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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 coursefor 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 lecturerConsultation 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.
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| **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.
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| **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.
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| **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** |  |  |