

DISCIPLINE SHEET**ACADEMIC YEAR****2022- 2023****1. DATA ABOUT THE STUDY PROGRAM**

1.1 Institution of higher education	UNIVERSITY OF MEDICINE AND PHARMACY OF CRAIOVA
1.2 Faculty	MEDICINE
1.3 Department	I
1.4 Study Domain	HEALTH
1.5 Study cycle	LICENCE
1.6 Study program/ Qualification	MEDICINE

2. DATA ABOUT THE DISCIPLINE

2.1 DISCIPLINE NAME	IMMUNO-HISTO-CHEMISTRY				
2.2. Discipline code	MED3111.1				
2.3 The holder of course activities	Mogoantă Laurențiu, Pirici Nicolae Daniel				
2.4 The holder of seminar activities	-				
2.5.Academic degree	Professor				
2.6. Employment (base norm/associate)	Base norm				
2.7. Year of study	III	2.8. Semester	I	2.9. Course type (content) 2.10. Regime of discipline (compulsoriness)	CRD

3. TOTAL ESTIMATED TIME (teaching hours per semester) – Semester I

3.1 Number of hours per week	1	From which 3.2 course	1	3.3 seminary/laboratory	-
3.4 Total hours in curriculum	14	From which 3.5 course	14	3.6 seminary/laboratory	-
Time found distribution (hours)					
Study by manual, course support, bibliography, and notes					10
Additional documentation in the library, specialized electronic platforms and, on the field					10
Training seminars / labs, homework, reports, portfolios, and essays					-
Tutoring					5
Examinations					6
Other activities, counselling, student discussion groups					5
3.7 Total hours of individual study	36				
3.9 Total hours per semester	50				
3.10 Number of credits ¹	2				

4. PREREQUISITES (where appropriate)

4.1 curriculum	The students must have solid knowledge on Histology, Anatomy and Embriology, Cell and Molecular Biology, Physiology and Physiopathology, Pathology, Biostatistics
4.2 competency	-

5. CONDITIONS (where appropriate)

5.1. of course deployment	The course is held weekly in the "Gomoiu" Auditorium, Faculty of Medicine, second floor, str. P. Rares no. 2. In case of special situations (alert states, emergencies, pandemic, other types of situations that limit the physical presence of people) the activity can be carried out online using computer platforms approved by the faculty / university. The online education process will be adapted accordingly to ensure the fulfillment of all the objectives provided in the discipline file.
5.2. of seminary/ lab deployment	Tutoring, consultations, research classes will take place in Histology classrooms

6. SPECIFIC COMPETENCES ACCRUED

PROFESSIONAL COMPETENCES	<p>C4. Addressing health / disease issues from the perspective of community particularities, in direct relation to the social, economic and / or cultural conditions of a community; To participate in the protection and improvement of the population's health, in facilitating the implementation of some basic morphological notions in triggering some actions that aim at protecting the health, especially in the groups considered at risk;</p> <p>C5. Initiation and development of a scientific and / or formative research activity in the field of optical microscopy and immunohistochemistry.</p>
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TRANSVERSAL COMPETENCES	<p>CT1. Autonomy and responsibility</p> <ul style="list-style-type: none"> • to correlate the acquired immunohistochemical notions and to integrate them in the histopathological and clinical context; • to establish the diagnosis of tissue and organ in a normal context; • to know and apply immunohistochemistry techniques in the diagnosis of diseases; • to apply, solve, develop scientific notions and concepts; • have a wealth of knowledge appropriate to the professional profile. <p>CT2. Social interaction;</p> <ul style="list-style-type: none"> • have respect for diversity and multiculturalism; • learn to develop teamwork skills; • to communicate orally and in writing the requirements, the way of working, the obtained results, to consult with the team; <p>CT3. Personal and professional development</p> <ul style="list-style-type: none"> • to be open to lifelong learning and development, • to be aware of the need for individual study, thus creating the basis for personal autonomy and professional development; • to capitalize optimally and creatively in the collective activities one's own potential; • to know the types of medical scientific papers and to know the specific methods by which they can be performed; • to deepen the use of the computer for documentation, for writing a scientific paper and for analyzing the results of a scientific research; • to know and respect the norms of medical ethics and deontology.
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7. DISCIPLINE OBJECTIVES (based on the grid of specific competences acquired)

7.1 The general objective of the discipline	- acquisition of general knowledge on immunohistochemistry techniques and general immunohistochemical aspects of different types of tissues
7.2 The specific objectives of the discipline	- acquiring knowledge about the specific antigenicity of different normal structures and the applicability of immunohistochemistry in the diagnosis, prognosis and follow-up of the therapy of certain pathologies.

8. CONTENTS

8.1 Course (content units)	No. hours
Immunohistochemistry - definition, history, immunohistochemical markers	1
Antigens, antibodies - methods of production, structure, reactivity, antigen-antibody complex	1
Immunohistochemistry techniques, internal and external control (positive and negative)	2
Markers for epithelial cells	1
Markers for mesenchymal cells	1
Markers for endothelial cells	1
Markers for muscle cells	1
Markers for nerve tissue cells and neuroendocrine cells	1
Leukocyte markers	2
Markers of cell proliferation	1
Markers for cell growth factors	1
Matrix metalloproteinases in normal and pathological processes	1
BIBLIOGRAPHY	
<ol style="list-style-type: none"> 1. Mogoanta L., Popescu Carmen Florina - Ghid de tehnici de histologie, citologie si imunohistochimie. Editura Medicala Universitara Craiova, 2007; 2. Zoltan P., Eموke H., Janos J. - Imunohistochimie: baze teoretice: aplicatii practice, Editura University Press, Targu Mures, 2004; 3. Ardeleanu Carmen, Comanescu Violeta, Zaharia B. - Imunohistochimie. Editura Sitech, Craiova, 1999; 4. Sternberger L.A. - Immunocytochemistry, Second Edition. A Wiley Medical Publication, New York, 1979. 	

9. CORROBORATING THE DISCIPLINE CONTENT WITH THE EXPECTATIONS OF EPISTEMIC COMMUNITY REPRESENTATIVES, PROFESSIONAL ASSOCIATIONS AND EMPLOYEE REPRESENTATIVES RELATING TO THIS PROGRAM

The discipline of Immunohistochemistry is an optional discipline and a student can have complete information on the structure of tissues and organs, necessary for the subsequent correlation with the information in the given professional area. The knowledge, practical skills and attitudes learned in this discipline provide the necessary support for a student to subsequently design, write, analyze and publish a scientific paper in the PEER-REVIEW system.

10. METHODOLOGICAL LANDMARKS

Types of activity	Teaching / learning techniques, materials, resources:
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Course	The course is taught using modern methods using video projection, diagrams, drawings and microscopic images suggestive of the topics covered. In case of special situations (alert states, emergency states, other types of situations that limit the physical presence of people) the activity can be carried out online using computer platforms approved by the faculty / university. The online education process will be adapted accordingly to ensure the fulfillment of all the objectives provided in the discipline file.
Individual study	Encourage individual study to form a basis for initiating discussion on the next topic.

11. RECOVERY PROGRAM					
Absences recoveries	No. absences that can be recovered	Place of deployment	Period	In charge	Scheduling of topics
	2	Official department location / online teaching	The last two weeks of the semester	All teaching personal	Is based on practical work that must be recovered
Consultations schedule / Students' debating society	2 hours weekly / teaching personal	Official department location / online teaching	weekly	All teaching personal	Is based on the requirements of the students
Program for students poorly trained	2 hours / week/ each Friday	Official department location / online teaching	weekly	All teaching personal	Is based on the requirements of the students
12. ASSESMENT					
Activity type	Assessment form	Assessment methods	Percentage of final grade		
Course	Formative evaluation through grid type tests and survey during the semester Summative assessment during the exam	Written exam or multichoice system with the help of the informatics system in the online version	100%		
Practical work					
Periodic checks					
Evaluation of individual activity					
Minimal performance standards	Minimum 50% for each component of the evaluation				
13. GUIDANCE AND COUNSELLING PROGRAMS					
Professional guidance and counselling programs (2 hours/month)					
Schedule	Place of activity	In charge			
Last Friday of every month	Official department location	All teaching personal			

Endorsement date in the department: 30.09.2022

Department Director,
Prof. Ion MÎNDRILĂ

Coordinator of study program,
Prof. Marius Eugen CIUREA

Discipline holder,
Prof. Laurențiu MOGOANTĂ