



KHYBER MEDICAL UNIVERSITY

GENERIC B.SC NURSING CURRICULUM

YEAR ONE STUDY GUIDE

(SEMESTER 1)

16 Weeks Activity Planner

2024-25

**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 pre-serve 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	Deputy Dean Medical Professional Education Department Alliance Healthcare (PVT) LTD
Sardar Ali	Member	Assistant Professor Institute of Nursing Khyber Medical University
Muhammad Asif Zeb	Member	Lecturer Institute of ParaMedical Sciences Khyber Medical University
Syed Amin Ullah	Member	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 3(2-1)	16 weeks
2	NU-102 MICROBIOLOGY 2(1.5-0.5)	16 weeks
3	NU-103 ANATOMY & PHYSIOLOGY-I 3(2-1)	16 weeks
4	NU-104 BIOCHEMISTRY 2(1.5-0.5)	16 weeks
5	NU-105 ENGLISH –FUNCTIONAL ENGLISH 3(0-0)	16 weeks
6	NU-106 INFORMATION AND COMMUNICATION TECHNOLOGY 2(2-0)	16 weeks
7	NU-107 IDEOLOGY AND CONSTITUTION OF PAKISTAN 2(2-0)	16 weeks



1st Semester



NU-101 FUNDAMENTALS OF NURSING-I 3(2-1)

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 historical development of health care and nursing
2. Discuss the role of national and international nursing Leaders and their contributions to the profession of nursing.
3. Differentiate profession and occupation.
4. Compare and contrast definitions of nursing by different Nursing Scholars.
5. Describe the role of a professional nurse.
6. Differentiate between the different basic concepts of theories of nursing.
7. Differentiate between different models of Health.
8. Explain the Health status, Health beliefs models, and Health practices.
9. Prioritize patient problems by utilizing a hierarchy of needs.
10. Apply the nursing process to manage human responses of clients to their actual or potential health problems.
11. Apply therapeutic communication and decision-making skills to involve client in decision-making regarding his/her healthcare.
12. Assess cultural, spiritual, and bio-psychosocial factors when arriving at

- nursing diagnoses and interventions for individual clients.
13. Identify the Scope of nursing practice in Pakistan.

Skills Domain

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

1. Demonstrate Clinical skills for assessing and managing patients.
2. Demonstrate safe practice of selected fundamental nursing procedures which apply to client's comfort, hygiene, safety, mobility, physiologic functions, and psychosocial health.

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 3(2-1)

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: HISTORY OF HEALTH CARE AND NURSING										
1	Week-1	Nursing	Define nursing.	C1			Interactive Lecture/SGD	2	MCQ's	5
2		Definitions by Scholars	Compare/Contrast definitions of nursing by different nursing scholars.	C2						
3		Health Care Concepts	Discuss the summarized form of health care concepts and sites in ancient cultures.	C2						
4		Nursing Leaders/Founders	Discuss the philosophical work of leaders and founders in nursing at na-tional and international levels.	C2						
5		Care in Islam	Relate the concepts of care in Islam and nursing.	C4						
6		Historical Perspectives	Explain the historical perspectives regarding the foundation of nursing.	C2						
7		Nursing in Mughal Era	Discuss the concepts of health care and nursing in Mughal era.	C3						
8		Nursing Definition by WHO	Define nursing with the perspective of World Health Organization.	C1						
9		Nursing Programs	Describe the various educational programs in nursing briefly.	C2						
10		Nursing in Pakistan	Explain the history of nursing education in Pakistan.	C2						
11	Practical	Demonstrate reception and orientation of a patient to the hospital setting.		P4		Demo	3	OPSE	5	
12		Follow the standards and policies of hospital reception and orientation.			A	Role Play		Formative Assessment		

TOPIC: ROLES OF THE NURSE IN HEALTH CARE										
13	Week-2	Profession	Define a profession.	C1			Interactive Lecture/SGD	2	MCQ's	5
14		Profession and Occupation	Differentiate a profession and occupation.	C4						
15		Characteristics of Profession	Enlist the characteristics of a profession.	C1						
16		Roles and Functions	Identify the roles and functions of health care team members.	C1						
17		Role of Nurse in Health Care	Describe the role of a professional nurse in Health Care.	C2						
18		Career Roles in Nursing	Discuss the career roles in nursing profession.	C2						
19		Different Nurses Roles	Describe the various roles of a nurse in a health care system.	C3						
20		Health Team Members	Understand and observe the coordination of patients' care between the health team members.	C5						
21		Scope of Nursing Practice	Identify the Scope of nursing practice in Pakistan.	C1						
22		Practical	Demonstrate to prepare occupied and unoccupied bed making for the patient.		P4		Demo	3	OPSE	5
			Provide morally acceptable care to the patient while making bed for patients.			A	Role Play		Formative Assessment	

TOPIC: CONCEPTS, NEEDS AND GOALS OF NURSING														
23	Week-3	Basic Human Needs	Define basic human needs.	C1			Interactive Lecture/SGD	2	MCQ's	5				
24		Need Theory	Discuss Maslow's Hierarchy of Needs theory.	C2										
25		Hierarchy of Needs	Prioritize patient problems by utilizing a hierarchy of needs.	C3										
26		Models of Health	Differentiate between different models of Health.	C4										
27		Basis of Nursing Practice	Explain the Health status, Health beliefs models, and Health practices.	C2										
28		Theories of Nursing	Differentiate between the different basic concepts of theories of nursing.	C4										
29		Goals of Nursing	Discuss goals and application of nursing process.	C2										
30		Diagnosis and Intervention	Assess cultural, spiritual, and bio-psychosocial factors related to diagnoses and relevant interventions.	C6										
31		Nursing Process	Apply nursing process to manage human responses of clients to their actual/potential problems.	C3										
32		Practical	Provide hygiene care (mouth care, hand and foot care, clothing etc.) to the patient as per patient need.		P4						Demo	3	OPSE	5
33	Provide safe and respectful personal hygiene care as per patients need.				A	Role Play	Formative Assessment							
TOPIC: COMMUNICATION SKILLS														
34	Week-4	Communication	Define communication, elements of communication, and ways of communication.	C1			Interactive Lecture/SGD	2	MCQ's	5				
35		Therapeutic Communication	Discuss therapeutic communication.	C2										
36		Characteristics	Identify the characteristics of the effective verbal communication.	C1										
37		Influencing Factors	Describe factors that's facilitates and interfere with the effective communication.	C2										
38		Techniques of Communication	Discuss techniques that facilitate and interfere with therapeutic communication.	C2										
39		Ways to Respond	Define ways to respond therapeutically and non-therapeutically.	C1										
40		Application of Communication	Apply therapeutic communication and decision-making skills to involve client in his or her healthcare.	C3										
41		Practical	Demonstrate therapeutic communication techniques while taking patient history.		P4						Demo	3	OPSE	5
42			Respect the patient needs and concerns while taking history of the patient.			A					Role Play		Formative Assessment	

TOPIC: NURSING SKILLS (VITAL SIGNS) TEMPERATURE										
43	Week-5	Vital Signs	Discuss vital signs and the relevant terms including pain.	C2			Interactive Lecture/SGD	2	MCQ's	5
44		Physiological Concept	Describe the physiological concept of body temperature.	C1						
45		Thermoregulation	Describe the principles and mechanisms for normal thermoregulation in the body.	C1						
46		Heat Production and Loss	Relate the ways that affect heat production and heat loss in the body.	C3						
47		Body Temperature Types	Define types of body temperature according to its characteristics.	C1						
48		Fever	Identify the sign and symptoms of fever.	C1						
49		Practical	Perform to measure the body temperature of the patient.		P4		Demo	3	OPSE	5
50	Follow the professional norms while taking temperature of patient.				A	Role Play	Formative Assessment			
TOPIC: NURSING SKILLS (VITAL SIGNS) PULSE										
51	Week-6	Pulse/Stroke Volume/CO	Define pulse, stroke volume and cardiac output.	C1			Interactive Lecture/SGD	2	MCQ's	5
52		Pulse Normal Ranges	Discuss the normal ranges for pulse rate in different age populations.	C2						
53		Factors	List the factors affecting the pulse rate.	C1						
54		Characteristics	Describe the characteristics of pulse.	C2						
55		Bradycardia and Tachycardia	Describe bradycardia and tachycardia.	C2						
56		Pulse Sites	Identify the different sites of assessing the pulse.	C1						
57		Practical	Demonstrate to take pulse rate of an adult patient.		P4		Demo	3	OPSE	5
58	Respect the patient needs and concern while taking heart rate of the patient.				A	Role Play	Formative Assessment			



TOPIC: NURSING SKILLS (VITAL SIGNS) RESPIRATION										
59	Week-7	Respiration	Define respiration and related terms.	C1			Interactive Lecture/SGD	2	MCQ's	5
60		Physiological Concept	Describe the physiological concept of respiration.	C2						
61		Normal Values	Enlist the normal values of respiration in different age groups.	C1						
62		Factors	Explain the factors affecting the respiration rate.	C2						
63		Braydpnea and Tachypnea	Understand Braydpnea and Tachypnea.	C2						
64		Practical	Perform to count and document the respiration rate of an adult client.		P4		Demo	3	OPSE	5
65	Provide morally acceptable assistance and care while assessing respira-tory rate.				A	Role Play	Formative Assess-ment			
TOPIC: NURSING SKILLS (VITAL SIGNS) BLOOD PRESSURE										
66	Week-8	Blood Pressure	Define blood pressure.	C1			Interactive Lecture/SGD	2	MCQ's	5
67		Blood Pressure Physiology	Describe the physiological concept of blood pressure.	C2						
68		Normal Values	Discuss the normal values of Blood Pressure in different age populations.	C2						
69		Factors	Explain the factors affecting the blood pressure.	C2						
70		Signs And Symptoms	Identify the signs and symptoms of high and low blood pressure.	C1						
71		Practical	Identify the signs and symptoms of high and low blood pressure.		P4		Demo	3	OPSE	5
72			Demonstrate to measure the Blood Pressure of an adult patient.			A	Role Play		Formative Assess-ment	



TOPIC: SKIN MANAGEMENT										
73	Week-9	Decubitus Ulcer	Define decubitus ulcer (bed sore).	C1			Interactive Lecture/SGD	2	MCQ's	5
74		Causes and Risk Factors	Relate the causes and risk factors of decubitus ulcer.	C4						
75		Prevention and Management	Discuss prevention and management of pressure ulcers.	C2						
76		Practical	Demonstrate nursing interventions to prevent decubitus ulcer.		P4		Demo	3	OPSE	5
77			Provide morally acceptable nursing care to the patient with decubitus ulcer.			A	Role Play		Formative Assessment	
TOPIC: CONCEPT OF SAFETY: RISK MANAGEMENT										
78	Week-10	Safety	Define safety.	C1			Interactive Lecture/SGD	2	MCQ's	5
79		Characteristics	Describe the characteristics of safety.	C1						
80		Hazards	Identify physical, microbial and psychological hazards in environment.	C1						
81		Ways of Minimizing Hazards	Discuss various ways to minimize hazards.	C2						
82		Environment Assessment	Discuss the assessment for environmental safety.	C2						
83		Hazards in Hospitals	Analyze physical and microbial hazards in hospital setting, interfere with safety.	C4						
84		Preventive Measures	Explain preventive measures for safe environment for health members and patient.	C2						
85		People at Risk	Identify people at risk for safety dysfunction based on hospital as-sessment.	C1						
86		Documentation	Understand the importance of documentation in nursing care and pa-tient safety.	C2						
87		Practical	Observe various legal forms/documents used in the admission process and patient safety.		P1		Demo	3	OPSE	5
88	Follow the proper norms of keeping safe documentation in nursing practices.				A	Role Play	Formative Assessment			

TOPIC: CONCEPT OF TEACHING & LEARNING										
89	Week-11	Teaching and Learning	Discuss the basic concepts of teaching and learning.	C2			Interactive Lecture/SGD	2	MCQ's	5
90		Components	Discuss the components of teaching learning plan.	C2						
91		Learning Needs	Assess the learning needs of the patient at the clinical site.	C6						
92		Teaching Learning Plan	Develop teaching learning plan.	C3						
93		Practical	Perform health teaching at the clinical site.		P4		Demo	3	OPSE	5
94			Follow the professional norms while teaching the client at clinical site.			A	Role Play		Formative Assess- ment	
TOPIC:OXYGENATION: RESPIRATORY FUNCTION & CARDIOVASCULAR SYSTEM										
95	Week-12	Factors	Relate factors that can interfere with effective oxygenation of body tissues.	C2			Interactive Lecture/SGD	2	MCQ's	5
96		Manifestations	Describe manifestations of altered respiratory and cardiovascular func-tion.	C2						
97		Lifespan Changes	Discuss lifespan changes/ problems in respiratory / cardiovascular functions	C3						
98		Nursing Measures	Describe nursing measures to ensure a patient airway.	C5						
99		Nursing Process	Apply nursing process for an altered respiratory and cardiovascular system.	C2						
100		Emergencies	Recognize the emergencies related to respiratory and cardiovascular system.	C2						
101		Ways to Prevent Infection	Explain ways that caregivers can decrease exposure of clients to infec-tion	C2						
102		Medical/Surgical Asepsis	Differentiate between medical and surgical asepsis.	C3						
103		Practical	Perform the procedure of cardiopulmonary resuscitation on dummy in lab.		P4		Demo	3	OPSE	5
104			Follow the professional norms and steps while performing the CPR Procedure.			A	Role Play		Formative Assess- ment	

TOPIC: ACTIVITY AND EXERCISE PATTERN										
105	Week-13	Mobility & Body Mechanics	Define terms mobility, joint mobility, body alignments and body mechanics.	C1			Interactive Lecture/SGD	2	MCQ's	2
106		Benefits	Discuss the benefits of activity and exercise.	C2						
107		Principles of Gravity	Identify the principles of gravity that affects balance.	C1						
108		Factors Affecting Mobility	Discuss factors affecting mobility.	C2						
109		Practical	Perform to measure height and weight of the patient of the patient.		P4		Demo	3	OPSE	5
110			Provide the ethical support and assistance during height and weight measurement.			A	Role Play		Formative Assessment	
TOPIC: ACTIVITY AND EXERCISE PATTERN										
111	Week-14	Effects of Immobility	Discuss the effects of immobility on human body	C2			Interactive Lecture/SGD	2	MCQ's	2
112		Normal Movement	Review Anatomy and Physiology of skeletal system and characteris-tics of normal movement.	C2						
113		Impact of Immobility	Describe impact of immobility on Physiological and Psychological functions.	C1						
114		Nursing Process	Apply nursing process while planning for altered musculoskeletal system.	C3						
115		Practical	Perform a bath to a patient with musculoskeletal system disorder on bed.		P2		Demo	3	OPSE	5
116			Follow the professional norms while giving bath to the patient on bed.			A	Role Play		Formative Assessment	



TOPIC: PROCESS OF HOSPITALIZATION										
117	Week-15	Admission/Transfer/Dis-charge	Define the terms admission, transfer and hospital discharge.	C1			Interactive Lecture/SGD	2	MCQ's	5
118		Hospital Departments	Describe the functions of the various departments in a hospital.	C1						
119		Procedure	Discuss the procedure for admission, transfer and discharge.	C2						
120		Nursing Responsibility	Identify nursing responsibility during admission, transfer and discharge.	C1						
121		Assessment	Assess cultural, spiritual, bio psychosocial factors when arriving at nursing diagnoses and interventions	C6						
122		Patients' Care	Understand the coordination of patients' care between the health team members.	C6						
123		Practical	Demonstrate to admit a patient in the designated nursing unit.		P2		Demo	3	OPSE	5
124			Respect the patient needs or concerns while preparing patient for admission.			A	Role Play		Formative Assess-ment	
TOPIC: PROCESS OF HOSPITALIZATION										
125	Week-16	Observation	Observe the process of admission, transfer, and discharge of a patient in a hospital.	C2			Interactive Lecture/SGD	2	MCQ's	5
126		Patient Orientation	Explain and orient a patient to the hospital environment.	C2						
127		Forms of Admission	Identify various legal forms/documents used in the admis-sion pro-cess.	C1						
128		Care Documentation	Identify different forms used for documentation in patients' care.	C1						
129		Nurse Role	Discuss nurse role in preparing patients and family for hospital discharge.	C2						
130		Normal Reaction	Discuss the normal reaction of patient being hospitalized.	C2						
131		Practical	Demonstrate to discharge a patient from the admitted nursing unit/ward.		P4		Demo	3	OPSE	5
132			Respect the patient needs or concerns while preparing patient for the discharge planning.			A	Role Play		Formative Assess-ment	

NU-102 MICROBIOLOGY 2(1.5-0.5)

Course Description

This course is designed to furnish the learners with the knowledge of basic concepts and scientific principles of Microbiology. It will enable learners to learn application and principles of Microbiology in hospital as well as in the 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. **Classify common disease-causing microorganisms.**
3. **Differentiate between different methods of microbe detection and destruction.**
4. **Demonstrate infection control practices that prevent infection in a hospital and community environment.**
5. **Use basic principles of Microbiology in nursing practice, in a hospital and community environment.**
6. **Demonstrate the skills learnt in the laboratory to carry out simple laboratory experiments.**

Skills Domain

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

1. **Demonstrate and interpret science phenomenon in a pathology lab????**
2. **Demonstrate and interpret cell adaptation slides**
3. **Demonstrate/Interpret Effect of Suspending Red Blood Cell in Different Concentration of Salt Solution.**

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-102 MICROBIOLOGY 2(1.5-0.5)

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: INTRODUCTION TO MICROBIOLOGY										
1	Week-1	Microbiology	Define microbiology.	C1			Interactive Lecture/SGD	1.5	MCQ's	5
2		Common Microorganisms	Classify common disease causing microorganisms.	C2						
3		Properties of Viruses	Enlist some of the basic properties of viruses.	C1						
4		Nutritional Requirements	Explain the basic nutritional requirements of microorganisms.	C2						
5		Microbiology Scientists	Discuss the contribution of different scientists in the field of microbiology.	C2						
6	Week-2	Bacteria Classification	Classify of bacteria based on nutritional requirement and morphology.	C2			Interactive Lecture/SGD	1.5	MCQ's	5
7		Eukaryotic/Prokaryotic Cell	Distinguish between eukaryotic and prokaryotic cell.	C4						
8		Protozoa and Fungi	Discuss protozoa and fungi as disease causing microorganisms	C2						
9		Microbiology Importance	Explain the importance of microbiology in nursing practice.	C2						
10		Practical	Demonstrate the protocols/practices of safe handling of chemical and equipments in lab.		P4		Demo	3	Formative Assessment	
11			Follow professional norms of handling the chemical and equip-ments in lab safely			A	Role Play			
TOPIC: CONTROL OF MICROORGANISM										
12	Week-3	Terms Definitions	Define sterilization, antiseptic, asepsis, macrobiotic, micro-biocid-al, antibiotic.	C1			Interactive Lecture/SGD	1.5	MCQ's	5
13		Physical/Chemical Methods	Describe some physical and chemical methods to control micro-bial growth.	C2						
14		Microbial Growth Control	Explain importance of the control of microbial growth.	C2						
15		Antibiotics Differentiation	Differentiate between broad spectrum and narrow spec-trum antibiotics.	C4						

TOPIC: DEFENCE MECHANISMS OF THE BODY										
16	Week-4	Terms Definitions	Define hypersensitivity, resistance, nonspecific resistance and susceptibility.	C1			Interactive Lecture/SGD	1.5	MCQ's	5
17		Resistance and Immunity	Discuss the specific resistance, innate resistance and immunity.	C2						
18		Antigens and Antibodies	Discuss antigens and antibodies.	C2						
19		Classes of Antibodies	Explain the five classes of antibodies and their functions.	C2						
20		Skin and Mucous Membrane	Describe the role of the skin and mucous membrane in non-specific resistance.	C2						
21		Practical	Label and name the parts of a microscope.		P4		Demo	3	Formative Assessment	
22			Maintain professional norms while labeling or naming the different parts of a microscope.			A	Role Play			
23	Week-5	Role of Good Health	Discuss the role of good health in protection against the microbial infection.	C2			Interactive Lecture/SGD	1.5	MCQ's	5
24		Phagocytosis	Explain the process of Phagocytosis.	C2						
25		Acquired Immunity Types	Explain four types of acquired immunity.	C2						
26		Memory/Tolerance/Specificity	Explain the role of memory, tolerance and specificity in immunity.	C2						
27	Week-6	Humoral/Mediated Immunity	Differentiate between humoral and cell mediated immunity.	C4			Interactive Lecture/SGD	1.5	MCQ's	5
28		Primary/Secondary Response	Distinguish between primary and secondary immune response.	C4						
29		Hypersensitivity Difference	Differentiate between delayed and immediate hypersensitivity.	C4						
30		Practical	Demonstrate the use and operation of a microscope.		P4		Demo	3	Formative Assessment	
31			Follow the professional attributes and norms while using a microscope.			A	Role Play			
TOPIC: MEDICAL & SURGICAL ASEPSIS										
32	Week-7	Terms Definitions	Define the terms infection, inflammation, nosocomial infection and infection control.	C1			Interactive Lecture/SGD	1.5	MCQ's	5
33		Asepsis	Define the term asepsis.	C1						
34		Types of Asepsis	Discuss the types of asepsis.	C2						

35	Week-8	Medical/Surgical Asepsis	Differentiate between medical and surgical asepsis.	C4			Interactive Lecture/SGD	1.5	MCQ's	5
36		Hand Washing Steps	Discuss the steps of hand washing.	C2						
37		Role of Hand Washing	Explain the role of hand washing in the prevention of nosocomial infection.	C2						
38		Practical	Perform medical hand washing to prevent the spread of microorganism.		P4		Demo	3	Formative Assessment	
39			Follow the steps of medical hand washing with required professional standards.			A	Role Play			
40	Week-9	Universal Precautions	Discuss the universal precautions.	C2			Interactive Lecture/SGD	1.5	MCQ's	5
41		Chain of Infection	Discuss the six components of chain of infection.	C2						
42		Microbe Detection/Destruction	Differentiate between different methods of microbe detection and destruction.	C4						
43	Week-10	Spread of Infections	Explain the ways, methods and reasons of spread of infections with examples.	C2			Interactive Lecture/SGD	1.5	MCQ's	5
44		Infection related Factors	Describe the factors that increase the risk of infection in various settings.	C2						
45		Role of Health Personnel	Employ the role of health care personnel and health in infection control.	C3						
46		Practical	Demonstrate surgical hand washing (scrubbing) to prevent the spread of microorganism.		P4		Demo	3	Formative Assessment	
47			Follow the steps of surgical hand washing (scrubbing) with re-quired professional standards.			A	Role Play			
TOPIC: CONCEPT OF ISOLATION										
48	Week-11	Isolation	Define Isolation.	C1			Interactive Lecture/SGD	1.5	MCQ's	5
49		Isolation Precautions	Explain the rationale for isolation precautions.	C2						
50		Types of Isolation	Explain the types of Isolation.	C2						
51	Week-12	Examples of Isolation	Enlist the examples of different types of isolation	C1			Interactive Lecture/SGD	1.5	MCQ's	5
52		Isolation/Chain of Infection	Relate isolation to the chain of infection cycle.	C4						
53		Personal Protective Equipment	Enlist the types of personal protective equipment used in isolation precautions.	C1						
54		Practical	Demonstrate precautionary measures during various types of isolation to control infections.		P4		Demo	3	Formative Assessment	
55			Perform various nursing interventions professionally in each type of isolation.			A	Role Play			

TOPIC: HUMAN AND MICROBIAL INTERACTION											
56	Week-13	Normal Flora	Define normal flora of the body.	C1			Interactive Lecture/SGD	1.5	MCQ's	5	
57		Normal Flora Beneficial Role	Enlist at least three beneficial role of normal flora.	C1							
58		Pathogenic Diseases	Discuss some pathogenic microbes and diseases i.e tetanus, ty-phoid, cholera, and diphtheria	C2							
59	Week-14	Pathogenic Diseases	Discuss T.B, pertusis, mumps, measles, polio, influenza ascariasis, teaniasis, dermatomycosis	C2			Interactive Lecture/SGD	1.5	MCQ's	5	
60		Resident and Transient Flo-ra	Differentiate between resident and transient normal flora.	C4							
61		Nosocomial Infections	Discuss nosocomial infections.	C2							
62		Nursing Practice	Use basic principles of microbiology in nursing practice, in a hospital and community setting	C3							
63		Practical	Demonstrate precautionary measures during various types of isolation to control infections.			P4		Demo	3	Formative Assess-ment	5
64			Perform various nursing interventions professionally in each type of isolation.				A	Role Play			
TOPIC: MICROBIOLOGY IN EVERY DAY LIFE											
65	Week-15	Role of Microbiology	Discuss the role of microbiology in medicine and nursing scienc-es.	C2			Interactive Lecture/SGD	1.5	MCQ's	5	
66		Microorganisms Uses	Discuss the medicinal uses of microorganisms.	C2							
67		Microorganism/Environ-ment	Describe how microorganisms affects environment i.e. air, water and food	C1							
68	Week-16	Safety Measures	Enlist some safety measures to control water and food borne diseases.	C1			Interactive Lecture/SGD	1.5	MCQ's	5	
69		Food Infection/Poisoning	Differentiate between food infection and food poisoning.	C4							
70		Microbiology in Everyday Life	Describe the different uses of microbiology in every day life.	C1							
71		Practical	Perform the procedure to prepare slides of culture media			P4		Demo	3	Formative Assess-ment	5
72			Follow the professional norms to prepare slides of culture media				A	Role Play			

NU-103 ANATOMY & PHYSIOLOGY-I 3(2-1)

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. Demonstrate the levels of organization of body structures through anatomical models or charts.
2. Locate the organs present in each of the nine abdomino-pelvic regions through a model.
3. Draw the process of positive (childbirth) or negative (thermoregulation) feedback mechanisms.
4. Demonstrate the location and name the organelles of a cell through a

structural model.

5. Demonstrate descriptions of the bones of axial & appendicular skeleton.
6. Demonstrate to identify bones in skull, vertebral column, rib cage, extremities, pectoral/pelvic girdle.
7. Locate the different immovable or slightly movable joints in a human anatomical model.
8. Locate and describe synovial Joints in a given anatomical model.
9. Demonstrate to label the major skeletal muscles in human models.
10. Locate the layers and Skin Structures in an Integumentary Model.
11. Locate and describe the anatomical chambers and structures of hear.
12. Draw the blood flow through different chambers and vessels of the heart.
13. Identify and interpret the blood group of a patient based on its antigen and antibodies.
14. Locate and Name the organs of the lymphatic System.
15. Demonstrate description of the organs of digestive system in abdominal cavity.
16. Locate and name the organs of digestive system from mouth to anus.

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-103 ANATOMY & PHYSIOLOGY-I 3(2-1)

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	Anatomy and Physiology	Define the term anatomy and physiology.	C1			Interactive Lecture/SGD	2	MCQ's	5
2		Importance	Describe the importance of learning and anatomy and physiology.	C1						
3		Relationship	Discuss the relationship between anatomy and physiology.	C2						
4		Nursing Care	Relate the basic anatomy & physiology concepts to the nursing care of clients.	C3						
5		Practical	Demonstrate the levels of organization of body structures through anatomical models or charts.		P4		Demo	3	OPSE	5
6			Listen to teacher attentively and courteously while observing and learning the levels of organization.			A	Role Play		Formative Assessment	
7	Week-2	Anatomical Positions/ Planes	Explain the anatomical positions and body planes.	C2			Interactive Lecture/SGD	2	MCQ's	5
8		Body Cavity	Define the term body cavity.	C1						
9		Organs	Discuss body cavities and list the organs lying within each cavity.	C2						
10		Purpose	Describe the purpose of knowing the body cavities.	C1						
11		Practical	Locate the organs present in each of the nine abdomino pelvic regions through a model.		P4		Demo	3	OPSE	5
	Handle the models safely to locate the organs present in each of the nine abdomino pelvic regions.				A	Role Play	Formative Assessment			

TOPIC: HOMEOSTASIS AND ADAPTATION										
12	Week-3	Homeostasis	Define the term homeostasis.	C1			Interactive Lecture/SGD	2	MCQ's	5
13		Factors	Discuss the factors which effect homeostasis.	C2						
14		Feedback Mechanism	Explain the feedback mechanism and its components.	C2						
15		Role of Feedback Process	Interpret the role of feedback process in homeostasis maintenance with examples.	C4						
16		Practical	Draw the process of positive (childbirth) or negative (thermoregulation) feedback mechanisms.		P4		Demo	3	OPSE	5
17			Maintain the professional norms during the instructions of sketching of feedback mechanism process.			A	Role Play		Formative Assess- ment	
TOPIC: CELL, TISSUES AND MEMBRANE										
18	Week-4	Cell/Tissue/Membrane	Define the terms cell, tissue and membrane.	C1			Interactive Lecture/SGD	2	MCQ's	5
19		Organelles	Describe the organelles inside the cell.	C1						
20		Cell Division	Discuss the process of cell division i.e. mitosis and meiosis.	C2						
21		Importance of Cell Division	Explain and evaluate the importance of the process of mitosis & meiosis	C2						
22		Types of Membranes	Discuss the types of membranes.	C2						
23		Tissues Types	Discuss epithelial, connective, muscle & nervous tissues based on their structures/locations/ functions	C2						
24		Practical	Demonstrate the location and name the organelles of a cell through a structural model.		P4		Demo	3	OPSE	5
25			Locate and name organelles of a cell through a structural model with proper norms and handling.			A	Role Play		Formative Assess- ment	

TOPIC: SKELETAL SYSTEM										
26	Week-5	Skeletal System	Define the skeletal system.	C1			Interactive Lecture/SGD	2	MCQ's	5
27		Structure/Types/Functions	Discuss the structure, types and functions of bone.	C2						
28		Functions	Enlist the functions of the skeletal system.	C1						
29		Markings	Discuss the various markings on the surface of bones.	C2						
30		Practical	Demonstrate descriptions of the bones of axial & appendicular skeleton.		P4		Demo	3	OPSE	5
31			Describe the bones of axial & appendicular skeleton with proper pro-fessional norms and attributes.			A	Role Play		Formative Assessment	
32	Week-6	Skull Bones	Describe the bones in skull.	C2			Interactive Lecture/SGD	2	MCQ's	5
33		Vertebral Column	Describe the bones in vertebral column.	C2						
34		Rib Cage	Identify the bones in rib cage.	C1						
35		Pectoral Girdle/Upper Extremity	Describe the bones in pectoral girdle and upper extremity.	C2						
36		Pelvic Girdle/Lower Ex-tremity	Describe the bones in pelvic girdle and lower extremity.	C2						
37		Male and Female Pelvis	Discuss the difference between male and female pelvis.	C2						
38		Practical	Demonstrate to identify bones in skull, vertebral column, rib cage, extremities, pectoral/pelvic girdle.		P4		Demo	3	OPSE	5
39			Handle bones in skull, vertebral column, rib-cage, extremities, and pectoral/pelvic girdle dexterously			A	Role Play		Formative Assessment	



TOPIC: JOINTS

40	Week-7	Joint	Define the term joint.	C1			Interactive Lecture/SGD	2	MCQ's	5
41		Types of Joints	Describe the types of joints including fibrous, cartilaginous and syno-vial joints.	C2						
42		Synovial Joints	Enlist the types of synovial joints.	C1						
43		Practical	Locate the different immovable or slightly movable joints in a human anatomical model.		P4		Demo	3	OPSE	5
44			Follow the professional norms to handle the models for joints location.			A	Role Play		Formative Assessment	
45	Week-8	Classification	Classify immovable, slightly movable and freely movable joints.	C2			Interactive Lecture/SGD	2	MCQ's	5
46		Common Characteristics	Describe the common characteristic or features of a synovial joint.	C2						
47		Types of Movements	Discuss the types of movements possible at synovial joints.	C2						
48		Practical	Locate and describe synovial Joints in a given anatomical model.		P4		Demo	3	OPSE	5
49			Maintain the professional norms during handling the models.			A	Role Play		Formative Assessment	



TOPIC: MUSCULAR SYSTEM										
50	Week-9	Terms Definition	Define the terms fascia, epimysium perimysium, endomysium, ten-dons, and aponeurosis.	C1			Interactive Lecture/SGD	2	MCQ's	5
51		Types of Muscles	Classify the main types of muscles.	C2						
52		Location	Discuss location and function of major muscles of neck, face, back, arms, and legs.	C2						
53		Practical	Demonstrate to label the major skeletal muscles in human models.		P4		Demo	3	OPSE	5
54			Follow the professional norms to label the models cautiously.			A	Role Play		Formative Assess-ment	
TOPIC: INTEGUMENTARY SYSTEM										
55	Week-10	Skin Layers	Describe the structure of the two main layers of skin including epider-mis and dermis.	C1			Interactive Lecture/SGD	2	MCQ's	5
56		Skin Derivatives	Discuss the structure & function of sweat gland, sebaceous gland, hairs and nails as skin derivatives.	C1						
57		Skin Functions	Discuss Protection, Thermoregulation, Sensation, Absorption and Excretion as skin main functions.	C1						
58		Practical	Locate the layers and Skin Structures in an Integumentary Model.		P1		Demo	3	OPSE	5
59			Follow the proper norms of keeping safe handling of the models.			A	Role Play		Formative Assess-ment	
TOPIC: CARDIOVASCULAR/CIRCULATORY SYSTEM										
60	Week-11	Heart Anatomy/Physiology	Describe the location, structure and functions of the heart and its great blood vessels.	C2			Interactive Lecture/SGD	2	MCQ's	5
61		Conduction System	Describe the structure and functional features of the conducting system of the heart.	C2						
62		Blood Circulation	Discuss the pulmonary, systematic, coronary and portal circulation.	C2						
63		Cardiac Cycle	Explain the principle events of a cardiac cycle.	C2						
64		Practical	Locate and describe the anatomical chambers and structures of heart.		P4		Demo	3	OPSE	5
65			Maintain the ethical integrity in handle the heart models and structure properly.			A	Role Play		Formative Assess-ment	

66	Week-12	Blood	Define blood and list its functions.	C1			Interactive Lecture/SGD	2	MCQ's	5
67		Composition	Describe composition, sites of production, and functions of cellular parts of blood/plasma.	C2						
68		Vessels Structure/Functions	Explain the structure and function of arteries, veins and capillaries.	C2						
69	Week-12	Practical	Draw the blood flow through different chambers and vessels of the heart.		P4		Demo	3	OPSE	5
70			Follow the professional norms to explain the blood flow through heart via heart			A	Role Play		Formative Assessment	
71	Week-13	Blood Groups	Enlist the types of blood groups.	C1			Interactive Lecture/SGD	2	MCQ's	2
72		ABO System	Explain the ABO system of blood grouping & Rh factor.	C2						
73		Importance	Discuss the importance of knowing the blood grouping.	C2						
74		Practical	Identify and interpret the blood group of a patient based on its antigen and antibodies.		P4		Demo	3	OPSE	5
75			Maintain the ethical norms during identification and interpretation of blood groups of a patient.			A	Role Play		Formative Assessment	

TOPIC: LYMPHATIC SYSTEM										
76	Week-14	Lymphatic System	Define lymph & the lymphatic system.	C1			Interactive Lecture/SGD	2	MCQ's	5
77		Lymphatic System Organs	Enlist the organs of lymphatic system.	C1						
78		General Functions	Discuss the general functions of the lymphatic system.	C2						
79		Lymph Vessels	Explain the lymph vessels & how lymph is returned to the blood vessels.	C2						
80		Lymph Nodes	Discuss structure and functions of lymph nodes, nodules, and spleen and thymus gland.	C2						
81		Lymph Composition	Interpret composition and formation of lymph in relation pathological conditions.	C4						
82		Practical	Locate and Name the organs of the lymphatic System.		P4		Demo	3	OPSE	5
83	Follow the professional norms while handling the models for describing the lymphatic system organs.				A	Role Play	Formative Assess- ment			
TOPIC: DIGESTIVE SYSTEM										
84	Week-15	Digestion	Define digestion and its related terms	C1			Interactive Lecture/SGD	2	MCQ's	5
85		Anatomy and Physiology	Describe the anatomy and physiology of digestive system in-cluding its organs	C2						
86		Accessory Organs	Discuss the role of accessory organs in digestion.	C2						
87		Practical	Demonstrate description of the organs of digestive system in abdominal cavity.		P2		Demo	3	OPSE	5
88			Name various organs of digestive system in a model with proper professional norms.			A	Role Play		Formative Assess- ment	

89	Week-16	Digestion Process	Explain digestion in mouth, stomach, small intestines & large intestines with chemical processes of enzymes	C2			Interactive Lecture/SGD	2	MCQ's	5
90		Absorption	Explain the absorption of various nutrients in the digestive system	C2						
91		Defecation	Discuss the process of defecation.	C2						
92		Practical	Locate and name the organs of digestive system from mouth to anus.		P4		Demo	3	OPSE	5
93			Maintain proper professional attributes in handling the digestive organs or the anatomical models.			A	Role Play		Formative Assessment	

NU-104 BIOCHEMISTRY 2(2-0)

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. Differentiate between the biochemical basis of proteins, carbohydrates, lipids, enzymes, hormones.
2. Explain the role of proteins, carbohydrates, lipids, enzymes, hormones in metabolism.
3. Relate basic knowledge of biochemistry for a better understanding of the physiological functions of the human body.
4. Interpret basic biochemical test reports in relation to the physiological function of the human body.

Skills Domain

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

1. Demonstrate and interpret science phenomenon in a pathology lab????
2. Demonstrate and interpret cell adaptation slides
3. Demonstrate/Interpret Effect of Suspending Red Blood Cell in Different Concentration of Salt Solution.

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-104 BIOCHEMISTRY 2(1.5-0.5)

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: INTRODUCTION TO BIOCHEMISTRY										
1	Week-1	Biochemistry	Define biochemistry	C1			Interactive Lecture/SGD	1.5	MCQ's	5
2		Basic Terms	Discuss the basic terms used in biochemistry.	C2						
3		Role of Biochemistry	Explain the role of biochemistry in medicine and nursing sciences.	C2						
4	Week-2	Structure and Function	Discuss the structure and function of cells and organelles.	C2			Interactive Lecture/SGD	1.5	MCQ's	5
5		Biochemical Processes	Understand the chemical and biochemical processes at molecular level associated with living cells.	C2						
6		Biochemistry Knowledge	Relate basic knowledge of biochemistry for better understanding of physiological functions of human body	C3						
7		Practical	Demonstrate the safe handling of chemical and equipments in biochemistry lab.		P4		Demo	3	Formative Assess-ment	5
8			Follow the professional standards of handling of chemical and equipments in lab.			A	Role Play			
TOPIC: BASIC CONCEPTS OF ORGANIC CHEMISTRY										
9	Week-3	Basic Concepts Review	Review concepts of matter, element, mixture, compound, reaction, equation, bonding, acid and base.	C1			Interactive Lecture/SGD	1.5	MCQ's	5
10		Organic Compounds	Recognize the role and importance of organic compounds in understanding the subject of biochemistry.	C2						
11		Organic and Inorganic	Compare properties of organic and inorganic compounds.	C4						
12	Week-4	Classification	Describe the classification of organic compounds.	C1			Interactive Lecture/SGD	1.5	MCQ's	5
13		Saturated/Unsaturated	Differentiate the type of saturated and unsaturated hydro-carbons.	C4						
14		Molecular Composition	Describe the molecular composition of carbohydrates, fats, proteins and nucleic acid.	C1						
15		Practical	Assess the chemical properties of organic compounds in lab.		P3		Demo	3	Formative Assess-ment	5
16			Follow professional norms to assess chemical properties of organic compounds in lab.			A	Role Play			

TOPIC: METABOLISM										
17	Week-5	Metabolism	Define metabolism, anabolism and catabolism.	C1			Interactive Lecture/SGD	1.5	MCQ's	5
18		Role and Pathway	Understand the role and pathway of metabolism.	C2						
19		Bioenergetics	Discuss bioenergetics and the basic concept of free energy.	C2						
20		Role of ATP	Explain the role of ATP in Linking Catabolism and anabolism.	C2						
21		Biological Reaction	Discuss the biological oxidation, reduction reaction and oxidative phosphorylation.	C2						
22	Week-6	Catabolism/Anabolism	Discuss Adenosine Triphosphalic relationship with catabolism and anabolism.	C2			Interactive Lecture/SGD	1.5	MCQ's	5
23		Glycolysis/Krebs/ETC	Briefly discuss the role of Glycolysis, Krebs Cycle, Electron Transport chain in metabolism.	C2						
24		Proteins/Carbs/Lipids/Hor.	Explain the role of proteins, carbohydrates, lipids, enzymes, hormones in metabolism.	C2						
25		Basic Concepts/Processes	Discuss the basic concepts and processes of carbohydrate, protein and fats metabolism.	C2						
26			Practical	Calculate the BMR (Basal Metabolic Rate) of a patient.		P4		Demo	3	Formative Assessment
27		Provide acceptable assistance and explanation to patient during the calculation of BMR.				A	Role Play			
TOPIC: CARBOHYDRATES										
28	Week-7	Carbohydrates	Define carbohydrates.	C1			Interactive Lecture/SGD	1.5	MCQ's	5
29		Carbohydrates Properties	Discuss properties of carbohydrates.	C2						
30		Structure & Classification	Describe the general structure and classification of carbohydrates.	C1						
31		Classes of Carbohydrates	Compare three classes of carbohydrates; monosaccharide, disaccharide & polysaccharide	C4						
32		Biological Significance	Discuss the biological significance of carbohydrates	C2						

33	Week-8	Importance of Glucose	Describe the importance of glucose in blood.	C1			Interactive Lecture/SGD	1.5	MCQ's	5
34		Gluconeogenesis	Discuss the gluconeogenesis, glycogenesis and glycogenolysis.	C2						
35		Glucose Catabolism	Describe the role of oxidative glucose catabolism in the citric acid cycle.	C1						
36		Ketosis and Ketogenesis	Describe the ketosis and Ketogenesis.	C1						
37		Carbohydrate Metabolism	Discuss the overall scheme of carbohydrate metabolism	C2						
38		Practical	Perform Benedict's Test for checking the presence of reducing the sugar levels in a given sample.		P4		Demo	3	Formative Assess-ment	5
39			Follow professional norms while performing the Benedict's Test for checking and reducing the sugars.			A	Role Play			
TOPIC: LIPIDS										
40	Week-9	Lipids and Fatty Acids	Describes the structure and general properties of lipids and fatty acids.	C1			Interactive Lecture/SGD	1.5	MCQ's	5
41		Classification of Lipids	Discuss the classification of lipids that is simple, compound & derived lipids.	C2						
42		Saturated/Unsaturated Fats	Distinguish between saturated and unsaturated fats.	C4						
43		Fatty Acids, Fats and Oil	Distinguish between fatty acids, fats and oil.	C4						
44		Role of Phospholipids	Discuss the role of phospholipids in cell membranes.	C2						
45	Week-10	Role of Steroids	Explain the role of steroids and cholesterol.	C2			Interactive Lecture/SGD	1.5	MCQ's	5
46		Fatty Acid Oxidation	Describe the mechanism of fatty acid oxidation.	C1						
47		Fat Oxidation and Energy	Discuss the amount of energy produced during the oxidation of a fat.	C2						
48		Role of Ketones Bodies	Explain the significance of the role of ketones bodies.	C2						
49		Practical	Perform the Emulsion Test in Lab.		P4		Demo	3	Formative Assess-ment	5
50			Maintain the required professional standards when performing the Emulsion Test in Lab.			A	Role Play			

TOPIC: PROTEINS										
51	Week-11	Amino Acids	Discuss the general structure of amino acids and protein.	C2			Interactive Lecture/SGD	1.5	MCQ's	5
52		Essential/Non-Essential	Discuss essential and non-essential amino acid.	C2						
53		Proteins Classification	Classify proteins according to solubility, composition, function and shape.	C2						
54		Protein Denaturation	Explain the significance of protein Denaturation.	C2						
55		Terms Definition	Define the term nucleic acid, nucleotide, trans and de-amination.	C1						
56		Features of Nucleotide	Describe the main structural features of nucleotide.	C1						
57	Week-12	RNA & DNA Differences	Explain the structure and main differences of RNA & DNA.	C2			Interactive Lecture/SGD	1.5	MCQ's	5
58		Nucleotides	Discuss the biological importance of nucleotides.	C2						
59		Absorption of Protein	Review the digestion and absorption of protein.	C2						
60		Nitrogen Balance	Explain the significance of nitrogen balance.	C2						
61		Protein Synthesis	Describe the synthesis of protein.	C1						
62		Transamina-tion/deamina-tion	Differentiate the transamination, deamination and decarboxylation.	C4						
63		Urea/Ammonia Disposal	Discuss the formation of urea and ammonia disposal.	C2						
64		Practical	Perform the Ninhydrin Test for the presence of amino acid, amine and protein groups.		P4		Demo	3	Formative Assess-ment	5
65			Follow the professional and ethical norms while performing Ninhydrin Test.			A	Role Play			
TOPIC: ENZYMOLOGY										
66	Week-13	Enzymes/Apo/Co En-zyme	Distinguish between enzymes, apoenzymes, coenzymes & co factors	C4			Interactive Lecture/SGD	1.5	MCQ's	5
67		Importance of Enzymes	Discuss the properties and importance of enzymes.	C2						
68		Enzyme Action	Explain the mode or mechanism of an enzyme action.	C2						
69		Activators and Inhibitors	Distinguish between activators and inhibitors.	C4						
70		Inhibition of Enzyme	Understand inhibition of enzyme activity in competitive, non & un competitive states.	C2						

71	Week-14	Classification of En-zymes	Describe with the classification of enzymes.	C2			Interactive Lecture/SGD	1.5	MCQ's	5
72		Factors Affecting En-zyme	Explain the factors affecting the enzyme activity.	C2						
73		Application of Enzymes	Discuss the role and application of enzymes understanding in clinical medicines.	C2						
74		Michalis Menten's Equation	Explain Michalis Menten's Equation	C2						
75		Practical	Interpret basic biochemical test reports in relation to the physiological function of the human body.		P4		Demo	3	Formative Assessment	5
76			Follow the professional norms when having interpretation of different biochemical test reports.			A	Role Play			
TOPIC: HORMONES COMMUNICATION CELLS/TISSUE										
77	Week-15	Hormone	Define Hormone.	C1			Interactive Lecture/SGD	1.5	MCQ's	5
78		Communication Chan-nel	Discuss the hormones as communication channel among cells and tissues.	C2						
79		Classification of Hor-mone	Describes the classification of hormone (Steroid Hormone, Amino Hormone and Peptide Hormone).	C1						
80	Week-16	Steroid Mode of Ac-tion	Discuss the mode of action of steroid & peptides hormones.	C2			Interactive Lecture/SGD	1.5	MCQ's	5
81		Hormones Interpreta-tion	Interpret to become familiar with cardiac, pineal and gastrointestinal hormones.	C4						
82		Biochemical Basis	Differentiate between the biochemical basis of proteins, carbohydrates, lipids, enzymes, and hormone.	C2						
83		Practical	Perform to calculate the total body density of the cell.		P4		Demo	3	Formative Assessment	5
84			Follow the professional norms while calculating the total body density of the cell.			A	Role Play			

NU-105 ENGLISH –FUNCTIONAL ENGLISH 3(3-0)

This course has been designed to enhance students' aptitude in English and enable them to the practical skills in oral communication reading, writing, listening, and speaking in their academic and professional settings. The course also intends to improve the grammar and vocabulary of the students in order to have better utilization in their communication skills and professional writings.

Cognitive Domain

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

1. **Discuss the Oral Communication and its type.**
2. **Explain the Oral Presentations requirements.**
3. **Understand the Vocabulary used in nursing professional writing.**
4. **Understand the basic concepts of Grammar.**
5. **Discuss the Reading Comprehension and process involved.**
6. **Explain the essentials of Report Writing.**

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-105 ENGLISH –FUNCTIONAL ENGLISH 3(3-0)

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: ORAL COMMUNICATION										
1	Week-1	Greetings	Understand an effective approach of greeting.	C2			Interactive Lecture/SGD	3	MCQ's	5
2		Start and Finish Conversa- tion	Discuss how to start and finish a conversation.	C2						
3		Telephonic Conversation	Engage in a telephonic conversation.	C3						
4		Compliments Words	Choose proper wording for complements.	C3						
5	Week-2	Congratulation and Sympa- thy	Extend congratulation and sympathy.	C2			Interactive Lecture/SGD	3	MCQ's	5
6		Feelings Expression	Express the feelings.	C2						
7		Information or Explanation	Analyze and ask for an information or explanation.	C4						
8	Week-3	Opinions and Ideas	Express opinions and ideas.	C2			Interactive Lecture/SGD	3	MCQ's	5
9		Suggestion, Advise, Per- suade	Understand to give suggestion, advise, persuade and insist etc.	C2						
10			Listen teacher attentively when learn that how to give suggestion, and advise.	C2						
11		Listening for Suggestions	Listen teacher attentively when learn that how to give suggestion, and advise.			A	Role Play		Formative Assess- ment	
TOPIC: ORAL PRESENTATIONS										
12	Week-4	Elements Good Presenta- tion	Identify elements of a good presentation.	C1			Interactive Lecture/SGD	3	MCQ's	5
13		Topics of Common Interest	Select topics of common interest and share useful information.	C2						
14	Week-5	Presentation Preparation	Prepare a good presentation using variety of strategies/ modes to convey ideas.			A	Role Play	3	Formative Assess- ment	5
15		Professional Norms	Follow the standard and professional norms to have a good presenta-tion.			A				
16			Handling Questions	Express thoughts while handling questions directed from the audience.	C2				Interactive Lecture/SGD	

17	Week-6	Thought-Provoking Discussions	Extend thought-provoking discussions.	C2			Interactive Lecture/SGD	3	MCQ's	5
18		Key Points Conclusion	Conclude and wrap up convincingly, restating the key points.	C5						
TOPIC: VOCABULARY										
19	Week-7	Dictionary Use	Learn the use the dictionary.	C1			Interactive Lecture/SGD	3	MCQ's	5
20		Parts of Speech	Identify various parts of speech.	C1						
21		Root Words	Discuss how to enhance the knowledge of root words.	C2						
22	Week-8	Common Suffixes and Prefixes	Understand the common suffixes and prefixes used in medical terminology.	C2			Interactive Lecture/SGD	3	MCQ's	5
23		Idiomatic Phrases	Discuss uses of idiomatic phrases used to describe physical ailments.	C2						
24		Idioms and Phrasal Verbs	Discuss how to extend the knowledge of idioms and phrasal verbs in general.	C2						
TOPIC: GRAMMAR										
25	Week-9	Appropriate Sentences/ Tenses	Use sentences and paragraphs using appropriate form of present and past tense	C3			Interactive Lecture/SGD	3	MCQ's	5
26		Tenses Differentiation	Differentiate between present perfect and past simple tenses.	C4						
27		Subject Verb Agreement	Understand the subject verb agreement in sentences.	C2						
28	Week-10	Correct Word Order	Write sentences using the correct word order.	C3			Interactive Lecture/SGD	3	MCQ's	5
29		Active and Passive Voice	Convert active sentences into passive and vice versa.	C3						
30		Direct and Indirect Speech	Explain that how to change direct speech into indirect speech and vice versa.	C2						
31	Week-11	Definite and Indefinite Articles	Use the definite and indefinite articles correctly.	C3			Interactive Lecture/SGD	3	MCQ's	5
32		Correct Prepositions	Insert correct prepositions of time and place in sentences.	C4						



TOPIC: READING COMPREHENSION										
37	Week-12	Content Prediction	Predict content of text through titles, subtitles, non-linguistic devices.	C3			Interactive Lecture/SGD	3	MCQ's	5
38		Skimming Main Ideas	Interpret the main idea through skimming.	C4						
40	Week-13	Specific Points through Scanning	Explain how to locate specific points of information through scanning.	C3			Interactive Lecture/SGD	3	MCQ's	5
41		Skill of Inferring	Develop the skill of inferring meaning of a word by considering its context.	C3						
42		Cohesive Devices	Recognize cohesive devices.	C1						
43	Week-14	Literal Comprehension Questions	Discuss questions of literal comprehension.	C2			Interactive Lecture/SGD	3	MCQ's	5
44		Re-Interpretation and Inference	Explain questions involving re-interpretation and inference.	C2						
45		Personal Response Questions	Explain questions of personal response.	C2						
TOPIC: REPORT WRITING										
46	Week-15	Biographical Information	Enlist biographical information of the field.	C1			Interactive Lecture/SGD	3	MCQ's	5
47		Critical Observations	Illustrate observations critically.	C4						
48	Week-16	Purpose and Function Of Visit	Establish purpose and function of the visit.	C5			Interactive Lecture/SGD	3	MCQ's	5
49		Report Writing	Write a legible report with ideas following logically from one point to another.	C3						
50		application	Exhibit to convince and persuade the recipient of an application	C3						



NU-106 INFORMATION AND COMMUNICATION TECHNOLOGY 2(2-0)

The purpose of this course is to prepare the learners towards the basic understanding of information technology and computer skills. The learners will be able to reflect the use of information technology in the modern world. Learners will learn how to use the software and programs which include Word, Excel, Access, PowerPoint, Outlook, Internet Surfing, and computer based nursing related programs and software's. The course is further 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 in shaping today's health care information system.

Cognitive Domain

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

1. Discuss the role and importance of Information and technology in academia.
2. Discuss computer skills, application and how it affects nursing practice, and education.
3. Demonstrate skills in the use of a word processor (Microsoft Word), spreadsheet/data base (Microsoft Excel).
4. Demonstrate skills in preparing materials for presentation by slide, overhead, or computer projection (multimedia) using presentation software (PowerPoint)
5. Demonstrate skills in accessing national/international networks, engines and databases using a virtual private network.
6. Verbalize understanding of Internet and its use, value, and efficacy in communicating nursing knowledge.
7. Identify the use of computers in our own area of nursing practice.
8. Illustrate the effective use of computer and its software's in nursing where necessary
9. Incorporate cognitive, interpersonal and technical skill derived from the humanities, natural and behavioral sciences when administering medi-

cation to clients, keeping in mind principles of different drugs.

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-106 INFORMATION AND COMMUNICATION TECHNOLOGY 2(2-0)

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: INTRODUCTION TO INFORMATION & COMMUNICATION TECHNOLOGY										
1	Week-1	ICT Definition	Define Information and communication technology.	C1			Interactive Lecture/SGD	2	MCQ's	5
2		Importance of ICT	Discuss importance of using information and communication tech-nology in academics.	C2						
3		Computer Skills	Explain the role of computer skills in nursing education.	C2						
4	Week-2	Computer and Related Terms	Discuss computer and its related terms.	C2			Interactive Lecture/SGD	2	MCQ's	5
5		Data	Discuss data and its types.	C1						
6		Data Types	Explain numerical, alphabetic, and alpha numeric data.	C2						
7		Components of CBIS	Describe the components of computer based information systems.	C1						
TOPIC: DATA AND INFORMATION										
8	Week-3	Information	Define information.	C1			Interactive Lecture/SGD	2	MCQ's	5
9		Data and Information	Distinguish between data and information.	C4						
10		Data Processing	Explain data processing.	C2						
11		Search Engine	Define search engine.	C1						
12		Online Resources	Use online resources and databases for searching information.	C3						
13		Online Information Means	Discuss the means of online information communication.	C2						

TOPIC: BASIC UNITS OF COMPUTER										
14	Week-4	prevent/treat infections	Define the commonly used antibiotics drug categories that is used to prevent /treat infections	C1			Interactive Lecture/SGD	2	MCQ's	5
15		action and effects	Briefly discuss action and effects of different commonly used antibiotics drugs	C2						
16		antibiotics	Enlist some of the most commonly used antibiotics of each category	C1						
17		nursing measures/patient education	Discuss the nursing measures/patient education which can be taken if patient is using to treat and prevent infections with the use of antibiotics	C2						
TOPIC: LANGUAGE & NUMBER SYSTEM										
18	Week-5	Input/Output/Memory	Distinguish among input, output unit and memory.	C4			Interactive Lecture/SGD	2	MCQ's	5
19		ALU	Explain arithmetic logic unit – ALU	C2						
20		Control Unit	Discuss control unit.	C2						
21		Network Components	Discuss components of a computer network (Devices, Links, Protocol, and Defense).	C2						
TOPIC: SYSTEM APPLICATION/ SOFTWARE										
22	Week-6	Softwares	Discuss software and its types including operating system & translators.	C2			Interactive Lecture/SGD	2	MCQ's	5
23		Application	Employ the application software i.e. general and specific purpose softwares.	C3						
24		Common Softwares	Enlist the commonly used softwares.	C1						
TOPIC: INTERNET AND SECURITY										
25	Week-7	Computer Virus	Explain computer virus and its types.	C2			Interactive Lecture/SGD	2	MCQ's	5
26		Antivirus Installation	Demonstrate step by step antivirus installation and up gradation.	C3						
27		Computer Networking	Define computer network and its types.	C1						
28		Internet and Email	Demonstrate to use internet and email applications.	C3						
29		Search Engines	Demonstrate how to use search engines for data searching and retrieval.	C3						
30		Online Databases	Use the online databases for searching information, articles and published studies	C3						

TOPIC: MS WORD										
31	Week-8	MS Word	Define MS word and its interface.	C1			Interactive Lecture/SGD	2	MCQ's	5
32		Ribbon Types	Discuss ribbon and its parts.	C2						
33		Button/Save/Save As/Quick Access	Use office button, save, save as and quick access toolbar.	C3						
34		Home Tab/Group/Commands	Describe home tab, its groups and commands.	C2						
35		Cut/Copy/Paste/Bold/Italics/Font	Use to cut, copy, paste, bold, italic, font type and size the text.	C3						
36	Week-9	Text Highlighting/Colors/Formatting	Understand text highlighting, text color and text formatting.	C2			Interactive Lecture/SGD	2	MCQ's	5
37		Text Alignment/Bullets/Shading	Discuss text alignment, bullets, and borders, shading and sort-ing.	C2						
38		Tab Insertion	Understand inserting tab, its groups and commands.	C2						
39		Page Formatting/Numbers	Make cover page, blank page, page break, and page numbers.	C3						
40		Tables/Arts/Clips/Headers/Footers	Prepare tables, pictures, clip arts, shapes, headers & footers, smart art charts.	C3						
41	Week-10	Text Box/Art/Symbols	Construct text box, word art, drop cap and symbols.	C3			Interactive Lecture/SGD	2	MCQ's	5
42		Page Layout	Explain page layout tab its groups and commands.	C2						
43		Themes/Colors/Effects/Columns	Construct theme, colors, fonts, effects margins, and columns.	C3						
44		Water Mark/Boarder/Colors	Put water mark, page color and page borders on a document.	C3						
TOPIC: MS POWER POINT										
46	Week-11	MS PowerPoint	Discuss MS Power Point and its Interface.	C2			Interactive Lecture/SGD	2	MCQ's	5
47		PowerPoint Presentation	Prepare MS PowerPoint with acceptable standards.	C3						
48		Home Tab	Describe home tab, its groups and commands.	C2						
49		New/Reset/Delete Slide	Learn to prepare new slide, reset and delete slide.	C1						

50	Week-12	Tables/Charts/Pictures/Arts	Prepare tables, pictures, clip arts, shapes, smart art & charts in PowerPoint presentation	C3			Interactive Lecture/SGD	2	MCQ's	5
51		Box/Headers/Footers/Movie/Sounds	Insert text box, header, footer, word art, movie and sound.	C3						
52		Tabs and Commands	Discuss tab its groups and command in PowerPoint presentation.	C2						
53		Slide Orientation	Insert page setup, slide orientations and themes in PowerPoint presentation.	C3						
54	Week-13	Background Styles/Graphics	Prepare background styles and hide background graphics.	C3			Interactive Lecture/SGD	2	MCQ's	5
55		Animation Tabs	Insert animation tab its groups and commands.	C3						
56		Animation and Transition	Discuss custom animations and transitions.	C2						
57		Transition Sound and Speed	Put transition's sound and speed in PowerPoint presentation.	C3						
58	Week-14	Slide Show Tab	Demonstrate slide show tab its groups and commands.	C3			Interactive Lecture/SGD	2	MCQ's	5
59		Slide Show	Learn the slide show from beginning, from current slide and custom show.	C1						
60		Slide Show Setup	Understand the setup of slide show and hide slides.	C2						
61		Techniques	Understand the techniques to manage the slide show.	C2						
TOPIC: MS EXCEL										
62	Week-15	Cell/Rows/Columns	Define cell, rows, columns and sheets.	C1			Interactive Lecture/SGD	2	MCQ's	5
63		Formula	Explain formula and putting values in excel sheet.	C2						
64		Cell Merging and Formatting	Learn to merge cells, conditional formatting, and format tables.	C1						
65	Week-16	Cell Styles/Filter/Find/Select	Discuss cell styles, sort and filter, find and select.	C2			Interactive Lecture/SGD	2	MCQ's	5
66		Automatic Series Generation	Understand automatic series generation, automatic calculations.	C2						
67		DMCs/Merit List	Discuss how to create DMCs and merit lists.	C2						

NU-107 IDEOLOGY AND CONSTITUTION OF PAKISTAN 2(2-0)

This course has been designed to enable the students to learn about the historical and ideological perspectives of Pakistan. The course is also intended to put light on the government, politics, ideological background and constitutional phases of the country. Furthermore; the learners would be able to understand the process of governance, national development, issues arising in the modern age and posing challenges to Pakistan.

Cognitive Domain

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

1. **To develop vision of historical perspective, government, politics, and ideological background of Pakistan.**
2. **To study the process of governance, national development, issues arising in the modern age and posing challenges to Pakistan.**

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-2? IDEOLOGY AND CONSTITUTION OF PAKISTAN 2(2-0)

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: HISTORICAL AND IDEOLOGICAL PERSPECTIVES OF PAKISTAN										
1	Week-1	History and Ideology	Discuss the historical and ideological rationales with the special reference to Sir Syed Ahmed Khan.	C2			Interactive Lecture/SGD	2	MCQ's	5
2			Discuss the historical and ideological rationales with the special reference to Allama Muhammad Iqbal.	C2						
3			Discuss the historical and ideological rationales with reference to Quaid-e-Azam Muhammad Ali Jin-nah.	C2						
4	Week-2	Muslims Separation	Determine the factors leading to Muslim separatism.	C4			Interactive Lecture/SGD	2	MCQ's	5
5	Week-3	People	Discuss about the people of the Indus Civilization and Muslim advent.	C2			Interactive Lecture/SGD	2	MCQ's	5
6		Land	Discuss about the land of the Indus Civilization and Muslim advent.	C2						
7	Week-4	Location/Geo-Physical Features	Explain about the location and geo-physical features of Indus and Muslim civilizations.	C2			Interactive Lecture/SGD	2	MCQ's	5
TOPIC: GOVERNMENT, POLITICAL SYSTEM AND CONSTITUTION IN PAKISTAN										
8	Week-5	Government & Political System	Discuss the political and constitutional phase of Pakistan from 1947 to 1958.	C2			Interactive Lecture/SGD	2	MCQ's	5
9	Week-6	Political & Constitutional Phases	Understand the political and constitutional phase of Pakistan from 1958 to 1971.	C2			Interactive Lecture/SGD	2	MCQ's	5
10	Week-7		Discuss the political and constitutional phase of Pakistan from 1971 to 1977.	C2			Interactive Lecture/SGD	2	MCQ's	5
11	Week-8		Analyze the political and constitutional phase of Pakistan from 1977 to 1988.	C2			Interactive Lecture/SGD	2	MCQ's	5
12	Week-9		Evaluate the political and constitutional phase of Pakistan from 1988 to 1999.	C4			Interactive Lecture/SGD	2	MCQ's	5
13	Week-10		Conclude the political and constitutional phase of Pakistan from 1999 onward.	C5			Interactive Lecture/SGD	2	MCQ's	5



TOPIC: CONTEMPORARY PAKISTAN										
14	Week-11	Economic Status	Explain the economy and economic status of Pakistan.	C2			Interactive Lecture/SGD	2	MCQ's	5
15		Institutions	Discuss the hierarchy and role of key institutions in Pakistan.	C2						
16		Issues	Explain the key issues currently faced by Pakistan.	C2						
17	Week-12	Society and Societal Structure	Discuss the society and social structure in Pakistan.	C2			Interactive Lecture/SGD	2	MCQ's	5
18	Week-13	Ethnicity	Discuss about ethnicity and its importance in the social structure of Pakistan.	C2			Interactive Lecture/SGD	2	MCQ's	5
19	Week-14	Foreign Policy	Discuss about the foreign policy of Pakistan.	C2			Interactive Lecture/SGD	2	MCQ's	5
20	Week-15	Challenges	Explain the challenges in relation to the foreign policy of Pakistan.	C2			Interactive Lecture/SGD	2	MCQ's	5
21	Week-16	Futuristic Outlook	Relate the futuristic outlook of Pakistan.	C3			Interactive Lecture/SGD	2	MCQ's	5

Recommended Text Books**NU-101 FUNDAMENTALS OF NURSING-I 3(2-1)**

- Carpinito L. J. (1998). Nursing Care Plans & Documentation: Nursing Diagnosis And Collaborative Problem (3rd Ed.) Philadelphia: Lippincott
- Craven, R. F., & Hirnle, C. J. (2000). Fundamentals of Nursing: Human Health and Function. (3rd Ed.). New York: Lippincott.
- Delaune, S. C., & Ladner, P. K. (2002). Fundamentals of Nursing: Standards and Practice. (2nd Ed.) Canada: Delmar.
- Erb, G. K., B. (2000). Fundamentals of Nursing: Concepts, Process and Practice (5th Ed.) Addison: Wesley.
- Potter, P. A & Perry, A. G. (2003). Basic Nursing: Essentials for Practice (5th Ed.) St. Louis: Mosby.

NU-102 MICROBIOLOGY 2(1.5-0.5)

- 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. (1997). Clinical Microbiology made ridiculously simple. 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. (1996). Microbiology and Infection. New York: Churchill Livingstone.
- Jawetz, R. (1992). Medical Microbiology. London: Appleton and Lange.
- Parker, M. J. (1978). Microbiology for Nurses. London: Bailliere Tindall.
- Stucke, A. V. (1993). Microbiology for Nurses. London: Bailliere Tindall

NU-103 ANATOMY & PHYSIOLOGY-I 3(2-1)

- Ross & Wilson. (2000) Anatomy and Physiology in Health & Illness; Edinburgh: Churchill, 8th Edition
- Guyton, A. C. (2001). Medical Physiology (10th Ed) Washington: Kirokawa.
- Tortora, G. J. (2000). Principles of Human Anatomy and Physiology (3rd Ed). New York: Happer & Row.

NU-104 BIOCHEMISTRY 2(2-0)

- Jacob A. (2004). Biochemistry for Nurses, 2nd Ed. New-Delhi: Jaypee Brothers.
- Chatterjea MN. (2004) Textbook of Biochemistry for Dental /Nursing / Pharmacy Students 2nd Ed, New Delhi Jaypee.
- Sackhiem, G. I. (1994). In Chemistry for the Health Science, 7th Ed, New York: Macmillan.
- Tortora, F. J., & Anagnostakos, N.P. (2000). Principles of Anatomy & Physiology, New York: Harper & Row.
- Lehninger N. I (1997) Principles of Biochemistry, 2nd Ed, New York: Worth.

NU-105 ENGLISH –FUNCTIONAL ENGLISH 3(0-0)

- 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.

NU-106 INFORMATION AND COMMUNICATION TECHNOLOGY 2(2-0)

- 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.



NU-107 IDEOLOGY AND CONSTITUTION OF PAKISTAN 2(2-0)

- Burki, Shahid Javed. State & Society in Pakistan, The Macmillan Press Ltd 1980.
- Akbar, S. Zaidi. Issue in Pakistan's Economy. Karachi: Oxford University Press, 2000.
- S. M. Burke and Lawrence Ziring. Pakistan's Foreign policy: An Historical analysis. Karachi: Oxford University Press, 1993. 4. Mehmood, Safdar. Pakistan Political Roots & Development. Lahore, 1994.
- Wilcox, Wayne. The Emergence of Bangladesh., Washington: American Enterprise, Institute of Public Policy Research, 1972.
- Mehmood, Safdar. Pakistan Kayyun Toota, Lahore: Idara-e-Saqafate-Islamia, Club Road.
- Amin, Tahir. Ethno - National Movement in Pakistan, Islamabad:
- Institute of Policy Studies, Islamabad.
- Ziring, Lawrence. Enigma of Political Development. Kent England: WmDawson & sons Ltd, 1980.
- Zahid, Ansar. History & Culture of Sindh. Karachi: Royal Book Company, 1980.
- Afzal, M Rafique. Political Parties in Pakistan, Vol. I, II & III. Islamabad: National Institute of Historical and cultural Research, 1998.
- Sayeed, Khalid Bin. The Political System of Pakistan. Boston: Houghton Mifflin, 1967.
- Aziz, KK Party, Politics in Pakistan, Islamabad: National Commission on Historical and Cultural Research, 1976.
- Muhammad Waseem, Pakistan under Martial Law, Lahore: Vanguard, 1987.
- Haq, Noor ul. Making of Pakistan: The Military Perspective. Islamabad: National Commission on Historical and Cultural Research, 1993.







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