

<p>The content of the discipline is designed to facilitate the formation of professional and transversal competences; The content of the courses and of the practical works provides basic notions and skills for postgraduate specializations; The content of the discipline is corroborated with the requirements of the market; The content of the discipline was selected as a result of the analysis of the curricula from the national and foreign universities; The thematic content of the courses and labs is similar to that of other faculties in the country and abroad;</p>
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10. Evaluare

Tip activitate	10.1 Criterii de evaluare	10.2 Metode de evaluare	10.3 Pondere din nota finală
10.4 Course	<ul style="list-style-type: none"> For grade 5 students must prove knowledge of the basis of structure and function of hereditary material and their involvement in pathology, list the main oro-facial signs in some single-gene and chromosomal disorders. For grade 10, students must have a thorough knowledge of the structure and function of genetic material, know the inheritance patterns in disorders of orognathic apparatus, genetic disorders of oro-maxillo-facial region, essential genetic risk categories and notions of bioethics. 	<p><i>Continuous evaluation:</i> (appreciation of students' activities during the semester, focusing on aspects of knowledge and synthesis of information)</p> <p><i>Final evaluation:</i> Exam: written multiple choice test (50 questions, one hour).</p>	<p>10%</p> <p>50%</p>

10.5 Laborator	<ul style="list-style-type: none"> • <i>For grade 5</i> students must prove theoretical knowledge of the protocols of the techniques they learned, know the normal data regarding chromosomal analysis bulletin, draw a family tree. • <i>For grade 10</i> students should know normal values and recognize pathological changes in cytogenetic investigations, recognize certain pathological phenotypes affecting orognathic apparatus, draw and interpret family trees, assess the recurrence risk of diseases with oro-dental involvement. 	<i>Final evaluation:</i> practical exam	40%
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10.6 Standard minim de performanță			
<ul style="list-style-type: none"> • Knowledge and understanding of basic terminology and basic scientific information, delivered through lectures and practical work, using the correct terms covered in the Genetics discipline at an acceptable level. • Recognizing pathological changes in more common genetic disorders in the population. 			

Data completării 25.10. 2018	Semnătura titularului de curs Assoc. Prof. Dr. Stoicănescu Dorina	Semnătura titularului de laborator/stagiu Assist. Dr. Chiriță Emandi Adela
Semnătura șefului de disciplină Prof. Dr. Puiu Maria		
Data avizării în departament	Semnătura directorului de departament Prof. Dr. Verdeș Doina	