

Course Syllabus of Introduction to Cytology & Histology

Faculty: Faculty of Medicine and Health Sciences.

Department: Basic Sciences

Program : Bachelor of Medicine and Surgery

I. General information about the course instructor :							
Name	Hyam Abdulkareem Al Hyfi	Office Hours(3 Hours Weekly)					
Location & phone number	Sana'a 777326771	Sat	Sun	Mon	Tue	Wed	Thu
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II. General information about the course:							
1	Course Title :	Introduction to Cytology & Histology					
2	Course Code and Number :	BMD03					
3	Credit Hours :	Credit Hours					Total
		Theoretical	Seminar/Tutoria 1	Practica 1	Clinica 1	Trainin g	
		2	-	1	-	-	
4	Study Level and Semester:	1 st year/ 2 nd Semester					
5	Pre-requisites :	None					
6	Co-requisites:	None					
7	Program in which the course is offered:	Bachelor of Medicine and Surgery					
8	Teaching Language:	English					
9	Instruction location:	University of Science and Technology, Sana'a					

III. Course Description

This an introductory block which provide the student with the basic science literature of cell and tissues to identify the normal structure of human cell and its components and their function in the cell. This fundamental course will also help student to recognize the main characteristics of the human basic tissues (epithelium, connective, muscular and nervous tissues) and their appearance in different parts of human organs. The student will be able to differentiate between different types of tissues and organs under the light microscope during the laboratory sessions in this block as well as in the next block systems.

IV. Course Aims: this course aims to:

1. Familiarize students with basic tissues and the extracellular matrices surrounding them: epithelium, connective tissues, including blood, bone and cartilage, muscles, and nerves.
2. Facilitate the integration of Anatomy with Physiology and Biochemistry.
3. Set the stage for further studies later.

V. Course Intended Learning Outcomes (CILOs) : by the end of this course, the student should be able to:

1. Identify the different types of the microscopes.
2. Describe the structure and components of the human cells.
3. Describe the characteristics, forms and functions of different body tissues.

VI. Course Contents

Theoretical Aspect:

No.	Course Units	Sub-topics	No. of Lectures	Contact Hours
1	INTRODUCTION	-Micro technique. -Microscopy.	1	2
2	CELLULAR BASES OF GENETICS	- General structure of the nucleus. - Molecular structure of D.N.A. - Chromosomes, genes and genome. - Chromosomal abnormalities. - Cell cycle.	2	4
3	CYTOPLASM	- L.M.& E.M. structure and function of cytoplasmic organelles. - Cytoplasmic inclusions.	2	4
4	EPITHELIUM	- General characters of epithelial cells. - Classification of epithelium. - Epithelium covering surfaces and lining cavities. - Glandular epithelium.	2	4

		- Neuroepithelium. - Germinal epithelium.		
5	CONNECTIVE TISSUE	-General structure of connective tissue. - Free and fixed connective tissue cells. - Connective tissue fibers - Connective tissue matrix. - Different types of C.T.	2	4
6	BLOOD	- The characters and structure (L.M. & E.M.) of R.B.Cs., leucocytes & platelets.	2	4
7	CARTILAGE & BONE	- General structure of cartilage. - Types of cartilage. - General structure of bone. - Types of bone.	2	4
8	MUSCULAR TISSUE	- General characters of muscular tissue. - Types of muscles.	1	2
9	NERVOUS TISSUE	- General structure of nerve cell. - Types of nerve cells. - Synapses. - Nerve endings.	1	2
Total			15	30

Second: Practical/Tutorial/Clinical aspects

No.	Practical/Tutorial/Clinical topics	No. of labs	Contact Hours
1.	INTRODUCTION -Micro technique. -Microscopy. -Liver cell, nucleus and cytoplasm.	2	4
2.	CELL ORGANELLES - R.E.R. in pancreatic acinar cells. - S.E.R. in lacrimal acinar cells. - Nissl granules in nerve cells by T.B. - Mitochondria in liver cells by iron Hx. - Golgi bodies in the epididymis by silver stain.	1	2
3.	CELL INCLUSIONS - Glycogen in liver cells by P.A.S. - Fat in fat cells. - Melanin pigment in iris.	1	2
4.	SIMPLE EPITHELIUM -Simple squamous epithelium in the parietal layer of Bowman's capsule of the kidney. -Simple cubical epithelium in the renal tubules. -Simple columnar epithelium in the small intestine. -Pseudostratified columnar epithelium with goblet cells in the trachea. NEUROEPITHELIUM -Taste buds in the tongue.	2	4
5.	STRATIFIED EPITHELIUM -keratinized stratified squamous epithelium in the skin. -Non keratinized stratified squamous epithelium in the vagina.	2	4

	<ul style="list-style-type: none"> - Stratified cuboidal epithelium in the gland duct. - Stratified columnar epithelium in the gland duct. -Transitional epithelium in the urinary bladder. <p>GLANDULAR EPITHELIUM</p> <ul style="list-style-type: none"> -Mucous glands in the oesophagus. -Serous glands in the pancreas. -Mixed glands in the salivary glands. 		
6.	<p>CONNECTIVE TISSUE PROPER</p> <ul style="list-style-type: none"> - Loose connective tissue by spreading technique. -Regular dense white C.T. in tendon. -Regular dense yellow C.T. in ligament by orcein stain. -Irregular dense yellow C.T. in aorta by orcein stain. 	1	2
7.	<p>CONNECTIVE TISSUE OF SPECIAL PROPERTIES</p> <ul style="list-style-type: none"> -Mucoïd C.T. in umbilical cord. - Adipose C.T. -Reticular C.T. <p>BLOOD</p> <ul style="list-style-type: none"> -Blood film. -Bone marrow section. 	1	2
8.	<p>CARTILAGE</p> <ul style="list-style-type: none"> -Hyaline cartilage in the costal cartilage. -Elastic cartilage in ear pinna by orcein stain. - White fibrocartilage. 	1	2
9.	<p>BONE</p> <ul style="list-style-type: none"> -Compact bone. -Cancellous bone. -Intracartilagenous ossification. 	1	2
10.	<p>MUSCULAR TISSUE</p> <ul style="list-style-type: none"> -Skeletal muscles. -Cardiac muscles. -Smooth muscles. 	1	2
11.	<p>NERVOUS TISSUE</p> <ul style="list-style-type: none"> -Nerve trunk,Hx&E. -Nerve trunk,osmic acid. -spinal ganglia Hx&E. -Spinal ganglia,silver stain. -Sympathetic ganglia. 	2	4
Total		15	30