



SILVER OAK UNIVERSITY
OAK COLLEGE OF PHARMACY (067)
Programme Name: B.Pharm (18)
Subject Name: REMEDIAL BIOLOGY
Subject Code: 1180673136
Semester: I

Prerequisite:

To learn and understand the components of living world, structure and functional system of plant and animal kingdom.

Objective: Upon completion of course, student shall be able to

- Know the classification and salient features of five kingdoms of life
- Understand the basic components of anatomy & physiology of plant
- Know understand the basic components of anatomy & physiology animal with special reference to human

Teaching Scheme:

Teaching Scheme				
L	T	P	Contact Hours	Credit
2	0	2	4	3

Content:

Unit No.	Contents	Teaching Hours	Weightage %
1	Living world: · Definition and characters of living organisms · Diversity in the living world · Binomial nomenclature · Five kingdoms of life and basis of classification. Salient features of Monera, Protista, Fungi, Animalia and Plantae, Virus, Morphology of Flowering plants Morphology of different parts of flowering plants – Root, stem, inflorescence, flower, leaf, fruit, seed. General Anatomy of Root, stem, leaf of monocotyledons & Dicotyledones.	07	23%
2	Body fluids and circulation · Composition of blood, blood groups, coagulation of blood · Composition and functions of lymph	07	23%

	<ul style="list-style-type: none"> · Human circulatory system · Structure of human heart and blood vessels · Cardiac cycle, cardiac output and ECG <p>Digestion and Absorption</p> <ul style="list-style-type: none"> · Human alimentary canal and digestive glands · Role of digestive enzymes · Digestion, absorption and assimilation of digested food <p>Breathing and respiration</p> <ul style="list-style-type: none"> · Human respiratory system · Mechanism of breathing and its regulation · Exchange of gases, transport of gases and regulation of respiration · Respiratory volumes 		
3	<p>Excretory products and their elimination</p> <ul style="list-style-type: none"> · Modes of excretion · Human excretory system- structure and function · Urine formation · Rennin angiotensin system <p>Neural control and coordination</p> <ul style="list-style-type: none"> · Definition and classification of nervous system · Structure of a neuron · Generation and conduction of nerve impulse · Structure of brain and spinal cord · Functions of cerebrum, cerebellum, hypothalamus and medulla oblongata <p>Chemical coordination and regulation</p> <ul style="list-style-type: none"> · Endocrine glands and their secretions · Functions of hormones secreted by endocrine glands <p>Human reproduction</p> <ul style="list-style-type: none"> · Parts of female reproductive system · Parts of male reproductive system · Spermatogenesis and Oogenesis · Menstrual cycle 	07	23%
4	<p>Plants and mineral nutrition:</p> <ul style="list-style-type: none"> · Essential mineral, macro and micronutrients · Nitrogen metabolism, Nitrogen cycle, biological nitrogen fixation <p>Photosynthesis</p>	05	17 %

	· Autotrophic nutrition, photosynthesis, Photosynthetic pigments, Factors affecting photosynthesis		
5	Plant respiration: Respiration, glycolysis, fermentation (anaerobic). Plant growth and development · Phases and rate of plant growth, Condition of growth, Introduction to plant growth regulators Cell - The unit of life · Structure and functions of cell and cell organelles. Cell division Tissues · Definition, types of tissues, location and functions.	04	13 %

Course Outcome: After Completion of syllabus students will able to

Sr. No.	CO statement	Unit No
CO-1	To learn and understand the component of living world, structural and functional system of plant and animal kingdom and morphology of flowering parts.	1
CO-2	To extrapolate the body fluids, circulation, absorption, digestion and respiration.	
CO-3	To illustrate excretory product and their elimination as well as neural control and coordination and human reproduction system.	3
CO-4	To recall and recollect about photosynthesis, plant and mineral nutrition.	4
CO-5	To understand plant respiration, plant growth and development and to gain knowledge about cell and tissue.	5

Teaching & Learning Methodology: -

The various methods or tools follows by the faculties to teach the above subject are:

1. Chalk and board method
2. Experiential learning.
3. Power point presentation and slide show method
4. Blended Learning
5. Mentorship

Experiments:

Students will perform following Experiments

1. Introduction to experiments in biology
 - a) Study of Microscope
 - b) Section cutting techniques
 - c) Mounting and staining
 - d) Permanent slide preparation
2. Study of cell and its inclusions

3. Study of Stem, Root, Leaf, seed, fruit, flower and their modifications
4. Detailed study of frog by using computer models
5. Microscopic study and identification of tissues pertinent to Stem, Root Leaf, seed, fruit and flower
6. Identification of bones
7. Determination of blood group
8. Determination of blood pressure
9. Determination of tidal volume

Books Recommended:

1. S. B. Gokhale Text book of Biology
2. Dr. Thulajappa and Dr. Seetaram , A Text book of Biology
3. B.V. Sreenivasa Naidu, A Text book of Biology
4. Naidu and Murthy c, A Text book of Biology
5. A.C.Dutta, Botany for Degree students
6. M. Ekambaranatha ayyer and T. N. Ananthkrishnan, Outlines of Zoology.
7. S.B. Gokhale and C. K. Kokate, A manual for pharmaceutical biology practical

CO-PO-PSO Matrix:

Co. No.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2
CO-1	3	1	2	1	-	2	-	1	2	2	2	2	3
CO-2	3	2	2	1	2	1	-	1	2	2	2	2	2
CO-3	3	3	2	2	-	2	-	3	1	2	3	2	3
CO-4	3	3	2	2	-	2	-	2	1	2	2	2	3
CO-5	3	2	1	2	2	1	-	2	2	2	2	2	3