COURSE TITLE	**BIO-SCIENCES**
COURSE CODE	**20GN0101**
COURSE CREDITS	**6**

Objective:

1 To Describe in general the structure and functions of the human body
2 To Describe in detail the structure and functions of the different organs and systems in the human body
3 To Apply the anatomical and physiological principles in the practice of nursing
4 To Describe the classifications and characteristics of micro-organisms &List the common disease producing micro-organisms
5 To Explain the activities of micro-organism in relation to the environment and the human body &Apply the principles of microbiology in nursing practice
6 To Enumerate the basic principles of control and destruction of micro-organisms

Course Outcomes: After completion of this course, student will be able to:

1 Describe in general the structure and functions of the human body
2 Describe in detail the structure and functions of the different organs and systems in the human body
3 Apply the anatomical and physiological principles in the practice of nursing
4 Describe the classifications and characteristics of micro-organisms &List the common disease producing micro-organisms
5 Explain the activities of micro-organism in relation to the environment and the human body &Apply the principles of microbiology in nursing practice
6 Enumerate the basic principles of control and destruction of micro-organisms

Pre-requisite of course: Anatomy & Physiology -A basic understanding of human biology – bones, muscles and organs and understanding of human biology and functioning of systems is often a fundamental prerequisite.

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
3	0	0	75	15	10	0	0

Contents : Unit	Topics	Contact Hours
1	**Introduction to anatomical terms organization of the human body** Anatomical terms , Systems and cavities of the human body	4

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Contents : Unit	Topics	Contact Hours
2	**Introduction to the detailed structure of the body** The cell: Structure, reproduction and function , Tissues including membranes and glands : types, structure and functions , Body cavities and their contents	6
3	**Blood** Composition and formation of blood, Functions of blood , Blood clotting, blood grouping and cross matching , Blood products and their use	6
4	**The Circulatory System** Heart : Structure, functions including conduction system and cardiac cycle, Blood vessels : Types, Structure and position, Circulation of blood, Blood pressure and pulse	6
5	**The Lymphatic system** Structure and function of lymph vessels, Lymph nodes and lymph circulation, lymphatic tissue - spleen and thymus	6
6	**The Respiratory system** The structure and functions of respiratory organs, The physiology of respiration, Characteristics of normal respiration and deviation	6
7	**The Digestive system** Structure and functions of the alimentary tract and is accessory organs, The process of digestion, absorption and metabolism of food constituents	6
8	**The Excretory system** Structure and functions of the kidney, ureters, urinary bladder, and urethra , Formation and composition of urine, Fluid and electrolyte balance , Structure and functions of the skin., Regulation of the body temperature	6
9	**The Endocrine system** The structure and functions of the pituitary, thyroid, parathyroid and adrenal glands, pancreas (islets of Langerhans), ovaries and testes	6
10	**The Reproductive system** Structure and functions of the female reproductive system, Process of menstrual cycle, reproduction and menopause , Structure and functions of breasts, Structure and functions of the male reproductive system, Reproductive health	8
11	**The nervous system** Types of nerves- structure and functions, Brain and cranial nerves, Spinal cord and motor and sensory pathways of the spinal cord, autonomic nervous system.	10
12	**The sense organs** Skin, eye, ear, nose and tongue, Physiology of vision, hearing, smell, touch, taste and equilibrium	6
13	**The Skeleton** Formation and growth of bones, Tendons, ligaments and cartilages , Classification of bones, joints, Joint movement, Axial and appendicular skeleton	8

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Contents : Unit	Topics	Contact Hours
14	**The Muscular System** Type, structure and functions of muscle, Origin, Insertion, and action of muscles	6
15	**Introduction - Microbiology** History of bacteriology and micro&#x02;biology., Scope of microbiology in Nursing	3
16	**Micro Organisms** Classification, characteristics, (Structure, size, method and rate of reproduction), Normal flora of the body, Pathogenesis & common diseases, Methods for study of microbes, culture & isolation of microbes	8
17	**Infection and its transmission** Sources and types of infection, nosocomial infection. , Factors affecting growth of microbes, Cycle of transmission of infection portals of entry, exit, modes of transfer, Reaction of body to infection, mechanism of resistance, Collection of specimens.	4
18	**Immunity** Types of immunity – innate and acquired, Immunization schedule , Immunoprophylaxis (vaccines, sera etc.), Hypersensitivity and autoimmunity. , Principles and uses of serological tests	5
19	**Control and destruction of Microbes** Principles and methods of microbial control -Sterilization ,-Disinfection , -Chemotherapy and antibiotics ,-Pasteurization , Medical and surgical asepsis, Bio-safety and waste management	5
20	**Practical Microbiology** Microscope – Parts, uses, handling and care of microscope , Observation of staining procedure, preparation and examination of slides and smears , Identification of common microbes under the microscope for morphology of different microbes.	5
Total Hours		**120**

Textbook :

1 Textbook Of Anatomy & Physiology (For GNM Nursing Student), Pankaj Soni , Rajib Biswas, Vision Health Sciences Publisher, 2023

2 Textbook of Microbiology for GNM Nursing Students, Pooja Gupta, Vision Health Sciences Publisher, 2023

3 Bio-Sciences (Anatomy, Physiology & Microbiology) Book for GNM 1st Year, DR. Farukh Khan , Prof. Urmila Devi Bhardwaj, Thakur Publication, 2023

References:

1 Ross and Wilson Anatomy and Physiology in Health and Illness, Ross and Wilson Anatomy and Physiology in Health and Illness, Waugh , Oswaal Books And Learning Private Limited, 2022

References:

2 Textbook of Microbiology for GNM Nursing Students , Textbook of Microbiology for GNM Nursing Students , Pooja Gupta, Vision Health Sciences Publisher, 2023

Suggested Theory Distribution:

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery					
Remember / Knowledge	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Higher order Thinking / Creative**
40.00	40.00	10.00	10.00	0.00	0.00

Instructional Method:

1 Classroom Teaching

Supplementary Resources:

1 NA

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