Syllabus of Embryology / Second year

PART: ONE

1. The Target Audience

Second year medical students

2. Goals and Objectives

The students should acquire knowledge about 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

Second semester / 2nd year/ Systemic Embryology/ 15 lectures	
Skeletal system & muscular system	
	At the end of the lecture the student should know **1.Embryological development of skull,vertebral column, ribs & sternum** **2.Interpretate the causes of common important bony abnormalities** **3.Recognize limbs growth & development** **4.Determine bony age** **5.Identify the embryological development of limbs & head musculature& their innervation** **6.Interpretate the causes of common limbs defects Skull development, skull abnormality.**
Cardiovascular system	
	At the end of the lecture the student should know **1.Formation and position and heart tube** **2. Formation heart loop** **3. Development of sinuse venosus** **4.Formation cardiac septa** **5. Abnormalities of atrioventricular canal**

	6.Abnormalities of interventricular septum
Respiratory system	
	At the end of the lecture the student should know **1.larynx** **2.Trachea, bronchi & lung**
Digestive system	
	At the end of the lecture the student should know **1.Identified of the primitive gut, its divisions and its differentiations** **2.The embryological development of digestive system derivatives** **3.Interpret ate the clinical correlates with embryological malformations of G.I.T .** **4.Diaphragm serous membrane and body cavities** **5.Coelomic cavity and identify their formations** **6.Embryological developments of diaphragm and its innervation** **7.Clinical correlates with embryological malformations of diaphragm**
Forgut development	
	At the end of the lecture the student should know **1. Development of esophagous** **2. Development stomach** **3. Development Duodenum** **4. Development of Liver, gall bladder & pancreas** **5. Mid gut & hind gut** **6. Physiological herniation** **7. Abnormalities in development of digestive system**
Urogenital system	
	At the end of the lecture the student should know **Know Origin of urogenital system from the urogenital ridge** **Enlist the Structures derived from urogenital ridge** **Know the 3 sets of successive kidney system** **Recognize the pronephron ,its time of appearance ,location and function** **Recognize the Mesonephron, its time of appearance ,location and function** **Recognize the metanephron ,its source, time of appearance ,location and function** **Describe the development of ureter from ureteric bud** **Describe the development of collecting duct** **Describe Positional changing of kidney and its blood supply** **Describe the development of urinary bladder from urogenital sinus** **Describe the development of urethra from urogenital sinus**
Formation of excretory unit of kidney	
	At the end of the lecture the student should know **1. Pronephros** **2. Mesonephros** **3. Metanephros** **4. Abnormalities in development**
Genital system	

	At the end of the lecture the student should know **1. Describe the development of the gonad** **2. Describe the development of testes** **3. Describe development of ovaries** **4. Describe the development of male and female genital ducts** **5. Describe the development of vagina** **6. Describe the development external genitalia** **7. Discuss some developmental abnormalities** **8. Gonads, indifferent gonad** ▪ **Testis & ovary** ▪ **Genital duct** ▪ **External genitalia** ▪ **Abnormalities**
Head & neck	
	At the end of the lecture the student should know **1.Pharyngeal arches** **2.Pharyngeal pouches** **3.Tongue** **4.Thyroid gland** **5.Cleft lip & palate**
Central Nervous System	
	At the end of the lecture the student should know **1. Describe the initial steps of spinal cord development** **2. Mention the histological differentiation of nerve cells** **3. List the positional changed of the cord** **the spinal cord 4. Mention the molecular regulation of nerve differentiation** **5. Describe forebrain ,midbrain& hindbrain** **6. Identify cerebral cortex development** **7. list the molecular regulation of brain development** **8. How cranial nerves develop** **9. Identify sympathetic and parasympathetic development** **10. Spinal cord development** **11. Brain development** **12. Clinical Correlates**