Human anatomy

1003212

Course lecturers:

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When you have questions, concerns, or suggestions, please contact Dr. Elbarrany or Dr.Altaf by e-mail, call for an appointment, or catch me before or after class or lab.

Course Description, Objectives, and Format

The Department offers the courses of Gross Anatomy of the human body, Histology and Embryology to the **2nd** year students of Medicine. The aim is to prepare them for the subsequent clinical years off study.

The students are expected to acquire relevant information of direct clinical bearing without the details of pure academic importance; further, the aim of these courses is to foster habits and attitudes of independent learning among the students so that they are able to keep abreast with latest development in the fields of their interest during subsequent professional career.

The **second year course** is divided into **three major** learning modules:

I. GROSS HUMAN ANATOMY.

II. HISTOLOGY

III. EMBRYOLOGY.

The overall objectives of this course are to provide students with:

1. Comprehend the anatomical terms, use them correctly, and develop a positive approach-to the subject.

2. Understand important single muscles, their origin, insertion, nerve supply, actions and important relations. Describe Muscle Groups, their actions, nerve supply and effects of nerve injury.

3. Recognize anatomical structures correctly and comprehend the topographic anatomy of the regions of abdomen, pelvis, perineum, thorax and extremities by actual dissection, prosection and museum study.

4. Understand the classifications of bones, their general features, structure, functions and the mechanism of displacement of bone fragment at common sites o£ fractures.

5. Understand the important joints of the body, their movements and the muscles producing these movements.

6. Acquire information of different fascial planes in different regions and their surgical importance.

7. Understand the general plan of lymphatic drainage of the body, regional lymph nodes where the common malignant growth can spread.

8. Interpret normal radiograms and C.T. scans of the body and demonstrate, by inspection, palpation and percussion, important bony landmarks, muscles, tendons, blood vessels, nerves and viscera on the living body.

9. Apply the knowledge and skill in solving clinical problems and interpret anatomical relationship to common clinical conditions.

10. Recognize the cellular components of normal tissues and organs of the body and correlate structure to their functions and develop ability to comprehend the mechanism of deranged function in various pathological conditions in the senior clinical years of study.

11. Understand normal development of the human embryo and fetus and acquire information about causes of developmental anomalies.

12. Develop concepts and sufficient understanding of the subject to be able to pursue post-graduate studies and continuing medical education and develop habits of self-learning.

Lectures

Each lecture is accompanied by a 60 minutes presentation. Information from the presentation and assigned reading is important for mastering the learning objectives which are the primary focus of exam questions.

Prior Knowledge and Skills Required for This Course

The ability to fully comprehend and appreciate the fundamentals of anatomy requires a background in basic biology and biochemistry.

Roles and Responsibilities of Students and lecturers

Students are expected to;

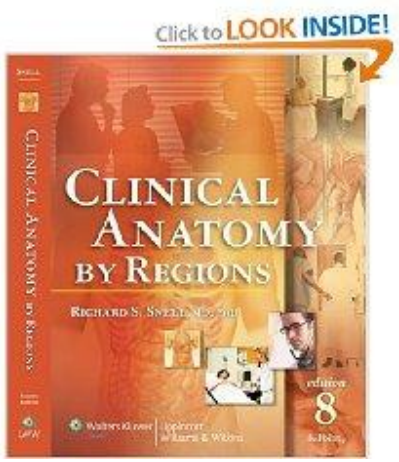
1. use all available resources to accomplish the learning objectives in each lecture and practical session, including:
    a. attending all lecture
    b. reading textbook assignments.
    c. participating in lecture and asking questions when information is unclear or more information is needed.
    d. performing assigned exercises working individually or in groups, as directed.
    e. optimizing their learning strategies by trying the suggested “tips” and/or other ideas, and working with others.
    f. asking for help from the course manager when they need it or even think they might need it.
2. notify the course manager as soon as they can if they are seriously ill or have an emergency that prevents them from attending
3. provide constructive feedback regarding the course on evaluation forms that will be provided at the end of the semester.
4. adhere to the faculty academic and professional rules.

Lecturer is expected to:

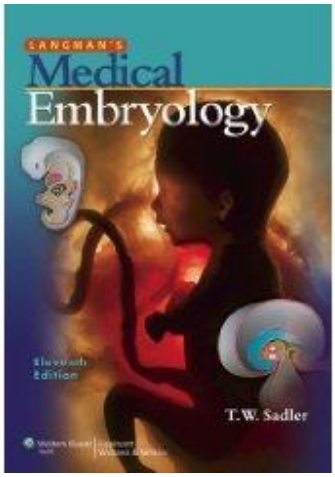
1. provide clear and informative lecture notes with learning objectives that focus on important points,
2. give clear, informative, and stimulating 60-minute lectures
3. answer questions either in or outside class or via e-mail or telephone.
4. compose thoughtful and fair exam questions that assess student learning and application of the course content.
5. directing the case sessions and facilitators to provide an effective learning experience in small group, team-oriented sessions.
6. providing answers and explanations to student inquiries regarding any aspect of the course.
7. providing advice and assistance to students for improving their learning strategies and performance in the course.
8. reviewing and implementing appropriate changes in the course based on student feedback and evaluations.

Learning Resources

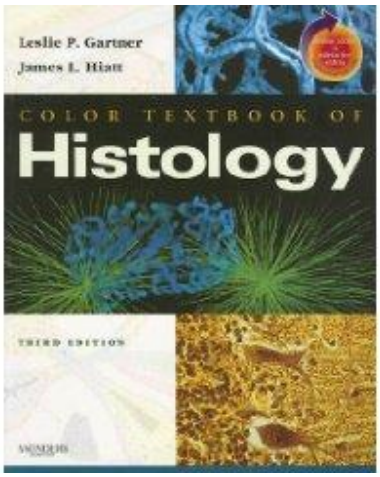
Required Textbook:



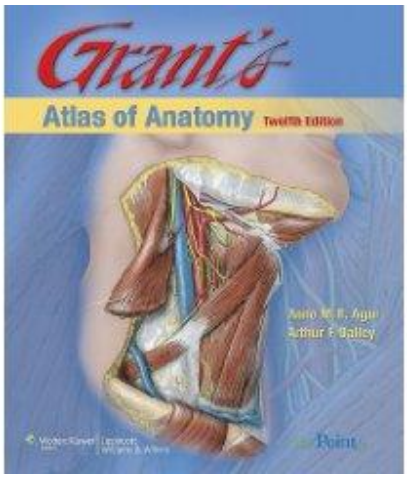
Clinical Anatomy by Regions (2007), 8th edition, Richard S Snell Lippincott Williams & Wilkins.



Langman's Medical Embryology: by Thomas W Sadler (2009), 11th edition, Lippincott Williams & Wilkins.



Color Textbook of Histology by Leslie P. Gartner and James L. Hiatt(2006) 3rd edition, Saunders



Grant's Atlas of Anatomy by Anne MR Agur and Arthur F Dalley (2008) 12th edition, Lippincott Williams & Wilkins

Tips for Learning

1. Briefly review your lecture notes before the lecture to get an idea of the material that will be covered, the degree of difficulty of the material, and how much detail is included in the notes. Look at the learning objectives to get an idea of the most important information that you are responsible for learning and that will serve as the focus for exam questions.

2. Attend the lectures. The lecture presentations re-enforce, enhance, and clarify the lecture concepts.

3. Keep up! Review the lecture as soon as you can after the lecture to make sure you understand the material; pay particular attention to the learning objectives. Read the required textbook for additional and alternative presentations of information. If you have questions, or just don't get it, ask for help.

4. Be an "active learner"! Consolidate the most important concepts and facts into a form that **YOU** are most likely to understand and retain, i.e. a summary chart or flow—include. Be creative and make it fun! Divide the work with your study partners and share your study-aids. Try giving a minilecture to yourself (on the car or while you're walking) or to your study partners—can you discuss the important points in your own words

without looking at your notes? You will remember your own version of the information better than trying to memorize your lecturer's version.

5. If you do not do well on the first exam, please contact your lecturer immediately to determine how to improve your learning strategy.

Examinations

There will be six exams in MCQs format with one best answer. Exam questions will focus on the learning objectives students are expected to master from material presented in the lectures and textbook

Exam 1 (in week 4) covers material from Lecture 1 through 3.

Exam 2 (in week 7) covers material from Lecture 4 through 6.

Exam 3 (in week 10) covers material from Lecture 1 through 9.

Exam 4 (in week 15) covers material from lecture 10 through 12

Exam 5 (in week 18) covers material from lecture 10 through 12

Exam 6 (in week 21) covers material from lecture 10 through 12

Final practical Exam 1st semester (in week 16) covers material presented in the practical sessions.

Final theory Exam 1st semester (in week 17) cover material from lecture 1 through 15.

Final practical Exam 2nd semester (in week 23) covers material presented in the practical sessions.

Final theory Exam 2nd semester (in week 25) cover material from lecture 1 through 25.

After each exam (especially the 1st one!), evaluate your performance and learning/study strategies. Did your performance reflect the effort you made and your confidence in knowing the material before the exam? Analyze the questions you missed, along with the challenges and responses, and try to figure out why you missed each one, e.g. couldn't remember the information, misunderstood the information, couldn't apply your knowledge to a problem solving question. Once you identify specific problems, you can implement specific solutions. If you want help with this type of evaluation, contact your lecturer.

Summative Evaluation and Grading

Final grades are based on grades earned for each of the 6 periodical exams, the lab exam and final theory exam.

Distribution of the marks for these exams are as follow:

- Six Quizzes, three in each semester. 18% of the final grades
- Research activities 2% of final grade
- 2 Mid-first term practical Examination 10% of the final grades
- Mid-year examination 30% of the final grades
- Final Practical Exam 10% of final grade.
- Final theory exam 30 % of final grade.

Letter grades are based on the following final numeric grades:

A Excellent 90 - 100

B Very Good 80 – 89

C Good 70 – 79

D Pass 60- 69

F Fail 59 and below

FIRST SEMESTER LECTURES CONTENTS

ANATOMY

I. Thorax Lectures

Week Number	Topics	Remarks
1	**1.** Introduction and anatomical terms. **2.** Thoracic cage (Bones & joints).	**The first periodic examination At the 4th week**
2	**1.** The intercostal space (muscles, nerves) **2.** Intercostal vessels- internal thoracic artery).	
3	**1.** Mediastinum (parts & contents of each). **2.** Pleura & lung.	
4	**1.** The heart & pericardium. **2.** The blood supply to the heart & clinical application.	
5	**1.** The large vessels (Veins & arteries). **2.** The posterior mediastinum.	

II. The abdomen Lectures		
Week Number	**Topics**	**Remarks**
6	1. Muscles, nerves, vessels and lymphatic drainage of the anterior abdominal wall. 2. The rectus sheath, the inguinal canal.	
7	1. The scrotum, testis, epididymis & spermatic cord. 2. The peritoneum (including lesser sac & epiploic foramen)	
8	1. The abdominal oesophagus & stomach. 2. The duodenum & pancreas spleen	The second periodic examination
9	1. The small & large intestines (including the vermiform appendix). 2. The liver & gall bladder and biliary system.	
10	1. The celiac, superior & inferior mesenteric arteries. The portal vein (porto-systemic anastomosis). 2. The kidneys and the suprarenal glands.	
11	1. The ureter, Abdominal aorta & inferior vena cava. 2. The muscles of the posterior abdominal wall & lumbar plexus of nerves. The diaphragm, sympathetic chain & lymphatic drainage of the abdomen.	

III. Pelvis lectures

12	1. Urinary bladder, prostate, seminal vesicles, vas & terminal ureter 2. Female genital organs (uterus, vagina) & ligaments.	The third periodic examination
13	1. Rectum & iliac vessels. 2. The pelvic diaphragm and the muscles of the lateral wall of the pelvis with the sacral plexus.	
14	1. Perineum (urogenital triangle) 2. Perineum anal triangle.	

HISTOLOGY

First Semester

Week	Topic
1	Lecture: Cell review Lab: Microscopy, staining, interpreting EMs
2	Lecture: Epithelia Lab: Epithelia
3	Lecture: Connective tissue Lab: Connective tissue
4	Lecture: Cartilage Lab: Cartilage
5	Lecture: Bone Lab: Bone
6	Lecture: Blood Lab: Blood
7	Lecture: Muscular tissue Lab: Muscle
8	Lecture: Nervous tissue Lab: Nervous tissue
9	Lecture: Cardiovascular Lab: Cardiovascular
10	Lecture: Lymphatic Organs I Lab: MALT, Tonsils, Thymus
12	Lecture: Lymphatic Organs II Lab: Spleen, Lymph nodes
12	Lecture: Respiratory system Lab: Respiratory system
13	Review
14	**Midyear Exam**

EMBRYOLOGY

Week	Topic
1	Introduction and terminology.
2	Genital system. male and female genital system.
3	Gametogenesis, spermatogenesis and oogenesis.
4	Ovulation and the female cycles .
5	Fertilization . Twins.
7	Cleavage – Implantation and Deciduas.
8	Changes in the trophoblsts and formation of the chorion .
9	Changes in the inner cell mass and formation of the germ layers .notochord and the neural tube.
10	Derivatives of the germ layers. and folding
11	Fetal membranes, Amnion, Yolk sac and allantois.
12	Connecting stalk and umbilical cord, Placenta.
13	Life span, Delivery, Congenital Malformations

SECOND SEMESTER LECTURES CONTENTS

ANATOMY

I. The Lower Limb		
Week Number	**Topics**	**Remarks**
1	1. The front of the thigh (superficial nerves, superficial vessels, the deep fascia of the thigh. 2. The femoral triangle and femoral sheath.	
2	1. Femoral vessels & femoral nerve. 2. Femoral hernia & varicose veins.	
3	1. The media.l compartment of the thigh & subsartorial canal. 2. The gluteal region.	
4	1. The back of the thigh 2.The hip joint.	
5	1. The anterior and lateral compartments of the leg (cutaneous nerves and veins, muscles & deep vessels and nerves). 2. The posterior compartment of the leg.	
6	1. The knee and ankle joints. 2. The layers and joints of the foot.	
7	1. Injuries of the lower limb nerves. 2.The arches of the foot.	

II. The Upper Limb		
Week Number	**Topics**	**Remarks**
1	1. The pectoral region (muscles & breast) walls of the axilla. 2. The axilla (the brachial plexus & axillary lymph nodes).	
2	1. The axillary vessels. 2. The scapular region & anastomosis around the scapula.	
3	1. Shoulder joint, sternoclavicular joint & acromioclavicular joint. 2. The front of the arm (Skin, muscles, vessels & nerves)	
4	1. Posterior compartment of the arm. The cubital fossa. 2. The front of the forearm (muscles, nerves & vessels).	
5	1. The lateral & posterior compartments of the forearm. 2. The extensor and flexor retinacula and the carpal tunnel and its syndrome.	
6	1. The muscles of the hand. 2. The vessels & nerves & joints of the hand..	
7	1. The elbow and wrist joints 2.. Injuries of the upper limb nerves.	

HISTOLOGY

Second Semester

Week	Topic
1	Lecture: Skin Lab: integument
2	Lecture: Digestive system I Lab: Salivary Glands and Tongue
3	Lecture: Digestive system II Lab: Esophagus and Stomach
4	Lecture: Digestive system III Lab: Small and large Intistine
5	Lecture: Digestive system IV Lab: Liver, Gall Bladder and Pancreas
6	Lecture: Urinary system Lab: Urinary system
7	Lecture: Male Reproductive system I Lab: Testis and Epididymis
8	Lecture: Male Reproductive system II Lab: Ductus Deferens, Seminal Vesicles, Prostate and Penis
9	Lecture: Female Reproductive system I Lab: Ovary and Fallopian tubes
10	Lecture: Female Reproductive system II Lab: Uterus, Vagina and Breast
11	Lecture: Endocrine system I Lab: Pituitary and Pineal Glands
12	Lecture: Endocrine System II Lab: Thyroid, Parathyroid and Adrenal Glands
12	Review
13	**End of year Exam**

EMBRYOLOGY

Week	Topic
1	Cardiovascular system I
2	Cardiovascular system II
3	Cardiovascular system III
4	Cardiovascular system IV
5	Respiratory system
6	Digestive system I
7	Digestive system II
8	Digestive system III
9	Urogenital system I
10	Urogenital system II
11	Urogenital system III
12	Limbs and Muscles
13	Articular and Skeletal system