BSSC101: ANATOMY

Course description:

- A study of the anatomical structure of the human body.
- Body structure will be studied by organ systems.
- Form-function relationships with emphasis on clinically relevant anatomy.
- the laboratory study will involve observing and learning from human skeletal collections and dissected cadavers and preserved specimens.

Objectives:

At the end of the course the student should be able to:

- Describe the structure and functions of the organ systems of the human body.
- Describe how the organ systems function and interrelate.
- Learn basic technical terminology and language associated with anatomy.
- Develop a self-identity of what it means to be "human"

Learning Objectives: Skills

- Identify the anatomical structure in the dissected specimen.
- Learn to correlate anatomical structures with relevant cinical conditions.

Unit I: Organization of the Human Body

Introduction to the human body
Definition and subdivisions of anatomy
Anatomical position and terminology
Regions and Systems of the body
Cavities of the body and their contents
Levels of organization of the body

Cell-Definition of a cell, shapes and sizes of cells.
- Parts of a cell - cell membranes cytoplasm, subcellular organelles and their main functions
Cell Division - Definition and main events that occur in different stages of mitosis and meiosis.

Tissues -Tissues of the body
- Definition and types of basic tissues
- Characteristics, functions and locations of different types of tissues

Unit II : Systems of Support and Movement

1. Skeletal system

Skeleton Definition, axial and appendicular skeleton with names and number of bones, Types of bones. Parts of bones, Functions of bones, Name location and general features of the bones of the body.

Joints - Definition and types of joints with examples. Axes and kind of movements possible. Name,location, type, bones forming, movements possible.

2.muscular system

parts of the skeletal muscle. Definition of origin and insertion. Name and location of the skeletal muscles of the body Orgin, Insertion, nerve supply and action of large muscles like sternocleidomastoid, pectoralis major, deltoid, Biceps brachii, Triceps brachii, gluteus, gastronemius and diaphragm.

Unit lll : Control Systems of the Body

1. Nervous system

Sub-divisions of the nervous system

Spinal cord Location, extent, spinal segments, external features and internal structure.

Brain Sub - divisions, location external features of medulla oblongata, pons, mid-brain, cerebellum and cerebrum. Meninges and spaces around them. Name and location of ventricles of brain and circulation of cerebrospinal fluid. Blood supply of the brain and spinal cord.

Cranial nerves - Name, number, location and general distribution.

Spinal nerves Typical spinal nerve groups and number of spinal nerves. Name and location of cervical plexus and brachial plexus. Location and general distribution of the branches.

Autonomic Nervous system-definition and functions suprarenal,pancreas, ovaries and testes. Names of hormones produced by each gland.

Unit IV: Maintenance of the Human Body

2. Sense organs

Location and features of the nose, tongue, eye, ear and skin

3. Endocrine system

Names of the endocrine glands. Location and features of pituitary, thyroid, parathyroid,

1. Cardio - vascular system

Types and general structure of blood vessels. Structure and types of arteries and veins. Structure of capillaries. Shape, size, location, coverings, external and internal features of heart. Structure of heart

wall, conducting system of the heart. Blood supply of the heart. The systemic arteries and veins. Name, location, branches and main-distribution of principal arteries and veins.

2. Lymphatic system

Lymph, lymphatic vessels, name, location and features of the lymphatic organs.

3. Respiratory system

Names of organs of respiration, Location and features of nose, pharynx, larynx, trachea, bronchi,lungs and pleura.

Unit V:

1. Digestive system

Names or organs of digestion. Parts of alimentary canal and accessory organs. Location and

features of mouth, pharynx, esophagus, stomach, small and large intestines. Location and features of Salivary glands, pancreas, liver and gall bladder.

2. Urinary system

Names of urinary organs, location and features of kidney, ureter, urinary bladder and urethra

3. Reproductive system

Name of male and female organs of reproduction. Location and features of scrotum,testis, epididymis, vas deferens, seminal vesicle, ejaculatory duct,
prostate gland, penis and spermatic cord. Location and features of uterus and its supports, uterine tube, ovary vagina vulva and breast.

Anatomical Regions

Simple ideas about scalp, triangles of neck, axilla, cubital fossa, mediastinum, inguinal canal, femoral triangle, popliteal fossa.

Recommended books:

1. Ross and Wilson: Anatomy and Physiology in health and illness
2. BD Chaurasia: General human anatomy
3.

References:

1. BDChaurasia: Regional Anatomy. Vol Ⅰ, Ⅱ, Ⅲ
2 Richard S. Snell: Clinical Anatomy

BSSC102: PHYSIOLOGY

Objectives of the course:

At the end of this course the students should be able to:

- ✓ Comprehend basic terminologies used in the field of Human Physiology
- ✓ Define and describe basic Physiological Processes governing the normal functioning of the human body
- ✓ Apply this knowledge in their Allied Health Science practice

UNIT Ⅰ

Ia.GENERAL PHYSIOLOGY

Concept of Homeostasis
Cell structure and functions
Transport across membranes

Ib. NERVE & MUSCLE

Nerve structure, classification of nerve fibres, Mechanism of impulse formation and Conduction. Muscles-classification, structure, Neuro-Muscular junction (NMJ), Muscle contraction mechanism, types.

Ic. BLOOD AND BODY FLUIDS

Body fluid volumes, compartments, and composition
Blood composition and functions
Plasma proteins
Erythrocytes - Morphology and functions
Leucocytes - Morphology and functions
Platelets - Morphology and functions
Blood groups

UNIT II

IIa. DIGESTIVE SYSTEM

Salivary glands - Nerve supply, functions of saliva
Parts of stomach - Structure of stomach & gastric glands, nerve supply, composition & functions of gastric juice.
Pancreatic juice - composition, functions and regulation
Bile - composition, functions of bile & bile salts.
Succus entericus and small intestinal movements
Deglutition, vomiting, functions of large intestine
Gastric movements and emptying.

IIbSKIN

Structure of sweat glands, temperature regulation

IIc. EXCRETORY SYSTEM

Structure of Nephron and its blood supply
Formation of urine-filtration
Formation of urine-reabsorption & secretion
Micturition & bladder abnormalities
Daily output of urine, water regulation, diuresis
Diuretics, diabetes insipidus and diabetes Mellitus.

UNIT III

IIIa. ENDOCRINE SYSTEM

Hypothalamo hypophyseal inter relationship
Anterior pituitary hormones and their function- Dwarfism, Giganitism, Acromegaly
Posterior pituitary hormones and their actions - Diabetes Insipidus.
Thyroid hormones, biosynthesis and functions - Cretinism. Myxoedema, Goiter and Grave's

disease
Parathyroid hormones, functions - Tetany
Insulin, Glucagons, actions and Diabetes mellitus
Adrenal cortex hormones and their functions.
Adrenal medullary hormones and their actions

IIIb. REPRODUCTION:

Male reproductive organs-Spermatogenesis and Testosterone actions
Female reproductive organs-Menstrual cycle
Physiology of Pregnancy
Physiology of Contraception
Male and female Contraceptive methods.

UNIT IV

IV.RESPIRATORY SYSTEM

Structure of upper and lower respiratory tract. Muscles of respiration and mechanism of respiration.
Lung volumes and capacities - definitions, normal values intra pulmonary and intra pleural pressures, surfactants.
Oxygen transport, Carbon-di-oxide transport.
Nervous and chemical regulation of respiration.
Hypoxia, cyanosis and artificial respiration.
High altitude and Deep sea Physiology.

UNIT V

V CARDIOVASCULAR SYSTEM

Structure and specialized conducting system of the heart, properties of cardiac muscle, innervation of heart and its action.

1. Cardiac cycle

ECG, heart sounds
Blood pressure - Definition, measurement,factors maintaining B.P, Regulation of B.P
Cardiac output-Definition, factors regulating cardiac output and measurement of cardiac output.
Regional circulation - Coronary and Cerebral
Shock and Haemorrhage
Effect of exercise on CVS & respiration.

UNIT VI

VIa. NERVOUS SYSTEM

Structure of neurons
Properties of neurons (excitation and conduction)
Synapses and synaptic transmission, reflexes and properties of reflexes.
Sensory endings and sensory mechanisms
Spinal cord-pathways in the spinal cord
Brain stem, thalamus, basal ganglia, cerebellum, cortex and reticular formauo

Cerebrospinal fluid
Control of posture and control of voluntary motor activity
Autonomic nervous system.

VIb. SPECiAL SENSES

Vision
Audition, olfaction, gustation and vestibular apparatus.

Recommended book

- Basics of Medical Physiology by D. Venkatesh/ H.H. Sudhakar

Reference books

- Medical physiology for under graduates by Indhu kurhana,
- Text Book of Physiology by A.K. Jain for BDS

BSSC103 BIOCHEMISTRY

Objectives:

- To have a knowledge about the chemistry and metabolism of various macromolecules carbohydrate, protein and lipids
- To learn about enzymes, vitamins, minerals and nutrition
- To know the structure and function of Hemoglobins, Nucleic acids.
- To learn about the organ function tests like Liver Function Tests and Renal Function Tests.

Unit - I:

Carbohydrates - Classification of carbohydrates and their biological importance, reducing property of sugars.

Metabolism of Carbohydrates: Digestion and Absorption of carbohydrates, steps of Glycolysis and energetics, steps of TCA cycle and energetics, steps of Glycogen synthesis and breakdown, significance of HMP shunt pathway, definition and steps of Gluconeogenesis, Galactose metabolism , Diabetes mellitus, Galactosemia.
Bioenergetics: Importance of ATP, outline of respiratory chain.

Unit - II:

Lipids - Classification of lipids, essential fatty acids, functions of cholesterol, triglycerid es, Phopholipids

Metabolism of Lipids: Digestion and Absorption of lipids, steps of B oxidation of fatty acids,types and functions of lipoprotein, Lipid profile, hyper cholesterolemiaHaemoglobin: Structure and functions of Haemoglobin

Unit - III:

Proteins - Classification of amino acids, structure of proteins, plasma proteins,immunoglobulins.

metabolism of Proteins: Digestion and absorption of proteins, transamination, deamination, Steps ot urea cycle, Phenylketonuria, Alkaptonuria, Transmethylation, products derived from Glycine and tyrosine

Nucleic acids : Structure and function of DNA & RNA, Types of RNA

Unit IV:

Enzymes: Definition, classification, coenzymes, factors affecting enzyme activity, Types and examples of enzyme inhibition.

Function Tests: Liver function tests, Renal function tests

Vitamins: Classification, Fat soluble vitamins: Functions, source, deficiency manifestations OT Vitamin A, D E and K, Functions and deficiency manifestations of vitamin C, co-enzymic forms and deficiency manifestations of B-complex vitamins.

Unit -V:

Nutrition: Basal metabolic rate (BMR), Specific Dynamic Action (SDA), Glycemic index, Dietary fiber, Balanced diet, Protein Energy Malnutrition (PEM).

Minerals : Calcium, Phosphorus, Iron, iodine.

Outline of PH homeostasis

Text books Recommended:

1.Textbook of Biochemistry for Paramedical Students By Dr.P.Ramamoorthy

2.Essentials of Biochemistry by U. Sathyanarayana

Reference books:

1. Text book of Biochemistry for Medical students by DM vasudevan, Sreekumari S, KannanVaidyanathan. 7th Edition

2.Harper's lustrated Biochemistry30" Edition

BSSC104: SPORTS SOCIOLOGY

Learning Objectives:

- Understanding the institution of sport from various sociological perspectives
- Understanding sport and its interrelationship with other social-cultural environments to include educational, political, economic, and religion.
- To gain knowledge of the philosophical values involved within sport participation

Unit I Introduction to Medical Sociology:

Medical Sociology: Definition - objectives - Scope - Different between Sociology of medicine and sociology in medicine - Historical development of Medical sociology - science of medicine and its relevance to social institution.

Health in Social Context: Definitions of health and diseases - illness and sickness - the sick Role - Labelling Theory - Social & cultural factors in health and diseases

health Practices and Practitioners: System of Medical Beliefs and Practices - concept of patient as a person and concept of a patient as a whole social component in therapy and rehabilitation.

UNIT II - Introduction to Sociology of Sport and Developing sporting bodies and programs

Sociology of Sport: What is it and why study it?

➔ Definitions of culture, society, and sport

- ➔ Understanding how sports are connected with social life
- ➔ Current status of sociology of sport

Producing Knowledge about Sports in Society: What is the role of research and theory?

- ➔ Definition of social theories
- ➔ Understanding social theories of how sports represent and shape society
- ➔ How are sports involved in creating and changing culture and social relations
- ➔ Understanding sports in terms of historical and global processes

Sports and Socialization: Who plays and what happens to them?

- ➔ Defining socialization
- ➔ The role sports play in shaping lives and developing leaders
- ➔ Understanding what happens when athletes get out of sports

Sports and Children: Are organized programs worth the effort?

- ➔ History of youth sports
- ➔ Benefits and drawbacks of increased parental involvement in youth sports
- ➔ The socio-cultural environment youth sports exist in youth sports

Sports in High School and College: Do competitive sports contribute to education?

- ➔ Understanding the culture in high schools
- ➔ Benefits of sports to schools
- ➔ The emphasis of sports over education in high schools and colleges

UNIT III - Gender and Sexuality, Race and racism, Class and Economy.

Gender and Sports: Does equity require ideological changes?

- ➔ The women's rights movement
- ➔ Understanding Title IX
- ➔ Participation opportunities
- ➔ Under representation of women in sports

Race and Ethnicity: Are they important in sports?

- ➔ Race in the United States
- ➔ Understanding the connections between racial ideology, gender and social class
- ➔ Sport participation among ethnic and racial minorities in the U.S.
- ➔ Getting minorities more involved in all levels of the sport industry

Social Class: Do money and power matter in sports?

- ➔ Social class and sport participation patterns
- ➔ Economic and career opportunities in sports
- ➔ Occupational careers among former athletes

Sports and the Economy: What are the characteristics of commercial sports?

- ➔ The commercialization of sports
- ➔ Social class' relationship to commercial sports
- ➔ The creation of spectator interest in sports
- ➔ Understanding the changes commercialization has brought to the structures and goals of sports

UNIT IV-Deviances and Violence in Sports, Commercialization and Mass Media in Sports.

Deviance in Sports: Is it out of control?

- ➔ Using functionalist, conflict, and interactionist theories to understand deviance in sports
- ➔ Deviance among athletes both on and off the field of play
- ➔ Doping in sports

Violence in Sports: How does it affect our lives?

- ➔ History of violence in sports
- ➔ Violence both on and off the field of play
- ➔ Violence among fans
- ➔ Understanding how violence in sports affect society

Sports and the Media

- ➔ Understanding the relationship between sports and the media
- ➔ How sports depend on the commercialization provided by the media
- ➔ How the media depend on the spectacle provided by sports
- ➔ Sports and journalism

Outcomes:

- Understand the process of socialization within sport and physical activity contexts to include role modeling and leadership behavior in sport
- Understand the influences, analysis and projection of sports on past historical occurrences
- Have become aware of social stratification and mobility opportunities from sport
- Be able to understand the workings of commercialization and mass media exploitation insport social-cultural ethical dilemmas confronted in sport
- Be able to understand the social problems of population discrimination (ethnic and gender patterns), bias, racism, and sexism as they are reflected in sport contexts

Recommended reading

- D. Stanley Eitzen, Ed., Sport in Contemporary Society: An Anthology, 7th edition, New York Worth Publishers, 2005
- Jay J. Coakley. Sport in Society: Issues and Controversies. 7th edition). WCB. McGraw -Hill. Boston. 2001.
- D.stanley Eitzen, Beyond Fair and Foul: The Myths and Paradoxes of Sports, 4th ed., 2009 Rowman and Littlefield.

BSSC 105 :ENGLISH COMMUNICATION

Unit I: Introduction

Theory of Communication,
Types and modes of Communication

Unit II: Language of Communication

Verbal and Non-verbal (Spoken and Written)

Personal, Social and Business
Barriers and Strategies
Intra-personal, inter-personal and Group communication

Unit III: Speaking Skills

Monologue
Dialogue
Group Discussion
Effective Communication / Mis- Communication
Interview
Public Speech

Unit IV: Reading and Understanding

Close Reading
Comprehension
Summary Paraphrasing
Analysis and Interpretation
Translation (from Indian language to English and vice-versa)
Literary/Knowledge Texts

Unit V: Writing Skills

Documenting
Report Writing
Making notes
Letter writing

BSSC 106 : MAJOR GAMES AND SPORTS

- ➔ Dimensions of play field
- ➔ Rules and interpretation
- ➔ Skills and techniques
- ➔ Tactics and strategies of the games and sports

1. BASKETBALL
2. BADMINTON
3. KABADDI
4. SOFTBALL
5. VOLLEY BALL
6. TABLE TENNIS
7. THROWBALL
8. KHO-KHO