

CHART OF DISCIPLINE/ SYLLABUS

1. Study Program Data

1.1 High Education Institution	"VICTOR BABES" UNIVERSITY OF MEDICINE AND PHARMACY TIMISOARA	
1.2 Faculty	FACULTY OF MEDICINE	
1.3 Department	II – Microscopic morphology	
1.4 Study Domain ¹⁾	License	
1.5 Cycle Studies ²⁾	License	
1.6 Study programme/ Qualification	Medicine in English	

2. Course Data

2.1.Course/Department		CLINICAL PRACTICE IMMUNOMORPHOLOGY						
2.2 Course tutor				Assoc. Prof. MD, PhD AMALIA-RALUCA CEAUȘU				
2.3 Practical activity tutors				Assoc. Prof. MD, PhD Serban Comsa				
2.4. Year of study	III	2.5 Semester	V	2.6 Assessment	Coloqvium/ Essay	2.7 Course rank	Content ³⁾	DO
							Mandatory /Compulsory ³⁾	DO

3. Duration/Estimated Time (number of hours/ semester of teaching activity)

3.1 Number of hours/ week	2	3.2 lecture/course	1	3.3 laboratory	1
3.4 Total hours of curriculum	28	3.5 lecture/course	28	3.6 laboratory	1
Time distribution for course activities					hours
Study support- manuals, lectures, references and notes					6
Additional documentation – library, dedicated platforms from domain					6
Documentation for seminars/ practical activity/ projects, themes, portofolios and essays					6
Tutoring					-
Assessment					4
Other activities					-
3.7 Total number of hours for individual study		18			
3.8 Total number of hours per semester		28			
3.9 Number of credits⁵⁾		50 2 (1 credit x 25 hours/credit)			

4. Preconditions (if applicable and requested)

4.1 Courses- studied curriculum / rules for attending the course	HISTOLOGY	
4.2 Practical activities/seminars/projects studied curriculum, basic skills/ rules for attending the course	-	

5. Condition (if if applicable and requested)

5.1 Courses	1. In person attendance based on the rules of the university 2. Mandatory attendance for up to 50% of total number of lectures 3. No audio or video-recording of the lectures without permission 5. Academic behaviour of students and academic staff 6. Interactive learning methods, with active participation of the students to teaching process 7. Use of lectures content limited to the students enrolled in academic year 2024-2025 8. Lectures content dissemination forbidden without permission given by the lecture tutor
5.2 Laboratory/practical activity/ project	Face-to-face using: computer, whiteboard, the Desk Pannoramic Scanner (3D Histech, Budapest, Hungary), the Panoramic Viewer system and the virtual slice library of the Department of Histology. Attendance at the laboratory is required, with a maximum of 85% of all absences being accepted.

6. Key competencies and basic skills

Professional Competencies	<ol style="list-style-type: none"> 1. Histology and immunomorphology terms and basic notions, general principles of immunohistochemical technique. 2. The ability to identify morphologic, and immunohistochemical stainings. 3. Clinical implications of the immunohistochemical technique. 4. Application of accumulated skills as the principal basis to promote the exam. 	
Transversal Competencies	<ol style="list-style-type: none"> 1. Interest for professional development by engaging critical thinking skills demonstrated through active participation in the lecture and practical work/laboratory; 2. Involvement in scientific research activities by participating in the elaboration of papers, studies, specialized articles; 3. Effective use of information sources and communication resources and assisted training (Internet portals, specialized software applications, databases, on-line courses, etc.) in an international language. 	

7. Disciplines/Course objectives (based on the key competenceis)

7.1 Disciplines/Course general objectives	The accumulation of histologic and immunohistochemical terms and notions as useful tools to promote the mandatory exam and the use of knowledge specified in the the scale correction for future clinical practice.	
7.2 Disciplines/Course specific objectives	Examination of immunohistochemical slides. Immunohistochemical staining methods. Normal immunomorphology of main tissues.	

8. Content

Content		Teaching methods	No. of hours	Notifications
8.1 Lecture				
SEMESTER V				
1. Basic principles of immunohistochemistry. Clinical applications in the pathological diagnosis	INTERACTIVE PRESENTATION	1	<ul style="list-style-type: none">• Interactive presentation of the teaching material, using multimedia, PowerPoint presentations.• Lectures for students is reviewed and updated with the latest information according to the international database.• Each lecture initially presents the educational objectives and ends with a brief presentation of the gained notions.	
2. The immunohistochemical techniques: how to handle the specimen, primary processing and basic steps		1		
3. Cytokeratins as markers of epithelial differentiation. Practical identification of covering and glandular epithelial tissues.		1		
4. Specific markers of non-epithelial cells included in epithelia		1		
5. Immunomorphological characters of the components of connective tissues		1		
6. Immunomorphology of the adipose tissue		1		
7. Immunohistochemistry of specialized connective tissues: cartilage and bone		1		
8. The expression of specific markers of the striated muscle tissues		1		
9. The immunohistochemical phenotype of the smooth muscle tissue		1		
10. Immunohistochemical markers of the neurons and supporting cells in the nervous tissue		1		
11. Bone marrow and blood: the practical application of immunocytochemical methods and their involvement in the diagnosis		1		
12. Integrating tissue marker to characterize normal cells.		1		
13. Integrating immunohistochemical methods to improve the pathological diagnosis		1		
14. Immunohistochemical markers as guide of anticancer therapy		1		
Mandatory references: <ul style="list-style-type: none">1. Lecture – electronic format, PowerPoint presentations 20252. Dabbs DJ – Diagnostic immunohistochemistry. Lippincott-Raven 6th Edition - November 23, 20213. Immunohistochemistry and Immunocytochemistry: Essential Methods Simon Renshaw John Wiley & Sons, Feb 6, 2017 Optional references: <ul style="list-style-type: none">4. Histology for Pathologists by Stacey E. Mills, 2019.				
8.2 Seminars/ Laboratory/practical activity/ projects		Teaching-learning, methods	Number of hours	Notification

1. Basic principles of immunohistochemistry. Clinical applications in the pathological diagnosis. Presentation of the immunohistochemical laboratory.		1 hour	
2. The immunohistochemical techniques: how to handle the specimen, primary processing and basic steps. How to work in the immunohistochemical laboratory.		1 hour	
3. Cytokeratins as markers of epithelial differentiation. Practical identification of covering and glandular epithelial tissues. Case presentation. Principal markers of diagnostic for carcinoma.		1 hour	
4. Specific markers of non-epithelial cells included in epithelia. Case presentation. Principal markers of diagnostic for adenocarcinoma.		1 hour	
5. Immunomorphological characters of the components of connective tissues. Case presentation. Principal markers of diagnostic for lymphoma.		1 hour	
6. Immunomorphology of the adipose tissue		1 hour	
7. Immunohistochemistry of specialized connective tissues: cartilage and bone. Case presentation. Principal markers for Ewing sarcoma.		1 hour	
8. The expression of specific markers of the striated muscle tissues. Case presentation		1 hour	
9. The immunohistochemical phenotype of the smooth muscle tissue. Case presentation		1 hour	
10. Immunohistochemical markers of the neurons and supporting cells in the nervous tissue. Case presentation		1 hour	
11. Bone marrow and blood: the practical application of immunocytochemical methods and their involvement in the diagnosis. Case presentation		1 hour	
12. Integrating tissue marker to characterize normal cells.		1 hour	
13. Integrating immunohistochemical methods to improve the pathological diagnosis. Molecular basis of angiogenesis and therapeutical implications.		1 hour	
14. Immunohistochemical of general markers and markers of lymphangiogenesis as guide of anticancer therapy		1 hour	
Mandatory references: 1. Lecture – electronic format, PowerPoint presentations 2025 2. Dabbs DJ – Diagnostic immunohistochemistry. Lippincott-Raven 6th Edition - November 23, 2021 3. Immunohistochemistry and Immunocytochemistry: Essential Methods Simon Renshaw John Wiley & Sons, Feb 6, 2017 Optional references: 4. Histology for Pathologists by Stacey E. Mills, 2019.			

9. Correlations between the content of the course and the requirements of the professional field and relevant employers

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10. Assessment

Activity	10.1 Assessment criteries	10.2 Assessment methods	10.3 Percentage of the final grade
10.4 Course	For grade 5, getting 50% of the maximum score For grade 10, getting the maximum score	<i>Activity during semester</i> <i>COLOQVIUM-ESSAY-POWERPOINT PRESENTATION</i>	10% 50%
10.5 Practical activity/ seminar	<i>Knowledge for grade 5</i> <i>Knowledge for grade 10</i>	Recognition of 2 microscopic preparations/semester - virtual microscopy	40%

10.6 Minimum performance standard-basic knowledge
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Date	Signature of the course holder Assoc. Prof. MD, PhD AMALIA-RALUCA CEAUȘU	Signature of the laboratory/seminar holder Assoc. Prof. MD, PhD Serban Comsa
Signature of the Head of Discipline	Flavia Zară, MD, PhD, PROFESSOR	
Date of approval in the Department	Signature of the Head of Department Alis Liliana Carmen Dema, MD, PhD, PROFESSOR	

Notă:

- ¹⁾ Domeniul de studii - *se alege una din variantele:* Licență/ Masterat/ Doctorat (**se completează conform cu Nomenclatorul domeniilor și al specializărilor/ programelor de studii universitare în vigoare**) ;
- ²⁾ Ciclul de studii - *se alege una din variantele:* Licență/ Master/ Doctorat;
- ³⁾ Regimul disciplinei (conținut) - *se alege una din variantele:***DF** (disciplină fundamentală)/ **DD** (disciplină din domeniu)/ **DS** (disciplină de specialitate)/ **DC** (disciplină complementară) - *pentru nivelul de licență; DAP* (disciplină de aprofundare)/ **DSI** (disciplină de sinteză)/ **DCA** (disciplină de cunoaștere avansată) - *pentru nivelul de masterat;*
- ⁴⁾ Regimul disciplinei (obligativitate) - *se alege una din variantele:***DI** (disciplină obligatorie)/ **DO** (disciplină opțională)/ **DFac** (disciplină facultativă);
- ⁵⁾ Un credit este echivalent cu 25 de ore de studiu (activități didactice și studiu individual).

*nr de ore de studiu individual (punctul 3.7.) = nr total ore (nr credite X 25) minus nr. ore din planul de învățământ (punctul 3.4) minus ore alocate pentru examinări. Aceste ore se împart între

Studiul după manual, suport de curs, bibliografie și notițe	
Documentare suplimentară în bibliotecă, pe platformele electronice de specialitate și pe teren	
Pregătire seminarii/ laboratoare/ proiecte, teme, referate, portofolii și eseuri	
Tutoriat	

- 6) Pentru specializările și/sau disciplinele a căror tematică se regăsește în bibliografia de rezidențiat, aceasta devine obligatorie. Dintre titlurile bibliografice, 50% trebuie să fie din ultimii 5 ani.

