Syllabus of Embryology1 / Second year/1st semester/2025-2026

PART: ONE

1. The Target Audience

Second-year medical students

2. Goals and Objectives

Students should acquire knowledge of general and systemic embryology.

3. Instructional Strategy:

- Theory lectures

4. Logistics

- Lecture halls for small group teaching and large group teaching.
- Electronic examination hall.
  - Data show and LCD screen

5. Assessments

1. Daily assessment at the end of lecture including discussion , participation .
2. Formative and summative exam.

6. Evaluation of Effectiveness:

Theoretical midterm and final exam.

PART TWO

Curriculum of embryology

First semester / 2nd year/ General Embryology / 15 lectures	
Introduction	
	At the end of the lecture the student should know: **1. Definitions of medical embryology, teratology, somatic cells , germ cells, gametes & gametogenesis.** **2. Values of studying embryology** **3. Gametogenesis** **4.Teratoma**
Gametogenesis	
Morphological changes during gamete maturation	
	At the end of the lecture the student should know **1. Oogenesis (prenatal & postnatal)** **2.The morphological changes in ovary** **3. primordial follicles**

Spermatogenesis	
	At the end of the lecture you should be able to: **1. Study the occurrence of spermatogenesis** **2. Hormonal effect on spermatogenesis** **3. Morphological changes** **4. Spermatogenesis and Spermiogenesis** **5. Abnormalities in gametes development**
1st week of development	
	At the end of the lecture you should be able to : **1. Define the ovarian cycle** **2. Menstrual cycle and its phases** **3. Ovulation** **4. Formation of corpus luteum**
2nd week of development	
	At the end of the lecture you should know: **1. Phases of fertilization, 1st, 2nd, and 3rd & prevention of polyspermy** **2. What are the results of fertilization?** **3. Definition of fertilization** **4. Results of fertilization**
Cleavage	
	At the end of the lecture you should know: **1. Cleavage, blastocyst formation ,clinical** **2. Morphology of blastocyst at day 8,9, 11-12 &13** **3. Compaction & Cavitation & Implantation** **3. Morphology of day 8 human blastocyst** **4. Morphology of day 9 human blastocyst** **5. Morphology of day 11-12 human blastocyst** **6. Morphology of day 13 human blastocyst**
3rd week development	
.	**At the end of the lecture the student should know** **1. Changes during the end of 2nd week development** **2. Gastrulation, primitive streak & notochord** **3. Define oropharyngeal & cloacal membrane** **4. Primitive streak** **5. Gastrulation**
ectoderm layer	
	At the end of the lecture the student should know **1. Development of neural tube & neural crest** **2. What are the derivatives of ectoderm and neural crest?** **3. What are the abnormalities in neural tube development.** **4. Growth of germ disc**

Intra embryonic mesoderm & endoderm	
	At the end of the lecture the student should know **1. Parts of mesoderm (paraxial, intermediate & lateral).** **2. Differentiation of mesoderm (somites development), age estimation.** **3. Clinical correlates** **4. What is the further development in the trophoblast.** **5. The cephalocaudal and lateral folding of embryo** **6. External features of 1st&2nd months human embryo** **7. Head fold, tail fold, vitelline duct, primitive gut** **8. External appearance during the 2nd month** **9. Fetal period 3rd month –birth fetal length, characterization of fetal period**
Placenta	
	At the end of the lecture the student should know **1. Development of placenta, functions & circulation** **2. Fetal & maternal parts of placenta** **3. Circulation of placenta** **4. Placental membrane** **5. Fetal & maternal sides** **6. Circulation of placenta**
Fetal membranes	
	At the end of the lecture the student should know **1. Development of primitive umbilical ring** **2. Development of primitive umbilical cord** **3. Relation of fetal membrane to the wall of uterus** **4. Amniotic fluid & its clinical correlates** **5. Amnion, chorion and Umbilical cord**