

**HUMAN BIOLOGY (BHS 111)**  
**COURSE SYLLABUS – 391**

**Course Description (4 Credit Hours)**

BHS 111 is designed to cover general topics in biology that include general structure of cells, organization of body and different body systems including the circulatory, respiratory and immune systems etc. The objective of the course to give students the basic idea of human biology for their future studies and to raise their science literacy to enable them to understand scientific issues for making personal and public policy decisions.

**Course Requirements**

Sylvia Mader, Michael Windelspecht, 2013. Human Biology. 13<sup>th</sup> edition, McGraw-Hill Higher Education. ISBN-13: 9780073525488

Week	Date	Chapter	Sections	Topics	Pages
1	22-26/12/1439	<b>Chapter 1</b> Exploring Life and Science	<i>Orientation</i>	<i>Orientation</i>	
2	29/12/1439-3/01/1440	<b>Chapter 3</b> Cell structure and function	3.1 – 3.6	<b>What is a cell?</b> (the cell theory, cell size and microscopy), <b>How cells are organized</b> (internal structure of eukaryotic cells), <b>The plasma membrane and how substance cross it</b> (plasma membrane functions), <b>Nucleus and endomembrane system</b> (the nucleus, ribosome, the endomembrane system: endoplasmic reticulum, golgi apparatus, Lysosomes), <b>The cytoskeleton, cell movement, and cell junctions</b> (cilia and flagella, junctions between cells), <b>Mitochondria and cellular metabolism</b> (mitochondria, give a brief idea about cellular respiration, student will study in detail in biochemistry).	44 – 58
3	6-10/01/1440	<b>Chapter 4</b> Organization and Regulation of	4.1 – 4.6	<b>Types of tissues, Connective Tissue connects and support</b> (Fibrous, supportive and Fluid connective tissues), <b>Muscular</b>	67 – 80

		Body Systems		<p><b>tissue moves the body</b> (Skeletal, smooth and cardiac muscles), <b>Nervous Tissue communicates</b> (Neurons, Neuroglia), <b>Epithelial tissue protects</b>(Simple, squamous, cuboidal, columnar, pseudostratified columnar, glandular epitheliums), <b>Stratified epithelium</b>. <b>Integumentary system</b> (Skin, Regions of the skin: epidermis, dermis, subcutaneous layer. Accessory organs: hairs &amp; nails).</p>	
4	13-17/01/1440	<p><b>Chapter 4</b> Organization and Regulation of Body Systems</p>	4.7 – 4.8	<p><b>Organ systems, Body cavities, and body membranes</b> (organ system, body cavities, body membranes), <b>Homeostasis</b> (the internal environment, the body systems and homeostasis, negative feedback, positive feedback).</p>	81 – 87
		<p><b>Chapter 5</b> Cardiovascular System: Heart and Blood Vessels</p>	5.1 – 5.4	<p><b>Overview of the Cardiovascular System</b> (circulation perform exchanges, functions of the cardiovascular system), <b>The types of blood vessels</b>(The arteries: from the heart, the capillaries: exchange, the veins: to the heart), <b>The heart is a double pump</b> (coronary circulation: the heart’s blood supply, passage of blood through the heart, the heartbeat is controlled, internal control of heart beat, external control of heartbeat, the electrocardiogram is a record of the heartbeat), <b>Features of the cardiovascular system</b> (pulse rate equals heart rate, blood flow is regulated, blood pressure moves blood in arteries, blood flow slow in the capillaries, blood flow in veins returns blood to heart)</p>	91 – 101

5	20-24/01/1440	<p><b>Chapter 5</b> Cardiovascular System: Heart and Blood Vessels</p>	5.5 – 5.6	<p><b>Two cardiovascular pathways</b> (the pulmonary circuit: exchange of gases, the systematic circuit: exchanges with tissue fluid, tracing the path of blood, hepatic portal system: specialized for blood filtration), <b>Exchange at the capillaries.</b></p>	102 – 104
		<p><b>Chapter 6</b> Cardiovascular System: Blood</p>	6.1 – 6.5	<p><b>Blood: An Overview</b> (functions of blood, composition of blood), <b>Red blood cells and transport of oxygen</b> (how red blood cells carry oxygen, how red blood cells help transport carbon dioxide, red blood cells are produced in bone marrow), <b>White blood cells and defence against disease</b> (Types of white blood cells), <b>Platelets and blood clotting</b> (Blood clotting), <b>Blood typing and transfusions</b> (ABO blood groups, blood compatibility, Rh blood groups).</p>	113 – 126
6	27/01-2/02 /1440	<p><b>Chapter 7</b> The Lymphatic and Immune Systems</p>	7.1 – 7.5	<p><b>Microbes, Pathogens, and You</b> (bacteria, viruses, prions), <b>The lymphatic system</b> (lymphatic vessels, lymphatic organs), <b>Innate defences</b> (Physical and chemical barriers to entry, inflammatory response, protective proteins), <b>Adaptive immune defences</b> (how adaptive defences work, B cells and antibody-mediated immunity, T cells and cell-mediated immunity), <b>Acquired immunity</b> (Active immunity, passive immunity)</p>	131 – 146
7	5-9/02/1440	<p><b>Chapter 8</b> Digestive System and Nutrition</p>	8.1 – 8.5	<p><b>Overview of digestion</b> (wall of the digestive tract), <b>The mouth, pharynx, and esophagus</b> (the mouth, the teeth and tongue, the pharynx and esophagus), <b>The stomach and small intestine</b> (the stomach, the small intestine, digestion is completed in the small intestine, nutrients are</p>	168 – 180

				absorbed in the small intestine), <b>The accessory organs and regulation of secretions</b> (the accessory organs, regulations of digestive secretions) <b>The large intestine and defecation</b> (Functions of large intestine)	
8	12-16/02/1440	<b>Mid-Term Exam</b> اختبار منتصف الفصل			
9	19-23/02/1440	<b>Chapter 9</b> Respiratory System	9.1 – 9.6	<b>The Respiratory System, The upper respiratory tract</b> (the nose, the pharynx, the larynx), <b>The lower respiratory tract</b> (the trachea, the bronchial tree, the lungs, the alveoli) <b>Mechanism of breathing</b> (inspiration, expiration, maximum inspiratory effort and forced expiration, volume of air exchanged during ventilation), <b>Control of ventilation</b> (nervous control of breathing, chemical control of breathing), <b>Gas exchanges in the body</b> (external respiration, internal respiration).	196 – 209
10	26-30/02/1440	<b>Chapter 10</b> Urinary System	10.1 – 10.4	<b>The Urinary System</b> (functions of the urinary system, organs of the urinary system), <b>Kidney structure</b> (anatomy of a nephron, parts of a nephron), <b>Urine formation</b> (glomerular filtration, tubular reabsorption, tubular secretion), <b>Kidneys and Homeostasis</b> (kidneys excrete waste molecules, water-salt balance, acid-base balance of body fluids, the kidneys assist other systems).	217 – 233
11	3-7/03/1440	<b>Chapter 11</b> Skeletal System	11.1 – 11.4	<b>Overview of skeletal system</b> (functions of the skeleton, anatomy of a long bone), <b>Bones of the axial skeleton</b> (the skull, the hyoid bone, the vertebral column, the rib cage), <b>Bones of the appendicular skeleton</b> (the pectoral girdle and upper limb, the pelvic girdle and lower limb), <b>Articulations</b> .	238 – 251

12	10-14/03/1440	<b>Chapter 12</b> Muscular System	12.1 – 12.2	<b>Overview of the muscular system</b> (types of muscle, skeletal muscles of the body), <b>Skeletal muscle fibre contraction</b> (muscle fibres and how they slide, control of muscle fibre contraction).	260 – 270
13	17-21/03/1440	<b>Chapter 13</b> Nervous System	13.1, 13.2 & 13.4	<b>Overview of the nervous system</b> (nervous tissue, anatomy of a neuron, myelin sheath, physiology of a neuron, the synapse), <b>The central nervous system</b> (the spinal cord, the brain), <b>The peripheral nervous system</b> (somatic system, autonomic system, the somatic versus the autonomic systems).	283 – 296 299 – 303
14	24-28/03/1440	<b>Chapter 15</b> Endocrine System	15.1 – 15.7	<b>Endocrine glands</b> (hormones are chemical signals), <b>Hypothalamus and Pituitary gland</b> (posterior pituitary, anterior pituitary), <b>Thyroid and Parathyroid glands</b> (thyroid gland, parathyroid glands), <b>Adrenal glands</b> (adrenal medulla, adrenal cortex), <b>Pancreas</b> (Diabetes mellitus, types of diabetes), <b>Other endocrine glands</b> (testes and ovaries, thymus, pineal gland, hormones from other organs or tissues), <b>Homeostasis</b> (responding to external changes, responding to internal changes, controlling the reproductive system, the neuroendocrine system)	333 – 356
15	2-6/04/1440	<i>Revision</i>			
16	9-13/04/1440	<i>Final Exam</i>			
17	16-20/04/1440	<i>Final Exam</i>			
18	23-27/04/1440	رصد الدرجات على النظام			

### Marks Breakup

**Mid Term Exam: 35 Marks** (5 chapters, from chapter 3 to chapter 7)

**Final Exam: 60 Marks** (7 chapters, from chapter 8 to chapter 15, except chapter 14)

**Quiz\*:** 5 Marks

**Total: 100 Marks**

\*There will be two quizzes in which **one word answer** type of questions will be asked, **No multiple choice questions**. Each quiz will be for 5 marks. The average of two quizzes will be calculated finally.

**Quiz I** will be held in **4<sup>th</sup> week** from **chapters 3 & 4** (10 questions; 5-5 questions from each chapter).

**Quiz II** will be held in **10<sup>th</sup> week** from **chapters 8 & 9** (10 questions; 5-5 questions from each chapter).

**NOTICE:**

- ✓ It is advised to the students that for the preparation of exams, they must **follow syllabus and recommended book**.
- ✓ The power points (PPTs) can be used as accessory tool which are available on Deanship website (<http://www.desatqu.org>). Use PPTs for the revision purpose only. **These PPTs are not complete solution for exams.**
- ✓ **In the exams anything can be asked from syllabus and book which may not be present in PPTs.**