

Faculty of Medicine (International Campus)

Title course: Introduction of Anatomy

Audiences: International medicine students of second semester

Total Credit: 2.5 (theory:2.2, practical: 0.3)

Teacher contribution of credit: 2.5 (theory:2.2, Practical: 0.3)

Time of presentation: 8.10-10.10 A.M Saturdays, 2 st semester (2019-2020)

Teacher: Dr Azita Faramarzi

Prerequisite: No

The time to answer questions: Any time

Aim of Course (theory)

Acquaintance with function of body systems that used in specialized and clinical patient courses. Acquaintance with structure and ultrastructure of general histology emphasis on function. Acquaintance with human embryo development from gametogenesis to birth and associated abnormalities.

General session objective:

1. Acquaintance with the history of anatomy, how to study anatomy and its terminology. Acquaintance with normal anatomy, body planes, body axis and body movement.
2. Acquaintance with skeletal, muscle and joints systems
3. Acquaintance with nervous system
4. Acquaintance with normal anatomy and variations. Acquaintance with principals of radiological anatomy
5. Acquaintance with Methods of Histology study
6. Acquaintance with cell and cytology
7. Acquaintance with epithelial tissue
8. Acquaintance with connective tissue and adipose tissue
9. Acquaintance with Cartilage, Bone and Joint tissues
10. Acquaintance with blood and hemopoiesis
11. Acquaintance with Muscle tissue
12. Acquaintance with Nerve tissue
13. Acquaintance with gametogenesis including oogenesis and spermatogenesis

14. Acquaintance with first week of development, from ovulation to implantation
15. Acquaintance with second week of development: bilaminar germ. Acquaintance with development trilaminar germ disc
16. Acquaintance with third to eight weeks: the embryonic period
17. Acquaintance with third month to birth: the fetus and placenta. Acquaintance with twins
18. Acquaintance with birth defects and prenatal diagnosis

Specific Goals By the general purpose of each session:

General goals of first session: Acquaintance with the history of anatomy, how to study anatomy and its terminology. Acquaintance with normal anatomy, body planes, body axis and body movement.

Special goals of first session: Describe a brief history of anatomy. Explain the concepts of superficial and deep anatomy. Know the anatomic subtypes. Describe anatomical position. Show planes, axis, movement and know their terminology.

General goals of second session: Acquaintance with skeletal, muscle and joints systems

Special goals of second session: Describe axial skeleton, including bones of the skull protect the brain, the vertebrae, sacrum, and coccyx form the vertebral column, The ribs, sternum, and xiphoid process. Explain appendicular Skeleton including Shoulder girdles, upper limbs, the pelvis and lower limbs. Explain types of muscles. Describe muscle groups. Know muscle features that are used in naming muscles. Explain the classification of joints. Know the types of joints.

General goals of third session: Acquaintance with nervous system

Special goals of second session: Explain the central and peripheral nervous systems. Know the massive paired hemispheres of the cerebrum. Know the brainstem, consisting of the thalamus, hypothalamus, epithalamus, subthalamus, midbrain, pons and medulla oblongata. Know the cerebellum. Describe the spinal cord. Know spinal nerves and spinal nerves.

General goals of fourth session: Acquaintance with normal anatomy and variations. Acquaintance with principals of radiological anatomy

Special goals of fourth session: Explain normal anatomy and variations. Explain principals of radiological anatomy

General objective of fifth session: acquaintance with methods of histology study

Special objective of fifth session: Explain importance of histology. Describe microscope and necessity of its use. Explain methods of tissue preparation. Explain histochemical techniques.

General objective of sixth session: acquaintance with cell and cytology

Special objective of sixth session: Know cell function, cytoplasm, cell membrane and cell organelles. Explain nucleus, nucleolus and their functions.

General objective of Seventh session: acquaintance with epithelial tissue

Specific objectives of Seventh session: know epithelial tissue. Explain epithelial tissue types including covering (Lining) and secretory (glandular). Describe basement membrane. Explain and compare cell adhesions. Describe apical epithelial surfaces (cilia, microvilli, Stereocilia). Explain types of epithelial secretions. Know transportation across epithelia. Describe renewal of epithelial cells.

General objective of eighth session: acquaintance with connective tissue and adipose tissue

Specific objective of eighth session: Explain function of connective tissue. Know and explain cells of connective tissue. Know function of connective tissue cells. Describe connective tissue fiber and their functions. Explain ground substance of connective tissue. Describe type of connective tissue and compare them. Explain and compare white adipose tissue and brown adipose tissue. Know storage and mobilization of lipid. Describe histogenesis of white and brown adipose tissue.

General objective of ninth session: acquaintance with connective tissue and adipose tissue

Specific objective of ninth session: Describe and compare types of cartilage tissues (Hyaline, Elastic cartilage and Fibrocartilage). Explain chondrocytes and isogenous aggregates. Describe perichondrium. Explain formation, growth and repair of cartilage. Know and compare bone cells (Osteoblasts, Osteoblasts and Osteoclasts) according to morphology, function and regulation. Explain bone matrix. Describe and compare periosteum and endosteum. Know types of bones. Explain lamellar bone. Describe woven bone. Explain osteogenesis including intramembranous and endochondral. Describe bone growth, remodeling and repair. Explain metabolic role of bone. Describe and compare types and subtypes of joints.

General objective of tenth session: acquaintance with blood and Hemopoiesis

Specific objective of tenth session: Explain composition of plasma. Describe and compare blood cells (erythrocytes, leukocytes, platelete) and their function. Explain and compare types of leukocytes.

General objective of eleventh session: acquaintance with muscle tissue

Specific objective of eleventh session: Explain and compare type of muscles including skeletal muscle, cardiac muscle and smooth muscle. Explain and compare type of contraction in skeletal muscle, cardiac muscle and smooth muscle. Explain regeneration of muscle tissues.

General objective of twelfth session: acquaintance with nNerve tissue

Specific objective of twelfth session: Explain development of nerve tissue. Describe and compare types of neurons. Describe cell body (perikaryon), dendritic and axon. Explain and compare glial cells. Describe synapses structure and compare types of them. Explain brain, meninges, Blood brain barrier and choroid plexus structure. Describe nerve fibers and compare them (myelinated fibers and unmyelinated fibers). Explain types of ganglia and compare them. Describe neural plasticity and regeneration.

General objective of thirteenth session: Acquaintance with gametogenesis including oogenesis and spermatogenesis

Specific objective of thirteenth session: Explains importance of embryology learning. Know primordial germ cells (PGCs). Describe formation and migration of PGCs. Know chromosome theory of inheritance. Describe and compare mitosis and meiosis. Know morphological changes during maturation of the gametes. Explain and compare oogenesis and spermatogenesis. Describe spermiogenesis.

General objective of fourteenth session: Acquaintance with first week of development, from ovulation to implantation

Specific objective of fourteenth session: Explain ovarian cycle and ovulation. Know development of follicles. Know corpus luteum. Explain oocyte transport. Know corpus albicans. Explain fertilization. Explain sperm capacitation and acrosome reaction. Describe embryo development, morula and blastocyst. Know types of infertility.

General objective of fifteenth session: Acquaintance with second week of development: bilaminar germ. Acquaintance with development trilaminar germ disc

Specific objective of fifteenth session: Explain embryo development from day 8 to day 13. Know cytotrophoblast and syncytiotrophoblast. Explain hypoblast layer and epiblast layer. Know amniotic cavity formation and primitive yolk sac. Explain uteroplacental circulation and sinusoids. Know chorionic cavity, extraembryonic somatic mesoderm, Know primary villi. Explain definitive yolk sac, exocoelomic cyst, chorionic plate and chorionic cavity. Describe connecting stalk. Explain abnormal implantation. Explain gastrulation. Describe ectoderm, mesoderm and endoderm formation. Explain notochord formation. Know establishment of the body axes. Explain fate map establishment during gastrulation. Know teratogenesis associated with gastrulation. Explain development of trophoblast.

General objective of sixteenth session: Acquaintance with third to eighth weeks: the embryonic period

Specific objective of sixteenth session: Explain derivations of the ectodermal layer. Explain neurulation and its molecular regulation. Describe neural crest and its molecular regulation. Know neural tube defect. Explain derivations of the mesodermal layer including paraxial mesoderm, Somite differentiation and their molecular regulation. Explain derivations of the intermediate and lateral plate mesoderm. Know development of blood and blood vessels and their molecular regulation and their abnormality. Know derivations of the endodermal layer. Know patterning of the anteroposterior axis. Explain external appearance during the second month.

General objective of seventeenth session: Acquaintance with third month to birth: the fetus and placenta. Acquaintance with twins

Specific objective of seventeenth session: Describe embryo development, as monthly changes, from second month to ninth month. Know birth time and low birth weight. Explain fetal membrane and placenta. Know trophoblast change in this period. Explain preeclampsia. Describe chorion frondosum and decidua basalis. Explain structure of placenta and full term placenta. Know circulation of the placenta and its abnormalities. Explain function of placenta. Describe amnion and

umbilical cord. Know placental changes at the end of pregnancy. Explain amniotic fluid and its abnormality. Explain fetal membranes in twins. Explain abnormalities associated with twins.

General objective of eighteenth session: Acquaintance with birth defects and prenatal diagnosis

Specific objective of eighteenth session: Know Types of Abnormalities. Explain Environmental Factors associated with birth defects. Know principles of Teratology. Explain Infectious Agents, Radiation, associated with birth defects. Describe pharmaceutical Drugs and Chemical Agents associated with birth defects. Know Hormones associated with birth defects. Explain maternal disease, nutritional deficiencies, obesity, hypoxia and heavy metals associated with birth defects. Know male mediated teratogenesis associated with birth defects. Explain prenatal diagnosis.

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

1. Description of the history of anatomy, how to study anatomy and its terminology. Description of normal anatomy, body planes, body axis and body movement.
2. Description of skeletal, muscle and joints systems
3. Description of nervous system
4. Description of normal anatomy and variations. Acquaintance with principals of radiological anatomy
5. Description of Methods of Histology study
6. Description of cell and cytology
7. Description of epithelial tissue
8. Description of connective tissue and adipose tissue
9. Description of Cartilage, Bone and Joint tissues
10. Description of blood and hemopoiesis
11. Description of Muscle tissue
12. Description of Nerve tissue
13. Description of gametogenesis including oogenesis and spermatogenesis
14. Description of first week of development, from ovulation to implantation
15. Description of second week of development: bilaminar germ. Description of development trilaminar germ disc
16. Description of third to eight weeks: the embryonic period
17. Description of third month to birth: the fetus and placenta. Acquaintance with twins
18. Description of birth defects and prenatal diagnosis

References:

Gray's Anatomy for Medical Students, latest edition

Junqueira's Basic Histology, latest edition

Langman embryology, latest edition

Methods of teaching: Teacher-centered lecture, discussion and question and answer

educational tools: video projector, computer and power point and whiteboard

Measurement and evaluation

Test	Method	Share of total score (in percent)	Date
Quiz	Short explanation	2	Every Session
Midterm exam	Multiple question	4	Middle of term
End of term exam	Multiple question	12	End of term
Active attendance at the class	question and answer	2	Every Session

Class requirements and expectations from the student:

Active attendance at the class, study the contents of each session after teaching and ready for next session

دانشکده: EDO نام و امضای مدرس: نام و امضای مدیر گروه: نام و امضای مسئول
 تاریخ تحویل: تاریخ ارسال: تاریخ ارسال:

Lesson Schedule of Introduction of Anatomy
International medicine students of second semester
Day and Hour of every session: Sunday 8.10-10.10
2 st semester (2019-2020)

Session	Date	Subject of every session	Teacher
1	2.1.2020	Acquaintance with the history of anatomy, how to study anatomy and its terminology. Acquaintance with normal anatomy, body planes, body axis and body movement.	Dr Azita Faramarzi
2	2.8.2020	Acquaintance with skeletal, muscle and joints systems	Dr Azita Faramarzi
3	2.15.2020	Acquaintance with nervous system	Dr Azita Faramarzi
4	2.22.2020	Acquaintance with normal anatomy and variations. Acquaintance with principals of radiological anatomy	Dr Azita Faramarzi
5	2.29.2020	Acquaintance with Methods of Histology study	Dr Azita Faramarzi
6	3.7.2020	Acquaintance with cell and cytology	Dr Azita Faramarzi
7	3.14.2020	Acquaintance with epithelial tissue	Dr Azita Faramarzi
8	4.4.2020	Acquaintance with connective tissue and adipose tissue	Dr Azita Faramarzi
9	4.11.2020	Acquaintance with blood and hemopoiesis	Dr Azita Faramarzi
10	4.18.2020	Acquaintance with Cartilage, Bone and Joint tissues	Dr Azita Faramarzi
11	4.25.2020	Acquaintance with Muscle tissue	Dr Azita Faramarzi
12	5.2.2020	Acquaintance with Nerve tissue	Dr Azita Faramarzi
13	5.9.2020	Acquaintance with gametogenesis including oogenesis and spermatogenesis	Dr Azita Faramarzi
14	5.16.2020	Acquaintance with first week of development, from ovulation to implantation	Dr Azita Faramarzi
15	5.23.2020	Acquaintance with second week of development: bilaminar germ. Acquaintance with development trilaminar germ disc	Dr Azita Faramarzi
16	5.30.2020	Acquaintance with third to eight weeks: the embryonic period	Dr Azita Faramarzi
17	6.6.2020	Acquaintance with third month to birth: the fetus and placenta. Acquaintance with twins	Dr Azita Faramarzi
18	6.13.2020	Acquaintance with birth defects and prenatal diagnosis	Dr Azita Faramarzi