

Semester – I
PART – A: THEORY COURSE
BTC-102: ANATOMY AND PHYSIOLOGY

Credit			Teaching Hours			Assessment		
L/T	P/I	Total	L/T	P/I	Total	Int.	Ext.	Total
3	1	4	48	32	80	30	70	100

Lecture/Tutorials, P/I=Practical/Internship, Int.=Internal, Ext.=External

ESSENCE OF THE COURSE

This course will enable students to understand the structural and functional aspect of human body. It aims to develop understanding about organization of the human body and its regulations, their support and movements, integration and control systems.

COURSE LEARNING OUTCOME

After completing this course, the students will be able to

- describe organization of the human body and its regulation.
- understand the support and movement of systems of the body.
- describe the integration and control system.
- discuss the human body and its function.
- analyze the structural aspect of systems of the body.
- describe the concept of fundamental of human body organs.
- analyze the functional aspects of Human body.

COURSE CONTENTS

Unit-I: Composition of the Human Body

- The Human Organism – Anatomy, Physiology, Structural and Functional Organization
- Structure and Function of the Cell and Histology of Tissues – Epithelial, Connective, muscular, nervous

Unit-II: Different systems of the Human Body

- Skeletal System-Gross Anatomy, Axial Skeleton, Appendicle Skeleton Naming of bones Articulations, Classification of Joints, Types of Movements and Effect of Exercise
- Muscular System – Histology, Functional Characteristics of Muscles, Gross Anatomy of Skeletal Muscles, Types of Muscle Contraction, team action of muscles and Effect of Exercise

Unit-III: Integration and Control System

- Central Nervous System – Brain, Spinal Cord – Development Structure Reflexes, Autonomic Nervous System – Structure and Functions
- Functional Organization of the Endocrine System- General Characteristics, Pituitary Hypothalamus, Thyroid, Adrenal, Pancreas
- Digestive System

Unit-IV: Maintenance of Body

- Circulatory System- Blood, Functions, Plasma,
- Cardio-Vascular System- Size, Form and Location of Heart, Anatomy of the Heart, Cardiac Cycle, Blood Pressure, Circulation, Pulmonary Systemic and Systematic Circulation, Effect of Exercise
- Respiratory System – Anatomy, Ventilation and Lung Volumes, Pulmonary Volumes and Capacity, Effect of Exercise

List of Practicals

- Identifying the human muscles and bones with the help of the model/chart/skeleton
- How to measure height, weight and body composition.
- Learning how to take heart/pulse rate and blood pressure
- Identifying the organs of different systems of the body with the help of model and chart.
- Learning how to measure lung volumes, blood glucose and lactic acid concentration in the blood.

TEACHING LEARNING STRATEGIES

- The content of the syllabus may be taught by using lecture method, discussion method, quiz method, educational videos (3D anatomy and 3D physiology software and virtual Video), human skeleton/system model, charts and assignment method depending upon the resources and facilities available at the University/Institute/ Department/Colleges.

MODE OF TRANSACTION

- Laboratory Work/Project Work/Viva/Seminars/Term Papers/Presentations/Self- Learning Instructional Material etc.

ASSESSMENT RUBRICS

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| ● End Semester Exam | Marks: 100 (70+30) |
| | Marks: 70 |
| ● Classroom Test, Project Work, Assignments, Presentations | Marks: 30 (10+20) |
| ○ Classroom Tests: Best one out of two unit tests | (Marks: 10) |
| ○ Project Work, Assignments, Presentations | (Marks: 20) |

SUGGESTED READINGS

- Guyton, A.C. (1996). Textbook of Medical Physiology, 9th edition. Philadelphia: W.B. Saunders.
- Lamb, G. S. (1982). Essentials of exercise physiology. Delhi: Surjeet Publication.
- Moorthy, A. M. (2014). *Anatomy physiology and health education*. Karaikudi: Madalayam Publications.