

# LESSON PLAN

**Class: MDC Biotech. 2<sup>nd</sup> Sem**

**Semester: 2<sup>nd</sup> sem**

**Paper: Biology - II**

**Session: 2023-24**

Sr. No	Week	Topic
1.	15/01/24-20/01/24	Human Physiology: Breathing and Exchange of Gases: Respiratory organs in animals (recall only); Respiration in Plants : Exchange of gases; cellular respiration - glycolysis, fermentation (anaerobic), energy relations - number of ATP molecules generated; amphibolic pathways;
2.	22/01/24-27/01/24	Respiratory system in humans; mechanism of breathing and its regulation in humans - exchange of gases, transport of gases and regulation of respiration, respiratory volume; respiratory quotient.
1.	29/01/24-03/02/24	disorders related to respiration - asthma, emphysema, occupational respiratory disorders. TCA cycle
2.	05/02/24-10/02/24	Body Fluids and Circulation: Composition of blood, blood groups, coagulation of blood; composition of lymph and its function; electron transport system (aerobic);
3.	12/02/24-17/02/24	human circulatory system - Structure of human heart and blood vessels; conditions of growth; amphibolic pathways; energy relations - number of ATP molecules generated;
4.	19/02/24-24/02/24	cardiac cycle, cardiac output, ECG; double circulation; regulation of cardiac activity, respiratory quotient.
5.	26/02/24-02/03/24	disorders of circulatory system - hypertension, coronary artery disease, angina pectoris, heart failure. Seed germination; phases of plant growth and plant growth rate ;
6.	04/03/24-09/03/24	Excretory Products and their Elimination: Modes of excretion - ammonotelism, ureotelism, uricotelism; human excretory system – structure and function; conditions of growth in plant;
7.	11/03/24-16/03/24	urine formation, osmoregulation; regulation of kidney function - renin - angiotensin, atrial natriuretic factor, ADH and diabetes insipidus; role of other organs in excretion; sequence of developmental processes in a plant cell;
8.	18/03/24-22/03/24	disorders - uremia, renal failure, renal calculi, nephritis; dialysis and artificial kidney, kidney transplant. growth regulators - auxin, gibberellin, cytokinin, ethylene, ABA
9.	23/03/24-31/03/24	<b>Holi Break</b>
10.	01/04/24-06/04/24	<b>Viruses:</b> General characteristics of viruses, difference between virus and typical microbial cell, structure, different shapes and symmetries with one example of each type, classification of viruses on the basis of nucleic acids, phage and animal cell viruses, example of each and their importance. Brief idea of lytic cycle and lysogeny.
11.	08/04/24-13/04/24	Locomotion and Movement Types of movement - ciliary, flagellar, muscular; skeletal muscle, contractile proteins and

		muscle contraction; skeletal system and its functions; joints; disorders of muscular and skeletal systems - myasthenia gravis, tetany, muscular dystrophy, arthritis, osteoporosis, gout. Neural Control and Coordination: Neuron and nerves; Nervous system in humans - central nervous system; peripheral nervous system and visceral nervous system; generation and conduction of nerve impulse. Chemical Coordination and Integration Plant Physiology: Plant water relations; osmosis, plasmolysis, imbibition, mineral nutrition; plant nutrients, micro and macro nutrients, role of nutrients. cyclic and non-cyclic photophosphorylation; chemiosmotic hypothesis; photorespiration;
<b>12.</b>	<b>15/04/24-20/04/24</b>	Endocrine glands and hormones; human endocrine system - hypothalamus, pituitary, pineal, thyroid, parathyroid, adrenal, pancreas, gonads; mechanism of hormone action (elementary idea); Photosynthesis in Higher Plants: Photosynthesis as a means of autotrophic nutrition; site of photosynthesis, pigments involved in photosynthesis ; photochemical and biosynthetic phases of photosynthesis;
<b>13.</b>	<b>22/04/24-30/04/24</b>	role of hormones as messengers and regulators, hypo - and hyperactivity and related disorders; dwarfism, acromegaly, cretinism, goiter, exophthalmic goitre, diabetes, Addison's disease. Note: Diseases related to all the human physiological systems to be taught in brief. C3 and C4 pathways; factors affecting photosynthesis.

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