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| 1. | Subject | HISTOLOGY | | | |
| 2. | Code | MLD – 115 | | | |
| 3. | Study program: | Three-year professional studies of medical laboratory diagnostics | | | |
| 4. | Conducted by | UKIM Medical Faculty – Skopje Department of Histology and Embryology | | | |
| 5. | Degree of education (first or second cycle) | First cycle | | | |
| 6. | Academic year/semester | First/I | 7. | Credits | 4 |
| 8. | Professor | Responsible professor: Doc. D-r Lena Kakasheva Mazenkovska The lessons are held by all the members of the Department of Histology and Embryology | | | |
| 9. | Prerequisite | None | | | |
| 10. | Goals | <ul style="list-style-type: none"> • Identifying different tissue types and their relations related to the structure of the organs and organ systems in the human body • Getting acquainted with the histological structure of tissues and organs • Being able to differentiate and to analyze histological samples from different tissues and organs using a microscope • Mastering a histological technique of preparing histological slides of different tissues and organs | | | |
| 11. | Content summary: | <p>Theoretical lessons:</p> <ul style="list-style-type: none"> • Introduction to histology • Tissues <ul style="list-style-type: none"> - Epithelium tissue: covering epithelia (simple squamous, simple cuboidal and simple columnar epithelium; pseudostratified and transitional epithelium; stratified squamous keratinized and stratified squamous non-keratinized epithelium); glandular epithelium and types of glands. - Supporting tissue: connective tissue (loose connective tissue, dense regular and dense irregular connective tissue, adipose tissue, pigment connective tissue, elastic connective tissue, reticular connective tissue and blood; cartilage; osseous tissue - Muscular tissue: smooth, skeletal and cardiac muscular tissue. - Nervous tissue: nerve cell, peripheral nerve, cerebellum and spinal ganglions. • Organ systems: <ul style="list-style-type: none"> - Cardiovascular system: arteries, veins, heart - Immune system: lymphatic nod and spleen - Digestive system: mouth cavity and salivary glands, esophagus, stomach, small intestine, large intestine and appendix, liver and pancreas. - Respiratory system: trachea and lungs. - Urinary system: kidney and urethra. - Male reproductive system: testicle and prostate. - Female reproductive system: ovary, uterus and vagina. - Endocrine system: pituitary gland, thyroid gland and adrenal gland. - Skin and mammary gland. - Eye and ear. <p>Practical lessons:</p> <ul style="list-style-type: none"> - Microscopic analysis of histological tissue samples - Microscopic analysis of histological organ samples of different organ systems | | | |

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| | <ul style="list-style-type: none"> - Complementing microscopic analysis of histological samples by using virtual microscopy - Gaining knowledge and skills to recognize normal structure of tissues and organs - Ability to recognize artefacts that occur during the preparation of a histological slide. | | | |
| 12. | Teaching methods: <ul style="list-style-type: none"> • Interactive lessons with aims and results • Laboratory exercises with video presentations • Using a microscope independently • Individual presentations on suggested topics and open discussions. • Reading recommended mandatory and additional literature • E-materials prepared by the Department and available on the webpage of the faculty • Using additional literature from recommended web links. | | | |
| 13. | Total classes: | 120 | | |
| 14. | Organization | | | |
| 15. | Types of teaching activities | 15.1 | Lessons: theoretical classes | 15 |
| | | 15.2 | Practical lessons | 45 |
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| 16. | Other types of activities | 16.1 | Practice | |
| | | 16.2 | Self-supporting practice | |
| | | 16.3 | Learning at home | 60 |
| 17. | Knowledge assessment | | Points | |
| | 17.1 | Test | 24-40 points | |
| | 17.2 | Practical exam | 16-26 points | |
| | 17.3 | Active participation | Min. – Max. Points | |
| | | | Theoretical lessons | 2 - 4 |
| | | | Practical lessons | 18 - 30 |
| 18. | Grading criterion (points/grades) | Up to 59 points | 5 (five) F | |
| | | From 60 to 68 points | 6 (six) E | |
| | | From 69 to 76 points | 7 (seven) D | |
| | | From 77 to 84 points | 8 (eight) C | |
| | | From 85 to 92 points | 9 (nine) B | |
| | | From 93 to 100 points | 10 (ten) A | |
| 19. | Requirements for obtaining a signature and attending the final examination | To obtain a signature, the student must attend the theoretical lessons, actively participate in the practical lessons and mid-term exams. To attend the practical exam, the student must first pass the histology test. The grade is based on the sum of the points of: attending the theoretical lessons, participation in the practical lessons and the points of the test and practical exam (min.60%) | | |
| 20. | Language | Macedonian | | |
| 21. | Method of evaluating the quality of the lessons | Anonymous student evaluation of the subject, the professors and the collaborators who hold the lessons. | | |
| 22. | Literature | | | |
| | 22.1 | Mandatory literature | | |
| | | 1. | N. Kostovska, L. Milenkova, Histology – Tissue structure, MARIV – S, 2009 | |

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| | | 2. | L. Milenkova, N. Kostovska, Histological structure of the organ systems, Medical Faculty, UKIM, 2013 |
| | | 3. | E.Mitevka, Handbook for practical lessons of histological structure of tissues and organ systems, Medical Faculty, UKIM, 2012 |
| | 22.2 | Additional literature | |
| | | 1. | E. Mitevka, Artifacts in histology, artifacts in paraffinic histological technique, Medical Faculty, 2016 |
| | | 2. | Department of Histology and Embryology, Learning materials, E-files with topics of the practical lessons, 2015 |
| | | 3. | L.K.Zunkveir and H.Karneiro, Foundations of Histology, Prosvetno Delo 2009 (the translation to Macedonian language), 2005 |
| | | 4. | M.H.Ross and V.Pavlina, Histology – text and atlas, Tabernakul 2010 (the translation to Macedonian Language), 2006 |
| | | 5. | www.biolucida.com Medical education edition |