



KHYBER MEDICAL UNIVERSITY

GENERIC B.SC NURSING CURRICULUM

YEAR ONE STUDY GUIDE

(SEMESTER 1)

16 Weeks Activity Planner

2021-22

**CENTRAL CURRICULUM & ASSESSMENT COMMITTEE FOR
NURSING, REHABILITATION SCIENCES & ALLIED HEALTH SCIENCES**



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Introduction

KMU VISION

Khyber Medical University will be the global leader in health sciences academics and research for efficient and compassionate health care.

KMU MISSION

Khyber Medical University aims to promote professional competence through learning and innovation for providing comprehensive quality health care to the nation.

CENTRAL CURRICULUM COMMITTEE

Opened new door, for the beginning of new era under the supervision of Prof Dr. Zia ul Haq, VC Khyber Medical University and Dr. Brekhna Jamil Director IH-PE&R the Central Curriculum & Assessment Committee has been formulated. This is first step taken to change the dynamics of Allied Health Sciences and Nursing Education in Pakistan. Committee by using a craft man approach has developed study guide which will provide pathways for other to follow and KMU will preserve the leadership in providing quality education across Pakistan and will be a reference point of quality in future. Committee has developed curricula to promote inter-professional learning, enhancing and improving the quality of life for people by discovering, teaching and applying knowledge related to Nursing, rehabilitation Sciences & Allied Health sciences.

High-quality education is relevant to patient needs and the changing patterns of skills that are demanded by modern health care and aligning assessment and providing quality training to students will definitely will be the outcome. Which will strengthen and enhance quality of Health System across Pakistan.

The Central Curriculum & Assessment Committee is as follows:

Dr. Brekhna Jamil	Chairperson	Director Institute of Health Professions Education & Research, KMU
Prof. Dr. Zia Ul Islam	Member	Professor ENT
Dr. Syed Hafeez Ahmad	Member	Addl. Controller of Examination Khyber Medical University
Dr. Danish Ali Khan	Member	Director/ Principal Northwest Institute of Health Sciences
Sardar Ali	Member	Assistant Professor Institute of Nursing Khyber Medical University
Muhammad Asif Zeb	Member	Lecturer Institute of ParaMedical Sciences Khyber Medical University
Nazish A Qadir	Member	Lecturer Institute of Physical Medicine & Rehabilitation Khyber Medical University
Syed Amin Ullah	Secretary	Assistant Director Academics Khyber Medical University



INTRODUCTION

The B.S (Generic) Nursing Programme aspires to prepare nurses in a multidisciplinary environment enabling them to work in an ever changing complex health care delivery system and to attain their true potentials in becoming competent, caring, and inquisitive members of the health care teams for improving the health status of individuals, families and the society at large.

B.S Nursing is a 4-years programme that prepares graduates to provide safe, competent and compassionate nursing care grounded in theory and professional standards. The curriculum is based on the concepts of relational practice, leadership, critical nursing inquiry and ethics of care. The curriculum further gives an opportunity to the students to acquire a good deal of experience to work at various levels of health organizations including basic health units, rural health centers, community clinics, specialized and tertiary health care settings.

OBJECTIVES

By the end of this program, students should be able to:

- 1. Develop nursing graduates skilled with progressive theoretical as well as practical knowledge and skills**
- 2. Educate nurses working with different capacities and various roles in health care institutions/organizations**
- 3. Train nurses for giving care with leadership, management, problem solving and decision making skills**
- 4. Integrate logics and reasoning in complex situations or settings while providing holistic care to patients**
- 5. Prepare nurses with analytical, critical thinking and research skills to promote evidenced based care**

FIRST SEMESTER SUBJECTS

S.No	Subjects	Duration
1	NU-101 FUNDAMENTALS OF NURSING-I 4(2-2)	16 weeks
2	NU-102 MICROBIOLOGY 3(2.5-.5)	16 weeks
3	NU-103 ANATOMY AND PHYSIOLOGY-I 3(3-0)	16 weeks
4	NU-104 BIOCHEMISTRY FOR NURSES 3(2-1)	16 weeks
5	NU-105 ENGLISH 2(2-0)	16 weeks
6	NU-106 COMPUTER SKILLS 1(1-0)	16 weeks



1st Semester

NU-101 FUNDAMENTALS OF NURSING-I 4(2-2)

Course Description

This course introduces the student to nursing as a professional discipline. The concept of a professional nurse is addressed through a brief overview of nursing historical development, definitions of nursing, nursing education, the practice, roles of the nurse and nurse's accountability. The conceptual basis for nursing practice is presented as the relationship which exists among human needs, adoption and homeostasis, alterations in health, voluntary and involuntary processes, and nursing intervention. The position of nurses in the health care delivery system of the Country is explained through a description of its organization and administration, facilities, and personnel. International health and nursing organizations are discussed.

Cognitive Domain

By the end of this subject, students should be able to:

1. **Describe the Early Nursing Leaders and historical development of Health care and Nursing.**
2. **Compare requirements and advantages of different Nursing Educational Programs.**
3. **Compare and contrast definitions of nursing by different Nursing Scholars.**
4. **Describe the roles of a professional Nursing.**
5. **Describe the relationship among Human needs, Adoption Homeostasis, alterations in Health, Voluntary and Involuntary Process and nursing Intervention**
6. **Explain the content and purposes of Code of Ethics, and Standards of Nursing practice.**
7. **Discuss the purposes and activities of the World Health Organization and**

the International Council of Nurses.

Skills Domain

By the end of this subject, students should be able to:

1. **Demonstrate therapeutic communication techniques while taking patient history.**
2. **Demonstrate to take pulse rate of the patient.**
3. **Perform to count and document the respiration rate of an adult client.**
4. **Demonstrate to measure the Blood Pressure of an adult patient.**
5. **Demonstrate nursing interventions to prevent decubitus ulcer.**
6. **Perform health teaching at the clinical site.**
7. **Perform the procedure of cardiopulmonary resuscitation on dummy in lab.**
8. **Perform to measure height and weight of the patient of the patient.**
9. **Demonstrate to prepare occupied and unoccupied bed making for the patient.**
10. **Demonstrate to admit a patient in the nursing unit.**
11. **Demonstrate to prepare a discharge plan for the patient.**

Affective Domain

By the end of this subject, students should be able to:

1. **Follow the specified norms of the IL, SGD teaching & learning.**
2. **Demonstrate the humbleness and use the socially acceptable language during academic and social interactions with human models, colleagues and teachers.**
3. **Demonstrate ethically competent decisions when confronted with an ethical, social or moral problem related to professional or personal life.**

TOS -NU-101 FUNDAMENTALS OF NURSING-I 4(2-2)

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/ Hours	Assesment	No of Items
				C	P	A				
TOPIC: HISTORY OF HEALTH CARE AND NURSING										
1	Week-1	Summary of Ancient Cultures, Site of Health Care in Ancient Cultures, Islam and Nursing, The Founder of Nursing, Historical Perspective, Nursing in Mogual Period, Nursing Defined by Different Scholars, Definition of Nursing by WHO, Educational Programs, History of Nursing Education in Pakistan	Discuss the summarized form of health care concepts and sites in ancient cultures	C2			Interactive Lecture/SGD	6	MCQ's	13
2			Discuss the philosophical work of the founders in Nursing	C3						
3			Relate the concepts of care in Islam and nursing	C3						
4			Explain the historical perspectives regarding the foundation of nursing	C2						
5			Discuss the concepts of health care and nursing in Mughal era	C2						
6			Compare the definitions of nursing by different nursing scholars	C4						
7			Define nursing with the perspective of World Health Organization	C1						
8			Describe the various educational programs in nursing briefly.	C2						
9			Explain the history of nursing education in Pakistan	C2						
TOPIC: ROLES OF THE NURSE IN HEALTH CARE										
10	Week-2	Profession, Characteristics of a Profession, Role of the Professional Nurse, Description of Career Roles, Description of Role as Communicator, A Teacher, A Counselor	Define a Profession	C1			Interactive Lecture/SGD	6	MCQ's	13
11			Enlist the characteristics of a profession	C1						
12			Describe the role of a professional nurse	C2						
13			Discuss the career roles in nursing profession	C2						
14			Describe the role of a nurses as a communicator, teacher and as a counselor	C2						
TOPIC: GOALS OF NURSING AND RELATED CONCEPTS										
15	Week-3	Description of Human Needs, Basis of Nursing Practice, World Health Organization, Model of Conceptual Framework for Generic BSN Program, Nursing and Nursing Practice. Goal of Nursing Process, Historical Perspective of the Nursing Process	Define basic human needs	C1			Interactive Lecture/SGD	6	MCQ's	13
16			Discuss basis of nursing practice	C2						
17			Define World Health Organization	C1						
18			Explain model of conceptual framework for Generic BS Nursing program.	C2						
19			Explore nursing and nursing practices	C3						
20			Define goal of nursing process	C1						
21			Discuss the historical perspective of the nursing process	C2						

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/Hours	Assesment	No of Items
				C	P	A				
TOPIC: COMMUNICATION										
22	Week-4	Definition and Elements of Communication, Types of Communication Ways of Communication, Characteristics of Effective Verbal Communication, Factors and Techniques that facilitates and interfere with the effective communication, Therapeutic and Non-Therapeutic Responses, Legal Aspects of Documents	Define communication, elements of communication, ways of communication	C1			Interactive Lecture/SGD	1	MCQ's	2
23			Identify the characteristics of the effective verbal communication	C1						
24			Describe factors that's facilitates and interfere with the effective communication	C2						
25			Discuss techniques that facilitate and interfere with effective communication	C2						
26			Define ways to respond therapeutically and non therapeutically	C1						
27			Relate the legal aspects of documentations	C3						
28			Demonstrate therapeutic communication techniques while taking patient history		P4		Demo	5	OSPE	6
29			Respect the patient needs and concerns while taking history of the patient			A3	Role Play			
TOPIC: NURSING SKILLS (VITAL SIGNS)										
30	Week-5	Define Vital Signs and the Related Terms, Physiological Concept of Temperature, Respiration And Blood Pressure, Principles and Mechanisms for Normal Thermoregulation, Ways of Heat Production And Heat Loss, Types of Body Temperature according to Its Characteristics, Sign and Symptoms of Fever,	Define vital signs and the relevant terms	C1			Interactive Lecture/SGD	3	MCQ's	7
31			Describe the physiological concept of temperature, respiration and blood pressure	C2						
32			Describe the principles and mechanisms for normal thermoregulation in the body.	C2						
33			Relate the ways that affect heat production and heat loss in the body.	C3						
34			Define types of body temperature according to its characteristics.	C1						
35			Identify the sign and symptoms of fever.	C1						
36			Perform to Measure the body temperature of the patient		P4		Demo	3	OSPE	3
37			Follow the standard and professional norms while taking temperature of patient			A5	Role Play			

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/Hours	Assesment	No of Items
				C	P	A				
38	Week-6	Normal Ranges and Factors affecting Temperature, Pulse, Respiration and Blood Pressure, Characteristics of Pulse and Respiration, Factors Responsible for Maintaining Normal Blood Pressure,	Discuss the normal ranges for temperature, pulse, respiration and blood pressure.	C2			Interactive Lecture/SGD	3	MCQ's	7
39			List the factors affecting temperature, pulse, respiration.	C1						
40			Describe the characteristics of pulse and respiration.	C2						
41			Relate factors responsible for maintaining normal blood pressure.	C3						
42			Describe various methods and sites used to measure T.P & B.P.	C2						
43			Recognize the signs of alert while taking TPR and B.P.	C1						
44				Demonstrate to measure the Blood Pressure of an adult patient		P4		Demo	3	OSPE
45		Counsel the patient for any variations in the blood pressure readings			A5	Role Play				
46	Week-7	Various Methods and Sites Used to Measure T.P & B.P,	Demonstrate to take pulse rate of the patient		P4		Demo	6	OSPE	7
47			Respect the patient needs and concern while taking heart rate of the patient			A3	Role Play			
50	Week-8	Signs of Alert while Taking TPR and B.P.	Perform to count and document the respiration rate of an adult client		P4		Demo	6	OSPE	7
51			Provide morally acceptable assistance and care while assessing respiratory rate			A5	Role Play			
TOPIC: SKIN MANAGEMENT										
52	Week-9	Definition, Causes and Risk Factors of Decubetic Ulcer (Bed Sore), Nursing Interventions to Prevent Decubetic Ulcer.	Define decubitus ulcer (bed sore)	C1			Interactive Lecture/SGD	1	MCQ's	2
53			Relate the causes and risk factors of decubitus ulcer	C3						
54			Demonstrate nursing interventions to prevent decubitus ulcer.		P4		Demo	5	OSPE	6
55			Provide morally acceptable care to the patient with decubitus ulcer			A5	Role Play			
TOPIC: CONCEPT OF SAFETY: RISK MANAGEMENT										

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/Hours	Assesment	No of Items
				C	P	A				
56	Week-10	Definition of Safety, Characteristics of Safety, Physical and Microbial Hazards in Environment, Ways to Minimize Hazards, Environmental Safety, Physical and Microbial Hazards in the Hospital Environment interacting with Patients, Preventive Measures for Safe Environment for Health Members and Patient, People at Risk for Safety Dysfunction	Define safety	C1			Interactive Lecture/SGD	1	MCQ's	2
57			Describe the characteristics of safety	C2						
58			Identify physical and microbial hazards in environment	C1						
59			Discuss various ways to minimize hazards	C2						
60			Discuss the assessment for environmental safety	C2						
61			Analyze physical and microbial hazards in hospital setting, interfere with safety	C4						
62			Identify people at risk for safety dysfunction based on hospital assessment	C1						
63				Perform preventive measures for safe environment for health members and patient independently		P4		Demo	5	OSPE
64		Follow the professional norms while performing different preventive measures of safe environment			A5	Role Play				
TOPIC: CONCEPT OF TEACHING & LEARNING										
65	Week-11	Learning Needs of Patient, Teaching Learning Plan, Health Teaching	Assess the learning needs of the patient at the clinical site	C5			Interactive Lecture/SGD	1	MCQ's	2
66			Develop teaching learning plan	C3						
67			Perform health teaching at the clinical site		P4		Demo	5	OSPE	6
68			Follow the professional norms while teaching the client at clinical site			A5	Role Play			
TOPIC: OXYGENATION: RESPIRATORY FUNCTION & CARDIOVASCULAR SYSTEM										



S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/Hours	Assesment	No of Items				
				C	P	A								
69	Week-12	Factors Interfere with Effective Oxygenation, Manifestations, Lifespan-related Changes and Problems of Altered Respiratory and Cardiovascular Function, Ensure a Patient Airway, Emergencies, Nursing Process and Teaching Plan to Respiratory and Cardiovascular System, Infection Prevention, Medical and Surgical Asepsis	Relate factors that can interfere with effective oxygenation of body tissues.	C3			Interactive Lecture/SGD	1	MCQ's	2				
70			Describe manifestations of altered respiratory and cardiovascular function.	C2										
71			Discuss lifespan changes/ problems in respiratory / cardiovascular functions	C2										
72			Describe nursing measures to ensure a patient airway.	C2										
73			Apply nursing process for a altered respiratory and cardiovascular system	C3										
74			Recognize the emergencies related to respiratory and cardiovascular system.	C1										
75			Explain ways that caregivers can decrease exposure of clients to infection	C2										
76			Differentiate between medical and surgical asepsis.	C4										
77			Perform the procedure of cardiopulmonary resuscitation on dummy in lab		P3						Demo	5	OSPE	6
78			Follow the professional norms while performing the CPR Procedure			A3					Role Play			
TOPIC: OXYGENATION: ACTIVITY AND EXERCISE PATTERN														
79	Week-13	Definitions of Terms Mobility, Joint Mobility, Body Alignments and Body Mechanics, Benefits of Activity and Exercise, Principles of Gravity affecting Balance, Factors Affecting Mobility, Effects of Immobility,	Define terms mobility, joint mobility, body alignments and body mechanics	C1			Interactive Lecture/SGD	1	MCQ's	2				
80			Discuss the benefits of activity and exercise	C2										
81			Identify the principles of gravity that affects balance	C1										
82			Discuss factors affecting mobility	C2										
83			Discuss the effects of immobility on human body	C2										
84			Review A&P of skeletal system and characteristics of normal movement.	C1										
85			Demonstrate various Range of motion for general mobility		P4						Demo	5	OSPE	6
86			Follow proper norms while performing ROM			A5					Role Play			

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/Hours	Assesment	No of Items
				C	P	A				
87	Week-14	A&P and Movements of Musculo-Skeletal System, Impact of Immobility, Nursing Process of Musculo-Skeletal Disorders	Describe impact of immobility on Physiological and Psychological functions	C1			Interactive Lecture/SGD	1	MCQ's	2
88			Apply nursing process while planning for altered musculo-skeletal system	C3						
89			Perform bath to a patient with musculoskeletal system disorder on bed		P4		Demo	5	OSPE	7
90			Follow the professional norms while giving bath to the patient on bed			A5	Role Play			
91			Perform to measure height and weight of the patient of the patient		P4		Demo			
92			Provide acceptable/ethical assistance during height and weight measurement			A5	Role Play			
TOPIC: PROCESS OF HOSPITALIZATION										
93	Week-15	Definitions, Procedure and Nursing Responsibilities During Admission, Transfer and Discharge, Nurse Role in Discharge Planning,	Define the team admission, transfer and discharge	C1			Interactive Lecture/SGD	1	MCQ's	2
94			Discuss the procedure for admission, transfer and discharge	C2						
95			Identify nursing responsibility during admission, transfer and discharge	C1						
96			Discuss nurse role in preparing patients and family for discharge	C2						
97			Discuss the normal reaction of patient being hospitalized	C2						
98		Normal Reaction of Patient being Hospitalized.	Demonstrate to prepare occupied and unoccupied bed making for the patient		P4		Demo	5	OSPE	6
99	Provide morally acceptable care to the patient while making bed for patients				A5	Role Play				
100	Week-16	Normal Reaction of Patient being Hospitalized.	Demonstrate to admit a patient in the nursing unit		P3		Demo	6	OSPE	7
101			Respect patients' needs and concerns during admission of patient in the unit			A3	Role Play			
102			Demonstrate to prepare a discharge plan for the patient		P3		Demo			
103			Respect the patient needs while preparing the patient for discharge planning			A3	Role Play			



NU-102 MICROBIOLOGY 3(2.5-.5)

Course Description

This course is designed to furnish the learners with the knowledge of basic concepts and scientific principles of Microbiology. It facilitates the learners to learn the application of principles of Microbiology in hospital and community environment.

Cognitive Domain

By the end of this subject, students should be able to:

1. **Explain the necessity of the knowledge of Microbiology needed when providing nursing care to the clients.**
2. **Use basic principles of Microbiology in nursing practice, in a hospital and community environment.**
3. **Demonstrate the skills learnt in the laboratory to carryout simple laboratory experiments.**

Skills Domain

By the end of this subject, students should be able to:

1. **Demonstrate the safe handling of chemical and equipment's in lab**
2. **Demonstrate and make use of operating a microscope**
3. **Perform the procedure to prepare slides of culture media**
4. **Demonstrate the preventive measures during various types of isolation**
5. **Demonstrate preventive measures to control nosocomial infections in patients**
6. **Perform the procedure of staining bacteria**

Affective Domain

By the end of this subject, students should be able to:

1. **Demonstrate punctuality. Follow the specified norms of the IL, SGD teaching & learning.**
2. **Demonstrate the humbleness and use the socially acceptable language during academic and social interactions with human models, colleagues and teachers.**
3. **Demonstrate ethically competent decisions when confronted with an ethical, social or moral problem or personal life.**

TOS -NU-102 MICROBIOLOGY 3(2.5-.5)

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/Hours	Assesment	No of Items
				C	P	A				
TOPIC: INTRODUCTION TO MICROBIOLOGY										
1	Week-1	Definition and Importance of Microbiology, Properties of Viruses and Microorganisms, Contribution of A. V. Leeuwenhork, F. Redi, L. Pasteur and R. Koch to Microbiology, Difference between Eukaryotic and Prokaryotic Cell, Nutritional Requirements of Microorganisms,	Define Microbiology	C1			Interactive Lecture/SGD	4	MCQ's	7
2			Enlist some of the basic properties of viruses	C2						
3			Explain the basic nutritional requirements of microorganisms	C2						
4			Discuss the contribution of different scientists in the field of microbiology	C2						
5	Week-2	Classification of Bacteria based on Nutritional Requirement/ Morphology	Classify of bacteria based on nutritional requirement and morphology	C3			Interactive Lecture/SGD	4	MCQ's	7
6			Distinguish between eukaryotic and prokaryotic cell	C4						
7			Explain the importance of microbiology in nursing practice	C2						
TOPIC: SAFE USE OF LAB										
8	Week-3	Safe Use of Chemicals and Equipments in Lab	Demonstrate the safe handling of chemical and equipments in lab		P3		Demo	4	OSPE	12
9			Follow professional norms of handling the chemical and equipments in lab safely			A3	Role Play			
TOPIC: CONTROL OF MICROORGANISM										
10	Week-4	Importance, Physical and Chemical Methods of the Control of Microbial Growth, Terms Definitions (Sterilization, Antiseptic, Asepsis, Aseptic, Macrobiotic, Microbiocidal, Antibiotic etc), Difference between Broad and Narrow Spectrum antibiotics, Microbial Genetics, Gram Staining	Define sterilization, antiseptic, asepsis, macrobiotic, microbiocidal, antibiotic	C1			Interactive Lecture/SGD	4	MCQ's	7
11			Describe some physical and chemical methods to control microbial growth	C2						
12			Explain importance of the control of microbial growth	C2						
13			Differentiate between broad spectrum and narrow spectrum antibiotics	C3						
TOPIC: MICROSCOPE USE										



S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/ Hours	Assesment	No of Items
				C	P	A				
14	Week-5	How to Use a Microscope in Lab	Demonstrate and make use of operating a microscope		P3		Demo	4	OSPE	12
15			Follow the professional attributes and norms while using a microscope			A3	Role Play			
TOPIC: DEFENCE MECHANISMS OF THE BODY										
16	Week-6	Definitions of Resistance, Non-Specific Resistance and Susceptibility, Definitions of Specific Resistance, Innate Resistance and Immunity, Types of Acquired Immunity, Definitions of Antigens and Antibodies,	Define resistance and susceptibility	C1			Interactive Lecture/SGD	4	MCQ's	7
17			Explain nonspecific resistance	C2						
18			Discuss the specific resistance, innate resistance and immunity	C2						
19			Discuss antigens and antibodies	C2						
20	Week-7	Role of the Skin and Mucous Membrane in Non Specific Resistance, Five Classes of Antibodies and their Functions, Role of Memory,	Explain the five classes of antibodies and their functions	C2			Interactive Lecture/SGD	4	MCQ's	7
21			Discuss hypersensitivity	C2						
22			Describe the role of the skin and mucous membrane in non specific resistance	C2						
23	Week-8	Role of Good Health in Protection against the Microbial Infection, Process of Phagocytosis,	Discuss the role of good health in protection against the microbial infection.	C2			Interactive Lecture/SGD	4	MCQ's	7
24			Explain the process of Phagocytosis	C2						
25			Explain four types of acquired immunity	C2						
26			Explain the role of memory, tolerance and specificity in immunity	C2						
27	Week-9	Difference between Humoral and Cell Mediated Immunity, Difference between Primary and Secondary Immune Response, Tolerance and Specificity in Immunity, Hypersensitivity, Difference between Delayed and Immediate Hypersensitivity.	Differentiate between humoral and cell mediated immunity	C4			Interactive Lecture/SGD	4	MCQ's	7
28			Distinguish between primary and secondary immune response	C4						
29			Differentiate between delayed and immediate hypersensitivity	C4						
TOPIC: MEDICAL & SURGICAL ASEPSIS										

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/Hours	Assesment	No of Items	
				C	P	A					
30	Week-10	Six Components of Chain of Infection, Examples of Ways that Infection may Occur, Factors that Increase the Risk of Infection in Various Settings, Role of Health Care Personnel and Health in Infection Control	Define the terms infection, infection control and inflammation	C1			Interactive Lecture/SGD	2	MCQ's	4	
31			Discuss the six components of chain of infection	C2							
32			Explain the ways, methods and reasons of spread of infections with examples	C2							
33			Describe the factors that increase the risk of infection in various settings	C2							
34			Employ the role of health care personnel and health in infection control	C3							
35			Demonstrate the role of Healthcare personal in infection control inependently		P4		Demo	2	OSPE		6
36			Follow the protocols of infection control propoerly			A5	Role Play				
TOPIC: CULTURE MEDIA SLIDES											
37	Week-11	Culture Media and Slides Preparation	Perform the procedure to prepare slides of culture media		P3		Demo	4	OSPE	12	
38			Follow the professional norms to prepare slides of culture media			A3	Role Play				
TOPIC: CONCEPT OF ISOLATION											
39	Week-12	Definition and Types of Isolation, Relationship of Isolation to the Chain of Infection Cycle, Nursing Responsibilities in Each Type of Isolation.	Define Isolation	C1			Interactive Lecture/SGD	2	MCQ's	4	
40			Explain the types of Isolation.	C2							
41			Relate isolation to the chain of infection cycle	C3							
42			Demonstrate the preventive measures during various types of isolation		P3		Demo	2	OSPE		6
43			Perform various nursing interventions professionally in each type of isolation			A4	Role Play				
TOPIC: HUMAN AND MICROBIAL INTERACTION											
44	Week-13	Definition of Normal Flora, Three Beneficial Role of Normal Flora, Description of Some Pathogenic Microbes and Diseases i.e. Tetanus, Typhoid, Cholera, Diphtheria, Tuberculosis, Pertusis, Mumps, Measles, Polio, Influenza Ascariasis, Teaniasis and Dermatomycosis.	Define normal flora of the body	C1			Interactive Lecture/SGD	4	MCQ's	7	
45			Enlist at least three beneficial role of normal flora	C1							
46			Discuss some pathogenic microbes and diseases (tetanus,- typhoid, cholera, diphtheria, tuberculosis, pertusis, mumps, measles, polio, influenza ascariasis, and teaniasis and dermatomycosis	C2							

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/ Hours	Assesment	No of Items
				C	P	A				
47	Week-14	Difference between Resident and Transient Normal Flora, Definition of Nosocomial Infections, Three Measures to Control Nosocomial Infections.	Differentiate between resident and transient normal flora	C4			Interactive Lecture/SGD	2	MCQ's	4
48			Discuss nosocomial infections	C2						
49			Demonstrate preventive measures to control nosocomial infections in patients		P3		Demo	2	OSPE	
50			Counsel the patient properly to prevent the nosocomial infections			A4	Role Play			
TOPIC: STAINING OF BACTERIA										9
51	Week-15	Bacteria Staining Procedures	Perform the procedure of staining bacteria		P3		Demo	4	OSPE	12
52			Execute the staining of bacteria with the proper professional standards			A3	Role Play			
TOPIC: MICROBIOLOGY IN EVERY DAY LIFE										
53	Week-16	How Microorganisms affects Environment i.e. Air, Water and Food, Safety Measures to Control Water and Food Borne Diseases, Difference between Food Infection and Food Poisoning.	Describe how microorganisms affects environment i.e. air, water and food	C2			Interactive Lecture/SGD	2	MCQ's	4
54			List some safety measures to control water and food borne diseases.	C1						
55			Differentiate between food infection and food poisoning.	C4						
56			Demonstrate safety measure to prevent spread of microorganisms		P4		Demo	2	OSPE	
57			Follow the protocols while performing safety measures			A3	Role Play			

NU-103 ANATOMY AND PHYSIOLOGY-I 3(3-0)

Course Description

This course introduces learners to the structures and functions of the human body. Knowledge of Anatomy & Physiology will provide a better understanding, comprehension and integration to theoretical & clinical practice in nursing care situations.

Cognitive Domain

By the end of this subject, students should be able to:

1. Discuss the basic concepts and terms used in anatomy and physiology
2. Explain the level of organization of human body
3. Describe the structure and function of various systems of the human body
4. Discuss the role of homeostasis in maintaining normal body functioning
5. Relate the basic anatomy & physiology concepts to the nursing care of clients.

Skills Domain

By the end of this subject, students should be able to:

1. Observe levels of organization of body through different anatomical structures
2. Demonstrate to locate abdominal pelvic regions and quadrants through a model
3. Demonstrate how to locate the organs present in nine abdomino pelvic regions.
4. Locate and name the organelles of a cell through a structural model
5. Perform to give descriptions of the bones of axial & appendicular skeleton

6. Perform to describe skull, vertebral column, rib cage, pelvic girdle & pelvic girdle
7. Demonstrate to explain the blood flow through the heart via heart model or chart
8. Demonstrate how to name the various organs of digestive system in a model.

Affective Domain

By the end of this subject, students should be able to:

1. Demonstrate punctuality. Follow the specified norms of the IL, SGD teaching & learning.
2. Demonstrate the humbleness and use the socially acceptable language during academic and social interactions with human models, colleagues and teachers.
3. Make ethically competent decisions when confronted with an ethical, social or moral problem related to professional or personal life.

TOS -NU-103 ANATOMY AND PHYSIOLOGY-I 3(3-0)

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: INTRODUCTION TO HUMAN BODY										
1	Week-1	Introduction to Anatomy & Physiology, Relationship, Anatomical Positions, Body Planes.	Define the term anatomy and physiology	C1			Interactive Lecture/SGD	3	MCQ's	4
2			Discuss the relationship between anatomy and physiology	C2						
3			Explain the anatomical positions and body planes	C2						
4			Identify levels of organization of body through different anatomical structures		P3		Demo	1	OSPE	4
6			Listen & Respond to the teacher attentively and courteously			A3	Role Play			
7	Week-2	Cavities, Abdominopelvic Regions & Quadrants	Define the term body cavity	C1			Interactive Lecture/SGD	3	MCQ's	4
8			Discuss body cavities and list the organs lying within each cavity	C2						
9			Relate the importance of abdomino pelvic quadrants and regions.		C3					
10			Demonstrate to locate abdominal pelvic regions and quadrants through a model		P3		Demo	1	OSPE	4
11			Give value to locate the abdominal pelvic regions and quadrants through a model			A3	Role Play			
12			Demonstrate how to locate the organs present in nine abdomino pelvic regions.		P3		Demo			
13			Give value to locate the organs present in nine abdomino pelvic regions.			A3	Role Play			
TOPIC: HOMEOSTASIS AND ADAPTATION										
14	Week-3	Definition, Factors of Homeostasis , Feedback Mechanism and its Components , Role of feedback mechanism in homeostasis	Define the term homeostasis	C1			Interactive Lecture/SGD	3	MCQ's	4
15			Discuss the factors which effect homeostasis	C2						
16			Explain the feedback mechanism and its components.	C2						
17			Interpret the role of feedback process in homeostasis maintenance with examples	C3						
18			Identify statges/type of homeostasis through charts		P3		Demo	1	OSPE	4
19			Adopt how to care and handle Models and charts			A3	Role Play			
TOPIC: TISSUES AND MEMBRANE										

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
20	Week-4	Structure and Function of Cell, Cell Division (Mitosis and Meiosis) Its Process and Importance	Discuss the process of cell division i.e. mitosis and meiosis.	C2			Interactive Lecture/SGD	3	MCQ's	4
21			Explain and evaluate the importance of the process of mitosis & meiosis	C3						
22			Locate and name the organelles of a cell through a structural model		P3		Demo	1	OSPE	4
23			Locate and name organelles of a cell through a structural model with proper norms			A3	Role Play			
24	Week-5	Classification, Structure, Location and Functions, of Tissues (Epithelial Tissue, Connective Tissue, Muscle Tissue and Nervous Tissue)	Discuss the epithelial, connective, muscle and nervous tissues of the body on the basis of their structures, locations and functions	C2			Interactive Lecture/SGD	3	MCQ's	4
25			Identify location & type of tissue through Models and charts		P4		Demo	1	OSPE	4
26			Adopt how to care and handle Models and charts			A4	Role Play			
TOPIC: SKELETAL SYSTEM										
27	Week-6	Definition, Structure, Types and Functions of Bone, Physiology of Skeletal System,	Define the skeletal system	C1			Interactive Lecture/SGD	3	MCQ's	4
28			Discuss the structure, types and functions of bone	C2						
29			List the functions of the skeletal system	C1						
30			Discuss the various markings on the surface of bones	C2			Demo	1	OSPE	4
31			Perform to give descriptions of the bones of axial & appendicular skeleton		P3					
32			Describe the bones of axial & appendicular skeleton with proper professional norms			A3				
33	Week-7	Axial and Appendicular Skeleton, Bone Description (Skull, Vertebral column, The Rib Cage, Pectoral Girdle and Upper Extremity, Pelvic Girdle and Lower Extremity, Male and Female Pelvis	Discuss the difference between male and female pelvis	C2			Interactive Lecture/SGD	3	MCQ's	4
34			Perform to describe skull, vertebral column, rib cage, pelvic girdle & pelvic girdle		P3		Demo	1	OSPE	4
35			Give value to describe skull, vertebral column, rib cage, pelvic girdle & pelvic girdle			A3	Role Play			
TOPIC: JOINTS										



S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
36	Week-8	Definition, Types of Joints (Fibrous, Cartilaginous, Synovial)	Define the term joint	C1			Interactive Lecture/SGD	3	MCQ's	4
			Describe the types of joints including fibrous, cartilaginous and synovial joints	C2						
			List the types of synovial joints	C1						
37			Identify types of joints through Models and charts		P4		Demo	1	OSPE	4
38			Adopt how to care and handle Models and charts			A4	Role Play			
39	Week-9	Synovial Joints Types, Features and Movements)	Describe the common characteristic features of a synovial joint.	C2			Interactive Lecture/SGD	3	MCQ's	4
40			Discuss the types of movements possible at synovial joints	C2						
41			Identify Anatomical and Physiological movements of joints		P4		Demo	1	OSPE	4
42			Adopt how to care and handle Models and charts			A4	Role Play			
TOPIC: MUSCULAR SYSTEM										
43	Week-10	Terms Definitions (Fascia, Epimysium Perimysium, Endomysium, Tendons And Aponeurosis), Location and Function of Major Muscles (Neck, Face, Back, Arms, Legs)	Define the terms fascia, epimysium perimysium, endomysium, tendons, aponeurosis	C1			Interactive Lecture/SGD	3	MCQ's	4
44			Discuss location and function of major muscles of neck, face, back, arms, and legs	C2						
45			Identify major muscles of upper and lower limb		P4		Demo	1	OSPE	4
46			Adopt how to care and handle Models and charts			A4	Role Play			
TOPIC: INTEGUMENTARY SYSTEM										
47	Week-11	Structure and Functions (Epidermis and Dermis), Structure and Functions of Sweat gland, Sebaceous gland, Hair, Nail, Physiology of Skin (Protection, Regulation of body temperature, Sensation, Absorption And Excretion)	Describe the structure of two layers of skin epidermis and dermis	C2			Interactive Lecture/SGD	3	MCQ's	4
48			Discuss the structure & function of sweat gland, sebaceous gland, hairs and nails	C2						
49			Identify layers of skin		P4		Demo	1	OSPE	4
50			Adopt how to care and handle Models and charts			A4	Role Play			
TOPIC: CARDIOVASCULAR SYSTEM										

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items	
				C	P	A					
51	Week-12	Blood (Definition, Structure, Components, Composition, Production and Functions), ABO Blood Group & Rh Factor.	Define blood and list its functions	C1			Interactive Lecture/SGD	3	MCQ's	4	
52			Describe composition, sites of production ,functions of cellular parts of blood/plasma	C2							
53			Explain the structure and function of arteries, veins and capillaries	C2							
54			Relate and explain the ABO blood groups & Rh factor	C3							
55			Demonstrate difference between arteries, veins and capillaries on charts/ models		P4		Role Play	1	OSPE		4
56			Adopt how to care and handle human Models and charts			A5	Demo				
57	Week-13	Structure and Functions of Arteries, Veins & Capillaries), Heart (Location, Structure, Valves, Vessels, Blood Flow), Conduction System (Anatomy & Physiology), Cardiac Cycle, Types of Blood Circulation (Pulmonary, Coronary, Systematic, Hepatic)	Describe the location, structure and functions of the heart and its great blood vessels.	C2			Interactive Lecture/SGD	3	MCQ's	4	
58			Describe the structure and functional features of the conducting system of the heart.	C2							
59			Discuss the pulmonary, systematic, coronary and portal circulation	C2							
60			Explain the principle events of a cardiac cycle	C2							
61			Demonstrate to explain the blood flow through the heart via heart model or chart		P4		Role Play	1	OSPE		4
62			Follow the professional norms to explain the blood flow through heart via heart			A5	Demo				
TOPIC: LYMPHATIC SYSTEM											
63	Week-14	Definitions (Lymph & Lymphatic System), Structure and Functions of Lymphatic Organs, Production and Formation of Lymph, Lymph Vessels and Flow to Blood, Structure and Function of Nodes, Nodules, Thymus Gland and Spleen	Define lymph & the lymphatic system	C1			Interactive Lecture/SGD	3	MCQ's	4	
64			Enlist the organs of lymphatic system	C1							
65			Discuss the general functions of the lymphatic system	C2							
66			Explain the lymph vessels & how lymph is returned to the blood vessels	C2							
67			Discuss structure and functions of lymph nodes, nodules, spleen and thymus gland	C2							
68			Interpret composition and formation of lymph in relation pathological conditions	C3							
69			Draw lymphatic flow on chart		P4		Role Play	1	OSPE		4
70			Adopt how to care and handle human Models and charts			A5	Demo				
TOPIC: DIGESTIVE SYSTEM											

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
71	Week-15	Definition, Structure and Functions of Digestive System, Anatomy and Physiology of Digestive Organ, Accessory Organs of Digestive System	Define the digestive system and list its functions	C1			Interactive Lecture/SGD	3	MCQ's	4
72			Describe the anatomy & physiology of digestive organs	C2						
73			Discuss the role of accessory organs in digestion	C2						
74			Demonstrate how to name the various organs of digestive system in a model		P3		Demo	1	OSPE	4
75			Name various organs of digestive system in a model with proper professional norms			A3	Role Play			
76	Week-16	Process of Digestion in Mouth, Stomach, Small & Large Intestines), Process of Nutrients Absorption, Process of Defecation	Explain digestion of food in mouth, stomach, small intestines & large intestines with the chemical processes of enzymes	C2			Interactive Lecture/SGD	3	MCQ's	4
77			Explain the absorption of various nutrients in the digestive system	C2						
78			Discuss the process of defecation.	C2						
79			Identify digestive organs from human Models and charts		P4		Demo	1	OSPE	4
80			Adopt how to care and handle human Models and charts			A4	Role Play			

NU-104 BIOCHEMISTRY FOR NURSES 3(2-1)

Course Description

This course is intended to provide the health professional with an understanding of the major organic substances of living organisms, proteins, carbohydrates and lipids, their structure analyses and biochemical functions. It also provides an introduction to the chemistry of bioenergetics, metabolism, biosynthesis and molecular biology.

Cognitive Domain

By the end of this subject, students should be able to:

1. Describe the basics of organic chemistry with emphasis on the biomolecules and reactions encountered in biochemistry of proteins, carbohydrates, lipids, enzymes and hormones.
2. Describe chemical & physical properties of biomolecules.
3. Relate the basic knowledge of biochemistry for better understanding of the physiological functions of the human body.

Skills Domain

By the end of this subject, students should be able to:

1. Demonstrate the safe handling of chemical and equipment's in lab
2. Assess the chemical properties of organic compounds in lab
3. Demonstrate to calculate the BMR of a patient
4. Perform Benedict's Test for reducing the sugars
5. Demonstrate to explain the Michalis Menten's Equation
6. Perform the Emulsion Test in Lab
7. Demonstrate the Ninhydrin Test

8. Perform to calculate the total body density of the cell

Affective Domain

By the end of this subject, students should be able to:

1. Demonstrate punctuality. Follow the specified norms of the IL, SGD teaching & learning.
2. Demonstrate the humbleness and use the socially acceptable language during academic and social interactions with human models, colleagues and teachers.
3. Demonstrate ethically competent decisions when confronted with an ethical, social or moral problem related to professional or personal life.

TOS -NU-104 BIOCHEMISTRY FOR NURSES 3(2-1)

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/Hours	Assesment	No of Items
				C	P	A				
TOPIC: CONCEPTS OF CHEMISTRY										
1	Week-1	Importance of Chemistry in Nursing, Matter, Elements Mixtures & Compound, Structure of Atom (Periodic Table), Chemical formula, Chemical Reactions, Equations, Bonding, Redox Reaction and Acid Base, Safe Handling of Chemical and Equipments, Environment	Review concepts of matter, element, mixture, compound, reaction, equation, bonding	C1			Interactive Lecture/SGD	1	MCQ's	2
2			Discuss acid base and redox reactions	C2						
3			Demonstrate the safe handling of chemical and equipments in lab		P3		Demo	3	OSPE	7
4			Follow the professional standards of handling of chemical and equipments in lab			A3	Role Play			
TOPIC: BASIC CONCEPTS OF ORGANIC CHEMISTRY										
5	Week-2	Definition of Organic Chemistry & Compounds, Classification of Organic compound, Properties of Organic compound	Recognize the importance of organic compounds	C1			Interactive Lecture/SGD	1	MCQ's	2
6			Compare properties of organic and inorganic compounds	C4						
7			Describe the classification of organic compounds	C2						
8			Perform to classify the organic compounds through charts		P3		Demo	3	OSPE	7
9			Follow professional norms to classify the organic compounds through charts in lab			A3	Role Play			
10	Week-3	Molecular composition and type of hydrocarbons, International Union Nomenclature of Alpha Compounds (IUPAC), Hydro Carbons, Alkanes, Alkenes	Differentiate the type of saturated and unsaturated hydrocarbons	C4			Interactive Lecture/SGD	1	MCQ's	2
11			Describe the molecular composition of carbohydrates, Fats, Proteins and nucleic acid	C2						
12			List groups of alcohol, ethers aldehyde, ketones, acids, esters, amines, a.acids, amides.	C1						
13			Draw equations of alkanes, aldehydes, ketones, acids, esters, amines & amide		P3		Demo	3	OSPE	7

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/Hours	Assesment	No of Items	
				C	P	A					
14	Week-4	Amines, Alkenes & Alkynes Isomerism, Functional Groups, Macromolecule of Human Body	Discuss the biologic importance of aldehydes, ketones, acids, esters, amines, amides	C2			Interactive Lecture/SGD	1	MCQ's	2	
15			Distinguish between primary, secondary and tertiary amines	C4							
16			Relate isomerism with at least two examples	C3							
17			Assess the chemical properties of organic compounds in lab		P3		Demo	3	OSPE		7
18			Follow professional norms to assess chemical properties of organic compounds in lab			A3	Role Play				
TOPIC: METABOLISM											
19	Week-5	Definitions of Metabolism, Anabolism, Catabolism, Adeno-Tri-Phosphatase (ATP) Adenosine Triphosphalic relationship with Catabolism and Anabolism, Definitions of Gluconeogenesis, Glycogenesis, Glycogenolysis, Transamination, Deamination & Ketosis, Carbohydrate, Protein & Fats in Terms of Glycolysis, Krebs Cycle, Electron Transport and BMR Calculation.	Define metabolism, anabolism, catabolism	C1			Interactive Lecture/SGD	1	MCQ's	2	
20			Define Adenosine Triphosphalic (ATP)	C1							
21			Discuss Adenosine Triphosphalic relationship with catabolism and anabolism	C2							
22			Define gluconeogenesis/glycogenesis/glycogenolysis/trans & de-amination, ketosis	C1							
23			Discuss carbohydrate, protein & fats in terms of Glycolysis, Krebs Cycle, Electron Trans.	C2							
24			Demonstrate to calculate the BMR of a patient		P4		Demo	3	OSPE		7
25			Provide acceptable assistance and explanation to patient during the calculation of BMR			A5	Role Play				
TOPIC: CHEMISTRY OF CARBOHYDRATES											
26	Week-6	Structure of Carbohydrates, Classification of Carbohydrates, Properties of Carbohydrates, Biological significance of Carbohydrates, Major Classes; Monosaccharide, Disaccharide & Polysaccharide, Significance of Carbohydrates. Perform Benedict's Test for Reducing the Sugars	Define carbohydrates	C1			Interactive Lecture/SGD	1	MCQ's	2	
27			Describe the general structure of carbohydrates	C2							
28			Explain the classification of carbohydrate.	C2							
29			Compare three classes of carbohydrates; monosaccharide, disaccharide & polysaccharide	C3							
30			Discuss the biological significance of carbohydrates	C2							
31			Perform Benedict's Test for reducing the sugars		P3		Demo	3	OSPE		7
32			Follow professional norms while performing the Benedict's Test for reducing the sugars			A3	Role Play				
TOPIC: CHEMISTRY OF LIPIDS											

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/Hours	Assesment	No of Items
				C	P	A				
33	Week-7	Structure of Lipids, Properties of Lipids, Biological Significance of Lipid Classification, Simple and Compound Lipids, Derived Lipids, Fatty Acids, Fats & Oil, Saturated and Unsaturated Fatty Acids, Uses of Fats in the Body, Physical and Chemical Properties of Fats.	Describes the structure and general properties of lipids and fatty acids	C2			Interactive Lecture/SGD	2	MCQ's	5
34			Discuss the classification of lipids that is simple, compound & derived lipids	C2						
35			Draw the difference between saturated and unsaturated fats through charts		P3		Demo	2	OSPE	5
36	Week-8		Distinguish between soap and detergents	C4			Interactive Lecture/SGD	4	MCQ's	9
37			Discuss the role of phospholipids in cell membranes	C2						
38			Explain the role of steroids (cholesterol)	C2						
TOPIC: CHEMISTRY OF PROTEINS										
39	Week-9	General Chemistry Composition, Amphoteric Nature, Dipeptides of Amino Acids Structure of Primary, Secondary and Tertiary Proteins, Quaternary, Functions of Proteins, Biological importance of Proteins, Classification of Proteins on the basis of Solubility, Composition, Biological Functions, Properties of Proteins (Colloidal Nature, Denaturation of Protein)	Discuss the general structure of amino acids	C2			Interactive Lecture/SGD	4	MCQ's	9
40			Discuss essential, non-essential amino acid, polar, non-polar amino acid-Zwitter ion	C2						
41			Classify proteins according to solubility, composition, function and shape	C3						
42			Explain the significance of protein Denaturation	C2						
43			Discuss the structure of dipeptides and tripeptides	C2						
44	Describe the primary, secondary, tertiary and quaternary structure of protein	C2								
TOPIC: NUCLEIC ACID & NUCLEOTIDE										
45	Week-10	Review of the Cell, Structure of Nucleic Acid, Chemistry of Nucleic Acid, Nucleosides and Nucleotides, Structure of DNA & RNA, Functions of Nucleic Acid, Biological importance of Nucleotides	Describe the main structural features of nucleotide.	C2			Interactive Lecture/SGD	4	MCQ's	9
46			Explain the structure of RNA & DNA	C2						
47			Construct the main differences between DNA & RNA	C3						
48			Discuss the biological importance of nucleotides	C2						
TOPIC: ENZYMOLOGY										

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/Hours	Assesment	No of Items	
				C	P	A					
49	Week-11	Importance of Enzymes, Enzyme as Protein Properties of Enzymes, Enzyme Specificity, Mechanism of Enzyme Action, Activators and Inhibitors, Factors affecting Enzymes Activity (Concentration, Ph, Temperature, Time), Co-Enzymes & its Classification, Enzymes in Clinical Medicines, Perform and Explain Michalis Menten's Equation	Discuss the importance of enzymes.	C2			Interactive Lecture/SGD	1	MCQ's	2	
50			Explain the mode of enzyme activity.	C2							
51			Distinguish between apoenzymes, coenzymes & co factors	C4							
52			Distinguish between activators and inhibitors	C4							
53			Understand inhibition of enzyme activity in competitive, non & un competitive states	C1							
54			Describe the classification of enzymes	C2							
55			Explain the factors affecting the enzyme activity.	C2							
56			Demonstrate to explain the Michalis Menten's Equation		P3		Demo	3	OSPE		7
57			Follow the professional and ethical norms to explain the Michalis Menten's Equation			A3	Role Play				
TOPIC: BIO-ENERGETIC AND METABOLISM											
58	Week-12	Definition of Bioenergetics, Biogenetic Metabolism, Biological Oxidation, Oxidation Electron Transport Chain, Electron Carriers, Biological Redox Reaction	Define Bioenergetics	C1			Interactive Lecture/SGD	4	MCQ's	9	
59			Briefly discuss the concept of free energy	C2							
60			Explain the role of ATP in Linking Catabolism and anabolism	C2							
61			Discuss the biological oxidation and reduction reaction	C2							
62			Differentiate electron transport chain and oxidative phosphorylation	C3							
TOPIC: METABOLISM OF CARBOHYDRATES											
63	Week-13	Metabolism of Carbohydrates, Importance of Glucose in Blood, Glycogenesis and Glycogenolysis, Role of Oxidative Glucose Catabolism in the Citric Acid Cycle, Role of Gluconeogenesis, Scheme of Carbohydrate Metabolism.	Describe the importance of glucose in blood and its dependency by various	C2			Interactive Lecture/SGD	4	MCQ's	9	
64			Discuss the glycogenesis and glycogenolysis	C2							
65			Describe the role of oxidative glucose catabolism in the citric acid cycle.	C2							
66			Describe the role of Gluconeogenesis	C2							
67			Discuss the overall scheme of carbohydrate metabolism	C2							
TOPIC: METABOLISM OF FATS											

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/Hours	Assesment	No of Items
				C	P	A				
68	Week-14	Mechanism of Fatty Acid Oxidation, Energy Produced during the Oxidation of a Fat, Significance of the Role of Ketones Bodies. Perform Emulsion Test in Lab	Describe the mechanism of fatty acid oxidation	C2			Interactive Lecture/SGD	1	MCQ's	2
69			Discuss the amount of energy produced during the oxidation of a fat.	C2						
70			Explain the significance of the role of ketones bodies	C2						
71			Perform the Emulsion Test in Lab		P3		Demo	3	OSPE	7
72			Give value to the professional norms while performing the Emulsion Test in Lab			A3	Role Play			
TOPIC: METABOLISM OF PROTEIN										
73	Week-15	Review the Digestion and Absorption of Proteins, General Pathway of Protein Metabolism, De-Amination, Significance of Nitrogen Balance, Synthesis of Protein, Transamination and Decarboxylation, Formation of Urea and Ammonia Disposal Perform Ninhydrin Test	Review the digestion and absorption of protein.	C1			Interactive Lecture/SGD	1	MCQ's	2
74			Explain the significance of nitrogen balance	C2						
75			Describe the synthesis of protein	C2						
76			Differentiate the transamination, deamination and decarboxylation	C3						
77			Discuss the formation of urea and ammonia disposal	C2						
78			Demonstrate the Ninhydrin Test		P3		Demo	3	OSPE	7
79			Give value to professional and ethical norms while performing Ninhydrin Test			A3	Role Play			
TOPIC: HORMONES COMMUNICATION CELLS/TISSUE										
80	Week-16	Classification of Hormone, Function of Steroid & Peptides Hormones, Cardiac, Pineal and Gastrointestinal Hormones.	Describes the classification of hormone	C2			Interactive Lecture/SGD	1	MCQ's	2
81			Discuss the mode function of steroid & peptides hormones.	C2						
82			Interpret to become familiar with cardiac, pineal and gastrointestinal hormones	C3						
83			Perform to calculate the total body density of the cell		P3		Demo	3	OSPE	7
84			Follow the professional norms while calculating the total body density of the cell			A3	Role Play			

NU-105 ENGLISH-I 2(2-0)

Course Description

This course is designed to acquaint students to build students' conversation confidence. It provides them with speaking models that will help them in exchange of greetings, ideas, thought and feelings. It focuses on building students' confidence to speak fluently and persuasively before an audience. It also aims at establishing the importance of presentation skills in clinical context. It build students verbal skills by making them aware of different categories of lexical items and enabling students to make appropriate use of specified grammatical items.

This course enabling students to read and comprehend fairly complex, unfamiliar, nursing and non-nursing, authentic texts with appropriate speed and adequate understanding. Help students with an evaluation criterion for writing correct and informative field visit reports.

Cognitive Domain

By the end of this subject, students should be able to:

1. **Describe basic concept of basic grammar**
2. **Explain Parts of Speech its types and discuss that how same words use as different parts of speech.**
3. **Explain Parts of Speech its types and discuss that how same words use as different parts of speech.**
4. **justify critical thinking and conversational skills**
5. **Understand the Do's and Don'ts in Presentation**
6. **Distinguish Descriptive, narrative, expository and Narrative Paragraphs**

Skills Domain

By the end of this subject, students should be able to:

1. **Practice on general topics and every-day conversation with questions answers sessions.**
2. **Give presentations individually and in groups to showcase the latent talent**
3. **Organize the procedure to improve their communication skills**

Affective Domain

By the end of this subject, students should be able to:

1. **punctuality. Follow the specified norms of the IL, SGD teaching & learning.**
2. **Demonstrate the humbleness and use the socially acceptable language during academic and social interactions with human models, colleagues and teachers.**
3. **Demonstrate ethically competent decisions when confronted with an ethical, social or moral problem related to professional or personal life.**

TOS -NU-105 ENGLISH-I 2(2-0)

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/Hours	Assesment	No of Items	
				C	P	A					
TOPIC: ORAL COMMUNICATION											
1	Week-1	Greet People, Telephone Conversation, Giving Compliments, Congratula-tions/ Sympathy, Express feeling, Ask for Information/Expla-nation, Ex-change Opinions and Ideas, Suggest/Advise/ Persuade/Insist Etc.	Discuss an effective greeting approach	C2			Interactive Lecture/SGD	2	MCQ's	5	
2			Start and finish a conversation	C2							
3			Relate how to engage in a telephonic conversation	C3							
4			Choose proper wording for compliments	C3							
5	Week-2		Learn how to extend congratulation and sympathy	C1			Interactive Lecture/SGD	2	MCQ's	5	
6			Discuss how to express the feelings	C2							
7			Learn how to ask for an information or explanation	C1							
8	Week-3		Learn that how to express opinions and ideas	C1			Interactive Lecture/SGD	2	MCQ's	5	
9			Learn that how to give suggestion, advise, persuade and insist etc,	C1							
TOPIC: ORAL PRESENTATIONS											
11	Week-4	Elements of a Good Presentation, Topics Of Common Interest, Prepare and Organize a Good Presentation With Multiple Strategies, Handle Questions , Thought-Provoking Discussions, Key Points	Identify elements of a good presentation.	C1			Interactive Lecture/SGD	2	MCQ's	5	
12			Enlist and Select topics of common interest and share useful information	C1							
13	Week-5		Prepare a good presentation using a variety of strategies/ modes to convey ideas		P4		Demo	2	MCQ's	5	
14			Follow the standard and professional norms to have a good presentation			A	Role Play				
15			Discuss that how to express thoughts while handling ques-tions directed from the audience	C2			Interactive Lecture/SGD				
16	Week-6		Discuss how to extend thought-provoking discussions.	C2			Interactive Lecture/SGD	2	MCQ's	5	
17			Discuss to wrap up convincingly, restating the key points.	C2							
TOPIC: VOCABULARY											

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/Hours	Assesment	No of Items
				C	P	A				
18	Week-7	Use of Dictionary, Parts of Speech, Root Words, Common Suffixes and Prefixes Used in Medical Terminology, Use Of Idiomatic Phrases, Used to Describe Physical Ailments, Idioms and Phrasal Verbs in General	Learn that how to use the dictionary	C1			Interactive Lecture/SGD	2	MCQ's	5
19			Identify various parts of speech	C1						
20			Discuss how to enhance the knowledge of root words	C2						
21	Week-8	Use of Idiomatic Phrases, Used to Describe Physical Ailments, Idioms and Phrasal Verbs in General	Learn some of the common suffixes and prefixes used in medical terminology	C1			Interactive Lecture/SGD	2	MCQ's	5
22			Discuss uses of idiomatic phrases used to describe physical ailments	C2						
23			Discuss how to extend the knowledge of idioms and phrasal verbs in general.	C2						
TOPIC: GRAMMAR										
24	Week-9	Tenses, Sentences and Paragraphs, Verbs, Word Order, Active & Passive, Direct and Indirect Speech, Use of Definite and Indefinite Article, Prepositions	Learn to use sentences and paragraphs using appropriate form of present and past tense	C1			Interactive Lecture/SGD	2	MCQ's	5
25			Differentiate between present perfect and past simple tenses	C4						
26			Understand the subject verb agreement in sentences	C1						
27	Week-10	Tenses, Sentences and Paragraphs, Verbs, Word Order, Active & Passive, Direct and Indirect Speech, Use of Definite and Indefinite Article, Prepositions	Write sentences using the correct word order	C2			Interactive Lecture/SGD	2	MCQ's	5
28			Learn to convert active sentences into passive and vice versa	C1						
29			Explain that how to change direct speech into indirect speech and vice versa	C2						
30	Week-11	Tenses, Sentences and Paragraphs, Verbs, Word Order, Active & Passive, Direct and Indirect Speech, Use of Definite and Indefinite Article, Prepositions	Use the definite and indefinite articles correctly	C3			Interactive Lecture/SGD	2	MCQ's	5
31			Insert correct prepositions of time and place in sentences.	C4						
TOPIC: READING COMPREHENSION										
32	Week-12	Content, Text Through Titles, Subtitles, Non-Linguistic Devices, Skimming, Information Through Scanning, Inferring Meaning of Words, Cohesive Devices, Questions of Literal Comprehension, Respond to Questions Involving Re-Interpretation, Respond to Questions Of Personal Response	Discuss how to predict content of text through titles, subtitles, non-linguistic devices	C3			Interactive Lecture/SGD	2	MCQ's	5
33			Interpret the main idea through skimming	C3						
34	Week-13	Content, Text Through Titles, Subtitles, Non-Linguistic Devices, Skimming, Information Through Scanning, Inferring Meaning of Words, Cohesive Devices, Questions of Literal Comprehension, Respond to Questions Involving Re-Interpretation, Respond to Questions Of Personal Response	Explain how to locate specific points of information through scanning	C2			Interactive Lecture/SGD	2	MCQ's	5
35			Develop the skill of inferring meaning of a word by considering its context	C3						
36			Recognize cohesive devices.	C1						
37	Week-14	Content, Text Through Titles, Subtitles, Non-Linguistic Devices, Skimming, Information Through Scanning, Inferring Meaning of Words, Cohesive Devices, Questions of Literal Comprehension, Respond to Questions Involving Re-Interpretation, Respond to Questions Of Personal Response	Discuss questions of literal comprehension	C2			Interactive Lecture/SGD	2	MCQ's	5
38			Explain questions involving re-interpretation and inference	C2						
39			Explain questions of personal response.	C2						



S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/ Hours	Assesment	No of Items
				C	P	A				
TOPIC: REPORT WRITING										
40	Week-15	Provide Biographical Information, Document Observations Critically, Establish Purpose and Functions, Writing Legible and Logical Report	Enlist biographical information of the field	C1			Interactive Lecture/SGD	2	MCQ's	5
41			Illustrate observations critically	C4						
42	Week-16		Establish purpose and function of the visit	C5			Interactive Lecture/SGD	2	MCQ's	5
43			Write a legible report with ideas following logically from one point to another	C1						

NU-106 COMPUTER SKILLS 1(1-0)

Course Description

The purpose of this course is to give the learners a basic understanding of computers and describe the use of information technology in the modern world. Learners will learn how to use the software programmes which include Word, Excel, Access, PowerPoint, and Outlook. The course is intended to augment the computer skills required in clinical and scholastic settings. Learners will study computer applications in nursing education and practice. A large focus will be on utilizing these technologies are shaping today's health care information system.

Cognitive Domain

By the end of this subject, students should be able to:

1. Discuss computer skills, application and how it affects nursing practice, and education.
2. Discuss skills in the use of a word processor (Microsoft Word), spreadsheet/data base (Microsoft Excel).
3. Describe skills in preparing materials for presentation by slide, overhead, or computer projection (multimedia) using presentation software (PowerPoint).
4. Discuss skills in accessing national/international networks, engines and databases using a virtual private network.
5. Verbalize understanding of Internet and its use, value, and efficacy in communicating nursing knowledge.
6. Identify the use of computers in our own area of nursing practice
7. Illustrate the effective use of computer and its software's in nursing where necessary.

Skills Domain

By the end of this subject, students should be able to:

1. Demonstrate step by step antivirus installation and up gradation.
2. Perform to use internet and email.
3. Demonstrate how to use search engines.
4. Demonstrate to use office button, save, save as and quick access toolbar.
5. Perform how to cut, copy, paste, bold, italic, font type and size the text.
6. Observe text alignment, bullets, borders, shading and sorting.
7. Prepare tables, pictures, clip arts, shapes, headers & footers, smart art charts.
8. Perform to make text box, word art, drop cap and symbols.
9. Perform water mark, page color and page borders on a document.
10. Prepare MS Power Point and its Interface.
11. Prepare tables, pictures, clip arts, shapes, smart art and charts.
12. Prepare background styles and hide background graphics.
13. Demonstrate slide show tab its groups and commands.
14. Observe how to merge cell, conditional formatting as table.
15. Observe automatic series generation, automatic calculations.

Affective Domain

By the end of this subject, students should be able to:

1. Demonstrate punctuality. Follow the specified norms of the IL, SGD teaching & learning.
2. Demonstrate the humbleness and use the socially acceptable language during academic and social interactions with human models, colleagues and teachers.
3. Demonstrate ethically competent decisions when confronted with an ethical, social or moral problem related to professional or personal life.

TOS -NU-106 COMPUTER SKILLS 1(1-0)

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/ Hours	Assesment	No of Items
				C	P	A				
TOPIC: INTRODUCTION TO COMPUTER										
1	Week-1	Definitions of Computer and related Terms, Definition and Description of Data (Numerical, Alphabetic and Alpha Numeric Data)	Define Computer	C1			Interactive Lecture/SGD	1	MCQ's	5
2			Define Data	C1						
3			Explain numerical, alphabetic, and alpha numeric data	C2						
TOPIC: DATA AND INFORMATION										
4	Week-2	Definition of Information, Difference between Data and Information, Data Processing in Computer.	Define Information	C1			Interactive Lecture/SGD	1	MCQ's	5
5			Distinguish between data and information	C4						
6			Explain data processing	C2						
TOPIC: BASIC UNITS OF COMPUTER										
7	Week-3	Definitions of Input and Output Unit, Computer Memory, Arithmetic Logic Unit – ALU, Control Unit	Distinguish among input, output unit and memory	C4			Interactive Lecture/SGD	1	MCQ's	5
8			Explain Arithmetic Logic Unit – ALU	C2						
9			Discuss control unit	C2						
TOPIC: LANGUAGE AND NUMBER SYSTEM										
10	Week-4	Characteristics of Computer, Languages in Computer, The Number System.	Enlist characteristics of computer	C1			Interactive Lecture/SGD	1	MCQ's	5
11			Define Languages in computer	C2						
12			Discuss the number system	C2						
TOPIC: SYSTEM AND APPLICATION SOFTWARE										
13	Week-5	Definition of Software and its Types, Types of System Software Including Operating System and Translators, Application Software i.e. General and Specific Purpose Softwares	Discuss software and its types including operating system & translators	C2			Interactive Lecture/SGD	1	MCQ's	5
14			Employ the application software i.e. general and specific purpose softwares	C3						
TOPIC: INTERNET AND SECURITY										
15	Week-6	Computer Virus and its Types, Step by Step Antivirus Installation and Up Gradation, Computer Network and Its Types, Use Internet and Email, Use Search Engines.	Explain computer virus and its types	C2			Interactive Lecture/SGD	1	MCQ's	5
16			Discuss step by step antivirus installation and up gradation	C2						
17			Define computer network and its types	C2						
18			Discuss use internet and email	C2						
19			Discuss how to use search engines	C2						

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/Hours	Assesment	No of Items
				C	P	A				
TOPIC: MS WORD										
20	Week-7	MS Word and its Interface, Ribbon and its Parts, Use Office Button, Save, Save as and Quick Access Toolbar, Home Tab, Its Groups and Commands, How to Cut, Copy, Paste, Bold, Italic, Font Type and Size the Text,	Define MS word and its interface	C1			Interactive Lecture/SGD	1	MCQ's	5
21			Discuss ribbon and its parts	C2						
22			Discuss to use office button, save, save as and quick access toolbar	C2						
23			Describe home tab, its groups and commands	C2						
24			Discuss how to cut, copy, paste, bold, italic, font type and size the text	C2						
25	Week-8	Text Highlighting, Text Color and Text Formatting, Text Alignment, Bullets, Borders, Shading and Sorting, The Insert Tab, Its Groups and Commands, Make (Cover Page, Blank Page, Page Break, Page Numbers), Preparation (Tables, Pictures, Clip Arts, Shapes, Headers And Footers, Smart Art And Charts),	Understand text highlighting, text color and text formatting	C1			Interactive Lecture/SGD	1	MCQ's	5
26			Discuss text alignment, bullets, borders, shading and sorting	C2						
27			Discuss text alignment, bullets, borders, shading and sorting professionally	C2						
28			Understand how to insert tab, its groups and commands	C1						
29			Learn that how to make cover page, blank page, page break, page numbers	C1						
30			Explain and Prepare tables, pictures, clip arts, shapes, headers & footers, smart art charts	C2						
31	Week-9	How to Make Text Box, Word Art, Drop Cap and Symbols, How to Make Page Layout Tab Its Groups and Commands, Make (Themes, Colors, Fonts and Effects Margins, Orientations, Size and Columns) and How to Put Water Mark, Page Color and Page Borders on a Document.	Discuss how to make text box, word art, drop cap and symbols	C2			Interactive Lecture/SGD	1	MCQ's	5
32			Explain page layout tab its groups and commands	C2						
33			Understand that how to make theme, colors, fonts, effects margins, columns	C1						
34			Discuss how to water mark, page color and page borders on a document	C2						
TOPIC: MS POWER POINT										

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/Hours	Assesment	No of Items
				C	P	A				
35	Week-10	Preparation of MS Power Point and its Interface, Home Tab, Its Groups and Commands, Preparing New Slide, Reset and Delete Slide.	Discuss MS Power Point and its Interface	C2			Interactive Lecture/SGD	1	MCQ's	5
36			Discuss MS PowerPoint and Its Interface with acceptable standards	C2						
37			Describe home tab, its groups and commands	C2						
38			Learn to prepare new slide, reset and delete slide	C1						
39	Week-11	Putting Tables, Pictures, Clip Arts, Shapes, Smart Art and Charts, Insert Text Box, Header, Footer, Word Art, Movie and Sound, Tab Its Groups and Command,	Prepare tables, pictures, clip arts, shapes, smart art and charts		P3		Demo	1	MCQ's	5
40			Follow professional standards while making the tables, clip art or charts			A3	Role Play			
41			Learn how to Insert text box, header, footer, word art, movie and sound	C1			Interactive Lecture/SGD			
42			Discuss tab its groups and command	C2						
43	Week-12	Page Setup, Slide Orientations and Themes, Background Styles and Hide Background Graphics, Animation Tab Its Groups and Commands.	Distinguish that how to insert page setup, slide orientations and themes	C4			Interactive Lecture/SGD	1	MCQ's	5
44			Prepare background styles and hide background graphics		P3		Demo			
45			Follow standard to prepare background styles and hide background graphics			A3	Role Play			
46			Learn to insert animation tab its groups and commands	C1			Interactive Lecture/SGD			
47	Week-13	Custom Animations and Transitions, Put Transition's Sound and Speed, Slide Show Tab Its Groups and Commands.	Discuss custom animations and transitions	C2			Interactive Lecture/SGD	1	MCQ's	5
48			Comprehend to put transition's sound and speed	C2						
49			Demonstrate slide show tab its groups and commands		P4		Demo			
50			Follow the instructions to demonstrate the show on power-point slides			A5	Role Play			
51	Week-14	Slide Show from Beginning, From Current Slide and Custom Slide Show, Slide Show and Hide Slides.	Learn the slide show from beginning, from current slide & custom show	C1			Interactive Lecture/SGD	1	MCQ's	5
52			Understand the setup of slide show and hide slides	C1						
TOPIC: MS EXCEL										
53	Week-15	Definitions of Cell, Rows, Columns and Sheets, Formula, How to Merge Cells, Conditional Formatting, Format as Table.	Define cell, rows, columns and sheets	C1			Interactive Lecture/SGD	1	MCQ's	4
54			Explain formula	C2						
55			Observe how to merge cells, conditional formatting, format as table		P1		Demo			
56			Observe process of merging cells and conditional format as table properly			A1	Role Play			

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/Hours	Assesment	No of Items
				C	P	A				
57	Week-16	Cell Styles, Sort and Filter, Find and Select, Automatic Series Generation, Automatic Calculations, How to Create DMCs and Merit Lists	Discuss cell styles, sort and filter, find and select	C2			Interactive Lecture/SGD	1	MCQ's	5
58			Observe automatic series generation, automatic calculations		P1		Demo			
59			Properly follow the instruction while observing automatic series generation			A1	Role Play			
60			Discuss how to create DMCs and merit lists	C2			Interactive Lecture/SGD			

Recommended Text Books

FUNDAMENTALS OF NURSING-I

- Carpinito L. J. (2009). Nursing Care Plans & Documentation: Nursing Diagnosis and Collaborative Problem (5th Ed.) Philadelphia: Lippincott
- Craven, R. F., & Hirnle, C. J. (2013). Fundamentals of Nursing: Human Health and Function. (7th Ed.). New York: Lippincott.
- Delaune, S. C., & Ladner, P. K. (2011). Fundamentals of Nursing: Standards and Practice.
- Erb, G. K., B. (2000). Fundamentals of Nursing: Concepts, Process and Practice (5th Ed.) Addison: Wesley.
- Potter, P. A & Perry, A. G. (2007). Basic Nursing: Essentials for Practice (6th ed.) St. Louis: Mosby.

MICROBIOLOGY

- Atlas, M. R. (1989). Microbiology. New York: McMillan Publishing.
- Bocock, J. E. (1972). Microbiology for Nurses. London: Bailliere Tindall.
- Colee, J. G. (1981). Applied Medical Microbiology. New York: Blackwell Scientific.
- Gladwin, M. (2019). Clinical Microbiology made ridiculously simple. 7th ed Singapore: Med Master.
- Gupte, S. (1990). Practice Microbiology. New Delhi: Jaypee Brothers Medical.
- Hare, R. (1980). Bacteriology and Immunity for Nurses. London: Longman Group.
- Inglis, J. J. T. (2007). Microbiology and Infection. 3rd ed, New York: Churchill Livingstone.
- Jawetz, R. Medical Microbiology. London: Appleton and Lange 28th Ed.
- Parker, M. J. (1991). Microbiology for Nurses. 6th Ed London: Bailliere Tindall.
- Stucke, A. V. (1993). Microbiology for Nurses. London: Bailliere Tindal.

ANATOMY AND PHYSIOLOGY-I

- Ross & Wilson.(2018) Anatomy and Physiology in Health & Illness; Edinburgh: Churchill, 13th Edition
- Guyton, A. C. (2021). Medical Physiology (14th ed) Washington: Kirokawa.
- Tortora, G. J. (2019). Principles of Human Anatomy and Physiology (14th ed). New York: Happer & Row

BIOCHEMISTRY FOR NURSES 3(2-1)

- Jacob A. (2008). Biochemistry for Nurses, 2nd Ed. New-Delhi: Jaypee Brothers.
- Chatterjea MN. (2009) Textbook of Biochemistry for Dental /Nursing / Pharmacy Students 3rd Ed, New Delhi Jaypee.
- Sackhiem, G. I. (1994).In Chemistry for the Health Science, 7th Ed, New York: Macmillan.
- Tortora, G. J. (2019). Principles of Human Anatomy and Physiology (14th ed). New York: Happer & RowYork: Harper & Row.
- Lehninger N. I (1997) Principles of Biochemistry, 2nd Ed, New York: Worth.

ENGLISH

- Barnet, S., & Bedan, H. (1996). Current issues and enduring questions: A guide to critical thinking argument with reading (4th ed.). Boston: Bedford.
- Davidson, G. (2005). Get your message across: Improve your spelling. London: Penguin.
- Eastwood, J. (2004). Oxford practice grammar. Karachi: Oxford University Press. .
- Howe, D. H., Kirkpatrick, T. A., & Kirkpatrick, D. L. (2004). English for undergraduates. Karachi: Oxford University Press.
- Maker, J., & Lenie, M. (1996). Academic reading with active critical thinking. Cambridge: Wadsworth.
- Murphy, R. (2004). Murphy's English Grammar (3rd ed.). New Delhi: Cambridge University Press.
- Kirkpatrick, B. (2004). English for social interaction: Social expressions. Singapore: Learners Publishing.

- Seaton, A. (2004). Understanding spelling: Making sense of the rules, exceptions, and word formation. Singapore: Learners Publishing.

COMPUTER SKILLS 1

- Arnold, J. M., & Pearson, G. A. (1992). Computer Applications in Nursing Education and Practice. New York: National League of Nursing.
- Saba, V. K., & McCormick, K. A. (1995). Essentials of Computers for Nurses. New York: McGraw Hill.
- Thede, L. Q. (1999). Computers in Nursing: Bridges to the Future. Philadelphia: Lippincott.



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