

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 | HISTOLOGY | | |
| 2.2. Discipline code | MED21204 | | |
| 2.3 The holder of course activities | MOGOANTĂ LAURENȚIU, PIRICI NICOLAE DANIEL, BUSUIOC CRISTINA, MATEESCU GAROFITA-OLIVIA, OPREA BOGDAN | | |
| 2.4 The holder of seminar activities | MOGOANTĂ LAURENȚIU, PIRICI NICOLAE DANIEL, MATEESCU GAROFIȚA, BUSUIOC CRISTINA, OPREA BOGDAN, MATEI MARIUS, ISTRATE-OFITERU ANCA-MARIA, IOVAN LARISA, ROSU GABRIELA-CAMELIA, LILIAN ILONA MIHAELA | | |
| 2.5. Academic degree | Professor, Associate Professor, Lecturer, Teaching Assistant | | |
| 2.6. Employment (base norm/associate) | Base norm | | |
| 2.7. Year of study | II | 2.8. Semester | I/II |
| | | 2.9. Course type (content) | CFD |
| | | 2.10. Regime of discipline (compulsoriness) | |

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

| | | | | | |
|---|------------|------------------------|-----------|-------------------------|-----------|
| 3.1 Number of hours per week | 5 | From which 3.2- course | 2 | 3.3 seminary/laboratory | 3 |
| 3.4 Total hours in curriculum | 70 | From which 3.5- course | 28 | 3.6 seminary/laboratory | 42 |
| Time plan distribution (hours) | | | | | |
| Study by manual, course support, bibliography, and notes | | | | | |
| Additional documentation in the library, specialized electronic platforms and, on the field | | | | | |
| Training seminars / labs, homework, reports, portfolios, and essays | | | | | |
| Tutoring | | | | | |
| Examinations | | | | | |
| Other activities, counselling, student circles | | | | | |
| 3.7 Total hours of individual study | 55 | | | | |
| 3.9 Total hours per semester | 125 | | | | |
| 3.10 Number of credits | 5 | | | | |

TOTAL ESTIMATED TIME (teaching hours per semester) – Semester II

| | | | | | |
|---|------------|------------------------|-----------|-------------------------|-----------|
| 3.1 Number of hours per week | 5 | From which 3.2- course | 2 | 3.3 seminary/laboratory | 3 |
| 3.4 Total hours in curriculum | 70 | From which 3.5- course | 28 | 3.6 seminary/laboratory | 42 |
| Time plan distribution (hours) | | | | | |
| Study by manual, course support, bibliography, and notes | | | | | |
| Additional documentation in the library, specialized electronic platforms and, on the field | | | | | |
| Training seminars / labs, homework, reports, portfolios, and essays | | | | | |
| Tutoring | | | | | |
| Examinations | | | | | |
| Other activities, counselling, student circles | | | | | |
| 3.7 Total hours of individual study | 55 | | | | |
| 3.9 Total hours per semester | 125 | | | | |
| 3.10 Number of credits | 5 | | | | |

4. PREREQUISITES (where appropriate)

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

5. CONDITIONS (where appropriate)

| | |
|----------------------------------|---|
| 5.1. of course deployment | The course will be held weekly in "prof. Florin Bogdan" auditory, old building of the Faculty of Medicine – Is t floor / online teaching. |
| 5.2. of seminary/ lab deployment | Practical assignments take place in practical work room no 1 (room 136) / online teaching. |

| 6. SPECIFIC COMPETENCES ACCRUED | |
|---------------------------------|---|
| PROFESSIONAL COMPETENCES | <p>C4 - To address to health issues / illness from the perspective of particular community specifics, related to the social, economic and / or its cultural aspects.</p> <p>To participate through morpho-clinical correlations in protecting and improving the health of the population, in facilitating the implementation of basic morphological notions in triggering actions aimed at protecting health in groups considered at risk;</p> <p>C5 - Initiation and development of a scientific and / or formative research activity in the field of optical microscopy.</p> |
| TRANSVERSAL COMPETENCES | <p>CT1. Autonomy and responsibility</p> <ul style="list-style-type: none"> • to correlate the acquired histological notions and to integrate them in the clinical context • to establish the diagnosis of tissue and organ in a normal context • to apply the usual histological and histochemical techniques • to apply, solve, develop scientific notions and concepts, • to have the knowledge appropriate to the professional profile, <p>CT2. Social interaction;</p> <ul style="list-style-type: none"> • to be able to recognize and respect diversity and multiculturalism; • to have and/or to learn to develop teamwork skills; • to communicate orally and in writing accordingly to the required working methods, results, consulting with a 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 |

7. DISCIPLINE OBJECTIVES (based on the grid of specific competences acquired)

| | |
|---|---|
| 7.1 The general objective of the discipline | - acquiring general knowledge on the normal microscopic features of tissues and organs, in order to understand microscopic changes in pathological cases, organic support and the appearance of clinical signs and symptoms |
| 7.2 The specific objectives of the discipline | - acquisition of specific knowledge related to the microscopic structure of tissues and organs |

8. CONTENTS

| 8.1 Course (content units) | No of hours |
|--|-------------|
| <i>1st Semester</i> | |
| Tissue - definition, examples - Tissue differentiation and histocompatibility - Primary tissues | 2 |
| Epithelial Tissues - general characteristics of epitheliums, histogenesis, classification - microscopic structure - covering epithelium - glandular epithelium | 6 |
| Connective Tissues - histogenesis, microscopic organisation and fibrilogenesis - classification and histophysiology of the connective tissue - structural elements of the connective tissue - varieties of connective tissue | 4 |
| Blood and haematopoiesis - red blood cell, white blood cell, thrombocytes - haematopoiesis | 4 |
| Cartilaginous tissue; Bone (system and tissue) - histogenesis, microscopic organization, types of cartilaginous tissue - histogenesis, microscopic organization, types of bone tissue - joints, ossification | 4 |

| | |
|---|---|
| <p>Muscle tissue</p> <ul style="list-style-type: none"> - contraction system, energy production and the coupling of excitation-contraction - histogenesis and microscopic organization of the muscle - types of muscle (smooth muscle, striated skeletal muscle, striated cardiac muscle). | 4 |
| <p>Nervous Tissue</p> <ul style="list-style-type: none"> - histogenesis, the nervous cell, glial cell, the synapse - tissular bases of the organization of the peripheral nervous system | 4 |
| <i>II-nd semester</i> | |
| <p>Nervous system</p> <ul style="list-style-type: none"> - the organisation of the CNS: grey matter, white matter - blood brain barrier; meninges, choroid plexus. - cerebral and cerebellar cortices. - cellular bases of the relationship between nervous and endocrine system | 2 |
| <p>Hematopoietic and lymphopoietic organs</p> <ul style="list-style-type: none"> - structure and histophysiology of the bone marrow, lymph node, thymus, spleen, tonsil, Payer plates, cecum | 2 |
| <p>Internal secreting glands</p> <ul style="list-style-type: none"> - hypothalamus-hypophysis complex, epiphysis, thyroid gland, parathyroids, suprarenals, endocrine pancreas, diffuse endocrine system (structure, ultrastructure, histophysiology) | 2 |
| <p>Cardiovascular system</p> <ul style="list-style-type: none"> - histogenesis, structure and ultra-structure of the heart - blood vessels (arteries, veins, capillaries) and lymphatics | 2 |
| <p>Urinary system</p> <ul style="list-style-type: none"> - histogenesis, structure and ultra-structure of the kidney - histophysiology of the kidney - extra renal urinary pathways | 2 |
| <p>Respiratory system</p> <ul style="list-style-type: none"> - structure, ultra-structure and histophysiology of the respiratory tract - respiratory paths and the olfactive mucosa - histogenesis and particularities of the respiratory system in children | 2 |
| <p>Digestive system</p> <ul style="list-style-type: none"> - the mouth, tongue, taste buds, teeth, oesophagus. - stomach, small intestine, bowel, endocrine system of the digestive tract - salivary glands, exocrine pancreas. - the liver and biliary pathways: structure, ultrastructure and histophysiology | 6 |
| <p>Genital system</p> <ul style="list-style-type: none"> - histogenesis, tissue and cell organisation - male genital system: testicle, genital paths, annex glands, penis - female genital system: the ovary, salpinx, uterus, vagina, mammary gland, the placenta | 6 |
| <p>Skin and its appendages</p> <ul style="list-style-type: none"> - structure, ultra-structure and histophysiology - skin glands - the hair and nails - the skin as a sense organ | 2 |
| <p>Sense organs</p> <ul style="list-style-type: none"> - microscopic structure of the eye, cellular bases of photoreception - the ear: cellular structure of the hearing and equilibrium organ - the olfactive mucosa - the taste buds | 2 |

| BIBLIOGRAPHY | |
|--|--------------|
| 1. Mihail Hinescu, Angela Borda, Irina-Draga Căruntu, Laurențiu Mogoantă, Marius Raica - Ross. histologie, tratat și atlas. Corelații din biologia moleculară și celulară. Ediția a șaptea. Ed. Hipocrate, 2020. | |
| 2. L. Mogoantă, Adriana Bold, Cristina Busuioc, B. Oprea. - Histology. Tissues. University Medical Publishing House, Craiova, 2014. | |
| 3. Adriana Bold, L. Mogoantă, Cristina Busuioc, Garofița-Olivia Mateescu. Histologie. Organele. Ed. Medicală Universitară, Craiova, 2011. | |
| 4. Michael H. Ross, Wojciech Pawlina. Histology. A text and atlas. Ed. Lippincott Williams and Wilkins, 2011. | |
| 5. Adriana Bold, L. Mogoantă, Garofița-Olivia Mateescu. Histologie. Țesuturile. Ed. Medicală Universitară, Craiova, 2009. | |
| 6. Luiz Carlos Junqueira, Jose Carneiro. Histologie. Tratat și atlas. Ed. medicală Calistro, București 2008. | |
| 7. Bertrand Mace. Histologie. Bases fondamentales. Ed. OmniScience 2008. | |
| 8. Poirier J., Catala M., Andre J. M., Gherardi R., Bernaudin J.F. - Histologie. Les tissus. 3 edition, Masson, Paris 2006. | |
| 9. Poirier J., Catala M.. Histologie. Le tissus. Ed. Masson, Paris 2006. | |
| 10. Laurențiu Mogoantă, Adriana Bold - Histologie – Țesuturile. Ed. Medicală Universitară, Craiova 2005. | |
| 11. Laurentiu Mogoantă, Mihaela Hincu, Teofil Mehedinți, Adriana Bold. – Histologie medicală. Ed. Aius, 2004. | |
| 12. Wolfgang Kuhnel. Atlas de Poche d’Histologie. 3 edition, Medicine Sciences Flammarion, 2003. | |
| 13. Dadoune J.P.. Histologie. Ed. Medicine-Sciences Flammarion. Paris 2000. | |
| 14. Poirier Jacques. Histologie moleculaire. Texte et atlas. Ed. Masson, Paris 1999. | |
| 15. Carlos L. Junqueira, Jose Carneiro, Robert O. Kelly - Basic Histology. A large Medical Book, 1995. | |
| 16. Whrater PR, Burkitt HG, Stevens A, Lowe J.S.. - Basic Histopathology. Second edition. Churchill Livingstone, 1991 | |
| 8.2 Practical assignments (topics / themes) | hours |
| <i>Ist semester</i> | |
| Histological samples. Routine and special histological techniques | 3 |
| The use of microscope in histology. Types of microscopes. | 3 |
| The cell as a tissue component. Cell differentiation and apoptosis | 3 |
| Covering epithelial tissue | 3 |
| Glandular epithelial tissue | 3 |
| Connective tissue. Components | 3 |
| Types of connective tissue | 3 |
| Mucosae and serosae | 3 |
| The blood and blood cells | 3 |
| Blood smear technique. Leucocyte formula | 3 |
| Haematopoiesis | 3 |
| Bone tissue | 3 |
| Cartilaginous tissue (osteogenesis and joints) | 3 |
| Muscle tissues | 3 |
| <i>II-nd semester</i> | |
| Nervous system | 3 |
| Cardiovascular system | 3 |
| Hemato and lymphopoietic organs | 3 |
| Endocrine glands | 3 |
| Urinary system | 3 |
| Respiratory system | 3 |
| Upper digestive tube | 3 |
| Lower digestive tube | 3 |
| Annex glands of the digestive tube | 3 |
| Male genital system | 3 |
| Female genital system. The ovary | 3 |
| Female genital system. The genital paths | 3 |
| The skin | 3 |
| Sense organs | 3 |

BIBLIOGRAPHY

1. Mihail Hinescu, Angela Borda, Irina-Draga Căruntu, Laurențiu Mogoantă, Marius Raica - Ross. histologie, tratat și atlas. Corelații din biologia moleculară și celulară. Ediția a șaptea. Ed. Hipocrate, 2020.
2. Adriana Bold, L. Mogoantă, Ștefania Crăițoiu, Garofița-Olivia Mateescu, Cristina Busuioc, Anca Predescu, Nina Ionovici, B. Oprea, D. Pirici. Histologie. Organele. Lucrări practice. Ed. Medicală Universitară, Craiova, 2011.
3. Adriana Bold, L. Mogoantă, Ștefania Crăițoiu, Garofița-Olivia Mateescu, Cristina Busuioc, Nina Ionovici, Anca Predescu. Histologie. Țesuturile. Lucrări practice. Ed. Medicală Universitară, Craiova, 2009.
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5. Laurențiu Mogoantă, Adriana Bold - Histologie – Țesuturile. Ed. Medicală Universitară, Craiova 2005.
6. Laurentiu Mogoantă, Mihaela Hincu, Teofil Mehedinți, Adriana Bold. – Histologie medicală. Ed. Aius, 2004.
7. Wolfgang Kuhnel. Atlas de Poche d'Histologie. Ed. Medecine -Sciences Flammarion 2003.
8. John D. Baneroft, Marilyn Gamble. Theory and Practice of Histological Techniques. Ed. Churchill Livingstone.
9. Eliseiev V.G., Afanasiev Yu I., Kotovski E.F.. - Atlas de la estructura microscopica y ultramicroscopica de las celulas, tejidos y organos. Editorial Mir Moscu, 1987.

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

Histology is a compulsory discipline for a student to be able to have complete information on the structure of tissues and organs, necessary for subsequent correlation with the information of professional interest. The knowledge and practical skills learned in this discipline provide the necessary support for the student to be able to conceive, write, analyze and publish a scientific paper in the "peer review" system.

10. METHODOLOGICAL LANDMARKS

| Types of activity | Teaching Techniques / learning materials and resources: |
|-------------------|---|
| Course | The course is taught by modern methods using video projection, diagrams, drawings and microscopic images suggestive for 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 set out in the subject sheet. |
| Practical work | Practical assignments are supported by an interactive form of teaching which follows students' participation in the theoretical debates and practical views on histological structures and their correlation with the processes of physiology and pathophysiology. Practical assignments begin with a seminar in which students are tested for their knowledge gained from courses and individual training program, continues to exemplify concepts through images transmitted through suitable microscopic slides and projectors, aiming at motivating the students' understanding towards the microscopic morphology. It continues with microscopic examination of histological preparations which stimulates the curiosity of students to identify cells, tissues and organs |
| Individual study | It encourages individual study forming a basis to initiate discussion on the topic / next lp. |

11. RECOVERY PROGRAM

| | No. absences that can be recovered | Place of deployment | Period | In charge | Scheduling of topics |
|----------------------------|------------------------------------|--|-------------------------------|-----------------------|--|
| Absences recoveries | 5 | Official department location / online teaching | The last week of the semester | prof. L. Mogoantă | Depending on the practical assignments that need to be recovered |
| Consultations schedule | 2 hours weekly / teaching personal | Official department location / online teaching | weekly | All teaching personal | Depending on the requirements of the students |
| Students' debating society | 2 hours / week/ each Friday | Official department location / online teaching | weekly | All teaching personal | Depending on the schedule of research activities |

| | | | | | |
|---|---|--|--|-----------------------|--|
| Program for poorly trained students | 2 hours / week | Official department location / online teaching | weekly | All teaching personal | Is based on the requirements of the students |
| 12. ASSESSMENT | | | | | |
| 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 | | 60% |
| Practical work | Formative evaluation by survey during the semester Periodic evaluation during the semester Summative evaluation during the semester | | Oral exam or with the help of the video platform in the online version | | 20% |
| Periodic assesment | Periodic assessment during the semester of the course and practical work | | | | 10% |
| Assesment of individual activity | | | | | 10% |
| Minimum performance standard | At least 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