



Syllabus: Course Title and Code (111501302) First Semester 2023/2024

COURSE INFORMATION	
Course Name: Gastrointestinal system Semester: 1st Semester Department: Pathology, Microbiology, and Forensic medicine Faculty: Faculty of Medicine	Course Code: 111501302 Section: Preclinical Modules /Course Core Curriculum: MD program
Day(s) and Time(s): Everyday Nov 22 - Dec 27 Classroom: Al-Hareth Hall 1 and 2, and online, and Al-Hareth Main Hall	Credit Hours: 6 hours Prerequisites: N/A
COURSE DESCRIPTION	
<p>The Gastrointestinal tract (GIT) System is an intensive, multidisciplinary six-credit-hour course, with 53 lectures included. This course aims to cover all the clinically relevant and significant aspects of the gastrointestinal system and provide the fundamental concepts in several GIT- related topics. Students will be introduced to the anatomy and histology of the GIT and the physiology of gastrointestinal motility, digestion, and metabolism. Moreover, the lecture sessions will discuss the fundamental basic science concepts of important pathologies of the GIT, including diseases of the hepatobiliary system and the pancreas and several relevant pharmacological treatments. Theoretical and practical sessions will be taught in an integrative approach.</p>	
DELIVERY METHODS	
<p>The course will be delivered through a combination of active learning strategies. These will include:</p> <ul style="list-style-type: none"> • PowerPoint lectures and active classroom-based discussion • Practical laboratories • Relevant films and documentaries • E-learning resources: e-reading assignments and practice quizzes through Model and Microsoft Team 	

FACULTY INFORMATION		
Name	Dr. Dua Abuquteish	
Academic Title:	Assistant Professor	
Office Location:	1020	
Telephone Number:	5406	
Email Address:	dua@hu.edu.jo	
Office Hours:	Sunday 9.30-12:00 Tuesday 9.30-12:30 <i>Please send an e-mail (dua@hu.edu.jo) to meet at any other time.</i>	

REFERENCES AND LEARNING RESOURCES	
<p>Principles of Human Anatomy latest edition.</p> <p>Clinical Anatomy for Medical Students, latest edition</p> <p>Atlas of Human Anatomy Basic Histology. latest edition</p> <p>Before we are born. latest edition</p> <p>Textbook of Medical physiology. By Guyton & Hall, latest edition</p> <p>Harper’s Biochemistry Harper’s Biochemistry, latest edition</p> <p>Robbins Basic Pathology, latest edition (10th edition)</p> <p>Medical Microbiology. An Introduction to Infectious Diseases. latest edition.</p> <p>Illustrated Reviews Pharmacology, latest edition</p> <p>Supplementary Departmental Handouts</p>	

The GIT module lecturers:

Anatomy and histology	Dr. Mustafa Yousef	MustafaS@hu.edu.jo
	Dr. Amany Swilam	amany@hu.edu.jo
Pathology	Dr. Dua Abuquteish	dua@hu.edu.jo
Microbiology	Dr. Hala Tabl	Halaa_mo@hu.edu.jo
Pharmacology	Dr. Arwa Al-Anber	arwaa@hu.edu.jo
Biochemistry	Dr. Ahmad Salem	asalem@hu.edu.jo
Physiology	Dr. Iman Aolymat	imank@hu.edu.jo
	Dr. Saeed Alkhatib	sykhathib@just.edu.jo
Public health	Dr. Eman Al-Kamil	EmanA_Sa@hu.edu.jo

STUDENT LEARNING

Course Objectives	Course Student Learning Outcomes			Assessment Method
<p>Upon successful completion of this course, students should be able to:</p> <ol style="list-style-type: none"> Describe the gross structure and functional anatomy of each GIT organ. Recognize the microscopic appearance of different parts of the GIT and the normal embryology development with their congenital abnormalities. Describe the function of each GIT structure. Explain how neuronal mechanisms and GIT hormones regulate gastrointestinal, pancreatic, and biliary functions. Describe the major types of nutrients. Explain how proteins, carbohydrates, and fats are digested and absorbed. Identify and describe the major disease processes including neoplasms and malabsorption conditions affecting different organs of GIT in terms of pathogenesis, gross and microscopic changes, manifestations, and complications. 	TOPIC (SUBJECTS& NUMBER OF LECTURES/ SUBJECT)	Lecture title	Lecture Learning objectives	
	PATHOLOGY 1	Oral and salivary gland Diseases	<ol style="list-style-type: none"> Describe the etiology, pathogenesis, and pathology of the main diseases of oral cavity. Provide a brief account of infectious/inflammatory diseases of the salivary glands. List the most important salivary gland tumors and briefly describe their pathology 	<ul style="list-style-type: none"> Exams Quizzes “On-line’ reading assignments
	PATHOLOGY 2	Esophageal diseases, including GERD	<ol style="list-style-type: none"> Describe the main acquired anatomic disorders of the esophagus with emphasis on achalasia, lacerations, and hiatal hernia, in terms of etiology, pathogenesis, and pathologic features. Mention the cause, pathologic features, and clinical significance of esophageal varices. Describe the pathogenesis of reflux disease (GERD) 	

	PATHOLOGY 10 & 11	Liver injury, cirrhosis, and hepatic failure part I and II	<ol style="list-style-type: none"> 1. Describe the general morphologic and functional patterns of hepatic injury 2. Understand the different liver diseases manifestation and terminology. 3. List the main causes of hepatic failure and describe the pathogenesis, pathologic features, and complications of this disorder. 4. Define cirrhosis and describe the pathologic features and complications of this condition 	
	PATHOLOGY 12 and 13	Common liver diseases and hepatic tumors	<ol style="list-style-type: none"> 1. Discuss the Pathogenesis & Pathologic Manifestations of Alcohol Liver Disease. 2. Describe the other (non-Alcohol) and non-infectious causes of hepatitis, including Drug Induced Liver Diseases. 3. Briefly describe the Pathological Effects of Metabolic & Inherited Liver Diseases (Hemochromatosis, Wilson disease, alpha-1-antitrypsine deficiency, and others) 4. Cholestatic liver diseases 5. Hepatic adenomas and liver tumors 	

PATHOLOGY 14

Gallbladder and
pancreatic diseases

1. Discuss the disorders of the gallbladder with emphasis on cholelithiasis, cholecystitis and tumors.
2. Describe the pathology of the major tumors of the biliary tree.
3. Describe the causes, pathogenesis, and pathologic feature of different forms of pancreatitis.
4. List and describe the major tumor of exocrine pancreas.

Syllabus for Anatomy lectures in the Digestive System module

Anatomy 01	Anatomy of GIT (Mouth, tongue, teeth)	<ol style="list-style-type: none">1. Outline the parts & functions of GIT.2. Understand the general structure of digestive tract wall.3. Describe the anatomy of oral cavity (parts, structure, blood & lymph vessels, motor, and sensory supply).4. Briefly describe the teeth (types & structure).5. Describe the gross features & histology of tongue.6. Describe muscles & movements of tongue, blood & nerve supply, lymphatic drainage
Anatomy 02	Anatomy and Histology of Salivary glands	<ol style="list-style-type: none">1. Outline the types & function of minor and major salivary glands.2. Describe location, shape, facial sheaths & gross features of major salivary glands (parotid, submandibular and sublingual glands).3. Understand the relations, blood & nerve supply, and lymph drainage of the major salivary glands.4. Describe the histology of the major salivary glands.
Anatomy 03	Anatomy of palate, pharynx, and esophagus	<ol style="list-style-type: none">1. Describe the parts and structure of palate.2. Understand the muscles, movements, blood & nerve supply and lymph drainage of soft palate.3. Describe the extension, relations, and parts of pharynx.4. Describe muscles, blood & nerve supply, and lymph drainage of pharynx.5. Describe the extension, parts, relations, blood & nerve supply, and lymph drainage of esophagus.
Anatomy 04	Anatomy of peritoneum	<ol style="list-style-type: none">1. Describe the parts and reflection of peritoneum.2. Describe the parts of peritoneal cavity (lesser & greater sacs).3. Describe the ligament and folds of the anterior abdominal wall.4. Describe the peritoneal omenta, folds, recesses, Gutter & pouches.5. Understand the blood & nerve supply, and lymph drainage of peritoneum.

Anatomy 05	Anatomy of the Stomach	<ol style="list-style-type: none"> 1. Describe the location, shape, opening, surfaces, parts, and relations of stomach. 2. Understand the blood & nerve supply and Lymph drainage of stomach
Anatomy 06	Histology of Esophagus and Stomach	<ol style="list-style-type: none"> 1. Describe the histology of esophagus 2. Describe the general layout of the wall of the stomach. 3. Identify the various cells of the gastric epithelium and understand their main features. 4. Recognize the main histological differences between the regions of the stomach.
Anatomy 07	Anatomy of pancreas & duodenum	<ol style="list-style-type: none"> 1. Describe the location, parts and relations, blood & nerve supply, and lymph drainage of pancreas. 2. Describe the histology of pancreas. 3. Describe the parts of small intestine. 4. Understand the relation of the four parts of duodenum, blood & nerve supply, and lymph drainage of duodenum.
Anatomy 08	Anatomy of small & large intestine	<ol style="list-style-type: none"> 1. Describe the parts of small intestine. 2. Describe the gross features, blood & nerve supply, and lymph drainage of jejunum & ileum. 3. Outline the parts of large intestine. 4. Describe the location, relation, blood & nerve supply and the lymph drainage of the appendix & colon.
Anatomy 09	Anatomy of large intestine	<ol style="list-style-type: none"> 1. Describe the location, relation, blood & nerve supply and the lymph drainage of colon, and rectum. 2. Describe location, internal features, relations, sphincters, blood & nerve supply and lymph drainage and histology of anal canal. 3. Outline the location and causes of the internal & external hemorrhoid and anal fissure.
Anatomy 10	Histology of small and large Intestine	<ol style="list-style-type: none"> 1. Describe the general layout of the wall of the small intestine. 2. Identify the various cells of the small intestinal epithelium and understand their main features. 3. Recognize the main histological differences between the parts of the small intestine (duodenum, jejunum, and ileum).

		<p>4. Describe the general layout of the wall of the large intestine.</p> <p>5. Identify the various cells of the large intestinal epithelium and understand their main features.</p> <p>6. Recognize the main histological features of main parts of large intestine (colon, appendix, and anal canal)</p>
--	--	---

Anatomy 11	Anatomy of the Liver, Gallbladder, and biliary tree	<p>1. Describe the location, surfaces, fissures, lobes, and peritoneal covering of the liver.</p> <p>2. Describe the relations, blood & nerve supply, and lymphatic drainage of the liver.</p> <p>3. Describe the parts, location, relations, blood & nerve supply, and lymph drainage of gallbladder.</p> <p>4. Describe the biliary tree and its relations.</p>
Anatomy 12	Histology of the Liver, Gallbladder, and biliary tree	<p>1. Describe the histology of the liver.</p> <p>2. Describe the histology of the gall bladder.</p> <p>3. Describe the histology of biliary tree.</p>
Anatomy 13	Embryology of GIT tract	<p>1. Describe the formation of gut tube.</p> <p>2. Outline the derivatives of foregut, midgut, and hindgut</p>

Subject	# of lecture	Lecture title	Lecture learning objectives
Physiology	1	GIT motility	<ol style="list-style-type: none"> 1. Recognize the general principles of gastrointestinal function. 2. Describe the special features of the enteric nervous system. 3. Identify the significance of gap junctions, interstitial cells of Cajal, and pacemaker cells in the functioning of GI smooth muscle. 4. Explain the electrical basis of gastrointestinal contractions and the role of basic electrical activity (slow waves) in governing motility patterns. 5. Describe how gastrointestinal motility changes during fasting. 6. Identify the different types of propulsive and mixing motility in small and large intestine and the regulation of these movements. 7. Explain the receptive relaxation and other gastrointestinal reflexes.
Physiology	2	Swallowing, esophageal motility, and gastric vomiting	<ol style="list-style-type: none"> 1. Describe the mechanism of swallowing phases (oral, pharyngeal, and esophageal). 2. Identify the stimulus and neural pathways that generate primary and secondary esophageal peristalsis. 3. Understand the major functions of the esophagus and associated structures in terms of protection and propulsion. 4. List the physiological events in gastric motility that occur in the gastric phase of digestion. 5. Discuss the mechanism of vomiting and its significance as a protective response.
Physiology	3	GIT secretions	<ol style="list-style-type: none"> 1. Describe the physiological role of various salivary glands. 2. Describe the mechanisms involved in the regulation of salivary secretion. 3. Describe the correlation between the composition and functions of salivary secretion. 4. Describe the various types of gastric cells and the secretion of each cell type. 5. Mention the components of gastric juice and the function of each component

			<p>with especial attention on the role of hormones and other factors influencing gastric secretion.</p> <p>6. Describe the different mechanisms involved in the control of gastric secretion (mechanical, chemical, and neural).</p>
Physiology	4	Pancreatic secretions	<ol style="list-style-type: none"> 1. Recognize the functional anatomy of the pancreas. 2. Describe the mechanism of pancreatic secretion from acinar cell. 3. Indicate the composition and the role of pancreatic juice (ductal fluid and digestive enzymes) under different physiological states. 4. Describe the activation of the pancreatic enzymes in the lumen of the small intestine. 5. Illustrate the neuroendocrine regulation of exocrine pancreatic secretion. 6. Understand the role of exocrine pancreatic secretion in intestinal digestion of nutrients. 7. Describe the response of pancreatic secretion to a meal.
Physiology	5	Biliary and intestinal secretions	<ol style="list-style-type: none"> 1. Describe the components of bile and intestinal secretions. 2. Indicate the function of each component secreted in bile and intestinal juice in digestion. 3. Recognize the mechanism that regulates bile synthesis and secretion. 4. Illustrate the regulation mechanisms involved in the secretion of intestinal fluid (mechanical, hormonal, and neural).
Physiology	6	Absorption in GIT	<ol style="list-style-type: none"> 1. Indicate the role of Brunner's glands in duodenum and of bile salts in fat digestion and absorption (mechanical, hormonal, and neural). 2. Describe the enterohepatic circulation of bile acids. 3. Explain the mechanisms of absorption of the principal inorganic components of diets. 4. Discuss the molecular basis of membrane transport processes.

			<ol style="list-style-type: none"> 5. Explain the factors that determine whether a molecule is absorbed into the blood or into lymph. 6. Explain the mechanisms by which end products of digestion of proteins, carbohydrates, and fats are absorbed into and through the cells lining the alimentary canal. 7. Define how the motility patterns of the colon subserve its function to desiccate (dehydrate) and evacuate the stool.
--	--	--	---

Subject	# of lecture	Lecture title	Lecture learning objectives
Pharmacology	1	Antiemetic drugs affecting gastric motility	<ul style="list-style-type: none"> Describe the mechanism of drug-induced vomiting. List drug classes employed as antiemetic's & the mechanism of action each class. Understand nausea and vomiting treatment in pregnancy. Explain the clinical implications of drugs on gastric emptying.
Pharmacology	2&3	Drugs used in GERD and peptic ulcer disease.	<ul style="list-style-type: none"> Describe mechanism, uses and adverse effect drugs used in GERD. List major drugs associated with GI ulceration Describe the mechanism of action of drugs or groups of drugs commonly employed in the management of peptic ulcer disease. Explain the rationale behind the use of drug combination in peptic ulcer disease. List important antimicrobial drugs employed in peptic ulcer disease & explain the therapeutic basis of their inclusion in the management of peptic ulcer disease. Enumerate the adverse effects of drugs commonly used in peptic ulcer disease. Describe the pharmacotherapy options for prophylaxis of stress-related mucosal bleeding.
Pharmacology	4	Laxatives	<ul style="list-style-type: none"> Review the physiological aspects of normal bowel habits. List the major classes of drugs employed as laxatives & describe their mechanism of action. Acknowledge the indications and contraindications of laxatives Indicate the specific adverse effects associated with the commonly used laxative agents

Pharmacology	5	Antidiarrheal drugs	<ul style="list-style-type: none"> • Describe the therapeutic aims of antidiarrheal drugs. • List the major classes of antidiarrheal drugs & describe their mechanism of action. • Indicate the major adverse effects possibly encountered in patients using antidiarrheal drugs.
Pharmacology	6	Irritable bowel syndrome (IBS) and inflammatory bowel diseases (IBD)	<ul style="list-style-type: none"> • Describe mechanism, uses and adverse effect drugs used in irritable bowel syndrome and inflammatory disease. • Understand the non-pharmacological mana for IBS and IBD patients.
Pharmacology	7	Treatment of hepatic encephalopathy and liver cirrhosis	<ul style="list-style-type: none"> • Describe mechanism of drugs causing various types of hepatic diseases. • Describe the therapeutic beneficial effects of some drugs used in treatment of hepatic encephalopathy and liver cirrhosis.

Subject	# of lecture	Lecture title	Lecture learning objectives
Microbiology	1	Gastritis & Helicobacter pylori	1- Describe morphology and cultural characters of Helicobacter pylori. 2- Understand the virulence factors and pathogenesis of Helicobacter and its role in gastritis. 3- Identify laboratory diagnosis & treatment options of Helicobacter infection.
Microbiology	2	Bacterial infections of GIT I	1- Enumerate important bacterial GIT infections. 2- Describe morphology, culture, pathogenesis, Laboratory diagnosis and treatment options of Salmonella, Shigella, Diarrheagenic E.coli and Campylobacter.
Microbiology	3	Bacterial infections of GIT II	1- Describe morphology, culture & pathogenesis of Vibrio cholerae. 2- Identify laboratory diagnosis & treatment options of Vibrio cholerae. 3- Differentiate between different microbial causes of food poisoning. 4- Recognize Laboratory diagnosis of food poisoning.
Microbiology	4	Viral causes of diarrhea	1- Enumerate Viral causes of diarrhea. 2- Recognize the structure, pathogenesis, epidemiology, laboratory diagnosis & control of Rota viruses, Adenoviruses, 40 & 41 Norwalk, Coronaviruses & Enteroviruses
Microbiology	5	Viral Hepatitis	1- Enumerate types of hepatitis viruses. 2- Understand the general characters pathogenesis, clinical presentation, laboratory diagnosis, prevention and treatment of HAV, HBV, HCV, HDV and HEV.
Microbiology	6	Parasitic diseases of GIT I	1- Enumerate important intestinal trematodes & cestodes and Identify their general characters. 2- Describe the morphology, life cycle, pathogenesis, epidemiology, laboratory diagnosis & treatment of Schistosoma Mansoni, Fasciola, Taenia, Echinococcus granulosus and Hydatid disease.

Microbiology	7	Parasitic diseases of GIT II	<ol style="list-style-type: none"> 1- Enumerate important intestinal nematodes and Identify their general characters. 2- Describe the morphology, life cycle, pathogenesis, epidemiology, laboratory diagnosis & treatment of <i>Ascaris lumbricoides</i>, <i>Ancylostoma duodenale</i>, <i>Strongyloides</i> and <i>Enterobius vermicularis</i>.
Microbiology	8	Parasitic diseases of GIT III	<ol style="list-style-type: none"> 1- Enumerate important protozoal infections of GIT. 2- Describe the morphology, life cycle, pathogenesis, epidemiology, laboratory diagnosis & treatment of <i>Entamoeba histolytica</i>, <i>Giardia lamblia</i>, <i>Balantidium coli</i> and <i>Cryptosporidium parvum</i>.

Community Medicine	1	GIT public health issues	<p>To better understand priority GIT disorders prevalence and burden.</p> <p>To discuss the public health interventions and the evidence-based practices to address these problems.</p>
Biochemistry	1	Digestion and absorption of Carbohydrates	<ol style="list-style-type: none"> 1. Identify the major monosaccharides, disaccharides, and polysaccharides found in the human body and diet. 2. Explain why ingested disaccharides and polysaccharides must be broken down into monosaccharides and describe how this is accomplished. 3. List the main digestive enzymes and describe their action on carbohydrate. 4. Describe how glucose is transported across intestinal epithelial cells and into the bloodstream and describe the proteins involved. 5. Describe the role of glucose transporters (GLUTs) in the transport of glucose into and out of cells, and tissue specific differences in the expression and regulation of GLUTs. 6. Explain the biochemical basis for the symptoms seen in lactose intolerance & Congenital sucrase-isomaltase deficiency (CSID).

Biochemistry	2	Digestion and absorption of lipids	<ol style="list-style-type: none"> 1. List the constituents of dietary lipids 2. Discuss the digestion of lipid in the stomach and small intestine. 3. Explain the role of lipases in lipid digestion. 4. Discuss the digestion of dietary cholesterol and phospholipid. 5. Discuss the absorption of lipid by the intestinal mucosal cells. 6. Discuss the resynthesize and secretion of lipid by the enterocytes. 7. Discuss the secretion of chylomicron by the enterocytes 8. List causes of steatorrhea.
Biochemistry	3	Digestion and absorption of proteins and liver function tests	<ol style="list-style-type: none"> 1. Discuss the digestion of protein in the stomach and intestine. 2. List and explain the function of the proteolytic enzymes. 3. Describe the activation of pancreatic zymogens and the roles of the active enzymes in protein digestion. 4. Describe the uptake of peptides and amino acids from the gastrointestinal tract. Note: in neonates the absorption of intact proteins. 5. List laboratory tests used to assess liver function 6. Describe the metabolism of bilirubin. 7. Distinguish between direct and indirect measurements of bilirubin and its implications for distinguishing the cause of the jaundice <p>Understand the role of Helicobacter in gastritis as well as laboratory diagnosis & sensitivity to antibiotics.</p>

ACADE

It is The Hashemite University policy to provide educational opportunities that ensure fair, appropriate, and reasonable accommodation to students who have disabilities that may affect their ability to participate in course activities or meet course requirements. Students with disabilities are encouraged to contact their Instructor to ensure that their individual needs are met. The University through its Special Need section will exert all efforts to accommodate for individual needs.

Special Needs Section: Student Services and Care Unit

Tel: 053903333 ext. 4132 / 4583 / 5023

Location: Deanship of Students Affairs

Email: stydent@hu.edu.jo

COURSE REGULATIONS

Participation

Class participation and attendance are important elements of every student's learning experience at The Hashemite University, and the student is expected to attend all classes. A student should not miss more than 15% of the classes during a semester. *Those exceeding this limit of 15% will receive a failing grade regardless of their performance.* It is a student's responsibility to monitor the frequency of their own absences. **Attendance record begins on the first day of class irrespective of the period allotted to drop/add and late registration. It is a student's responsibility to sign-in; failure to do so will result in a non-attendance being recorded.**

In exceptional cases, the student, with the instructor's prior permission, could be exempted from attending a class provided that the number of such occasions does not exceed the limit allowed by the University. The instructor will determine the acceptability of an absence for being absent. A student who misses more than 25% of classes and has a valid excuse for being absent will be allowed to withdraw from the course.

Plagiarism

Plagiarism is considered a serious academic offence and can result in your work losing marks or being failed. HU expects its students to adopt and abide by the highest standards of conduct in their interaction with their professors, peers, and the wider University community. As such, a student is expected not to engage in behaviors that compromise his/her own integrity as well as that of the Hashemite University.

Plagiarism includes the following examples and it applies to all student assignments or submitted work:

- **Use of the work, ideas, images or words of someone else without his/her permission or reference to them.**
- **Use of someone else's wording, name, phrase, sentence, paragraph or essay without using quotation marks.**
- **Misrepresentation of the sources that were used.**

The instructor has the right to fail the coursework or deduct marks where plagiarism is detected

- .

Student Complaints Policy

Students at The Hashemite University have the right to pursue complaints related to faculty, staff, and other students. The nature of the complaints may be either academic or non-academic. For more information about the policy and processes related to this policy, you may refer to the students' handbook.

Course

Course Calendar and Assessment

Students will be graded through the following means of assessment and their final grade will be calculated from the forms of assessment as listed below with their grade weighting taken into account. The criteria for grading are listed at the end of the syllabus

Assessment	Grade Weighting	Deadline Assessment
Exam 1	40%	TBD
Exam 2	20%	TBD
Final Exam	40%	TBD

Description of Exams

Test questions will predominately come from material presented in the lectures. Semester exams will be conducted during the regularly scheduled lecture period. Exam will consist of a combination of multiple choice, short answer, match, true and false and/or descriptive questions.

Homework: Will be given for each chapter, while the chapter in progress you are supposed to work on them continuously and submit in next lecture when I finish the chapter.

You are also expected to work on in-chapter examples, self-tests and representative number of end of chapter problems. The answers of self-tests and end of chapter exercises are given at the end of the book.

Quizzes: Unannounced quizzes will be given during or/and at the end of each chapter based upon the previous lectures. It will enforce that you come prepared to the class.

No make-up exams, homework or quizzes will be given. Only documented absences will be considered as per HU guidelines.

Grades are not negotiable and are awarded to the MD program according to the following criteria*:

Letter Grade	Description	Grade Points
A+	Excellent	4.00
A		3.75
A-		3.50
B+	Very Good	3.25
B		3.00
B-		2.75
C+	Good	2.50
C		2.25
C-		2.00
D+	Pass	1.75
D	Pass	1.50
F	Fail	0.00
I	Incomplete	-

Topic	Lecturer	Lectures
Anatomy and histology	Dr. Mustafa Yousef	Lecture 6, and 10 -13
	Dr. Amany Swilam	Lectures 1-5, 7-9
Pathology	Dr. Dua Abuquteish	Lectures 1-14
Microbiology	Dr. Hala Tabl	Lectures 1-8
Pharmacology	Dr. Arwa Al-Anber	Lectures 1-7
Biochemistry	Dr. Ahmad Salem	Lectures 1-3
Physiology	Dr. Saeed Alkhatib	Lectures 4-6
	Dr. Iman Aolymat	Lectures 1-3
Public health	Dr. Eman Al-Kamil	Lecture 1

