

UNIVERSITY OF BARI  
SCHOOL OF MEDICINE

**BEMC - Bari English Medical Curriculum**

PROGRAM OF “HUMAN CYTOLOGY, HISTOLOGY AND EMBRYOLOGY”

CITOLOGY and HISTOLOGY: Dr. G. COLAIANNI, Ph.D. (graziana.colaianni@uniba.it)

EMBRYOLOGY: Prof.ssa D. VIRGINTINO, M.D. (daniela.virgintino@uniba.it)

**CYTOLOGY:** CELL CYTOPLASM (Overview of the Cell and Cytoplasm; Membranous Organelles; Non-membranous Organelles; Inclusions; Cytoplasmic Matrix; Clinical Correlations). CELL NUCLEUS (Overview of the Nucleus; Nuclear Components; Cell Renewal; Cell Cycle; Cell Death; Clinical Correlations).

**HISTOLOGY:** Epithelia: Classification of epithelia; Glands; The pineal gland; The thyroid gland; The parathyroid glands; The suprarenal glands; Some other organs having endocrine functions; The diffuse neuroendocrine cell system. General Connective tissue: intercellular ground substance, fibres and cells of connective tissue. Adipose tissue. The blood and mononuclear phagocyte system: Erythrocytes Leucocytes; Granulocytes; Lymphocytes; blood platelets. Cartilage tissue: Hyaline cartilage; Fibrocartilage; Elastic cartilage. Bone tissue: bone structure; the periosteum; Correlation of bone structure and some of its mechanical properties; Formation of bone. Muscle tissue; Skeletal muscle; Cardiac muscle; Smooth muscle. Nervous tissue: Neuron structure; Peripheral nerves; Sensory receptors; Neuromuscular junctions; Ganglia; Neuroglia.

SUGGESTED COURSEBOOKS Cytology and Histology: Histology, A Text and Atlas with Correlated Cell and Molecular Biology by Michael H. Ross, Wojciech Pawlina.

**HUMAN EMBRYOLOGY:**

- Gametogenesis: origin of the germ line; development of gonads and genitalia; gametogenesis in the male and female; ovarian and menstrual cycles.
- Fertilization: zygote, cleavage, morula, blastocyst, implant.
- Development of the bilaminar germ disc: trophoblast; epiblast and hypoblast; amniotic cavity and yolk sac; chorion; stem villi; establishment of uteroplacental circulation.
- Development of the trilaminar germ disc: the primitive streak; gastrulation; the notochord; development of mesoderm ectoderm and endoderm; derivative of the germ layers; differentiation of the somites.
- Development of the neural tube: primary and secondary neurulation; neural crest cells; nervous system cytodifferentiation; development of brain subdivisions.
- Folding of the embryo: formation of body cavities, mesenteries, gut tube and umbilical cord.
- Formation and folding of the primitive heart tube, morphogenesis of heart chambers, fetal circulation and conversion at birth.
- Development of the pharyngeal arches and morphogenesis of the face.
- Amnion and amniotic fluid.
- Development and functioning of the placenta.

SUGGESTED COURSEBOOKS Embriology:

1. Larsen's Human Embryology, 4e1 apr. 2008

di Gary C. Schoenwolf PhD e Steven B. Bleyl MD PhD

2. Langman's Medical Embryology (Longmans Medical Embryolgy)7 ott. 2014 di T. W. Sadler