



The University of Jordan

Accreditation & Quality Assurance Center

Course Syllabus

Anatomy and Embryology

1. Course title:
• Anatomy and Embryology
2. Course number:
• 0502109
3. Credit hours (theory, practical):
• 4 (3 Theory, 1 Practical)
Contact hours (theory, practical)
• Theory: 3 , Practical: 1
4. Prerequisites:
• Biology 0304102
5. Program title:
• MD, DDS
6. Program code:
• 05
7. Awarding institution:
• The University of Jordan
8. Faculty:
• School of Medicine
9. Department:
• Anatomy and Histology
10. Level of course:
• 1st year
11. Year of study and semester (s):
• 2020/2021 Second Semester
12. Final Qualification:
• MD, DDS
13. Other department (s) involved in teaching the course:
• None
14. Language of Instruction:
• English
15. Date of production:
• 18/1/2021

16. Course Coordinator:

- Dr. Amjad Shatarat
Office number 05
Office phone 23425
Email: a.shatarat@ju.edu.jo

17. Other instructors:

- Prof. Darwish Badran
- Dr. Ahmad Salman
- Dr. Maha Beltagi
- Dr. Islam Al trawneh

18. Course Description:

- **Gross Anatomy**
 - The course is designed to provide students with clear and detailed concepts of general anatomy, especially the anatomy of the limbs.
 - Detailed anatomy of the upper and lower limbs
 - Introduction to thorax, abdomen and their main structures.
- **Embryology:**
 - The course is designed to provide students with clear and detailed concepts of general embryology.
 - General overview of the fetal development and its major milestones will be learnt; starting from fertilization, implantation and its subsequent development into a bilaminar and trilaminar germ discs.
 - By the end of the course, students will acquire the ability to list derivatives of ectoderm , mesoderm and endoderm and fetal membranes.

19. Aims and outcomes:

- The objectives of this course include teaching the students general anatomy and embryology, as well as enabling them to distinguish between various anatomical structures and their functions.
- At the end of this course, the student is expected to have general knowledge in human anatomy, distinguish the various structures, and understand the blood & nerve supply and the function of each structure.

- Furthermore, the student must learn the major phases of fertilization, implantation, and fetal development.

20. Topic Outline and Schedule:

Week	Content	Outcomes
1	<ul style="list-style-type: none"> • <u>Anatomy:</u> Introduction to anatomy • <u>Embryology:</u> Introduction to embryology Mitosis and meiosis 	<ul style="list-style-type: none"> • <i>Define anatomical position, planes, directional terms. Origin, insertions as concepts</i> • <i>Definition, concepts, periods and detailed meiosis</i>
2	<ul style="list-style-type: none"> • <u>Anatomy:</u> • bones of the upper limb 	<ul style="list-style-type: none"> • <i>bones of the shoulder girdle, humerus, radius, ulna and hand</i> • <i>Types of joints with main focus on the synovial joints.</i>
3	<ul style="list-style-type: none"> • <u>Anatomy:</u> Scapular, Pectoral regions • <u>Embryology:</u> Male genital system and Female reproductive system 	<ul style="list-style-type: none"> • <i>Identify muscles of pectoral and scapular regions, (actions and nerve supply).</i> • <i>Overview on the shoulder joint</i> • <i>The concept of rotator cuff muscles</i> • <i>overview on the anatomy of the male and female reproductive system</i>
4	<ul style="list-style-type: none"> • <u>Anatomy:</u> • Muscles connecting the upper limb to the trunk 	<ul style="list-style-type: none"> • <i>Trapezius, deltoid, serratus anterior muscles and their nerve supply and actions.</i> • <i>Sternoclavicular and acromioclavicular joints their anatomy and functions</i>
5	<ul style="list-style-type: none"> • <u>Anatomy:</u> Axilla and Brachial plexus. • <u>Embryology:</u> Gametogenesis (Spermatogenesis) 	<ul style="list-style-type: none"> • <i>Locate axilla, its boundaries and contents.</i> • <i>Describe the brachial plexus, its formation and branches</i> <i>Understand the process of sperm formation and maturation.</i>
6	<ul style="list-style-type: none"> • <u>Anatomy:</u> • Axilla and axillary artery • Subclavian artery 	<ul style="list-style-type: none"> • <i>Axillary artery, its relation with pectoralis minor muscle course and its branches</i> • <i>Subclavian artery and its course</i>

7	<ul style="list-style-type: none"> • <u>Anatomy:</u> Arm compartments. • <u>Embryology:</u> Gametogenesis (Oogenesis) 	<ul style="list-style-type: none"> • <i>Anterior and posterior compartments of the arm their nerves and blood vessels</i> • <i>Understand the process of oocyte formation and maturation.</i>
8	<ul style="list-style-type: none"> • <u>Anatomy:</u> Cubital fossa and compartments of the forearm. • <u>Embryology:</u> First week of development. 	<ul style="list-style-type: none"> • <i>Recognize boundaries and contents of the cubital fossa.</i> • <i>Describe muscles, nerves, and blood vessels of the anterior compartment of the forearm</i> • <i>Understand the Ovarian Cycle, ovulation and its related changes.</i>
9	<ul style="list-style-type: none"> • <u>Anatomy:</u> Posterior compartments of the forearm. 	<ul style="list-style-type: none"> • <i>Describe muscles, nerves, and blood vessels of the posterior compartment of the forearm</i>
10	<ul style="list-style-type: none"> • <u>Anatomy:</u> The hand 1 • <u>Embryology:</u> Fertilization & cleavage implantation & blastocysts 	<ul style="list-style-type: none"> • <i>Describe muscles, nerves, and blood vessels of the hand</i> • <i>Explain the anatomy, type of joint, articulations and actions of shoulder, elbow.</i> • Describe the phases of the Fertilization process. • Describe the process of implantation • Identify the meaning of blastocyst.
11	<ul style="list-style-type: none"> • <u>Anatomy:</u> The hand 2 	<ul style="list-style-type: none"> • <i>Fascial and Spaces of the hand</i>
12	<ul style="list-style-type: none"> • <u>Anatomy:</u> Joints of the upper limb 	<ul style="list-style-type: none"> • <i>Shoulder, elbow and wrist joints</i>
13	<ul style="list-style-type: none"> • <u>Anatomy:</u> Nerve injuries of the upper limbs 	<ul style="list-style-type: none"> • <i>Nerve injuries of the median, ulnar and radial nerves</i>
14	<ul style="list-style-type: none"> • <u>Anatomy:</u> Bones of the lower limbs. 	<ul style="list-style-type: none"> • Describe the bones of the lower limbs. • Define the bilaminar disc and its significance for the implantation

	<ul style="list-style-type: none"> • <u>Embryology:</u> Bilaminar disc. 	<i>during the second week of fetal development.</i>
15	<ul style="list-style-type: none"> • <u>Anatomy:</u> Lumbosacral plexus. • <u>Embryology:</u> Bilaminar germ disc. 	<ul style="list-style-type: none"> • <i>Formation of the lumbar and sacral plexuses and their terminal branches</i> • <i>Describe the formation of the bilaminar germ disc and the amniotic cavity.</i>
16	<ul style="list-style-type: none"> • <u>Anatomy:</u> Thigh anterior and medial compartments, femoral triangle • <u>Embryology:</u> Trilaminar germ disc. 	<ul style="list-style-type: none"> • <i>Describe muscles, nerves, and blood vessels of the anterior and medial compartments of the thigh</i> • <i>Describe the formation of trilaminar germ disc.</i>
17	<ul style="list-style-type: none"> • <u>Anatomy:</u> Gluteal region 	<ul style="list-style-type: none"> • <i>Describe the muscles of the gluteal region, nerve and blood supply</i> • <i>Short lateral rotators of the hip</i> • <i>Gates of the plevis into the gluteal region</i>
18	<ul style="list-style-type: none"> • <u>Anatomy:</u> Posterior compartment of thigh and popliteal fossa. • <u>Embryology:</u> Derivatives of the ectoderm and neural tube. 	<ul style="list-style-type: none"> • <i>Describe muscles, nerves, and blood vessels of the posterior compartment of the thigh.</i> • <i>Boundaries of the popliteal fossa and its contents</i> • <i>Understand and list derivatives of ectoderm.</i>
19	<ul style="list-style-type: none"> • <u>Anatomy:</u> Leg muscles compartments. • <u>Embryology:</u> Derivatives of the mesoderm and endoderm. 	<ul style="list-style-type: none"> • <i>Describe muscles in each compartment of the leg.</i> • <i>Understand and list derivatives of mesoderm and endoderm.</i>
20	<ul style="list-style-type: none"> • <u>Anatomy:</u> Anatomy of the foot and nerve injuries of the lower limbs 	<ul style="list-style-type: none"> • <i>List the layers of the foot and its arches, nerve and blood supply</i>
21	<ul style="list-style-type: none"> • <u>Anatomy:</u> Thoracic wall. 	<ul style="list-style-type: none"> • <i>Outline thoracic wall and its basic structures of the: Bones, muscles, vessels, nerves and joints.</i>

		<ul style="list-style-type: none"> • <i>Describe the diaphragm, its shape, nerve supply, openings and function.</i>
22	<ul style="list-style-type: none"> • <u>Anatomy:</u> Lungs and Pleura; Heart and Pericardium. • <u>Embryology:</u> Derivatives of the mesoderm and endoderm. 	<ul style="list-style-type: none"> • <i>Describe the lungs, their lobes and fissures, relations, blood and nerve supply.</i> • <i>Understand the structure of the pleura and its nerve supply.</i> • <i>Understand the structure of the pleura and its nerve supply.</i> • <i>Understand and list derivatives of ectoderm.</i>
23	<ul style="list-style-type: none"> • <u>Anatomy:</u> Mediastinum and large vessels and nerves of the thorax. 	<ul style="list-style-type: none"> • <i>Outlines the contents and the divisions of the Mediastinum.</i> • <i>Distinguish major vessels and nerves present within the thoracic cavity.</i>
24	<ul style="list-style-type: none"> • <u>Anatomy:</u> Heart and Pericardium. • <u>Embryology:</u> Fetal period- congenital malformations. 	<ul style="list-style-type: none"> • <i>Distinguish the external and internal features of the heart.</i> • <i>Blood supply</i> • <i>Explain the conducting system of the heart.</i> • <i>Understand the structure of the pericardium.</i> • <i>Describe the normal and pathological development of fetus.</i>
25	<ul style="list-style-type: none"> • <u>Anatomy:</u> Abdominal wall, Inguinal canal and peritoneum. • <u>Embryology:</u> Placenta 	<ul style="list-style-type: none"> • <i>Distinguish basic structures of the anterior and posterior abdominal wall.</i> • <i>Describe function and nerve supply of muscles of the anterior and posterior abdominal walls.</i> • <i>Explain the general arrangement of the peritoneum, relationships, nerve supply and function.</i> • <i>Describe the anatomy of the placenta.</i>
26	<ul style="list-style-type: none"> • <u>Anatomy:</u> Gastrointestinal tract(GIT). 	<ul style="list-style-type: none"> • <i>Understand the general arrangement of abdominal viscera.</i>

	<ul style="list-style-type: none"> • <u>Embryology:</u> Fetal membranes. 	<ul style="list-style-type: none"> • <i>Describe the anatomy of the esophagus, stomach, and duodenum</i> • <i>Identify major blood vessels and nerves of GIT.</i> • <i>Describe the formation and progression of the development of the fetal membranes.</i>
27	<ul style="list-style-type: none"> • <u>Anatomy:</u> • Gut tube 	<ul style="list-style-type: none"> • <i>Describe the anatomy of small and large intestines and their blood supply.</i>
28	<ul style="list-style-type: none"> • <u>Anatomy:</u> • Accessory structures of GIT 	<ul style="list-style-type: none"> • <i>Describe the anatomy of the liver, gall bladder, pancreas and spleen</i>

21. Teaching Methods and Assignments:

- Development of ILOs is promoted through the following teaching and learning methods:
 - Small Group discussions during practical sessions
 - prerecorded videos uploaded on You Tube.
 - Online discussion for each group of students.
 - Prerecorded dissection of all practical sessions.
 - Questions and Answers at designated online sources, Facebook, lark and E-Learning.

22. Evaluation Methods and Course Requirements:

- Midterm Exam
- Final Exam
- Course Evaluation Forms

23. Course Policies:

- Attendance policies:
 - Students are expected to attend all class sessions as listed on the course calendar.
 - Students are not allowed to be absent for more than 15% of the credit hours of the course.
 - All students are required to wear a lab coat during the laboratory session.

- Absences from exams and handing in assignments on time:
 - Make-up appeals are considered only for students who provide documentation of a compelling reason for missing the exam.
- Health and safety procedures:
 - College members and students must at all times, conform to health and safety rules and procedures.
 - Social distancing and masks should be preserved at all times during the practical sessions.
- Honesty policy regarding cheating, plagiarism, misbehavior:
 - As a student in this course (and at this University) you are expected to maintain high degrees of professionalism, commitment to active learning and participation in this class and also integrity in your behavior in and out of the classroom.
 - Students violate this policy would be subjected to disciplinary action according to University of Jordan disciplinary policies.
- Grading policy:
 - Grade-point average according to grading policy at University of Jordan.
- Available university services that support achievement in the course:
 - Internet database at the University of Jordan the University of Jordan library.

24. Required equipment:

- Formalin preserved human cadavers and body parts.
- Plastinated human cadavers and body parts.
- Plastic models

25. References:

- Required book (s), assigned reading and audio-visuals:
 - Snell's Clinical Anatomy by Regions 10 th Edition
 - Gray's Anatomy for Students 4th Edition
 - Langman's Medical Embryology by Sadler
- Recommended books, materials, and media:
 - Principles of Anatomy and Physiology.
 - Grant's atlas of anatomy.

26. Additional information:

--

- Name of Course Coordinator: Amjad Al-Shatarat

Signature: _____

Date: _____

- Head of curriculum committee/ Department: ___Dr. Amjad Shatarat

Signature: _____

Date: _____

- Head of Department: __Dr. Amjad Shatarat

Signature: _____

Date: _____

- Head of curriculum committee/Faculty: _____

Signature: _____

Date: _____

- Dean: _____

Signature: _____

Date: _____

Copy to:

Head of Department Assistant.

Dean for Quality Assurance.

Course File.