

GUJARAT TECHNOLOGICAL UNIVERSITY

Pharm.D

1st year

Subject Name: Biology

Subject Code: 818806

Scope: This is an introductory course in Biology, which gives detailed study of natural sources such as plant and animal origin. This subject has been introduced to the pharmacy course in order to make the student aware of various naturally occurring drugs and its history, sources, classification, distribution and the characters of the plants and animals. This subject gives basic foundation to Pharmacology.

Objectives: Upon completion of the course the student shall be able to:

1. Should know the history, modern concepts of biology and its relevance to pharmaceutical sciences
2. Know the classification and salient feature of five kingdoms of life
3. Knowledge about morphology of plant, flower, fruit and seed
4. Basic components of anatomy and physiology of plant along with study of microbes.
5. Learn about various tissue system and organ system in animals, Poisonous animals study, with special reference to human beings and detailed study of different system of Frog

Teaching Scheme (Hours)				Evaluation Scheme (Marks)				Total marks
Theory	Tutorial	Practical	Total	Theory		Practical		
				External	Internal	External	Internal	
3	1	3	7	70	30	70	30	200

Sr. No.	Course Contents	Hours	Module Weightage
Part-A			
1	Introduction	2	2%
2	General organization of plants and its inclusions	4	4.5%
3	Plant tissues	4	4.5%
4	Plant kingdom and its classification	4	4.5%
5	Morphology of plants	5	5.5%
6	Root, Stem, Leaf and its modifications	8	9%
7	Inflorescence and Pollination of flowers	6	6.5%
8	Morphology of fruits and seeds	6	6.5%
9	Plant physiology	4	4.5%
10	Taxonomy of Leguminosae, Umbelliferae, Solanaceae, Liliaceae, Zinziberaceae, Rubiaceae	8	9%
11	Study of Fungi, Yeast, Penicillin and Bacteria	10	11%

Part-B			
1	Study of Animal cell	4	4.5%
2	Study animal tissues	4	4.5%
3	Detailed study of frog	6	6.5%
4	Study of Pisces, Reptiles, Aves	8	9%
5	General organization of mammals	4	4.5%
6	Study of poisonous animals	3	3.5%

Course Materials: (Latest edition)

Text books

1. Text book of Biology by S.B.Gokhale
- b. A Textbook of Biology by Dr.Thulajappa and Dr.Seetaram.

Reference books

1. A Text book of Biology by B.V.SreenivasaNaidu
2. A Text book of Biology by Naidu and Murthy
3. Botany for Degree students By A.C.Dutta.
4. Outlines of Zoology by M.Ekambaranathaayyer and T.N.Ananthkrishnan.
5. A manual for pharmaceutical biology practical by S.B.Gokhale and C.K.Kokate.

Pharm.D. 1st year BIOLOGY

Practical (3 Hours/ Week, 6 Credits, 90 Hours)

Sr. No.	Experiments
1	Introduction of biology experiments.
2	Study of cell wall constituents and cell inclusions.
3	Study of Stem modifications.
4	Study of Root modifications.
5	Study of Leaf modifications.
6	Identification of Fruits and seeds.
7	Preparation of Permanent slides.
8	T.S. of Senna, Cassia, Ephedra, Podophyllum.
9	Simple plant physiological experiments.
10	Identification of animals
11	Detailed study of Frog
12	Computer based tutorials

Course Materials: (Latest edition)

1. A manual for pharmaceutical biology practical by S. B. Gokhale and C. K. Kokate.

2. Practical Anatomy and Physiology by R. K. Goyal and Dr. Natvar M. Patel., B. S. Shah Prakashan.
3. Pharmacognosy by T.E Wallis
4. Pharmacognosy: MS. B.K. Shah, Dr. N.S. Kapadia, Nirav & Roopal Prakashan Ahmedabad, 2010-2011.
5. Practical Pharmacognosy, Techniques and experiments, K. R. Khandelwal, Nirali prakashan, 16th edition, 2006.

Scheme of Practical Examination

	Internal/Sessional	External
Identification	04	10
Synopsis	04	10
Major Experiment	07	20
Minor Experiment	03	15
Viva	02	15
Max.marks	20	70
Duration	3 hours	4 hours

Note: Total sessional marks is 30(20forpracticalsessionalplus10marksforregularity, promptness, viva-voce and record maintenance)