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| **Course title** | **Code** | **Semester** | **Type of course** | **Course volume (Contact hours)** | **ECTS** |
| **Gastrointestinal System and Metabolism** | **MED1002** | **II** | **Mandatory** | **101** | **6** |
| **Faculty, the educational program and level of education** | * School of Medicine and Health Sciences
* Higher Medical Educational Program “Medicine”
* One cycle 6-year
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| **Learning Course Content** |
| * **Embryology** - Development of body cavities and diaphragm. Clinically oriented problems
* **Anatomy** - Introduction to Digestive System, Components of Oral Cavity.
* Tongue, teeth, hard palate, soft palate and muscles Sublingual gland, submandibular gland, parotid gland Pharynx,. Walls of gut
* **Cadaver Lab** - gastroıntenstınal organs
* **Physiology** - General organization of digestive system, Cephalic and gastric phase of digestion. Intestinal phase of digestion. Regulation of gastrointestina motility and secretions. Large intestine.
* **Biochemistry** - Introduction to metabolism.Glycolysis and its regulation. Electron transport chain and ATP synthesis.TCA and Regulation.
* **Medical Biology/Medical Genetics -** Mutations and repair.
* **Histology -** Histology of Upper GIS
* **PBL**
* **Anatomy -** Accessory organs : Liver and Gallbladder (biliary vesicle), Porta hepatis and its tributarie. Peritoneum (visceral and parietal layers): Greater and lesser omentum, Omental Bursa, Omental Foramen (foramen epiploicum).Mesenteries.
* **Cadaver Lab** - gastroıntenstınal organs
* **Radiologic Anatomy** - Images of the Gastrointestinal System - I; Images of the Gastrointestinal System – II Images of the Gastrointestinal System – II
* **Physiology -** Gastrointestinal Blood Flow—“Splanchnic Circulation”, Regulation of gastrointestinal function, Propulsion and Mixing of Food in the Alimentary Tract;
* **Biochemistry** - Gluconeogenesis and its regulation. . Biosynthesis and breakdown of glycogen.Integration of glycolysis and glycogen metabolism. Pentose Phosphate Pathway & Other Pathways of Hexose Metabolism
* **Medical Biology/Medical Genetics** - Mechanisms of programmed cell death (apoptosis) clinical outcome.
* **Clinical Visits** - Collection of clinical cases
* **Embryology** - Development of foregut. Development of midgut and hindgut.
* **Histology** - Histology of Lower GIS
* **Anatomy** - Oesophagus, Stomach, duodenum, Pancreas and spleen
* **Cadaver Lab** - gastroıntenstınal organs
* **Radiologic Anatomy** - Images of the Biliary System and The Pancreas ; Images of the Peritoneal Cavity and the Abdominal Wall. Images of the Gastrointestinal System - I; Images of the Gastrointestinal System - II Images of the Biliary System and The Pancreas ; Images of the Peritoneal Cavity and the Abdominal Wall
* **Physiology** - Chemical digestion of nutrients (Fat; Proteins); Lab: Gastrointestinal peristalses, simulation of GI motility
* **Biochemistry** - Biosynthesis of lipids. Biosynthesis of cholesterol. Biosynthesis of fatty acis and allosteric regulation. Oxidation of fatty acids and its regulation. Biosyntesis of triacylglycerol.
* **Medical Biology/Medical Genetics** - Introduction of genetics, concepts of genetic.
* **Embryology** - Development of foregut. Development of midgut and hindgut
* **Histology** - Histology of Liver, Bile Ducts, Gall Bladder, and Pancreas
* **Anatomy** - Small Intestine, Large Intestine.
* **Cadaver Lab** - gastroıntenstınal organs
* **Physiology** - Secretory Functions of the Alimentary Tract, Digestion and absorption of food,Absorption of nutrients and water. Functions of the liver, Energy metabolism, hunger and obesity;
* **Med. Microbiology** - Normal flora, pathogenisity of microorganisms, host-microbial interaction
* **Biochemistry** - Biosynthesis of amino acid and nitrogenous compounds.Oxidation of Amino Acids.Nucleic acid metabolism. Regulation of enzymes in metabolism. LAB: Construction of a calibration curve for the determination of glucose concentration,Determining the glucose concentration.
* **Medical Biology/Medical Genetics** - Mendelian, monogenic inheritance, major principles. Test cross.
* **Clinical Visits** - Collection of clinical cases
* **Clinical Skills** - Enema Administration
* **PBL**
* **PPT**
* **Review Hs**
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| **Textbooks and Materials** |
|  **Anatomy*** **Elsevier's Integrated Anatomy and Embryology-** Bogart Bruce Ian; Ort Victoria; Mosby Elsevier; 2007;
* **Human Anatomy**-Elaine N. Marieb; Pearson; 12th ed.; 2023;
* **Sobotta Atlas of Human Anatomy**.**Tables of Muscles, Joints,and Nerves**-F.Paulsen;J.Waschke; Urban & Fischer; 16st. edition; 2018.

 **Rad. Anatomy*** **Learning Radiology**: **Recognizing the Basics** -William Herring. Elsevier Mosby; 2nd ed. 2012;

 **Biochemistry*** **Biochemistry :**  **Lippincott illustrated reviews -**  Ferrier, Denise R; Wolters Kluwer; 7 th. ed. 2017;
* **Marks' basic medical biochemistry:** **a clinical approach-** Lieberman, Michael; Wolters Kluwer Health; 4th.ed. 2018

**Histology*** **Junqueira's Basic Histology : Text and Atlas- Anthony L. Mescher; McGraw Hill Education; 16th Ed. 2021;**
* **Histology and cell biology: an introduction to pathology**- Elsevier Saunders; 5rd.ed; 2020;

**Embryology*** **The Developing Human: Clinically Oriented Embryology** - Keith Moore L; Persaud T.V.N;Mark G Torchia; Elsevier Saunders. 11th ed. 2020;

**Biophysics** * **Biological and Medical Physics-** **Tamar Sanikidze;** West Pomeranian University of Technology ; V-1/ V-2. 2016

**MOLECULAR BIOLOGY/GENETICS*** **Molecular Biology of the Cell -** Bruce Alberts, Alexander Johnson; Garland Science; 7th ed. 2022;

 **Physiology*** **Guyton** a**nd Hall textbook of medical physiology-** Hall, John E; Elsevier; 14th.ed. 2021;
* **Elsevier's Integrated Physiology-** Robert G. Carroll; Mosby Elsevier; 2007;
* **Lehninger principles of biochemistry-**David L.Nelson; Michael M.Cox W.H. Freeman and Company; 6h.ed. 2013;
* **Textbook of Biochemistry with Clinical Correlations-** Thomas M. Devlin; John Wiley & Sons, Inc. 7th.ed. 2011;
* **Problem-Based Physiology**-Robert G. Carroll; Elsevier Sounders; 1st.ed. 2010;
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