

Gujarat Technological University
B.Pharm Semester-II
Human Anatomy Physiology and Health Education-II
(3 hours/week, 3 credits, 45 hours)

Theory (3 Hours / Week: 3 Credits: 45 hours)

1. **Respiratory System:** Anatomy of Respiratory organs, Physiology (mechanism and regulation) of respiration, Physiology of Internal Respiration, Brief overview of measuring lung functions i.e. respiratory volumes, Vital capacity, Respiratory disorders. **04 hrs**
2. **Nervous System:** Neurons and Nerve Fibers, Physiology of Nerve excitation and conduction, Overview of Neurotransmitters, Divisions of Nervous System, Central Nervous System (Brain & Spinal Cord), Function of different parts of brain and spinal cord, Reflex action, Electroencephalogram (EEG), Specialized functions of the brain including Limbic system and Reticular activation and Inhibiting System, Peripheral Nervous System (PNS) (Cranial nerves & spinal nerves): Description of spinal and cranial nerves, Physiology and functions of the Autonomic Nervous System, brief introduction to CNS disorders. **13 hrs**
3. **Special Senses:** Basic anatomy of the Eye and the Ear, Physiology of Vision, Hearing and Equilibrium Balance. Organs of Taste (tongue), Olfaction, Touch, Pressure, etc., Structure and Functions of Skin. Regulation of Body Temperature, Disorders. **04 hrs**
4. **Urinary System:** Various parts of urinary system and their functions, Structure and functions of Nephron, Physiology of Urine formation, Brief outline of renal diseases, Acid- base balance. **04 hrs**
5. **Endocrine System:** Role of Endocrine Glands in Regulation and Integration of various functions of the Body, Anatomy and Physiology of pituitary gland, thyroid, parathyroid, adrenals, Pancreas, testes and ovary, their hormones and functions with brief outlines of their disorders. **05 hrs**
6. **Reproductive System:** Gross Anatomy and Histology of Male and female reproductive Organs and their Functions, Physiology of Menstruation, Coitus and Fertilization, Sex differentiation, Oogenesis and spermatogenesis, implantation of embryo, pregnancy and its maintenance, parturition. **04 hrs**
7. **Physiology of Ageing** **01 hr**

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| 8. | Concept of health, concept of disease, Demography and family planning | 03 hrs |
| 9. | Brief outline of common communicable diseases with special emphasis on causative agent, mode of spread and prevention/treatment of the following diseases: Chicken Pox, Measles, Influenza, Diphtheria, Poliomyelitis, Cholera, Typhoid fever, Paratyphoid fever, Food poisoning, Plague, Rabies, Teatanus. | 05 hrs |
| 10. | First aid treatment in shock, snakebite, burns, poisoning and resuscitation methods. | 02 hrs |

**Human Anatomy Physiology and Health Education-II
PRACTICALS
(2 hours/week, 2 credits, 30 hours)**

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| 1. | Biochemical Analysis of Urine: Physical Characteristics, Normal Constituents, Abnormal Constituents | 08hrs |
| 2. | Study with the help of charts and models of the Anatomy of following systems:
Respiratory System, Urinary System, Male and Female Reproductive System, Eye and Ear, Nervous System | 12 hrs |
| 3. | Determination of body temperature | 01 hr |
| 4. | Histology of Various organs of above mentioned Systems | 04 hrs |
| 5. | Determination of Lung Volumes and Vital Capacity | 02 hrs |
| 6. | Study of Reflexes, Vision and Hearing capacity | 03 hrs |

Books Recommended (Latest Editions)

1. William J. Larsen: Anatomy – Development, function, Clinical Correlations– Saunders (Elsevier Science)
2. Guyton A.C. and Hall J.E. : Textbook of Medical Physiology – 10th Edition– W. B. Saunders
3. Seeley R.R., Stephens T. D. and Tate P.: Anatomy and Physiology 2000– McGraw Hill Co.
4. Waugh A. and Grant A.: Ross and Wilson's Anatomy and Physiology in Health & illness — Churchill Livingstone
5. Sobotta : Atlas of Human Anatomy (2 Volumes) –Edited by Putz and R. Pabst, Lippincott, Williams and Wilkins
6. Anne M. R. Agur & Ming J. Lee: Grant's Atlas of Anatomy –Lippincott, Williams and Wilkins
7. Gosling T.A., Harris P.F., Whitmore I., William, Human Anatomy: Color Atlas and Text — Mosby
8. Bullock B.L. & Henze R.L., Focus on Pathophysiology –Lippincott
9. Martini, F. Fundamentals of Anatomy and Physiology (Prentice Hall)
10. Goyal_R. K. & Mehta A.A._ Human Anatomy Physiology and Health Education, (B. S. Shah Prakashan)
11. West, J. B. Best and Taylor's physiological Basis of Medical Practice (Williams and Wilkins, Baltimore)
12. Tortora G. J. and Anagnodokos N. P. Principles of Anatomy and Physiology (Harper and Colling Publishers, New York)
13. Joshi Vijaya D. Preparatory Manual for Undergraduates Physiology (B.I. Churchill Livingstone) –
14. Chatterjee C. C. Human Physiology (Medical Allied Agency, Calcutta)
15. Park, K. Textbook of Preventive and social medicine (Bansaridas Bhanot)
16. Goyal R.K. et al.: Practical Anatomy Physiology and Biochemistry (B. S. Shah Prakashan, Ahmedabad)
17. Garg K. et al. A Text Book of Histology (CBS Publishers, New Delhi)
18. Lesson, C.R. et al.: Text Book of Histology (W.B.Saunders Company)