

School of Dentistry
Format of course plan

Course title: Anatomical sciences 1

The audiences: International dentistry students, 1st semester

Total credit: 3

The time to answer of questions: Sunday 13-15

The time of the lesson: first semester, Saturday 8-10

Teacher: dr. Ali Ghanbari

Prerequisite: Nothing

General goals:

Understanding the history of anatomy as long as introducing its famous scientists and their main works. Learn the anatomical terminology and the trends for studying gross anatomy.

To describe the essential systems of the body individually like skeletal, muscular, cardiovascular, respiratory, and nervous system.

Learning the main micro-anatomical expressions like tissues, the cell, cell transportation and communication. To make some details about components of the cells; cell membrane, organelles (mitochondria, nucleus, cyto-skeleton, lysosomes, Ribosomes, endoplasmic reticulum ...). To characterize the prominent tissues; epithelium, connective, skeletal and cartilages.

To explain the general embryology, it would necessary to determine ovarian cycle and the role of hormones, fertilization, morolla stage, blastula stage and implantation. Then the happening in the second and third weeks of gestation would describe, respectively.

General goals of sessions:

- 1- Description of the anatomical terminology
- 2- Description of upper limb skeleton
- 3- Description of lower limb skeleton
- 4- Description of vertebral column
- 5- Description of the skull
- 6- Description of muscular system
- 7- Description of nervous system
- 8- Description of nervous system (continued)
- 9- Description of respiratory system
- 10- Description of cardiovascular system
- 11- Description of cardiovascular system (continued)
- 12- Description of digestive system
- 13- Description of the cell
- 14- Description of the cell (continued)
- 15- Description of the epithelium tissue
- 16- Description of the connective tissue
- 17- Description of the skeletal and cartilage tissues
- 18- Description of ovulation cycle
- 19- Description of fertilization and implantation
- 20- Description of the second week of gestation
- 21- Description of the third week of gestation

General goals of first lesson:

Description of the anatomical terminology

Special goals of first lesson:

Briefly describe the history of anatomy and nominate famous anatomist scientists like Galenus, Vesalius, Avicenna, Davinchi and Snell. Give explanations regarding the importance of dissection and visualization in learning tridimensional anatomy. Discuss about two manners of anatomy presentation; systematic and regionals. Explain anatomical position, anatomical planes, anatomical expressions related to these planes. Present anatomical expressions related to movements.

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General goals of second lesson:

Description of upper limb skeleton

Special goals of second lesson:

Teaching prominent features about scapula, clavicle, humerus, ulna, and radius. Nominate the bones of proximal and distal rows of wrist region, respectively with presenting specialized features for some bones to identify them from each other. Brief explanation regarding metacarpal, phalanges and the sesamoid bones in this region.

General goals of third lesson:

Description of lower limb skeleton

Special goals of third lesson:

Teaching prominent features about hip, femur, tibia, and fibula. Nominate the bones of posterior, middle, and anterior rows of tarsal region, respectively in accompany with depicting specialized features for some bones to identify them from each other. Brief explanation regarding metatarsal, phalanges and the sesamoid bones in this region.

General goals of forth lesson:

Description of vertebral column.

Special goals of forth lesson:

Teaching general anatomical features of vertebrae like vertebral foramen, vertebral arch and its components, vertebral body, and intervertebral discs and foramina. Clarifying the first and secondary arches of vertebral column with describing its arches after birth. Identifying specific features own for each region of vertebral column. Description of ribs and sternum.

General goals of fifth lesson:

Description of the skull

Special goals of fifth lesson:

Teaching external features of the skull from anterior, posterior, inferior, internal and lateral views and give some details in this regard such as nominating eminent foramina, sulci, prominences, and specific features that is land mark for distinguishing each individual bone.

General goals of sixth lesson:

Description of muscular system

Special goals of sixth lesson:

Teaching structure of striated muscles, trend of nominating the explain terms related to muscles such as origin, insertion, tendon, ligament, fascia. Introducing prominent muscles in each region of the body. For example sternocleidomastoid and scalenus muscles in the neck. Trapezius and latissimus dorsi in the back and so on.

General goals of seventh lesson:

Description of nervous system

Special goals of seventh lesson:

Briefly describe the neuroanatomical terms such as neurons, axon, dendrites, white and gray matter and their specified forms. Describe the synapse and neurotransmitters. Describe the division of human nervous system physiologically and anatomically. Describe the subdivisions of C.N.S and P.N.S. Teaching external features of spinal cords such as its length, shape, and fissures. Determining the fasciculus and funiculus of spinal cord with emphasis on their works. Identifying white and gray matters of spinal cord. Description of white and gray matters of brain stem and cerebellum.

General goals of eighth lesson:

Description of nervous system (continued)

Special goals of eighth lesson:

Describe the thalamus, hypothalamus, and cerebrum. Explain the cranial nerves and make some details about their course and works. Explain the spinal nerves, and spinal nerve networks, respectively.

General goals of ninth lesson:

Description of respiratory system

Special goals of ninth lesson:

Describe the superior respiratory components; nasal cavities, pharynx and larynx. Describe the inferior respiratory components; trachea, lungs, pleura and pleural recesses.

General goals of tenth lesson:

Description of cardiovascular system

Special goals of tenth lesson:

Describe the external and internal characteristics of the heart and the arteries and veins of it.

General goals of eleventh lesson:

Description of cardiovascular system (continued)

Special goals of eleventh lesson:

Describe the course and branches of aorta. Describe the superficial veins of the body.

General goals of twelfth lesson:

Description of digestive system.

Special goals of twelfth lesson:

Describe the digestive canal components including oral cavity, esophagus, stomach, small intestine, large intestine. Describe the accessory glands of digestive system including salivary glands, liver, gall bladder and pancreas.

General goals of 13th lesson:

Description of the cell

Special goals of 13th lesson:

Describe the general characteristics of the cell and bring some types of the cell, focusing on the relationship between the cell type and their own functions. Describe the cell membrane and by explaining its constituents, the function of them would be discussed.

General goals of 14th lesson:

Description of the cell (continued)

Special goals of 14th lesson:

The organelles within the cell would be explained. In this regards, the structure and function of cytoskeleton, mitochondria, Ribosomes, Rough and smooth endoplasmic reticulum, nucleus, chromosomes, nucleolus would briefly presented.

General goals of 15th lesson:

Description of the epithelium tissue

Special goals of 15th lesson:

To describe the general characteristics of epithelium tissue such as absence of intra-cellular space, microvillus, polarity, basal lamina. Then specified types of epithelia, heir location in the body and their functions would be illustrated, respectively.

General goals of 16th lesson:

Description of the connective tissue

Special goals of 16th lesson:

To describe the general characteristics of connective tissue such as their cell types, the types of their fibers, the composition of ground substance. Then it would bring the examples of the distribution of connective tissue in the body and finally demonstrate the specialized forms of connective tissue.

General goals of 17th lesson:

Description of the skeletal and cartilage tissues

Special goals of 17th lesson:

To describe the general characteristics of skeletal and cartilage tissues such as their cell types, the types of their fibers, the composition of ground substance.

General goals of 18th lesson:

Description of ovulation cycle

Special goals of 18th lesson:

Describe the happenings during ovarian cycle from hypophyseal gonadal axis, endometrial changes and ovulation process.

General goals of 19th lesson:

Description of fertilization and implantation

Special goals of 19th lesson:

Describe the fertilization site and process, the developmental happening up to implantation.

General goals of 20th lesson:

Description of the second week of gestation

Special goals of 20th lesson:

Describe events occur within the second week of gestation such as differentiation of inner and outer cell layers, cavitation.

General goals of 21th lesson:

Description of the third week of gestation

Special goals of 21th lesson:

Describe events occur within the third week of gestation such as gastrulation, formation of neural tube and neural crest.

At the end of the class, the student's abilities would be:

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- 7- Description of nervous system
- 8- Description of nervous system (continued)
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- 20- Description of the second week of gestation
- 21- Description of the third week of gestation

References:

Cyrus jalili, Mohamad Reza Salahshoor, Ali Ghanbari, Iraj Rashidi: Genaral Anatomy
Frederic H Martini: Human Anatomy

Teaching method:

Lecture, Mind map, answer and question, problem solved, group teaching (in practical class)

Educational tools:

Models, fixed brains, Video Projector and Whiteboard

Assessment and evaluation of the test

Considered time For answering	date	Share of total (score (in percent	Method	Test
5 min for each quiz	Initiation of each session	2	Short answers	Oral Quiz
15 min for each quiz	End of each session	3	Short explanation and Multi-choice	Quiz
20 min	Midterm	6	Multi-choice	Mid term exam
40 min	Final	7	Multi-choice	Final Exam

Classroom roles and student expectations:

The presence of all students in all sessions is mandatory and students must attend the each session.

Lecturer	Topic	Sessions
Dr. Ali Ghanbari	Anatomical terminology	١
Dr. Ali Ghanbari	Uupper limb skeleton	٢
Dr. Ali Ghanbari	Lower limb skeleton	٣
Dr. Ali Ghanbari	Vertebral column	٤
Dr. Ali Ghanbari	Skull	٥
Dr. Ali Ghanbari	Muscular system	٦
Dr. Ali Ghanbari	Nervous system	٧
Dr. Ali Ghanbari	Nervous system (continued)	٨
Dr. Ali Ghanbari	Respiratory system	٩
Dr. Ali Ghanbari	Cardiovascular system	١٠
Dr. Ali Ghanbari	Cardiovascular system (continued)	١١
Dr. Ali Ghanbari	Digestive system	١٢
Dr. Ali Ghanbari	The cell	١٣
Dr. Ali Ghanbari	The cell (continued)	١٤
Dr. Ali Ghanbari	Epithelium tissue	١٥
Dr. Ali Ghanbari	Connective tissue	١٦
Dr. Ali Ghanbari	Skeletal and cartilage tissues	١٧
Dr. Ali Ghanbari	Ovulation cycle	١٨
Dr. Ali Ghanbari	Fertilization and implantation	١٩
Dr. Ali Ghanbari	The second week of gestation	٢٠
Dr. Ali Ghanbari	The third week of gestation	٢١