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### თბილისის ჰუმანიტარული სასწავლო უნივერსიტეტი

**TBILISI HUMANITARIAN TEACHING UNIVERSITY**

**Syllabus**

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| **Name of the course/module** | **Histology, Cytology, Embryology-1** |
| **Code of the course** | **PhM0403DM** |
| **Status of the course**  **(elective/compulsory)** | **C**ompulsory course  for the one-cycle higher educational Programme-Dentistry |
| **ECTS** | **4 credits.Total:100 hours**  Contact Hours–49hours (Class Meeting Time Period:15L/30Pr.) + 4 hours(Midterm:2h and Final Examinations 2h):  Individual Work-51 hours |
| **Authors (lecturer)** | Marina Nebieridze Ph.D (Biology) , THTU invited lecturer  Consultation days: according to consultation schedule |
| **Aim of the course** | The aim of discipline is to give the student the knowledge of modern methodology, methods and theory of the microscope, as well as to teach him/her the consecutive stages of the preparation of material needed for the research;to introduce students to the principles of the organization of living materials at the cellular level. |
| **Program prerequisits** |  |
| **Assessment system and criteria** | **Assessment system of the Tbilisi Humanitarian Teaching University's** is divided into the following components:  The total marks of the mid term Out of the overall assessment (100 points) is 60 points, which includes three kinds of grades:  **Student’s activity during a semester;**  **One-midterm exam;**  **final exam**.  Theminimum competence requirement for mid termevaluation components is at least 18 points in total.  **The minimum competence requirement of the final evaluation is 50% of the total mark from final evaluation that means 20 points out of 40.**  Evaluation System includes:  I. Five Forms of Positive Assessment:  (A) Excellent – 91% and more from maximum evaluation  (B) Very good – 81-90% from maximum evaluation  (C) Good – 71-80% from maximum evaluation  (D) Satisfactory – 61-70% from maximum evaluation  (E) Sufficient – 51-60% from maximum evaluation  II. Two Forms of Negative Assessment:  (A)(FX) Fail (Not passed ) - 41-50 from maximum evaluation score, which means that the student will need to work more and to retake the test after additional independent work;  (B) (F) Fail – A student gets 40 points, or less from maximum evaluation, which means that the work done by him/her is not sufficient and s/he has to retake the course from the beginning.  1. One of the negative assessment: in case of not passing, the University fixes additional exam at least in 5 days, after the announcement of final examination results, which must be published in the examination table.  2. The grades, which student gets after additional test is a student's final grades, in which is not considered the negative points of the major examination.  If a student receives from 0 to 50 points after additional test, in the final exam sheet is formed (F) -0 for the student. |
| **Course description** | appendix 1 |
| **Assessment system/activities, methods**  **and criteria** | A student’s final grade is obtained as a result of summing the midterm evaluation earned per semester and final exam evaluation results.  The sum of the course assessment (100 points) breaks down as follows:   * **Activities - 30points** * **Midterm exam - 30 points** * **Final Exam -40 points**   **Activities**(Attendance and participation)-maximal **20points**  Each student is evaluated 10 times a semester, each evaluation – 2 points: total – 20 points,Evaluation criteria:  2 points - s/he is active during classes, obtains perfect knowledge of the ongoing topic, answers all questions completely, is able to identification of histological microscopic preparations .  1.0 point- s/he is less active during classes, does not present perfect knowledge of the ongoing topic, answers questions partly, identification histological microscopic preparations are hard to find.  0 - s/he is less active during classes/group works, does not present perfect knowledge of the ongoing topic, does not answer any questions.  **Quiz** – total**10points**  Includes theoreticalmaterial, it holds 2 times in semester,each quizincludes 5 issues, each correct answer is evaluated with 1 point, each wrong answer is evaluated with 0 point.  **Midterm exam - (30 points)**administered in writtenform (the computer test)**.**Test includes 30 closed-ended question. Each closed-ended question has 4 answers. Only one is correct. Correct answer must be cyrcled.   * Each correctly done test is evaluated with 1point * Each wrongly done test is evaluated with 0 point   **Final Exam -40 points**  The examination is conducted by a combination of written(computer test) and oral exam and includes:   1. The computer test -**20points** 2. Verbal task -**15 points** / 3 brief topics, each is equal 5points 3. Theidentificationof the histological microscopic preparations - **5 points**   Criteria of assessment of oral topics are :  **5 points –**The answer is complete; Terminology is configured; student obtains perfect knowledge of the topic, s/he coveres of the material fluently, summarises core and additional literature, reveales critical thinking and logical analysis.  **4 points** -The answer is not absolutely complete; student obtains knowledge of the topic, without important mistakes, s/he coveres of the material fluently, summarises core literature, reveales critical thinking and logical analysis.  **3 points -** The answer is not complete; student obtains satisfactory knowledge of the topic, s/he coveres of the material by mistakes, summarises core literature, reveales less of critical thinking and logical analysis.  **2 points** - The answer is weak; student obtains satisfactory knowledge of the topic, makes mistakes, doenot summarises core literature, cant make critical thinking and logical analysis.  **1 points -** The answer is substantially incorrect. Set out in the relevant material of the individual fragments. The student is not able to analyze the material.  Identification of the histological microscopic preparations - maximum 5 points.5 microscopicpreparations are allowed for the identification, each evaluated by 1 point. |
| **Core literature:** | 1. L.P.Gartner, J.L.Hiatt-GolorTexbook of Histology. 2. M.Persaud The Developing Human-Clinically Oriented Embryology-7 th Edition. |
| **Additional literature** | 1. L. C.Junqueira et al. Bazic Histology. Text atlas book. 11-th edition. 2. K. L Moore, T.V.N. Persaud, The developing Human, 8-th edition, 2008 3. R. Rukhadze. Histology. Tbilisi state Medical University.2009. |
| **Learning outcomes, competences**  **(general and field specific)** | **Knowledge**   * Student explains the principles of organization at the cellular levels; * Student discusses about the physiological characteristics of the human body at the cellular level; * Student identifies of structural components of different cell system by using microscope and atlases.   **Skills**   * Student finds ways of solving of practical problems based on theoretical knowledge; * Student determines and summarises specific features useful for clinical thinking.   **Responsibilities**   * Student manages the time of individual work;   manages their independent learning as well as extending of the Knowledge;   * Student determines the level of knowledge and future needs. |
| **Learning/Teaching methods** | Lecture/ practical (use of microscope and atlases)  Individual/Group work, Verbal teaching method, Demonstration of study materials, Presentation, Explanation methods, Discussion/debate |

**Appendix 1**

**Course description:**

**Topics of the lecture, practical classes/laboratory work/working group, literature**

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| **Week №** | **Type of**  **the class** | **Topics** | **Contact hours** | **Literature** |
| **Iweek** | Lect. | Histology . Methods for studying cell, structure, composition and functions of the cell cytoplasm and their constituent elements. | **1** | **1** |
| Pract. | Course introduction. Research methods. Microscopes, their structure; Histological preparations. manufacturing methods; | **2** | **1** |
| **IIweek** | Lect. | Glicocalyx. Intercellular contacts, cell surface specialization. Organelles cytoplasm - mitochondria. | **1** | **1** |
| Pract. | Glicocalyx. Intercellular contacts. Pili, microvilli, stereocilia. Cytoplasm; Organelles - the mitochondria. Analysis - identification of tissue samples; | **2** | **1** |
| **IIIweek** | Lect. | Cytoplasmic membrane and Ribosomes; Golgi complex, lizosoma, secretion, cell skeleton: microtubules, micropilaments, microtrabec grid; Cell differentiation. | **1** | **1** |
| Pract. | Cytoplasmic membrane and Ribosomes; Golgi complex, lizosoma, secretion, cell skeleton: microtubules, micropilaments, microtrabec grid; Analysis - identification of tissue samples; | **2** | **1** |
| **IVweek** | Lect. | Nuclei. Nucleolema, nucleoplasma, chromatin; Nucleolar, cell cycle, mitosis/ amitosis, meiosis. | **1** | **1** |
| Pract. | Nuclei. Nucleolema, nucleoplasma, chromatin; Nuclear protein synthesis. The cell cycle; Mitosis amitosis, meiosis; Cell differentiation, life cycles, cell physiology.  Analysis - identification of tissue samples; | **2** | **1** |
| **V week** | Lect. | Medical Embryology. Gametogenesis, fertilization, embryo development in the early stages, organogenesis. | **1** | **1** |
| Pract. | Medical Embryology. Gametogenesis, insemination. The early stages of embryonic development, organogenesis. | **2** | **1** |
| **VIweek** | Lect. | Morula, blastula, double layer disc embryonic development. | **1** | **1** |
| Pract. | Morula, blastula, double layer disc embryonic development.  Analysis - identification of tissue samples; | **2** | **1** |
| **VII week** | Lect. | General Histology. Doctrine tissues. Epithelium, their types and functions. Glandular epithelium**.** | **1** | **1** |
| Pract. | General Histology. Doctrine tissues. Epithelium, their types and functions. Slide view,  Identify the type of epithelium. | **2** | **1** |
| **VIII week** | **Midterm** | | **2** |  |
| **IX week** | Lect. | Proper connective tissue. Loose connective tissue interstitial substance. Tissue fluid formation and circulation, lymph fibroblasts. | **1** | **1** |
| Pract. | Proper connective tissue. Loose connective tissue interstitial substance. Tissue fluid formation and circulation. Lymph. Fibroblasts.  View slides, charts hacking. | **2** | **1** |
| **X week** | Lect. | Loose connective tissue cells. Adipose tissue. | **1** | **1** |
| Pract. | Loose connective tissue cells. Adipose tissue.  Slide view, loose connective and fatty tissue cells of recognition.  Analysis - identification of tissue samples; | **2** | **1** |
| **XI week** | Lect. | Dense connective tissue - tendon. Cartilage, tissue structure. | **1** | **1** |
| Pract. | Dense connective tissue - tendon. Cartilage. View a slideshow of cartilage. Detection tendon and cartilage cells.  Analysis - identification of tissue samples; | **2** | **1** |
| **XII week** | Lect. | Bone tissue formation; Intramembran osteogenesis, | **1** | **1** |
| Pract. | Bone tissue formation; Intramembranuli osteogenesis. Bone Slide View.  Analysis - identification of tissue samples; | **2** | **1** |
| **XIII week** | Lect. | Bone. Encondral osteogenesis. | **1** | **1** |
| Pract. | Bone. Encondral osteogenesis. Bone Slide View.  Analysis - identification of tissue samples; | **2** | **1** |
| **XIV week** | Lect. | Striated (skeletal) muscle tissue. Smooth muscle tissue. | **1** | **1** |
| Pract. | Striated (skeletal) muscle tissue. Smooth muscle tissue. View slide show of muscle.  Analysis - identification of tissue samples; | **2** | **1** |
| **XV week** | Lect. | Cardiac muscle tissue. Actine and miosin. Sarcomere. | **1** | **1** |
| Pract. | Cardiac muscle tissue. Actine and miosin. Sarcomere.  View slide show of muscle. Hacking schemes. | **2** | **1** |
| **XVIweek** | Lect. | Cardiac muscle tissue. Actine and miosin. Sarcomere. | **1** | **1** |
| Pract. | Cardiac muscle tissue. Actine and miosin. Sarcomere.  View slide show of muscle.  Analysis - microscopic analysis of tissue samples, identification; | **2** | **1** |
| **XVII – XVIIIweek** | **Final exam** | | **2** |  |
| **XIX-XXweek** | **Additional exam** | |  |  |