Nursing Techniques

Progression Grid – Grade 11-12

Domain A: Fundamental of Nursing

Standard: Students will demonstrate comprehensive knowledge and practical application of nursing history, communication, ethics, vital signs assessment, the nursing process, infection control, and patient care management, integrating these concepts to provide safe, ethical, and effective nursing care in a variety of clinical settings.

Grade 11	Grade 12
Benchmark I: Demonstrate an understanding of the historical development of nursing by analyzing the contributions of key figures like Florence Nightingale and nursing leaders in shaping modern nursing practices. **Benchmark II:** Explain the components and process of effective communication in nursing, including identifying barriers and applying therapeutic techniques to enhance patient interactions. **Benchmark III:** Critically evaluate ethical principles in nursing (such as autonomy, beneficence, and justice), and their application in real-world scenarios, guided by the ANA and ICN codes of ethics. **Benchmark IV:** Apply the nursing process in clinical settings by conducting assessments, formulating nursing diagnoses, and developing, implementing, and evaluating care plans, while maintaining proper documentation and confidentiality. **Benchmark V:** Demonstrate knowledge of infection control and asepsis practices by identifying the chain of infection and implementing strategies to minimize infection risks in healthcare environments. **Benchmark VI:** Manage patient care related to vital signs, oxygenation, and pain management, using appropriate techniques for wound care, pressure ulcer prevention, and first aid management in emergencies.	

Student Learning Outcomes	
Nursing History ***1.*Discuss the historical development of the nursing profession.** Students will be able to explain key milestones in the evolution of nursing from its inception to modern-day practice. ***2.*Discuss the life of Florence nightingale.** Students will be able to summarize the major events and contributions of Florence Nightingale's life. ***3.***Describe the Nightingale's role in development of nursing. Students will be able to identify how Florence Nightingale revolutionized nursing through her practices and reforms. ***4.***State contributions of nursing leaders. Students will be able to list and explain the significant contributions of key figures in nursing leadership. ***5.***Describe the nursing- related functions of I.R.C.S. Students will be able to explain the role of the International Red Cross Society in nursing and humanitarian efforts. ***6.***Describe the functions of the international council of nursing. Students will be able to outline the primary functions and objectives of the International Council of Nursing in promoting global nursing standards. ***7.***Identify scientific/technological changes influencing nursing progress in the 20th and20th century. Students will be able to assess the impact of scientific and technological advancements on the nursing profession over time.	***Asepsis and infection control*** ***1.*** Students will identify the six components of the chain of infection. ***2.*** This will help students to explain examples of ways that infection may occur. ***3.*** Students will be able to describe factors that increase the risk of infection in various settings. ***4.*** Students will discuss the role of health care personnel and health agencies in infectioncontrol. ***5.*** It will help students to explain ways that caregivers can decrease the exposure of clients to infection. ***6.*** Students will be able to differentiate between medical and surgical asepsis.

8.Discuss the past, present, and future of nursing. Students will be able to critically analyze the evolution, current trends, and future challenges in the nursing profession. ***9.*****Relate its own role to nursing leaders of the 18th and 19th century.** Students will be able to draw connections between their own nursing practice and the leadership roles of 18th and 19th-century nursing pioneers. ***10.*** Explain nursing development in Pakistan. Students will be able to describe the historical evolution and current advancements in the nursing profession in Pakistan.	

1. Describe the function of the Pakistan nursing Council. Students will be able to identify and explain the regulatory role and key functions of the Pakistan Nursing Council in maintaining nursing standards. ***2.*** Introduction main function of Pakistan Nurse's federation. Students will be able to outline the primary roles and contributions of the Pakistan Nurse's Federation in promoting the welfare and rights of nurses. ***Communication*** ***3.*** Definition of communication, elements of the communication process, means of communication and identify the characteristics of effective verbal communication***.*** Students will be able to define communication, identify elements of the communication process, and recognize characteristics of effective verbal communication. ***4.*** Describe factors that facilitate and interfere with effective communication. Students will be able to describe factors that both facilitate and interfere with effective communication. ***5.*** Describe techniques that facilitate and interfere with communication. Students will be able to explain techniques that facilitate and interfere with communication. ***6.*** Define ways to respond therapeutically. Students will be able to define and demonstrate ways to respond therapeutically.	***Oxygenation*** ***1.*** Identify factor that can interfere with effective oxygenation of body tissues. Students will be able to recognize and assess key factors such as respiratory conditions, environmental influences, and lifestyle habits that impede proper oxygenation. ***2.*** Describe the common manifestations of altered respiratory and cardiovascular function. Students will be able to identify and explain signs and symptoms related to impaired respiratory and cardiovascular systems, including shortness of breath, cyanosis, and abnormal heart rhythms. ***3.*** Describe nursing measures to ensure a patient airway. Students will be able to implement and explain appropriate nursing interventions, such as positioning, suctioning, and airway management techniques, to maintain a clear and functional airway. ***First aid*** ***1.*** **Wound.** Define the types of wounds and explain their first aid management. Students will be able to describe techniques to clean and dress a wound to prevent infection. ***2.*** **Hemorrhage.** Students will be able to explain the causes and types of hemorrhage. Discuss how to apply pressure and other techniques to control bleeding. ***3.*** **Burn.** Classify different degrees of burns and their symptoms. Students will be able to outline first aid steps for treating thermal burns and preventing shock. ***4.*** **Shock**.

7.Identify non-therapeutic responses.

Students will be able to identify non-therapeutic communication responses.

8.Discuss the legal aspects of documentation.

Students will be able to discuss the legal aspects of documentation in communication.

Nursing Ethics

Students will be able to learn

1. Autonomy: Respect patients' rights to make informed decisions.
2. Beneficence: Promote patients' well-being and best interests.
3. Non-Maleficence: Do no harm.
4. Justice: Uphold fairness and equity in care.
5. Deontology (Duty-Based): Focus on moral rules and obligations.
6. Utilitarianism (Consequentialism): Maximize overall well-being.
7. Virtue Ethics: Emphasize character traits (compassion, empathy).
8. Care Ethics: Prioritize caring relationships and empathy.
9. American Nurses Association (ANA) Code of Ethics (2015).

Define the types of shock and recognize its symptoms.
Students will be able to discuss immediate first aid measures to prevent shock from worsening.

5. **Poisoning.**
Explain the causes of unconsciousness and its symptoms.
Students will be able to outline first aid steps for assessing and managing an unconscious person.

6. **Unconsciousness.**
Define fainting and describe its common causes.
Students will be able to discuss immediate first aid actions to help someone who has fainted.

7. **Seizures**/Epilepsy:
Recognize the signs of a seizure and differentiate between types.
Students will be able to explain first aid management for someone experiencing a seizure.

8. **Fainting.**
Define fainting and describe its common causes.
Students will be able to discuss immediate first aid actions to help someone who has fainted.

9. **Injury of bones and joints.**
Define common fractures and joint injuries.
Students will be able to describe immobilization techniques used in first aid for fractures and dislocations.

10. **Define the different of foreign bodies' aspirations.**
Define foreign body aspiration and discuss its effects on the respiratory system.
Students will be able to explain how different types of foreign bodies affect treatment approaches.

11. **Discuss first aid management of removal of foreign bodies.**
Discuss the appropriate methods for identifying and managing foreign bodies in various parts of the body.
Students will be able to explain first aid steps for safe removal or stabilization until medical help is available.

Skin management

1. **List factors affecting skin integrity**.

10. International Council of Nurses (ICN) Code of Ethics (2012). 11. Students will learn key Nursing Ethics Issues. 12. Nursing Ethics in Practice	Students will be able to identify and explain the various intrinsic and extrinsic factors that compromise skin integrity. They will also analyze how these factors contribute to common skin issues in patient care. ***2.*** **List the signs and symptoms of pressure Ulcer.** Students will be able to accurately list the early and advanced signs and symptoms of pressure ulcers. They will differentiate between the stages of pressure ulcers and their associated clinical presentations. ***3.*** **Discuss the prevention measures of pressure ulcers.** Students will be able to describe effective preventive strategies for pressure ulcers, including patient positioning, skincare routines, and the use of support surfaces. They will also understand the role of nutrition and hydration in ulcer prevention.

Vital signs 1. Definition. Students will be able to define vital signs and understand their significance in patient care. 2. Body temperature. Students will learn how to measure and interpret body temperature to assess a patient's health status. 3. Pulse Rate Students will be able to measure and evaluate the pulse rate as an indicator of cardiovascular function. 4. Respiratory Rate Students will learn to assess respiratory rate and recognize its role in monitoring respiratory function. 5. Blood Pressure Students will be able to measure blood pressure and interpret the results in the context of patient health. 6. Oxygen saturation Students will learn to measure oxygen saturation and assess its relevance to respiratory efficiency. 7. **Pain Level**: Students will understand how to assess pain levels using standardized scales to support patient comfort and care. 8. Level of Consciousness Students will be able to assess the level of consciousness as an indicator of neurological function. 6. Bowel Movement	***4.*** **Describe the nursing management of pressure ulcers.** Students will be able to outline a comprehensive nursing care plan for managing pressure ulcers, including wound care, infection control, and pain management. They will also evaluate the effectiveness of different treatment options based on patient outcomes. ***Pain Management*** ***1.*** Define acute and chronic pain. Students will be able to define and differentiate between acute and chronic pain, understanding their characteristics and causes. ***2.*** Describe types of pain management. Students will be able to describe various types of pain management techniques, including pharmacological and non-pharmacological approaches. ***Roles of Nursing*** ***1.*** Caregiver: Students will be able to provide direct patient care, support, and education. ***2.*** Advocate: Students will promote patients' rights, interests, and well-being. ***3.*** Educator: Learner will teach each patients, families, and communities about health and wellness. ***4.*** Collaborator: Students will Work with healthcare teams to coordinate care. ***5.*** Leader: Learners will Manage, delegate, and prioritize care. ***6.*** Researcher: Students will be able to analyze and Conduct

Students will understand the importance of bowel movement assessment in monitoring digestive health. 7. Normal Range Students will learn the normal ranges for vital signs and their implications for overall health. 8. Abnormal Findings. Students will be able to identify abnormal findings in vital signs and understand their clinical significance. ***Nursing process*** ***1.*** Define Nursing Process. Students will be able to clearly define the nursing process as a systematic, patient-centered approach to care, outlining its steps from assessment to evaluation. ***2.*** Describe the purpose of the nursing process. Students will understand and articulate the purpose of the nursing process in promoting individualized, evidence-based patient care to achieve optimal health outcomes. ***3.*** Identify the components of the nursing process. Students will identify and explain the key components of the nursing process, including nursing assessment and nursing diagnosis, and their roles in comprehensive patient care. a. **Nursing assessment** Students will be able to conduct thorough patient assessments, gathering essential data to inform care plans. b. **Nursing diagnosis** Students will be able to accurately identify and prioritize patient health problems based on assessment data.	studies, collect data, and analyze results. ***7.*** Consultant: Learners will be able to offer expertise to healthcare teams and organizations. ***8.*** Policy Maker: Influence healthcare policy and advocacy. ***9.*** Entrepreneur: Develop innovative healthcare solutions. ***10.*** Informatics: Design and implement healthcare technology. ***11.*** Assessment: Evaluate patients' physical, emotional, and social needs. ***12.*** Diagnosis: It will aid the learners to identify and prioritize nursing diagnosis. ***13.*** Planning: Learner will develop individualized care plans. ***14.*** Implementation: Execute care plans and interventions. ***15.*** Evaluation: Monitor and adjust care plans.

c. **Outcome identification and planning** Students will be able to set realistic, measurable patient goals and develop care plans that address identified health issues. d. **Implementation and evaluation** Students will be able to implement care plans and evaluate patient outcomes, adjusting interventions as necessary for optimal results. 4. Communication of the nursing process. a. **Describe the purpose of the client record.** Students will be able to explain the essential role of client records in ensuring continuity of care, legal documentation, and quality assurance in nursing practice. b. **List of the principles of charting.** Students will identify key principles of accurate, concise, and timely charting that ensures clear communication and supports patient safety in healthcare settings. c. **Discuss the guidelines of documentation.** Students will demonstrate an understanding of proper documentation guidelines, including accuracy, completeness, objectivity, and adherence to legal and professional standards. d. **Discuss the importance of confidentiality in the documentingand reporting** Students will explain the significance of maintaining confidentiality in healthcare documentation and reporting, ensuring ethical practices and patient trust. ***Process of hospitalization*** 1. Define the term admission, transfer and discharge. Students will be able to define the terms admission, transfer, and discharge and explain their significance in patient care.	16. Professional Development: Pursue continuous education and certification. 17. Quality Improvement: Contribute to quality initiatives and patient safety. 18. Leadership: Hold leadership positions in healthcare organizations. 19. Community Engagement: Participate in health promotion and communityoutreach.

2. Discuss the procedures for Students will be able to discuss the various procedures involved in the admission, transfer, and discharge of patients in a hospital setting . • Admitting a patient to the hospital unit. • Transferring a patient from one hospital unit to another unit or to another hospital. • Discharging a patient from the hospital. • Identify nurse's responsibility during admission, transfer and discharge. • Discuss nurse's role preparing patients and family for discharging • Discuss the normal reaction of the patients being hospitalized.	

Domain *B*: Microbiology

Standard : Students will demonstrate comprehensive knowledge of microorganisms, their role in health and disease, as well as principles of microbiology, including bacterial classification, viral structures, immunological defenses, microbial control methods, and their application in healthcare, food safety, water treatment, and public health practices. They will apply this understanding to diagnose, prevent, and treat infectious diseases, and implement effective infection control strategies in medical, pharmaceutical, and environmental settings.

Grade 11	**Grade 12**
Benchmark I: Identify different types of microorganisms, including bacteria, viruses, fungi, and protozoa, and classify them based on their unique characteristics. **Benchmark II**: Explain the roles of microorganisms in health, disease, food production, and environmental processes, citing specific examples of both beneficial and harmful microorganisms. **Benchmark III**: Demonstrate an understanding of how microbiology principles apply to hygiene, food safety, and antibiotic use, explaining how these practices help control harmful microorganisms. **Benchmark IV**: Compare and contrast the characteristics of beneficial and harmful microorganisms, explaining how certain microorganisms promote health while others cause disease.	
Student Learning Outcomes	

***Unit 1:* Introduction to Microbiology** • *Students will be able to identify and describe different types of microorganisms, including bacteria, viruses, fungi, and protozoa.* • *Students will explain the role of microorganisms in health, disease, food production, and environmental processes* • *Students will compare and contrast the characteristics of beneficial and harmful microorganisms* • *Students will demonstrate an understanding of how microbiological principles apply to real-world situations, such as hygiene, food safety, and antibiotic use* • *Students will explore various career paths in microbiology and understand the skills and education required for these fields* • *Students will design and conduct basic microbiological experiments, including safe handling and culturing of microorganism* Unit 2 : BACTERIOLOGY Classification and identification of bacteria • **Students will understand** the basic principles of	**Unit -1 : Immunology** Introduction to immunology Students will be able to understand the basic concepts and scope of immunology, including the immune system's role in defending the body from pathogens. • Explain the distinction between innate and adaptive immunity. Students will differentiate between innate and adaptive immunity and their respective functions in the human body. • Students will recognize how passive and active immunity protect the body against infections. Students will Identify and describe the key immune cells (e.g., lymphocytes, macrophages, and neutrophils) and their roles in immune response. Understand the functions of different immune cell types in pathogen recognition and elimination. Types of immunity Students will differentiate between innate and adaptive immunity and their respective functions in the human body. They will be able to recognize how passive and active immunity protect the body against infections. Immune cells Students will identify and describe the key immune cells (e.g., lymphocytes, macrophages, and

bacterial taxonomy and classification systems. • **Students will understand** how to identify different bacterial shapes and arrangements. • **Students will understand** the significance of Gram staining in distinguishing between Gram-positive and Gram-negative bacteria. • **Students will understand** various methods for bacterial identification, including culture techniques and molecular approaches. **Bacterial structure and function** • **Students will understand** the basic structural components of bacterial cells, including the cell wall, cell membrane, cytoplasm, and genetic material. • **Students will understand** the role of different bacterial structures, such as flagella and pili, in motility and adherence to surfaces. • **Students will understand** the differences between Gram-positive and Gram-negative bacteria, including the implications of these differences for function and treatment.	neutrophils) and their roles in immune response. They will Understand the functions of different immune cell types in pathogen recognition and elimination. Antibodies and antigen- antibody reaction This will aid the students to explain the structure and function of antibodies and their role in neutralizing antigens.

- **Students will understand** how bacterial structures contribute to overall cellular function and survival in various environments.

Growth and metabolism

- **Students will understand** the phases of bacterial growth, including lag, log, stationary, and death phases, and factors affecting each phase.
- **Students will understand** the various metabolic pathways employed by bacteria, such as aerobic respiration, anaerobic respiration, and fermentation.
- **Students will understand** the distinction between autotrophic and heterotrophic bacteria, including their energy sources and nutritional requirements.
- **Students will understand** the role of environmental factors (e.g., temperature, pH, and oxygen levels) in bacterial growth and metabolism.

Bacterial genetic

- **Students will understand** the structure and organization of bacterial DNA, including chromosomal and plasmid DNA.
- **Students will understand** the processes of genetic variation in bacteria, including mutations and horizontal gene transfer (transformation, transduction, and conjugation).
- **Students will understand** the implications of genetic variation for bacterial evolution, adaptation, and antibiotic resistance.
- **Students will understand** the tools and techniques used in bacterial genetics, including cloning and gene expression analysis

Students will analyze how antigen-antibody interactions form the basis of immune defense mechanisms.

Immunization and vaccine development

Students will understand the principles behind immunization and how vaccines stimulate immune memory.

Students will Explore the stages involved in vaccine development and the importance of vaccines in disease prevention.

Unit 2 : CONTROL OF MICROORGANISMS BY PHYSICAL METHODS

- Physical

agents

Temperat

ure

- **Identify** the role of temperature in controlling microbial growth.
- **Differentiate** between the effects of moist heat and dry heat on microorganisms.
- **Explain** the concepts of thermal death point (TDP) and thermal death time (TDT).
- **Analyze** the effectiveness of various heat-based methods (e.g., autoclaving, pasteurization, incineration) in sterilizing or disinfecting materials.

Radiation

BACTERIAL DISEASES

- **Students will understand** the major bacterial pathogens and the diseases they cause, including their symptoms and modes of transmission.
- **Students will understand** the mechanisms of pathogenicity, including toxin production, biofilm formation, and immune evasion strategies.
- **Students will understand** the principles of diagnosis, treatment, and prevention of bacterial infections, including the role of antibiotics and the issue of antibiotic resistance.
- **Students will understand** the significance of public health measures and hygiene practices in controlling the spread of bacterial

- **Distinguish** between ionizing (e.g., gamma rays, X-rays) and non-ionizing radiation (e.g., UV light) and their effects on microorganisms.
- **Describe** how radiation damages microbial DNA and inhibits replication.
- **Evaluate** the practical applications of radiation for sterilization in medical and industrial settings.

Filtration

- **Understand** the principle of microbial filtration and its importance in sterilization of heat-sensitive liquids and air.
- **Identify** different types of filters (e.g., HEPA filters, membrane filters) and their uses.
- **Evaluate** the effectiveness of filtration in removing microorganisms from various environments.

Unit 3 : VIROLOGY

- Types of viruses (DNA,RNA)**Students will understand** the fundamental differences between DNA and RNA viruses, including their structure and genetic material.
- **Students will understand** the classification of viruses based on their nucleic acid type and the implications for replication and pathogenesis.
- **Students will understand** examples of major DNA and RNA viruses and their associated diseases.

Viral structure and replication

- **Students will understand** the basic structure of viruses, including the capsid, envelope, and nucleic acid.
- **Students will understand** the mechanisms of viral replication, including the steps of attachment, penetration, uncoating, replication, assembly, and release.
- **Students will understand** how different types of viruses (e.g., enveloped vs. non-enveloped) affect their replication processes and infectivity

Viral transmission and pathogenesis

- **Students will understand** the various modes of viral transmission, including direct contact, airborne spread, and vector-borne transmission.
- **Students will understand** the factors that influence viral pathogenesis, including viral load, host immune response, and the ability to evade immune detection.
- **Students will understand** the stages of viral infection and how they lead to clinical manifestations of disease.
- **Viral diseases**

Desiccation

- **Describe** the process of desiccation and its role in microbial control.
- **Explain** how drying inhibits microbial growth by removing water necessary for cellular activities.
- **Evaluate** the resistance of different

microorganisms to desiccation Fresher

- **Understand** how low temperatures (refrigeration and freezing) slow microbial metabolism and growth.
- **Identify** the microorganisms that are resistant to cold temperatures and the implications for food preservation.
- **Compare** the effectiveness of refrigeration vs. freezing in controlling microbial populations.

Chemical agents

Disinfectants

- **Define** the term disinfectant and its use in reducing microbial populations on non-living surfaces.
- **Describe** the mechanisms by which disinfectants such as alcohols, phenolics, and chlorine compounds control microorganisms.
- **Evaluate** the effectiveness of different disinfectants based on their chemical properties and target organisms.

• **Students will understand the characteristics and symptoms of major viral diseases, including examples such as influenza, HIV, and hepatitis.** • **Students will understand the principles of diagnosis, treatment, and prevention of viral infections, including vaccination strategies and antiviral therapies.** • **Students will understand the global impact of viral diseases on public health and the importance of surveillance and outbreak management.** **Unit 4 : Microbial infections and disease** **Types of infectious diseases**	Antiseptics • **Differentiate** between antiseptics and disinfectants based on their applications and use on living tissues. • **Explain** how antiseptics such as hydrogen peroxide and iodine work to inhibit or kill microorganisms on skin and mucous membranes. • **Assess** the appropriate use of antiseptics in healthcare and personal hygiene. Sterilants • **Define** sterilants and their role in achieving total microbial destruction, including spores.

- **Students will understand** the concept of microbial infections, including thetypes of pathogens (bacteria, viruses, fungi, and parasites) that can cause disease.
- **Students will understand** the relationship between microbial infections andthe host immune response.
- **Disease transmission and prevention**
- **Students will understand** the classification of infectious diseases based ontheir causative agents (bacterial, viral, fungal, and parasitic).
- **Students will understand** the differences between communicable andnon-communicable diseases and their implications for public health.
- **Students will understand** examples of major infectious diseases, includingtheir symptoms, complications, and affected populations
- **Diagnosis and treatment of infectious diseases**
- **Students will understand** the methods used for diagnosing infectiousdiseases, including laboratory tests, imaging, and clinical assessment.
- **Students will understand** the principles of treatment for infectious diseases,including the use of antibiotics, antivirals, antifungals, and other therapies.
- **Students will understand** the importance of antimicrobial stewardship inpreventing resistance and ensuring effective treatment.
- **Emerging and Re-emerging diseases**
- Students will understand the factors contributing to the emergence and re-emergence of infectious diseases, including environmental changes, globalization, and antibiotic resistance.
- Students will understand the implications of

- **Explain** the mechanism of action of sterilants such as ethyleneoxide and glutaraldehyde.
- **Identify** the appropriate situations for using sterilants inmedical equipment sterilization.

Preservatives

- **Understand** the purpose of preservatives in preventing microbial growth in food, pharmaceuticals, and cosmetics.
- **Identify** common chemical preservatives (e.g., sulfites,nitrates) and their mechanisms of action.
- **Evaluate** the role of preservatives in extending the shelf-life ofproducts and preventing spoilage.

Methods :

Sterilization

- **Define** sterilization as the process of destroying or removing all forms ofmicrobial life, including bacteria, viruses, fungi, and spores.
- **Distinguish** between various sterilization methods (e.g., heat, chemical, radiation, filtration) and their specific applications in medical, laboratory,and industrial settings.
- **Demonstrate** the ability to apply sterilization techniques in controlledenvironments (e.g., autoclaving in healthcare and lab equipment sterilization).
- **Evaluate** the effectiveness of sterilization techniques

emerging and re-emerging diseases for public health, surveillance, and response strategies. • Students will understand examples of recent emerging diseases (e.g., COVID-19, Ebola) and re-emerging diseases (e.g., measles, tuberculosis) and their impact on communities. **Unit 5: Microbiology in Nursing Practice** **Infection prevention and control** • **Students will understand** the principles and importance of infection prevention and control (IPC) in healthcare settings. • **Students will understand** the chain of infection and how breaking this chain can prevent the spread of infections. • **Students will understand** the protocols and guidelines for implementing effective infection control measures in various clinical situations.	for different types of materials and microorganisms, including their limitations. Disinfection • **Explain** disinfection as a method aimed at reducing or eliminating pathogenic microorganisms (but not necessarily spores) from non-living surfaces. • **Classify** types of disinfectants (e.g., alcohol, chlorine, phenolics) and their applications in healthcare, household, and industrial settings. • **Analyze** the factors affecting the effectiveness of disinfection, including concentration, contact time, and type of surface. • **Demonstrate** appropriate use of disinfectants for infection control and surface decontamination in laboratory and medical environments.

- **Hand hygiene**
- **Students will understand** the significance of hand hygiene in preventing healthcare-associated infections (HAIs).
- **Students will understand** the proper techniques for hand washing and the use of hand sanitizers in different contexts.
- **Students will understand** the guidelines for when to perform hand hygiene, including before and after patient contact, and the role of hand hygiene in patient safety.
- **Personal protective equipment (PPE)**
- **Students will understand the purpose and types of personal protective equipment (PPE) used in healthcare settings.**
- **Students will understand the appropriate selection and proper use of PPE based on the type of care being provided and the risk of exposure.**
- **Students will understand the protocols for donning and doffing PPE safely to minimize the risk of contamination and protect both healthcare workers and patients.**

Sanitization

- **Define** sanitization as the process of reducing microbial populations to levels deemed safe by public health standards, particularly in food production and public health.
- **Differentiate** between sanitization and disinfection, emphasizing its use in public and commercial settings (e.g., restaurants, public restrooms).
- **Identify** the methods and agents used for sanitization (e.g., detergents, heat, UV light) and their applications in maintaining hygiene in various industries.
- **Assess** the role of sanitization in food safety, public health, and consumer product safety.

Decontamination

- **Describe** decontamination as the removal or neutralization of contaminants (including microorganisms) from objects, surfaces, and environments.
- **Identify** different levels of decontamination (cleaning, disinfection, sterilization) and when each is appropriate based on the risk of infection or contamination.
- **Understand** the role of personal protective equipment (PPE) and safe practices during the decontamination process.
- **Apply** decontamination techniques in various real-life settings (e.g., healthcare, biowaste management, hazardous material handling) to reduce or eliminate health risks.

	Application : Medical devices • **Understand** the critical importance of sterilization and disinfection inpreventing infections associated with medical devices (e.g., surgical instruments, catheters). • **Identify** appropriate sterilization methods (e.g., autoclaving, ethyleneoxide, radiation) for various medical devices based on material and function. • **Evaluate** the effectiveness of microbial control procedures in ensuringthe safety and sterility of reusable and single-use medical devices. • **Apply** proper handling, storage, and sterilization protocols for medicaldevices in clinical and hospital settings to minimize infection risks.

	Pharmaceuticals • **Explain** the necessity of microbial control in the production, storage, and handling of pharmaceuticals to prevent contamination and ensure product safety. • **Recognize** the use of aseptic techniques and sterilization methods (e.g., filtration, gamma radiation) in the manufacture of sterile pharmaceutical products like injectables. • **Analyze** how preservatives and controlled environments (e.g., clean rooms) are used to maintain pharmaceutical integrity and extend shelf life. • **Apply** regulatory guidelines (e.g., Good Manufacturing Practices) to ensure microbial safety and compliance in pharmaceutical production. Food processing • **Understand** the role of microbial control methods (e.g., pasteurization, heat sterilization, chemical sanitizers) in ensuring food safety and preventing spoilage. • **Describe** how microbial contamination can occur during food production, packaging, and storage, and how sanitization and preservation techniques are applied. • **Evaluate** the use of physical (e.g., refrigeration, drying) and chemical (e.g., preservatives) methods in controlling microbial growth in food products. • **Apply** food safety standards (e.g., HACCP) to design effective microbial control strategies in food processing environments.

	Water treatment • **Explain** the importance of microbial control in water treatment to prevent the spread of waterborne diseases and ensure safe drinking water. • **Identify** various water treatment methods (e.g., filtration, chlorination, UV radiation) used to eliminate harmful microorganisms from water supplies. • **Assess** the effectiveness of disinfection and filtration in different stages of water treatment (e.g., primary, secondary, tertiary). • **Apply** knowledge of water treatment processes to ensure compliance with public health regulations and environmental safety standards.

	Hospital environments • **Recognize** the high risk of infection in hospital environments and thecritical need for stringent microbial control practices (e.g., surface disinfection, air filtration). • **Describe** the types of microbial control measures (e.g., terminal cleaning,UV light, chemical disinfectants) used in hospital settings to prevent healthcare-associated infections (HAIs). • **Evaluate** infection control strategies used in high-risk areas (e.g., operating rooms, intensive care units) to protect patients and healthcareworkers. • **Apply** hospital infection control protocols to minimize the spread ofpathogens, particularly in response to outbreaks or contamination incidents. Unit -3 : **Basic concept of pathology** Definition of pathology • **Students will understand** the definition of pathology and its significancein the study of disease. • **Students will understand** the role of pathology in diagnosing diseasesand guiding treatment decisions. • Types (anatomic ,clinical , surgical ,molecular pathology) **Students will understand** the different types of pathology, including: • **Anatomic Pathology**:

	◦ **Students will understand** the principles of anatomic pathology, including the study of structural changes in tissues and organs due to disease. ◦ **Students will understand** the methods used in anatomic pathology, such as histopathology and cytopathology. • **Clinical Pathology**: ◦ **Students will understand** the principles of clinical pathology, focusing on laboratory analysis of bodily fluids and tissues for disease diagnosis.

	◦ **Students will understand** the types of tests performed in clinical pathology, including blood tests, urinalysis, and microbiological cultures. • **Surgical Pathology**: ◦ **Students will understand** the role of surgical pathology in examining tissues obtained during surgical procedures. ◦ **Students will understand** the process of preparing and analyzing surgical specimens to determine the presence of disease. • **Molecular Pathology**: ◦ **Students will understand** the principles of molecular pathology, including the analysis of nucleic acids and proteins for disease diagnosis and treatment. ◦ **Students will understand** the applications of molecular techniques in identifying genetic disorders and infectious diseases. • **Integration of Pathology in Medicine** ◦ **Students will understand** how different branches of pathology contribute to a comprehensive understanding of disease processes. ◦ **Students will understand** the importance of pathology in informing clinical decision-making and improving patient outcomes. Unit : 4 **<u>Pathology in Nursing Practice</u>** • Assessing patients for disease

	Students will demonstrate the ability to systematically assess patients for signs and symptoms of disease through comprehensive history taking and physical examination. Learners will apply critical thinking to identify potential health issues and make informed clinical decisions based on patient data. • Interpreting laboratory results Students will accurately interpret common laboratory test results and correlate them with patient symptoms to guide clinical decision-making.

	Learners will develop skills to differentiate between normal and abnormal lab values and understand their implications for diagnosis and treatment. • Developing nursing care plans Students will create individualized nursing care plans that address patient needs, incorporating evidence-based interventions to promote recovery and wellness. Learners will assess patient progress and adapt care plans in response to changing clinical conditions, ensuring continuity of care. • Educating patients about disease prevention Students will effectively communicate with patients about preventive health measures, promoting lifestyle changes to reduce the risk of disease. Learners will design patient education strategies that are culturally sensitive and tailored to individual health literacy levels.

Domain *C*: *Nutrition*

Standard : Students will critically analyze the role of nutrition in human health, assess nutritional needs across different life stages, and design effective dietary interventions. They will evaluate health conditions related to nutrition using advanced assessment tools and apply strategies to address them. Additionally, students will develop and implement nutrition programs, considering cultural, socioeconomic, and public health factors to enhance individual and community well-being.

Grade 11	**Grade 12**
Benchmark I: Students will explain the scope and importance of nutrition, recognizing its impact on health, disease prevention, and longevity. Studnets will identify the nutritional needs throughout the life cycle, including infants, children, adolescents, adults, and the elderly. Additionally, students will differentiate between macronutrients (carbohydrates, proteins, fats) and micronutrients (vitamins, minerals), evaluating their specific roles in metabolism, growth, and overall physiological function. **Benchmark II:** Students will demonstrate a deep understanding of the processes of digestion, absorption, and metabolism of macronutrients, analyzing how the body utilizes carbohydrates, proteins, and fats for energy and function. They will evaluate concepts such as glycemic index, glycemic load, and protein quality, and apply this knowledge to manage conditions like diabetes, cardiovascular disease, and obesity through balanced nutrition. **Benchmark III:** Students will utilize various methods and tools for nutrition assessment, including Body Mass Index (BMI) and biochemical testing, to evaluate individual health and nutritional status. They will be able to design personalized and community-based nutritional interventions, addressing issues such as malnutrition, geriatric nutrition, and obesity, while considering cultural, socioeconomic, and public health policies. **Benchmark IV:** Students will apply principles of nutrition education and counseling to effectively communicate dietary recommendations, considering the influence of cultural and socioeconomic factors. They will demonstrate the ability to design, implement, and evaluate nutrition programs and policies at both individual and community levels, promoting healthy eating habits and improving public health outcomes.	
Student Learning Outcomes	

Unit 1: **Introduction to Nutrition** • **Definition , scope and importance of nutrition** Students will be able to define nutrition and explain its scope, highlighting therole it plays in maintaining overall health and well-being. Students will understand the significance of nutrition in human development,disease prevention, and the promotion of longevity.	Unit 1 : **Nutrition throughout the life cycle** • **Infant and child nutrition** Students will be able to identify the nutritional needs and growth patternsof infants and young children, recognizing key nutrients essential for development.

• **Overview of macrountrients and micronutrients** Students will identify and classify the major macronutrients (carbohydrates, proteins, fats) and micronutrients (vitamins, minerals), explaining their specific functions in the body. Students will evaluate the role of both macronutrients and micronutrients in supporting energy, metabolism, and physiological processes. • **Nutrition and health** Students will explore the relationship between nutrition and overall health, identifying how proper nutrition can prevent diseases and promote physical and mental well-being. Students will assess the impact of dietary habits on chronic illnesses and propose ways to improve health outcomes through balanced nutrition. Unit 2 : **Carbohydrates** • **Classification ,sources and function** Students will be able to classify various nutrients and food components based on their sources (animal, plant, or synthetic) and understand their specific roles and functions in maintaining human health. • **Digestion ,absorption and metabolism** Students will demonstrate an understanding of the human digestive	Students will demonstrate an understanding of the role of breastfeeding, formula feeding, and complementary foods in promoting optimal health during early childhood. • **Adolescent and adults nutrition** Students will analyze the changing nutritional requirements during adolescence and adulthood, linking these to physical, mental, and emotional development. Students will evaluate the impact of lifestyle choices, diet, and nutritional interventions on maintaining health and preventing chronic diseases in adolescents and adults. • **Geriatric nutrition** Students will assess the unique nutritional needs of the elderly population, identifying the role of diet in promoting longevity and managing age-related health conditions. Students will be able to design nutritional plans that address common geriatric concerns, such as malnutrition, osteoporosis, and cognitive decline, while promoting overall well-being. Unit 2 : **Nutrition in Health and Disease** • **Diabetes and nutritions** Students will be able to explain the relationship between diabetes and nutritional choices, emphasizing the role of carbohydrates and glycemic

system, explaining how food is broken down, nutrients are absorbed, and the metabolic pathways that convert them into energy or body components. • **Glycemic index and load** Students will be able to evaluate the concept of glycemic index and glycemic load, explaining how different carbohydrates affect blood sugar levels and how these measures can influence dietary choices for health and disease management.	index in managing blood sugar levels. Students will assess dietary plans to optimize nutrition for individuals with diabetes, focusing on preventing complications and maintaining balanced blood glucose levels. • **Cardiovascular disease and nutrition** Students will analyze the impact of different nutrients, including fats, fiber, and antioxidants, on cardiovascular health and disease prevention. Students will develop heart-healthy dietary strategies aimed at reducing the risk of cardiovascular diseases such as hypertension, heart attacks, and strokes.

Unit 3 : **protein**

- **Structure ,classification and function**

  Students will be able to describe the structural features of key biomolecules,classify them into major categories, and explain their specific biological functions.

  Learners will analyze how molecular structure influences biological activity
  and apply this understanding to categorize various biomolecules based on theirfunctions.

- **Digestion ,absorption and metabolism**

  Students will understand and explain the physiological processes of digestionand absorption of nutrients in the human body.

  Learners will be able to analyze the metabolic pathways for macronutrients and trace how nutrients are broken down, absorbed, and utilized for energy and bodily functions.

- **Protein quality and requirements**

  Students will assess the factors that determine protein quality and differentiatebetween complete and incomplete proteins based on their amino acid profiles.

  Learners will be able to explain human protein requirements and evaluate theimpact of different dietary sources on meeting these nutritional needs.

Unit 4 : **Fats**

- **Classification ,sources and function**
- **Obesity and nutrition**

  Students will describe the role of nutrition in the development and management of obesity, emphasizing energy balance, macronutrients, andfood choices.

  Students will design effective nutritional interventions to address obesity,focusing on sustainable weight management and overall health improvement.

Unit 3 : **Nutrition Assessment**

- **Methods and tools**

  Students will be able to identify and evaluate various research methodsand tools used in data collection and analysis within scientific studies.

  Learners will demonstrate the ability to select appropriate tools and methodologies for specific scientific or clinical problems, justifying theirchoices.

- **BMI (body index mass)**

  Students will understand the concept of Body Mass Index (BMI) and itssignificance in assessing individual health status based on weight and height.

  Learners will be able to calculate BMI and interpret the results in termsof health risks and recommendations for lifestyle adjustments.

- **Biochemical assessment**

  Students will gain knowledge about various biochemical tests and theirrole in assessing nutritional status, metabolic disorders, and overall

Students will be able to classify nutrients and identify their key sources. Students will analyze the functions of various nutrients and their importance in maintaining health. • **Digestion ,absorption and metabolism** Students will describe the processes of digestion and absorption in the human body. Students will explain how nutrients are metabolized and their role in energy production and overall health.	health. Learners will demonstrate the ability to interpret biochemical data to evaluate health indicators such as glucose, cholesterol, and other key biomarkers. Unit 4 : **Nutrition Education and Counseling** • **Principle and strategies** Students will be able to identify and apply core principles and strategies in decision-making processes.

• **Fatty acids types and essentiality** Students will differentiate between types of fatty acids, including saturated, unsaturated, and trans fats. Students will understand the concept of essential fatty acids and their role in maintaining physiological functions. Unit 5 : **minerals and water** • **Classification ,sources and function** Students will be able to classify essential nutrients and identify their natural sources in food. Students will explain the functions of different nutrients in maintaining physiological processes and overall health. • **Deficiency diseases and toxicity** Students will identify and explain common deficiency diseases caused by lack of essential nutrients and their symptoms. Students will understand the concept of nutrient toxicity and describe the health effects of excessive nutrient intake. • **Vitamins and minerals interaction** Students will describe the roles of vitamins and minerals in bodily functions and their synergistic interactions. Students will analyze how deficiencies or excess of one	They will develop the ability to critically assess and implement effective strategies to achieve organizational or personal goals. • **Communication skills** Students will demonstrate effective verbal and non-verbal communication skills in diverse settings. They will be able to tailor their communication approach based on audience, context, and purpose. • **Cultural and socioeconomic considerations** Students will understand and analyze the impact of cultural and socioeconomic factors on decision-making and behavior. They will gain the ability to adapt and create inclusive solutions in culturally and economically diverse environments. Unit 5 : **Community nutrition** • **Nutrition and health policies** Students will be able to analyze national and international health policies related to nutrition and assess their impact on population health. They will also be able to critique policy interventions aimed at improving nutritional outcomes for various demographic groups.

nutrient can impactthe absorption or function of another.	• **Nutrition programs and services** Students will understand the structure and objectives of different nutritionprograms and services, including government and non-government initiatives. They will also be able to evaluate the effectiveness of these programs in addressing malnutrition and promoting healthy eating habits. • **Community -based nutrition and interventions** Students will be able to design and implement community-based nutritioninterventions aimed at improving public health outcomes. They will also develop skills to assess the nutritional needs of communities and engage stakeholders in sustainable health promotion strategies.

Domain *D*: *Medical Surgical nursing*

Standard *Y*: *Learners will critically analyze and integrate knowledge of pathophysiology, diagnostic methods, and medical-surgical management of gastrointestinal, endocrine, genitourinary, neurological, hematological, and cardiovascular disorders. They will develop and implement evidence-based nursing care plans using the nursing process. This outcome ensures holistic care and effective decision-making to improve patient outcomes across various health conditions..*

Grade 11	**Grade 12**
Critically evaluate the pathophysiology, diagnostic methods, and medical management of gastrointestinal, endocrine, genitourinary, neurological, hematological, and cardiovascular disorders. Learners will also **analyze the impact** of these disorders on patient health and outcomes. **Design and implement** individualized nursing care plans using the nursing process (assessment, planning, implementation, and evaluation) for patients with gastrointestinal, endocrine, genitourinary, neurological, hematological, and cardiovascular disorders, focusing on optimizing patient recovery and managing complications. **Interpret and apply** anatomical and physiological knowledge to assess the clinical manifestations of disorders across the gastrointestinal, endocrine, genitourinary, neurological, hematological, and cardiovascular systems, demonstrating the ability to **make informed decisions** in patient care based on a comprehensive understanding of disease processes. **Synthesize** knowledge of medical, surgical, and pharmacological interventions to **develop evidence-based strategies** for managing complex cases involving conditions such as diabetes mellitus, myocardial infarction, cerebrovascular accidents, and anemia, ensuring a holistic approach to patient care and recovery.	
Student Learning Outcomes	
Unit - 1 Gastrointestinal disorders 1. Students will be able to understand and demonstrate the anatomy and physiology of the gastrointestinal system (GIT). 2. Discussion of the causes, pathophysiology and manifestation of the following GIT disorders will help the students to understandGIT disorders .	*Unit - 1* ***endocrine Nursing*** 1. Students will be able to review the anatomy & Physiology of Endocrine System. 2. Learners will discuss the causes, pathophysiology and manifestation of the following Endocrine disorders

3. Students will be able to discuss the diagnostic, medical and surgical management of the below mentioned disorder. 4. Learners will be able to understand the nursing process including assessment, planning, implementing and evaluation of care provided to the clients with GIT disorders. **Disorders of Mouth and Oesophagus** • Stomatitis • Oral cancer/ tumor • Hiatal hernia • Esophageal cancer/ tumor ***Unit- 2 Genitourinary tract disorders*** 1. learns will review the anatomy and physiology of GUT. 2. Students will be able to discuss the causes, pathophysiology and manifestation of the following GUTdisorders. 3. Students will discuss the diagnostic, medical and surgical management of the below mentioned disorders. 4. Students will be able to apply the nursing process including assessment, planning, implementing and evaluation of care provided the client with genitourinarydisorders. · Urinary tract infection. · Glomerulonephritis.	3. Students will understand and discuss the diagnostic, medical and surgical management of the below mentioned disorders 4. Students will be able to apply nursing process including assessment, planning, implementation and evaluation of care provided to the clients with Endocrine disorders · Diabetes mellitus · Cushing syndrome · Addison's disease · Diabetes insipidus · Hypopituitarism · Hypo & Hyperthyroidism ***Unit- 2 Neurological Nursing*** 1. Review the anatomy & physiology of Nervous System 2. Discuss the causes, pathophysiology and manifestation of the following neurological disorders 3. Discuss the diagnostic and surgical management of the below mentioned disorders 4. Apply nursing process including assessment, planning, implementation and evaluation of the care provided to the

	clients with neurological disorders

· Urethral strictures, hydro ureter and hydronephrosis. · Urinary incontinence/retention & Urinary calculi. · Acute & chronic renal failure. · Urinary bladder and renal cell carcinoma. **Unit- 3 *Hematology disorders*** 1. Students will be able to discuss the causes, manifestations and associated mechanism of following anemias 2. Students will be able to describe the pathogenesis of hemolytic disease of the newborn. 3. Students will be able to analyse the lymphoproliferative disorders associated with Hodgkin disease and non-Hodgkin's lymphomas 4. Students will be able to discuss the diagnostic, medical and surgical management of the below mentioned disorders 5. Students will be able to determine and apply the nursing process including assessment, planning implementation and evaluation of care provided to the clients with hematological disorders. · Sickle cell anemia · Immunohemolytic anemia	· Meningitis · Encephalitis · Parkinson disease · Cerebro vascular accident · Head injuries Spinal cord injuries ***Unit- 3 Cardiovascular disorders*** 1. Review the anatomy & physiology of cardiovascular system 2. Discuss the causes, Pathophysiology and manifestation of thefollowing cardiovascular disorders 3. Discuss the diagnostic , medical and surgical management ofthe below mentioned disorder 4. Apply nursing process including assessment, planning, implementation and evaluation of care provided to the clients withcardiovascular disorders. · Myocardial infraction · Endocarditis · Myocarditis

· Iron deficiency anemia	· Congestive heart failure. · Hypertension

· Vitamin B12 deficiency anemia · Folic acid deficiency anemia · Aplastic anemia · Polycythemia · Leukemia · Autoimmune and thrombotic Thrombocytopenic purpura. **Unit- 4 *Cellular adaptation and aberrant cell growth*** ***1.*** Students will identify the goals of cancer therapy ***2.*** Students will be able to discuss different treatment modalities available for Cancer ***3.*** Learners will discuss chemotherapy and radiation therapy, their types,indication, side effects and nursing care ***4.*** Students will be able to review and discuss different types of cancer surgeries and nursing careof patients undergoing cancer surgery. ***5.*** End of life care (palliative and hospice care) **Unit- 5 *Immunological disorders*** 1. This will help learners to discuss immunological disorders. 2. Students will be able to discuss the diagnostic, medical and	· Ischemic heart disease · Cardiac arrest ***Unit- 4 Respiratory disorders*** 1. This will help the learners to review the anatomy & physiology of respiratory tract 2. Students will discuss the causes, pathophysiology and manifestation of the followingrespiratory tract disorders 3. Learners will discuss the diagnostic, medical and surgical management of the belowmentioned disorders **Upper respiratory tract infections:** · Sinusitis · Pharyngitis · Tonsillitis **Lower respiratory tract infections:** · Pneumonia · Pulmonary T.B

surgical management ofthe below mentioned disorders	**Obstructive lung disease:** · Asthma · COPD

3. Apply nursing processes including assessment, planning, implementation and evaluation of care provided to the clients with immunological disorders. · HIV/AIDS · Hypersensitivity and autoimmunity disorders **Unit- 6 *Orthopedic nursing*** 1. Relate the normal anatomy and physiology of musculo-skeletal system alterations of normal structures and functions. 2. Identify the needs of the clients, with different types oftractions and amputation. 3. Use nursing concepts in identifying potential complications associated with musculo-skeletal disorders. 4. Utilize nursing process in delivering care, promoting and maintaining the optimal wellness of clients with musculo-skeletaldisorder. 5. Demonstrate pre and post operative nursing care in patients with Musculoskeletal · Soft tissue injury · Fracture. · Amputation,	***Unit- 5 Eye and ENT Disorders*** 1. Review the anatomy & physiology of eye and ENT 2. Discuss the causes, pathophysiology and manifestation of the following eye and ENT disorders 3. Discuss the diagnostic, medical and surgical management of the below mentioned disorders · Common eye infections · Conjunctivitis · Blepharitis · Cataract. · Glaucoma · Otitis media · Nasal polyps Epistaxis ***Unit- 6 Skin Disorders*** 1. Review the anatomy & physiology of skin 2. Discuss the causes, pathophysiology and manifestation of the following skin disorders 3. Discuss the diagnostic, medical and surgical

· Osteomyelitis.	management of the below mentioned disorders

· Osteoarthritis.	· Common skin infections · Acne vulgaris · Psoriasis · Eczema. Psoriasis · Scabies · Burn 1. Review the anatomy & physiology of skin 2. Discuss the causes, pathophysiology and manifestation of the following skin disorders 3. Discuss the diagnostic, medical and surgical management of the below mentioned disorders · Common skin infections · Acne vulgaris · Psoriasis · Eczema. Psoriasis · Scabies · Burn

Domain *F*: *Pediatric Nursing*

Standard : *Demonstrate the ability to integrate culturally relevant nursing practices in pediatric and neonatal care, effectively addressing ethical, developmental, and health challenges to improve outcomes for children and families in the Pakistani context.*

Grade 11	**Grade 12**
Benchmark I: **Evaluate pediatric nursing practices by addressing cultural, ethical, and legal challenges in the Pakistani context to improve child healthcare outcomes.** **Benchmark II:** **Assess and manage child development using culturally informed approaches and implement nursing care plans for hospitalized children and their families.** **Benchmark III:** **Provide comprehensive neonatal care for complex conditions, applying evidence-based nursing interventions for newborns and low birth weight infants.**	
Student's Learning Outcomes	

Unit : I	**Unit : IV**
1. Evolution in Pediatric Nursing 2. Role of paediatric nurse 3. Paediatric Nursing in Pakistani culture 4. Convention on the rights of the child. 5. Commonly occurring ethical issues in pediatric setting of Pakistan	1. *Nursing care approaches for dealing with Small for Gestation Age and Low Birth Weight infants: A commonly occurring problem in Pakistan* 2. *Concept of Small for Gestation Age, Low for Gestation Age, Appropriate for Gestation Ageand low birth weight infants* 3. *Assessment of new born* 4. *Gestational age assessment*

	5. *Head to toe assessment* 6. *Developmental Care Approach for prematureand newborns in Pakistani families* 7. *Nursing care of the full term and premature babiesand their families*
UNIT_II *Assessing Growth & Development in children ofdifferent age group* 1) *Growth & Development pattern in South Asian Countries, and influence of Pakistani culture on Growth and Development of child.* 2) *Factors influencing physical and emotional development of children* 3) *Assessing Milestones*	**Unit :V** *Stressor and reaction related to developmental stage. Stressor and reactions of the family of then child who is hospitalized.* *Nursing care of a child who is hospitalized.* *Nursing care process of child and family withhospitalization Pharmacological and non-pharmacological painmanagement.*
Unit : III *Guidelines for communication with children and families.* 1. *Role of play in growth and development of children.* 2. *Functions of play for hospitalized children.* 3. *Therapeutic play versus play therapy.* 4. *Play as a tool for nursing management* 5. *Importance of therapeutic play from Pakistani Perspec*	**Unit :VI** 1. *Birth injuries and other related injuriesin newborns* 2. *Respiratory Distress Syndrome and surfactant therapy* 3. *Transient Tachypnea of Newborn* 4. *PPHN* 5. *Intra Ventricular Hemorrhage* 6. *Hyperbilirubinemia.*

6. *Functions of play for hospitalized children.* 7. *Therapeutic play versus play theraptives*	7. *Child with G6PD* 8. *Birth Asphyxia and nursing management* 9. *Septicemia and care aspects* 10. *Hypoglycemia/ Infant of diabetic mothers* 11. *Hypocalcaemia* 12. *Inborn error of metabolism* 13. *Nursing care, pharmacological and non-pharmacological measures for dealing with the above health issues of newborns*

Domain *F*: *Pharmacology & Mathematics*

Standard : *Integrate and apply mathematical concepts related to fractions, decimals, and percentages to effectively interpret and execute medication orders, ensuring accurate drug administration through precise dosage calculations and an understanding of medical abbreviations in diverse clinical scenarios.*

Grade 11	Grade 12
Benchmark I: Analyze and apply the concepts of fractions, decimals, and percentages by converting between them and solving complex word problems using the percentage formula. Learners will also synthesize knowledge of these concepts to calculate percentages, parts, and bases in real-world scenarios. **Benchmark II:** Evaluate drug abbreviations and conversions by interpreting physicians' orders and accurately converting units within the measurement system. Learners will apply their understanding of medical abbreviations to ensure precise medication administration. **Benchmark III:** Interpret and critique the abbreviations used in prescriptions, including time, route, and drug abbreviations. Learners will demonstrate their ability to accurately interpret physician orders and communicate the information effectively in a clinical setting. **Benchmark IV:** Solve complex dosage calculations for medications administered through various routes (oral, subcutaneous, intramuscular, intravenous) using appropriate formulae and syringe interpretation. Learners will evaluate and calculate intravenous infusion rates and medication dosages for safe administration across different delivery methods.	
Student Learning Outcomes	

Unit I: BASIC CONCEPTS IN MATHEMATICS:

In this unit learners will apply the four fundamental operations on Fraction decimal and percentage. At the completion of this unit learners will be able to:

Describe the following:

1. *Fraction*
2. *Decimal*
3. *Division of whole by decimal*
4. *Division of decimal by whole*
5. *Division of decimal by decimal*
6. *Percentage*
7. *Meaning of percentage*
8. *Conversion of percentage to fraction*
9. *Conversion of percentage to decimals*
10. *Conversation of fraction to percentage*
11. *Conversation of decimals to percentage*
12. *Formula of percentage*
13. *How to calculate percentage*
14. *How to calculate part*
15. *How to calculate base*

2. **Apply four fundamental operations on fraction,decimal and percentage.**

3. **Apply the percentage formula in different wordproblems.**

Unit III BASIC DRUG ABBREVIATIONS AND CONVERSIONS:

In this unit learners will review mathematical concepts utilized in thecalculation of medications and their administration.

At the completion of this unit, learners will be able to:

- *Abbreviations*
- *Equivalents*
- *Convert the units with in the system*
- *Describe simple physicians order*

Unit II INTERPRETING THE LANGUAGE OF PRESCRIPTION: *In this unit learners will learn the various abbreviations used in physician's orders At the completion of this unit learners will be able to:* *Interpret the following:* *a. Time abbreviations* *b. Route abbreviations* *Drug abbreviations*	***Unit IV: CALCULATIONS OF MEDICATION FORVARIOUS ROUTES:*** *In this unit learners will gain practice in calculating dosages for medications administered by various routes. After this unit,learners will be able to:* *Demonstrate their ability to solve word problems onoral medications by using a formula for:* *a. solid medications* *b. liquid medications,* *c. Powder medications.* *Demonstrate their ability to solve problems related toparental medications by interpreting the scale on syringes:* • *5 – ml syringe,* • *3 – ml syringes,* *Insulin units/1 – ml syringe.* ***Calculate simple problems for medications administered by:*** • *subcutaneous injections, (SC)* • *intramuscular injections, (IM)* • *Intravenous infusions. (IV)* *Calculate intravenous infusion rates by using formulaefor:* • *Ml per hour.* • *Drops per minute.*