

# Anatomy of Thorax and abdomen -MED 1206

Year 1 Semester 2

Credits: 4

Module Coordinator: Prof. SB Adikari

CONCEPT	OBJECTIVES	Duration	T/L activity	Comments
1. Osteology and surface marking of thorax and abdomen	<p>Student should be able to:</p> <ol style="list-style-type: none"> <li>identify and orientate the bones that form the thoracic cage</li> <li>state the boundaries of the thoracic inlet outlet</li> <li>state and demonstrate the bony landmarks of the thorax</li> <li>count the ribs and intercostal spaces.</li> <li>demonstrate the surface markings of the heart, pericardium, lungs and the pleura.</li> <li>identify and orientate the lumbar vertebrae and bones forming the pelvis.</li> <li>state the boundaries of the pelvic inlet and outlet.</li> <li>define the greater and lesser pelvic cavities</li> <li>identify important muscle attachments on the bones studied</li> </ol>	4hrs	PD	<p>Practical using bones, skeleton and volunteers and dissection manual <b>(a-i)</b></p> <p>(Surface anatomy, planes and regions of abdomen will be done under “ Surface anatomy of Abdomen- Concept No 12)</p>
2. Anterior thoracic wall	<ol style="list-style-type: none"> <li>describe the general arrangement of the thorax and abdomen</li> <li>describe development of anterior body wall</li> <li>describe the blood supply, nerve supply (including the neurovascular plane) and lymphatic drainage of the chest wall, intercostals spaces and anterior abdominal wall</li> <li>illustrate the dermatomes of chest and abdominal walls</li> <li>describe the arrangement of the muscles of the chest wall</li> <li>describe the arrangement of structures in the intercostal space</li> </ol>	<p>3 hrs</p> <p>12hrs</p>	<p>Lectures</p> <p>Dissection</p>	<p>Lectures:</p> <ol style="list-style-type: none"> <li>General arrangement of thorax and abdomen (1hr) <b>(a-d)</b></li> <li>Arrangement of anterior thoracic and abdominal walls (1hr) <b>(e-i)</b></li> <li>Inguinal region and clinical anatomy (1hr) <b>(j-p)</b></li> </ol>

<p>3. Anterior abdominal wall and Inguinal canal</p>	<p>g. describe the movement of the chest wall during respiration and state its mechanism  h. describe the arrangement of muscles of the anterior abdominal wall  i. describe the formation of the rectus sheath  j. describe the formation of the inguinal canal and its boundaries  k. state the contents of the inguinal canal  l. describe the coverings of the spermatic cord  m. describe the formation of hernia  n. explain the embryological descent of testes in  o. relation to adult anatomy  p. describe the clinical anatomy of anterior abdominal wall, inguinal canal and inguinal region</p>	<p>1 hr</p>	<p>Body side SGD</p>	
<p>5. Mediastinum and mediastinal viscera</p>	<p>a. describe the boundaries of the mediastinum and its sub divisions  b. describe the structures in the different divisions of the mediastinum and state their relations  c. describe the anatomy of the pericardium  d. state the nerve supply of the pericardium  e. state the functions of the pericardium  f. describe the position of the heart and the great vessels in the mediastinum  g. describe the internal and external appearance and structure of the heart(chambers, valves, ect)  h. describe the blood supply of the heart.  i. describe the innervations and conducting system of the heart  j. describe the arrangement of the great vessels  k. describe the relations of the heart and the great vessels  l. identify the cardiac silhouette and the parts of the heart and great vessels that contribute to the outline of it</p>	<p>2hr  9hrs  1 hr  2hrs</p>	<p>Lectures  Dissections  Body side SGD  Tutorial</p>	<p>Lecture 1-mediastinum and mediastinal viscera –<b>(a-b)</b>  Lecture 2-anatomy of the heart pericardium and and great vessels –<b>(c-l)</b></p>

	<ul style="list-style-type: none"> <li>m. describe the microscopic structure of heart and blood vessels and correlate the structure function relationship</li> <li>n. describe the anatomy of lymphoid organs and lympho-reticular system</li> <li>o. describe the clinical correlations of the heart pericardium and great vessels</li> </ul>	<p>2 hrs</p> <p>3 hrs</p>	<p>PD (Histology)</p>	<p>Lecture 1 (Histology) -(m) Lecture 2-( n )</p> <p><b>Obj. o</b> will be done in clinical anatomy lecture after dissections</p>
5. Development of the heart and blood vessels	<ul style="list-style-type: none"> <li>a. describe the development of the heart and blood vessels</li> <li>b. describe the foetal circulation</li> <li>c. describe the circulatory changes that occur at birth</li> <li>d. describe the congenital anomalies of the heart and blood vessels</li> </ul>	1 hr	Lecture	
6. Lungs and pleurae	<ul style="list-style-type: none"> <li>a. describe the anatomy of the pleura and pleural cavities</li> <li>b. describe the surface mark the pleura and lungs</li> <li>c. describe the surface projections of the apex of the lungs and the fissures of the lungs</li> <li>d. use the knowledge of anatomy and surface projections in examining the respiratory system</li> <li>e. state and describe the common clinical problems of the thoracic cavity (pleural effusion, pneumothorax, haemothorax)</li> <li>f. describe the anatomical basis of the pleural tap and surgical approaches to the thorax</li> <li>g. identify the lungs and parts of the airways</li> <li>h. describe the bronchial tree and bronchopulmonary segments</li> <li>i. correlate the structure of lungs and airways with its function</li> <li>j. describe the blood supply, nerve supply and lymphatic drainage of lungs and airways</li> <li>k. identify lungs and airways in relation to other structures in the thoracic cavity</li> </ul>	<p>3 hrs</p> <p>9hrs</p> <p>3 hrs</p> <p>2 hrs</p>	<p>Lectures</p> <p>Dissection</p> <p>PD (Histology)</p> <p>Tutorial</p>	<p>Lecture 1-2hr Anatomy of lungs and pleura (a-k)</p> <p>Lecture 2- 1 hr Histology –respiratory tract and pleura (I)</p> <p><b>Lecture 3-</b> Clinical anatomy of thorax and respiratory tract will be done after dissections (m)</p>

	<ul style="list-style-type: none"> <li>l. describe the microscopic structure of lungs pleura and the trachea-bronchial tree</li> <li>m. state and describe the common clinical problems of the thoracic cavity and respiratory tract</li> </ul>			
7. Development of the respiratory tract	<ul style="list-style-type: none"> <li>a. development of the respiratory system and associated developmental abnormalities</li> </ul>	1 hr	Lecture	Lecture - development of the respiratory tract and diaphragm (7.a, 9.d)
8. Cross Sectional anatomy and radiology of thorax	<ul style="list-style-type: none"> <li>a. understand the importance of cross sectional anatomy</li> <li>b. identify structures in cross sections of the thorax</li> <li>c. identify the above structures in a cross sectional radiographs</li> <li>d. describe a normal chest radiograph</li> </ul>	1 hr 3 hrs	Lecture PD	<p>Allocate dissection hours of concept no 8 and 9 close to each other in order to arrange museum rotations</p> <p>1/3 batch for 3hr session</p> <p>Radiographs should be demonstrated during relevant dissection sessions</p>
9. Diaphragm	<ul style="list-style-type: none"> <li>a. describe the component parts of the diaphragm and state its functions</li> <li>b. describe the nerve supply and blood supply of the diaphragm</li> <li>c. state and identify structures passing through the diaphragm including the vertebral levels</li> <li>d. describe the development of the diaphragm including its congenital abnormalities</li> <li>e. describe the clinical correlations of diaphragm related to respiration</li> </ul>	1 hr 3 hrs 1 hr	Lecture Dissections Body side SGD	<p>Development will be done with the respiratory system</p> <p>Body side tutorial includes all gross anatomy objectives covered up to now</p>

		1 hr	Lecture	
10. General arrangement of gastrointestinal system	<ul style="list-style-type: none"> <li>a. state the main functions of the gastrointestinal system.</li> <li>b. outline the general structure of gastrointestinal system to perform the functions</li> <li>c. describe the general pattern and microscopic anatomy of the alimentary canal</li> </ul>	1 hr	Lecture	
11. Oral cavity	<ul style="list-style-type: none"> <li>a. describe the boundaries of the oral cavity.</li> <li>b. state how the structures in the oral cavity are adapted to perform the functions (teeth, tongue, salivary glands etc)</li> <li>c. outline the macroscopic and microscopic features of the structures in the oral cavity including the salivary glands</li> <li>d. state and identify the muscles forming the floor of the mouth</li> <li>e. name and identify the types of teeth in the deciduous and permanent dentition</li> <li>f. state the development and eruption times of teeth and its relevance in aging</li> </ul>	2 hrs	Lectures  PD	PD: will be done with oesophagus and stomach
12. Surface anatomy of abdomen	<ul style="list-style-type: none"> <li>a. State how the abdomen is divided into nine regions and four quadrants</li> <li>b. State the surface projections of abdominal structures.</li> <li>c. Outline the procedure of clinical examination of the abdomen.</li> </ul>	1 hr  3 hrs	Video demonstration  PD	Surface projections of the abdominal organs and anatomical basis of clinical examination of the abdomen will be done.

<p>13. Abdominal cavity and its compartmentalization</p>	<p>a. describe the general arrangements of viscera in the abdominal cavity</p> <p>b. understand the arrangement of the peritoneum and its relationship with the abdominal organs</p> <p>c. describe the peritoneal reflexions</p> <p>d. localise the viscera within the abdominal cavity and learn their gross landmarks and features</p>	<p>1 hr</p> <p>6 hrs</p>	<p>lecture</p> <p>Dissections</p>	
<p>14. Abdominal viscera</p>	<p>a. describe the gross anatomy of abdominal viscera</p> <p>b. (oesophagus, stomach, duodenum, jejunum, ileum, colon, rectum and anal canal, liver and biliary system, pancreas, spleen,)</p> <p>c. describe the lymph drainage and nerve supply</p> <p>d. describe the microscopic anatomy of abdominal viscera. (oesophagus, stomach, duodenum, jejunum, ileum, colon, rectum and anal canal, liver and biliary system, pancreas)</p> <p>e. list the functions of abdominal viscera.</p> <p>f. explain the basis of structure function relationship</p>	<p>5 hrs</p> <p>3 hrs</p> <p>12 hrs</p> <p>3 hrs</p> <p>2 hrs</p> <p>2 hrs</p>	<p>Lectures- Gross anatomy of</p> <ol style="list-style-type: none"> <li>1. oesophagus and stomach lymphatics and nerves (1hr)</li> <li>2. Small and large intestines, rectum and anal canal lymphatics and nerves (2hr)</li> <li>3. Liver, biliary system, pancreas and lymphatics and nerves (2hrs)</li> </ol> <p>Lectures - Histology of GIT</p> <p>Dissections</p> <p>Histology PD</p> <p>Body side SGD</p> <p>Tutorial</p>	<p>Detailed structure of kidneys, ureters and adrenal glands will be done in pelvis and perineum module.</p> <p>Regional anatomy of rectum and anal canal will be done in pelvis and perineum module.</p> <p>Spleen anatomy will be done with lymphoreticular system</p> <p>Histology practical to be done after completing the macroscopic structures of small and large intestine</p>

15. Development of the gastro-intestinal system	a. describe the development of the gastro-intestinal system and its anomalies	4 hrs	Lectures	
16. Cross Sectional anatomy and radiology of abdomen	a. identify structures in cross sections of the abdomen b. identify the above structures in a cross sectional radiographs c. Identify the structures in plane abdominal X-ray and special investigations such as barium meal etc..	1 hr	Lecture	Arrange museum rotations- 1/3 batch for 3hr session
		3 hrs	PD	Radiographs should be demonstrated during relevant dissection sessions
17. Posterior abdominal wall and retroperitoneum	a. describe the arrangement of muscles and fascia of the posterior abdominal wall b. describe the anatomy of the posterior abdominal wall and the retroperitoneal structures (abdominal aorta, IVC, kidneys, ureters, bladder and adrenal glands) c. list the components of the urinary system d. describe the gross structure of the kidneys, ureters and bladder e. describe how the urinary system is adapted to perform its function f. describe the unique blood circulation of the kidney g. describe the venous and lymphatic drainage and nerve supply of the kidney h. describe the histological appearance of the urinary system	1x2 hrs	Lectures	Objectives c-h will be done in pelvis and perineum module
		3 hrs	Dissection	
		2 hrs	Lecture	
		3 hrs	Dissection & Histology PD	