



**Department of Biology**

**College of Education**

**University of Salahaddin**

**Subject: Practical Histology**

**Course Book (Year 2)**

**Lecturer's name: Israa M. Mohammed, MSc**

**Academic Year: 2023/2024**

## Course Book

<b>1. Course name</b>	Practical Histology
<b>2. Lecturer in charge</b>	Israa M. Mohammed
<b>3. Department/ College</b>	Biology/College of Education
<b>4. Contact</b>	<b>E-mail:</b> israa.mohammed@su.edu.krd <b>Tel:</b> 0751 8703205
<b>5. Time (in hours) per week</b>	6 hrs.
<b>6. Office hours</b>	PhD student
<b>7. Course code</b>	EdB0201
<b>8. Teacher's academic profile</b>	<p>I have finished High school in 2009 and attended to College of Education, Biology Department/Salahaddin University /Erbil during 2009-2010 and I was the top 1 student in my department and my entire college with grade <b>83.834</b>.</p> <p>I got my job at the biology in 2012 as an assistant biologist and served for one year, then I started my master study in histology and embryology in 2013 and finished the master study in January 2016 with grade <b>86.812</b> The title of my thesis was "Histopathological and Histochemical study of Aluminium Chloride Induced Oxidative stress in Albino rat brain: The Protective Role of Omega-3 and Melatonin"</p> <p>My academic title changed from biologist to assistant lecturer after finishing a three-month teaching course on methods of teaching and assessment and getting IELTS certification for English language.</p>
<b>9. Keywords</b>	Histology, Tissue, Embryology, Fertilization, Cleavage
<b>10. Course overview:</b>	<p>Histology is the study of microscopic/anatomy dealing with the structures of cells, tissue and organs in relation to their functions. It is Important because without studying Histology studying other subjects in the coming years of student's study is impossible, such as physiology and Endocrinology, beside that the goal of these students are to be teachers in the future, so it is required from them to have a huge knowledge about this subject to able to teach students.</p> <p>The first part of the course deals with basic tissues (a collection of similar cells and the extracellular matrices surrounding them): epithelium; connective tissues (proper, blood, bone and cartilage); muscles; and nerve tissues. The second part of the course deals with organs, systemic arrangement of tissues performing a specific function, as of cardiovascular system, integumentary system, respiratory system, digestive system (GIT and associated glands), endocrine system, urinary system, female reproductive system, male reproductive system and finally, the sense organs. The course deals mainly with the structural aspects of cells, tissues and organs. It also covers the basic functions of these structures.</p> <p>Students will take these subjects in the laboratories by following in in sync with theory lectures of Histology so that they get the perfect picture and understanding about the subjects they take.</p>
<b>11. Course objective:</b>	The purpose of histology course is to teach students how to identify various types of cells in

<p>standard prepared histological sections and to identify a variety of normal tissues. At the end of the histology course, the student is expected to be able to:</p> <ol style="list-style-type: none"> <li>1. Understand the histological structure of each of the organs of the body systems.</li> <li>2. Identify cells, tissues and organs of the body systems,</li> <li>3. Understand the structural and functional relationships of the cells, tissues, and organs of the body systems.</li> </ol>	
<p><b>12. Student's obligation</b> The students are obliged to have a drawing notebook to draw the microscopic slides and take notes( beside that they can take photo of the slides after drawing them), and they are also obliged to wear a lab coat.</p>	
<p><b>13. Forms of teaching</b> Interactive teaching using Data Show Projector and Whiteboard, and main focus is everyone's participation in discussions and make every student part of the lecture. I start every section with questioning the students. At the end of the lecture , a student will take the role of lecturer and summarizes the lecture , in order to directly evaluate the degree of understanding.</p>	
<p><b>14. Assessment schemes</b> Student are obliged to weekly quizzes which will be counted along with other activities as 5 degree on the average. Beside that they will have 3 monthly exams (and exams are accounted 30 degree ) as well as reports , seminars prepared by students at the second coarse, 35 degree will be recorded as practical degree and 15 degree on theoretical histology and embryology .The final examination is only theoretical 50 degree.</p>	
<p><b>15. Student learning outcome:</b> They will have knowledge of the normal histological structure of the cells and tissues of the human body. And they will have an understanding of the significant structural differences between specialized body cells. And recognized the interrelationship between the structure of tissues and their function. Briefly, they will have knowledge about four major types of tissues inside the human body (Epithelial tissue, Connective Tissue, Muscle Tissue, and Nervous Tissue) and how to differentiate between them one by one, beside that they will have knowledge about tissue structure of different systems inside human body such Integumentary system, circulatory system, Muscular system, Nervous system... etc These informations will be necessary for being a teacher in the future, beside that can benefit from this knowledge in their daily life since it is related to their own body's structure and composition and how it works together to be a healthy person.</p>	
<p><b>16. Course Reading List and References:</b></p> <ul style="list-style-type: none"> <li>▪ <b>Key references:</b> A Photographic Atlas of Histology, Michael J. Leboffe. William, A.; Beresford, M.A., D. Phil, Westginia University, Morgantown, USA.</li> <li>▪ <b>Useful references:</b> Junqueira, L.C. &amp; Carneiro. J. (2005). Basic Histology: Text&amp;Atlas.11ed</li> <li>▪ <b>internet:</b> <a href="http://www.embryology.med.unsw.edu.au/OtherEmb/chick2.therhtm">www.embryology.med.unsw.edu.au/OtherEmb/chick2.therhtm</a></li> </ul>	
<b>17. The Topics:</b>	<b>Lecturer's name</b>
<b>18. Practical Topics</b>	

<b>Subject 1 : Histological tissue (slide preparation), types of sectioning, steps of preparation, microtome operation.</b>	Israa M. Mohammed (2 hours)
<b>Subject 2, 3:</b> Epithelial Tissue: Characteristic features and functions of epithelial tissue. Classification of types of epithelia and know example of location within body.	Israa M. Mohammed (2hours)
<b>Subject 4:</b> Connective Tissue Proper 1- Definition and Function of connective tissue proper. 2- Components of connective tissue. 3- Classification & types of connective tissue proper and sites of each type.	Israa M. Mohammed (2 hours)
<b>Subject 5:</b> Bone and Cartilage 1- Components, functions, types (hyaline, elastic, and fibro cartilage), Locations, cells of cartilage (Chondroblasts and chondrocyte). 2- Structure, types (compact and spongy bone), cells of bone	Israa M. Mohammed (2 hours)
<b>Subject 6: blood</b> Components, functions. Types of cells	Israa M. Mohammed (2 hours)
<b>Subject 7:</b> Muscular Tissue Microscopic features function and type of muscles (skeletal muscle, cardiac muscle, and smooth muscle).	Israa M. Mohammed (2 hours)
<b>Subject 8:</b> Nerve Tissue I 1. Basic structure of nerve tissue. 2. Neurons, classification, structure and function of neuron. 3. Nerve fiber (Definition, types: myelinated nerve fiber and unmyelinated nerve fiber, and structure of myelinated nerve fiber). 4. Nerve endings (definition, types).	Israa M. Mohammed (2 hours)
Nerve Tissue II Central nervous system (CNS) Brain (cerebellum & cerebrum) and Spinal cord	Israa M. Mohammed (2 hours)
<b>Subject 9:</b> Cardiovascular system 1. Histological structure of the heart wall. 2. Classification of arteries and veins; their structural modifications in relation to their functions.	Israa M. Mohammed (2 hours)
<b>Subject 10: Integumentary system</b> 1. Types & sites of skin 2. Histology of thick non-hairy skin 3. Histology of thin hairy skin 4. Skin appendages (hair and hair follicles, nail, sebaceous gland).	Israa M. Mohammed (2 hours)

<p><b>Subject 11: Urinary system</b>          1-kidneys overview 2-Nephron structure :          A-Renal corpuscles (glomerulus)          b- Renal tubules (Proximal convoluted tubule, distal convoluted tubule). 3-urinary tracts (ureter, urinary bladder, and urethra).</p>	<p>Israa M. Mohammed (2 hours)</p>
<p><b>Subject 12: Digestive system I</b>          1-Overview &amp; gross anatomy of digestive system.          2-Oral cavity (lips, tongue, oral mucosa, and salivary glands).          3-Gastrointestinal tract (oesophagus, stomach).</p>	<p>Israa M. Mohammed (2 hours)</p>
<p><b>Subject 13: Digestive system II</b>          1-Small intestine anatomy (duodenum, jejunum, and ileum).          2-Large intestine anatomy (caecum, ascending colon, transverse colon, descending colon, sigmoid colon, rectum, anus).</p>	<p>Israa M. Mohammed (2 hours)</p>
<p><b>Subject 14: Accessory Digestive Glands</b>          1- Pancreas 2- Liver 3- Gall bladder</p>	<p>Israa M. Mohammed (2 hours)</p>
<p><b>15. Examinations:</b>          The students are being tested paper. The exam includes 10 Questions, each question contains picture of slide and these questions are: Identify the Slide?          Identify the pointed part?          Where it is found? (location of the tissue)  <b>Answer: Special connective tissue –compact bone Pointed parts are: lacunae, lamella</b>  <b>Long bones of leg.</b></p>	