



KHYBER MEDICAL UNIVERSITY

PROTHETICS & ORTHOTICS CURRICULUM

YEAR ONE STUDY GUIDE

(SEMESTER 2)

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

Prosthetists provide artificial limbs and gait analysis to people who have part or all of a limb missing. Orthotists provide braces and splints to support, correct, or aid the function of people with various conditions of the neuro, muscular and skeletal systems. On this program you will learn how to assess and treat people requiring prosthetic and orthotic care. The strong practical elements of this program will be taught in conjunction with relevant theory and background information.

OBJECTIVES

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

1. **To possess the necessary entry level clinical and technical skills to practice as P&O according to national and international approved standards.**
2. **To apply theory with practice and think creatively to adopt or shape new practice environment.**
3. **To successfully integrate the knowledge and skills gained in clinical practice, investigate, diagnose and formulate treatment plan for common disease, deformities and amputations.**
4. **To possess knowledge and understanding of techniques related to the material, design, planning and improvements of services and manufacturing operations.**
5. **To effectively communicate with patients, supervisors, support personnel and other health care professionals, using verbal, non-verbal and written communication skills.**
6. **To exhibit high standard of professionalism and demonstrate an awareness of potential conflicts of interest.**
7. **To possess the necessary professional behavior to practice as P&O in communities they serve.**
8. **To apply the basics of medical ethics and research methodology and various steps involved in the health care research.**
9. **To assess normal and pathological gait using 2D and 3D instrumentation, critically reflect on the results and objectively measure the outcome of intervention.**
10. **Serve as responsible member of the community and are willing and able to assume leadership roles in the community they serve.**
11. **Participate in and provide education for communities, patients, peers, students and other.**
12. **To apply technologies for improving the quality of life of PWD in community.**
13. **To apply clinical and technological skills for providing health and rehabilitation services to the community.**
14. **To apply legal and ethical principles governing the P&O –patient relationship to interactions with patients and their families.**



SECOND SEMESTER SUBJECTS

S.No	Subjects	Duration
1	BPO-614 MATERIAL SCIENCE 2(2-0)	16 weeks
2	BPO-615 PATHOLOGY-I 3(3-0)	16 weeks
3	BPO-617 ANATOMY-II 3(2-1)	16 weeks
4	BPO-620 APPLIED PROTHETICS & ORTHOTICS-II 4(1-3)	16 weeks
5	RSC-614 ENGLISH-II 3(3-0)	16 weeks
6	RSC-615 ISLAMIC STUDIES/ ETHICS 2(2-0)	16 weeks



2nd Semester

BPO-614 MATERIAL SCIENCE 2(2-0)

Course Description

When designing a suitable device for a patient, it is essential for the prosthetist-orthotist to have a good background knowledge of the properties and limitations of the materials at his disposal. The Material Science course examines the materials commonly available in the P&O workshop from their chemical composition to how this affects their characteristics and, therefore, the uses available and design considerations to take into account.

Cognitive Domain

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

1. **Explain the important properties of various types of materials: metals, ceramics, polymers and composites.**
2. **Describe the relationships that exist between the structural elements of these materials and their characteristics.**
3. **Explain mechanical failure behavior of these materials, along with techniques used to improve the mechanical and failure properties in terms of alteration of structural elements.**
4. **Describe the basis for selection of materials for specific prosthetic and orthotic applications.**
5. **Discuss knowledge of toxicity and safety issues associated with the use of specific materials.**

Affective Domain

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

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

TOS -BPO-614 MATERIAL SCIENCE 2(2-0)

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: PROPERTIES OF MATERIALS										
1	Week-1	Properties	Explain the mechanism of Ductility in P&O materials	C2			Interactive Lecture/SGD	2	MCQ's	5
2			Explain the mechanism of malleability in P&O materials	C2						
3			Describe hardness of material and its uses	C2						
4	Week-2	Process	Discuss the utilization of heat/electrical conductivity in molding process	C2			Interactive Lecture/SGD	2	MCQ's	5
5			illustrate resistant materials to corrosion and weight	C2						
6			The properties of various materials commonly used in P&O	C2						
7	Week-3	Polymers	Differentiate different Metals and their application	C3			Interactive Lecture/SGD	2	MCQ's	5
8			Define polymers	C1						
9			Outline types of different polymers	C1						
10	Week-4	Polymers	Different the polymerization process for different polymers	C4			Interactive Lecture/SGD	2	MCQ's	5
11			Define Polyurethane polymer	C1						
12			Explain differnt types of Polyurethane polymer	C2						
13	Week-5	Polymers	Define polyethylene polymer	C1			Interactive Lecture/SGD	2	MCQ's	5
14			Discuss polyethylene polymer utilization	C2						
15			Define polypropylene	C1						
16			Explain differnt types of polypropylene	C2						
17	Week-6	Chemicals	Discuss utilization polypropylene	C2			Interactive Lecture/SGD	2	MCQ's	5
18			Define Ethyl Vinyl acetate	C1						
19			Determine different types Ethyl Vinyl acetate	C4						
20	Week-7	Chemical	Discuss utilization of Ethyl Vinyl acetate	C2			Interactive Lecture/SGD	2	MCQ's	5
21		wood, Rubber , Foam	Define Composites	C1						
22			Explain Composites types	C2						
23			Discuss uses of composite types	C2						
TOPIC: CHEMICAL STRUCTURE OF MATERIALS										
24	Week-8	Metals	Define Ferrous metals	C1			Interactive Lecture/SGD	2	MCQ's	5
25			Define Non-Ferrous metals	C1						
26			Explain alloys of Ferrous and non-ferrous metals	C2						

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
27	Week-9	Materials	Discuss production processes and their effect on material structure	C2			Interactive Lecture/SGD	2	MCQ's	5
28			Discuss Ceramics and composites	C2						
29			Explain thermoplastics and their chemical reaction	C2						
30	Week-10	Process	Explain thermosetting plastics and their chemical reaction	C2			Interactive Lecture/SGD	2	MCQ's	5
31			Discuss Production processes and their effect on the mechanical properties of materials	C2						
32			Explain the process of forging	C2						
33	Week-11	Process	Explain the process of Casting	C2			Interactive Lecture/SGD	2	MCQ's	5
34			Discuss the Extrusion	C2						
35			Discuss the Rolling process	C2						
36			Differentiate between drawing and casting	C4						
37			Explain sintering process	C2						
TOPIC: MECHANICAL FAILURE										
38	Week-12	Mechanical	Explain types of brittle fracture	C2			Interactive Lecture/SGD	2	MCQ's	5
39			Discuss ductile fatigue	C2						
40			Explain differnt types of shear forece	C2						
41	Week-13	Phenomena	Explain the phenomena corrosion	C2			Interactive Lecture/SGD	2	MCQ's	5
42			Discuss patterns to Improving mechanical properties	C2						
43			Formulate Heat treatment	C4						
44	Week-14	Alloys	Explain different types of Alloys and their application	C2			Interactive Lecture/SGD	2	MCQ's	5
45			Differentiate between Plating/anodizing/galvanizing	C2						
46			Explain the process of Lamination	C2						
fTOPIC: MATERIALS USED IN P&O										
47	Week-15	Flexible and rigid foams, rigid sheets	Discuss history of Plaster of Paris	C2			Interactive Lecture/SGD	2	MCQ's	5
48			Explain Fabrics and its types	C2						
49			illustrate Polymers and its types	C2						
50	Week-16	Materials	Discuss Leather and its chemical process	C2			Interactive Lecture/SGD	2	MCQ's	5
51			Discuss utilization of Rubber and silicone	C2						
52			Explain Factors regarding choice of materials	C2						
53			Discuss special consideration in design considerations	C2						



BPO-615 PATHOLOGY-I 3(3-0)

Course Description

The Pathology courses explores the fundamental principles behind diseases and conditions that can compromise balance and movement. Emphasis is placed on the cause, progression and effect of various disorders on the body from cellular level to the body as a whole. The aim of these pathology courses is to provide a background knowledge on the disorders that will be covered later from more of a clinical perspective in the Applied Prosthetics and Orthotics and Clinical Orthopaedic courses. In Pathology - I the general mechanisms of pathology will be introduced, followed by a more in-depth look at disorders that affect the body, system by system; with greater focus on those disorders related to prosthetics and orthotics.

Cognitive Domain

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

1. **Demonstrate familiarity with pathology nomenclature**
2. **State the cause of common diseases presenting in the prosthetics and orthotics clinic**
3. **Describe the signs, symptoms and progression of these diseases on a cellular, tissue, system and whole body level**
4. **Classify diseases according to their cause, system affected or presentation**

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.**

BPO-615 PATHOLOGY-I 3(3-0)

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/ Hours	Assesment	No of Items
				C	P	A				
TOPIC: INTRODUCTION TO PATHOLOGY AND PATHOLOGY NOMENCLATURE										
1	Week-1	Cell adaptation	Explain Atrophy	C2			Interactive Lecture/SGD	3	MCQ's	5
2			Describe Hypotrophy	C2						
3		Behavior	Participate in group discussion			A	Role Play		Formative	
4	Week-2	Cell adaptation	Explain Metaplasia	C2			Interactive Lecture/SGD	3	MCQ's	5
5			Discuss Aplasia	C2						
6	Behavior	Participate in group discussion			A	Role Play	Formative			
7	Week-3	Cell injury and death	Discuss the process of Necrosis	C2			Interactive Lecture/SGD	3	MCQ's	5
8			Explain types of Gangrene (wet and dry)	C2						
9		Behavior	Participate in group discussion			A	Role Play		Formative	
10	Week-4	Reversible and irreversible changes	Explain Fatty changes	C2			Interactive Lecture/SGD	3	MCQ's	5
11			Discuss Pigmented	C2						
12		Behavior	Participate in group discussion			A	Role Play		Formative	
13	Week-5	Reversible and irreversible changes	Describe Calcification	C2			Interactive Lecture/SGD	3	MCQ's	5
14			Explain types and causes of calcification	C2						
15		Behavior	Participate in group discussion			A	Role Play		Formative	
16	Week-6	Inflammation	Explain Acute inflammation	C2			Interactive Lecture/SGD	3	MCQ's	5
17			Explain Chronic inflammation	C2						
18		Behavior	Participate in group discussion			A	Role Play		Formative	
19	Week-7	Cell repair and wound healing	Discuss steps of healing	C2			Interactive Lecture/SGD	3	MCQ's	5
20			Describe 1st & 2nd Intention Healing	C2						
21		Behavior	Participate in group discussion			A	Role Play		Formative	
TOPIC: HAEMODYNAMIC DISORDERS										
22	Week-8	Hemorrhage	Explain edema hemorrhage	C2			Interactive Lecture/SGD	3	MCQ's	5
23		Thrombosis	Discuss type thrombosis	C2						
24		Behavior	Participate in group discussion			A			Role Play	
25	Week-9	Hyperaemia	Describe Hyperaemia	C2			Interactive Lecture/SGD	3	MCQ's	5
26		Types	Explain types of Hyperaemia	C2						
27		Behavior	Participate in group discussion			A	Role Play		Formative	



S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/ Hours	Assesment	No of Items
				C	P	A				
28	Week-10	Stroke	Explain Stroke (CVA)	C2			Interactive Lecture/SGD	3	MCQ's	5
29		PVD	Explain Peripheral Vascular Disease (PVD)	C2						
30		Behavior	Participate in group discussion			A	Role Play	Formative		
TOPIC: IMMUNE SYSTEM PATHOLOGY										
31	Week-11	Immune system	Discuss Cells of the immune system	C2			Interactive Lecture/SGD	3	MCQ's	5
32		Cytolysin	Describe Role of cytolysin	C2						
33		Behavior	Participate in group discussion			A	Role Play	Formative		
34	Week-12	Tissue injury	Explain Immune mechanisms of tissue injury	C2			Interactive Lecture/SGD	3	MCQ's	5
35		Type I-IV	Explain types of tissue injury							
36		Behavior	Participate in group discussion			A	Role Play	Formative		
TOPIC: INFLAMMATORY DISEASES										
37	Week-13	Inflammation	Discuss chemical mediators of inflammation	C2			Interactive Lecture/SGD	3	MCQ's	5
38		Osteomyelitis	Explain osteomyelitis	C2						
39		Behavior	Participate in group discussion			A	Role Play	Formative		
40	Week-14	TB spondylitis, caries spine, Pott's disease	Explain Tuberculosis and its types	C2			Interactive Lecture/SGD	3	MCQ's	5
41		spine – tapes dorsalis	Discuss Syphilis effecting joints and bones	C2						
42		Behavior	Participate in group discussion			A	Role Play	Formative		
43	Week-15	Bursitis	Explain Bursitis and its ypes	C2			Interactive Lecture/SGD	3	MCQ's	5
44		Polio	Discuss Polio virus	C2						
45		symptoms and transmis- sion	Explain Polio virus symptoms and transmission	C2						
46	Behavior	Participate in group discussion			A	Role Play	Formative			
47	Week-16	Meningitis	Explain Meningitis	C2			Interactive Lecture/SGD	3	MCQ's	5
48		Type	Discuss different type of Meningitis	C2						
49		Behavior	Participate in group discussion			A	Role Play	Formative		

BPO-617 ANATOMY-II 3(2-1)

Course Description

This course will also focus on the anatomy of the upper limbs, head and trunk, covering in detail the skeleton, muscles, nerves and blood supply of these areas. Lectures will be supported by isolated natural organ and cadaver labs, charts and models to aid student understanding.

Cognitive Domain

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

1. Describe skeletal system of the upper limbs
2. Explain muscular system of the upper limbs
3. Discuss nervous system of the upper limbs
4. Describe circulatory system of the upper limbs
5. Discuss skeletal system of the trunk
6. Describe muscular system of the trunk
7. Explain nervous system of the trunk
8. Discuss circulation and organs of the trunk
9. Describe skeletal system of the head
10. Explain muscular system of the head
11. Discuss nervous system of the head
12. Describe circulation and organs of the head

Skills Domain

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

1. Identify skeletal, nervous and circulatory system of upper limbs
2. Identify skeletal, nervous and circulatory system of Trunk
3. Identify skeletal, nervous and circulatory system of Head

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 -BPO-617 ANATOMY-II 3(2-1)

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/Hours	Assesment	No of Items					
				C	P	A									
TOPIC: SKELETAL SYSTEM OF THE UPPER LIMBS															
1	Week-1	Humerus	Explain the anatomical features of Humerus	C2			Interactive Lecture/SGD	2	MCQ's	5					
2			Enlist functions of bones	C2											
3			Explain structural and regional classification of bone.	C2											
4			Describe developmental classification of bone.	C2											
5			Describe the structure of long bones	C2											
6			Explain structural and regional and developmental classification of bone.	C2											
7	Practical		Identify Humerus land mark from bone/ Models/ charts		P4		Demo	2	OSPE	5					
8			Adopt how to care and handle bone/ models and charts			A	Role Play								
9	Week-2	Radius	Explain the anatomical features of Radius	C2			Interactive Lecture/SGD	2	MCQ's	5					
10			Explain structural and regional classification of bone.	C2											
11		Ulna	Describe developmental classification of bone.												
12			Explain the anatomical features of Ulna	C2											
13		Practical		Identify radius land mark from bone/ Models/ charts		P4						Demo	2	OSPE	5
14				Identify ulna land mark from bone/ Models/ charts		P4									
15	Adopt how to care and handle bone/ models and charts					A	Role Play								
16	Week-3	Bones of the wrist	Explain the anatomical structure, function and features of bones of wrist	C2			Interactive Lecture/SGD	2	MCQ's	5					
17		Bones of the hand	Explain the anatomical structure bones of hand	C2											
18		Practical		Identify wrist land mark from bone/ Models/ charts		P4		Demo	2	OSPE	5				
19				Identify hand land mark from bone/ Models/ charts		P4									
20				Adopt how to care and handle Models and charts			A	Role Play							
21	Week-4	Shoulder Joint	Explain the structure and function of shoulder joint	C2			Interactive Lecture/SGD	2	MCQ's	5					
22		Elbow joint	Explain the structure and function of Elbow joint	C2											
23		Practical		Identify shoulder joint land mark from bone/ Models/ charts		P4		Demo	2	OSPE	5				
24	Identify Elbow joint land mark from bone/ Models/ charts				P4										
25	Adopt how to care and handle Models and charts					A	Role Play								

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/Hours	Assesment	No of Items
				C	P	A				
26	Week-5	Wrist joint	Explain the structure and function of Wrist joint	C2			Interactive Lecture/SGD	2	MCQ's	5
27		Joints of the hand	Explain the structure and function of intercarpal/carpo-metacarpal/interphalangeal joints	C2						
28		Practical	Label the bony land marks of Fibula, tarsals , Metatarsals and Phalanges idependently		P4		Demo	2	OSPE	5
29			Adopt how to care and handle Models and charts			A	Role Play			
TOPIC: MUSCULAR SYSTEM OF THE UPPER LIMBS										
30	Week-6	Muscles of the upper arm	Describe the anatomical features & attachment of muscles tendons/ligaments on Humerus	C2			Interactive Lecture/SGD	2	MCQ's	5
31			Describe origin / insertion/location & action of muscles of anterior/posterior compartment of arm	C2						
32		Practical	Label the origin and insertion of muscles Humerus idependently		P4		Demo	2	OSPE	5
33			Adopt how to care and handle Models and charts			A	Role Play			
34	Week-7	Muscles of the forearm	Describe the anatomical features & attachment of muscles tendons/ligaments on radius	C2			Interactive Lecture/SGD	2	MCQ's	5
35			Describe the anatomical features & attachment of muscles tendons/ligaments on Ulna	C2						
36			Describe origin / insertion/location & action of muscles of anterior/posterior compartment of forearm	C2						
37		Intrinsic muscles of the hand	Describe the anatomical features & attachment of muscles tendons/ligaments on Carpals/metacarpals/phalanges	C2						
38			Describe origin / insertion/location & action of intrinsic / extrinsic muscles of Hand	C2						
39		Practical	Label the origin and insertion of muscles of upper limb idependently		P4					
40	Adopt how to care and handle Models and charts				A	Role Play				
TOPIC: NERVOUS SYSTEM OF THE UPPER LIMBS										
41	Week-8	Radial nerve	Describe origin , course and distribution of Radial nerve	C2			Interactive Lecture/SGD	2	MCQ's	5
42		Ulnar nerve	Describe origin , course and distribution of ulnar nerve	C2						
43		Median nerve	Describe origin , course and distribution of median nerve	C2						
44		Practical	Label origin , course and distribution of nerves of upper limb idependently		P4		Demo	2	OSPE	5
45			Follow the protocols of handling the models with care			A	Role Play			



S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/Hours	Assesment	No of Items
				C	P	A				
TOPIC: CIRCULATORY SYSTEM OF THE UPPER LIMBS										
46	Week-9	Arterial supply to the upper limbs	Describe Course and distribution of arteries of upper limb	C2			Interactive Lecture/SGD	2	MCQ's	5
47		Venous return from the upper limbs	Describe Course and distribution of veins of upper limb	C2						
48		Lymphatic drainage of the upper limbs	Describe Lymphatic drainage of upper limb	C2						
49		Practical	Label course and distribution of arterio-venous supply of upper limb independently			P4	Demo	2	OSPE	
50			Follow the protocols of handling the models with care			A	Role Play			
TOPIC: SKELETAL SYSTEM OF THE TRUNK										
51	Week-10	Pelvic	Explain the anatomical features of the bones of pelvic	C2			Interactive Lecture/SGD	2	MCQ's	5
52			Explain different parts/sections of the pelvic	C2						
53		Vertebral column	Describe the anatomical features of vertebrae of spine	C2						
54		Ribs	Explain the anatomical features of Ribs	C2						
55		Sternum	Describe the structure of sternum	C2						
56		Clavicle	Explain the structure of Clavicle	C2						
57		Scapula	Describe the structure of Scapula	C2						
58		Joints of the trunk	Explain the joints of trunk	C2						
59		Practical	Label the features of skeletal of trunk idependently			P4	Demo	2	OSPE	
60			Adopt how to care and handle Models and charts			A	Role Play			
TOPIC: MUSCULAR SYSTEM OF THE TRUNK										
61	Week-11	Abdominal muscles	Describe origin / insertion/location & action of muscles of Abdomin muscules	C2			Interactive Lecture/SGD	2	MCQ's	5
62		Muscles of the back	Describe origin / insertion/location & action of muscles of Back	C2						
63		Muscles of the shoulder	Describe origin / insertion/location & action of muscles of shoulder	C2						
64		Muscles of the ribs and chest	Discuss the surface anatomy of dorsal spine, sternum, costal cartilages and ribs.	C2						
65		Practical	Label the muscle of abdomin, back and shoulder iden- pendently			P4	Demo	2	OSPE	
66			Adopt how to care and handle Models and charts			A	Role Play			

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/Hours	Assesment	No of Items
				C	P	A				
TOPIC: NERVOUS SYSTEM OF THE TRUNK										
67	Week-12	The brachial plexus	Describe origin , course and distribution of axillary nerve	C2			Interactive Lecture/SGD	2	MCQ's	5
68			Describe origin , course and distribution of superior/inferior subscapular nerve/ thoraco dorsal nerve/pectoral nerve	C2						
69			Spinal cord	Explain the structure and function of spinal cord	C2					
70		Practical	Label origin , course and distribution of nerves of upper limb independently		P4		Demo	2	OSPE	5
71			Adopt how to care and handle Models and charts			A	Role Play			
TOPIC: CIRCULATORY SYSTEM AND ORGANS OF THE TRUNK										
72	Week-13	Heart and blood vessels of the trunk	Explain heart and blood vessels of the trunk	C2			Interactive Lecture/SGD	2	MCQ's	5
73		Lymphatic vessels, glands and spleen	Explain lymphatic vessels, gland and Speen and its function	C2						
74		Lungs and diaphragm	Describe Lungs and Diaphragm and its function	C2						
75		Liver	Describe Liver and its function	C2						
76		Pancreas	Describe pancreas and its function	C2						
77		Kidneys	Explain kidney and its function	C2						
78		Practical	Label circulatory sytem		P4		Demo	2	OSPE	5
79			Adopt how to care and handle Models and charts			A	Role Play			
TOPIC: SKELETAL SYSTEM OF THE HEAD										
80	Week-14	Skull	Explain the features of bones of skull	C2			Interactive Lecture/SGD	2	MCQ's	5
81		Jaw and teeth	Explain the features of jaw and theeths	C2						
82		Joints of the head and jaw	Explain the structure and function of joints of Head and Jaw	C2						
83		Practical	Label land marks of skull and jaw independently		P4		Demo	2	OSPE	5
84			Adopt how to care and handle Models and charts			A	Role Play			
TOPIC: MUSCULAR SYSTEM/ NERVOUS SYSTEM OF HEAD										
85	Week-15	Muscles of the head	Describe Origin / insertion/location & action of muscles of Head	C2			Interactive Lecture/SGD	2	MCQ's	5
86		Cranial Nerves	Describe Course and distribution of cranial nerves	C2						
87		Brain	Explain the structure and parts of the brain	C2						
88		Practical	Label land marks of cranial verves independently		P4		Demo	2	OSPE	5
89			Adopt how to care and handle Models and charts			A	Role Play			



S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/ Hours	Assesment	No of Items
				C	P	A				
TOPIC: CIRCULATORY SYSTEM AND ORGANS OF THE HEAD										
90	Week-16	Blood supply to the head	Describe Course and distribution of blood supply to the Head	C2			Interactive Lecture/SGD	2	MCQ's	5
91		Eyes	Describe Course and distribution of blood supply of Eye	C2						
92		Ears	Describe Course and distribution of blood supply of ears	C2						
93		Mouth and throat	Describe Course and distribution of blood supply of Mouth and throat	C2						
94		Practical		Label Course and distribution of head independently		P4		Demo	2	
95			Adopt how to care and handle Models and charts			A	Role Play			

BPO-620 APPLIED PROTHETICS & ORTHOTICS-II 4(1-3)

Students will continue their education in prosthetics and orthotics with ankle foot orthotics (AFO), trans-tibial prosthetics, and partial foot and ankle disarticulation prosthetics. Through theory, practical and patient contact sessions, students will learn how to assess the patient, design an appropriate device, cast, modify the cast and manufacture the device. When the device is ready for fitting, the student will learn how to safely fit his or her device, identify common fitting issues and gait deviations and perform the required adjustments. When the optimum fit and alignment has been achieved the student will perform the final finishing of the device and learn the proper procedure for delivering the device to the patient and necessary follow-up. The AFO section will give students the opportunity to practice designing, making and fitting both solid and jointed types of device.

Cognitive Domain

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

1. **Formulate the functional loss of the patient**
2. **Select the appropriate materials and components to achieve the desired effect in the device**
3. **Identify fitting and alignment problems and show capacity to solve these problems**
4. **Assess the quality of a device and identify areas of poor quality**
5. **Explain the follow-up appropriate for the device and patient**

Skills Domain

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

1. **Demonstrate assessment of a patient requiring prosthetic orthotic intervention**
2. **Demonstrate the correct casting and measuring technique for producing the device**
3. **Produce a prosthesis/orthosis from the cast and measures previously taken**
4. **Demonstrate the correct fitting procedure**
5. **Demonstrate the required rectification of the positive mould**
6. **Demonstrate safe and caring handling of the patient, explaining to the patient the process along the way and what he can expect**
7. **Demonstrate the proper checkout and delivery procedure for the required device**

Affective Domain

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

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

TOS -BPO-620 APPLIED PROTHETICS & ORTHOTICS-II 4(1-3)

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/Hours	Assesment	No of Items	
				C	P	A					
TOPIC: ANKLE FOOT ORTHOTICS (AFO)											
1	Week-1	Anatomy	Explain internal and surface anatomy of the lower leg	C2			Interactive Lecture/SGD	1	MCQ's	5	
2		Biomechanic	Describe biomechanics concerning the normal foot and leg	C2							
3		Deformities	Discuss common foot deformities and their pathologies	C2							
4		Practical		Perfrom Static and dynamic assessment of the foot and ankle		P4		Demo	6	OSPE	5
5				Perform Formulation of functional loss		P4					
6				Design device design and corrective forces		P4					
7				Perform Casting and take measurements for Ankle foor orthotics		P4					
8			Protocols	Follow the protocols of handling the equipment with care			A	Role Play			
9	Week-2	Gait	Explain of normal gait	C2			Interactive Lecture/SGD	1	MCQ's	5	
10				Explain of pathological gait	C2						
11		Practical		Perform assessment of normal gait analysis		P4		Demo	6	OSPE	5
12				Perform assessment of abnormal gait analysis		P4					
13			Protocols	Follow the protocols of handling the equipment with care			A	Role Play			
14	Week-3	Material	Explain Material and components used in Fabrication of Ankle foot orthotics	C2			Interactive Lecture/SGD	1	MCQ's	5	
15		Design	Discuss Device design and corrective forces	C2							
16		Practical		Perform selection of material and components used in Fabrication of Ankle foot orthotics		P4		Demo	6	OSPE	5
17				Perform device Prescriptionn and proper design		P4					
18		Protocols	Follow the protocols of handling the equipment with care			A	Role Play				
19	Week-4	Modification	Explain process of modification	C2			Interactive Lecture/SGD	1	MCQ's	5	
20		Fitting	Explain the fitting Process of AFO	C2							
21		Practical		Perfrom ectification of the positive model		P4		Demo	1	OSPE	5
22				Perform fitting Process		P4					
23			Protocols	Follow the protocols of handling the equipment with care			A	Role Play			

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/ Hours	Assesment	No of Items
				C	P	A				
24	Week-5	Alignment	Explain static and dynamic alignment	C2			Interactive Lecture/SGD	1	MCQ's	5
25		Practical	Perfrom static and dynamic alignment of AFO		P4		Demo	6	OSPE	5
26		Protocols	Follow the protocols of handling the equipment with care			A	Role Play			
27	Week-6	Finishing	Explain finishing process of AFO device	C2			Interactive Lecture/SGD	1	MCQ's	5
28		Practical	Perfrom Finishing of the device		P4		Demo	6	OSPE	5
29			Perfrom Check-out, delivery		P4					
30		Protocols	Follow the protocols of handling the equipment with care			A	Role Play			
TOPIC: TRANS-TIBIAL PROSTHETICS										
31	Week-7	Anatomy	Explain internal and surface anatomy of the lower limb	C2			Interactive Lecture/SGD	1	MCQ's	5
32		Amputation	Describe Causes of TT amputation and their effect on prosthetic outcome	C2						
33			Discuss amputation and its levels	C2						
34		Practical	Perfrom Static and dynamic assessment the TT amputee		P4		Demo	6	OSPE	5
35			Formulation of functional loss		P4					
36			Fabricate Device design TT prosthesis		P4					
37		Protocols	Follow the protocols of handling the equipment with care			A	Role Play			
38	Week-8	Stump	Explain the stump shape and types	C2			Interactive Lecture/SGD	1	MCQ's	5
39			Discuss common stump problems and the required action	C2						
40		Biomechanics	Describe biomechanics of the TT prosthesis	C2						
41		Practical	Perform casting and measurements		P4		Demo	6	OSPE	5
42			Perform rectification of the positive model		P4					
43			Prepare TT prosthesis manufacture to first fitting stage		P4					
44		Protocols	Follow the protocols of handling the equipment with care			A	Role Play			
45	Week-9	Gait	Explain normal and prosthetic gait for trans tibila Prosthetics	C2			Interactive Lecture/SGD	1	MCQ's	5
46		Material	Describe Material and components used for trans tibila Prosthetics	C2			Demo	6	OSPE	5
47		Practical	Check the Bench alignment of TT prothesis		P4					
48			Check the Static alignment TT prothesis		P4					
49			Check the Dynamic alignment TT prothesis		P4					
50		Protocols	Follow the protocols of handling the equipment with care			A	Role Play			

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/Hours	Assesment	No of Items
				C	P	A				
51	Week-10	Endo/exoskeletal, patella tendon bearing, total surface bearing, supracondylar, suprapatellar	Explain design and indications for trans tibia Prosthetics	C2			Interactive Lecture/SGD	1	MCQ's	5
52		Finishing	Explain finishing process of trans tibia device	C2						
53		Practical	Perform Cosmetic finishing		P4		Demo	6	OSPE	5
54			Perform Check-out, delivery		P4					
55		Protocols	Follow the protocols of handling the equipment with care			A	Role Play			
TOPIC: ANKLE DISARTICULATION (AD) AND PARTIAL FOOT (PF) PROSTHETICS										
56	Week-11	Anatomy	Explain internal and surface anatomy of the lower limb	C2			Interactive Lecture/SGD	1	MCQ's	5
57			Describe Causes of ankle disarticulation	C2						
58		Practical	Static assessment of the AD and PF amputee		P4		Demo	6	OSPE	5
59			Dynamic assessment of the AD and PF amputee		P4					
60		Protocols	Follow the protocols of handling the equipment with care			A	Role Play			
61	Week-12	Disarticulation	Explain effect of ankle disarticulation on prosthetic outcome	C2			Interactive Lecture/SGD	1	MCQ's	5
62		Amputation	Describe Causes of Partial Foot amputation	C2						
63		Practical	Assess formulation of functional loss		P4		Demo	6	OSPE	5
64			Fabricate device design		P4					
65		Protocols	Follow the protocols of handling the equipment with care			A	Role Play			
66	Week-13	Amputation	Explain effect of Partial Foot amputation on prosthetic outcome	C2			Interactive Lecture/SGD	1	MCQ's	5
67			Discuss Amputation and stump shape	C2						
68		Practical	Perform casting and take measurements		P4		Demo	6	OSPE	5
69			Perform rectification of the positive model		P4					
70		Protocols	Follow the protocols of handling the equipment with care			A	Role Play			
71	Week-14	Biomechanics	Explain biomechanics of the AD and PF prosthesis	C2			Interactive Lecture/SGD	1	MCQ's	5
72			Discuss common stump problems and the required action	C2						
73		Practical	Design AD and PF prosthesis manufacture to first fitting stage		P4		Demo	6	OSPE	5
74			Perform Bench alignment for AD and PF prosthesis		P4					
75		Protocols	Follow the protocols of handling the equipment with care			A	Role Play			

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/ Hours	Assesment	No of Items
				C	P	A				
76	Week-15	Gait	Differentiate between normal and prosthetic gait for AD and PF prosthesis	C4			Interactive Lecture/SGD	1	MCQ's	5
77		Selection	Explain selection of material and components used in fabrication of AD and PF prosthesis	C2						
78		Practical	Perform static alignment for AD and PF prosthesis		P4		Demo	6	OSPE	5
79			Perform dynamic alignment for AD and PF prosthesis		P4					
80		Protocols	Follow the protocols of handling the equipment with care			A	Role Play			
81	Week-16	Design	Explain device design for AD and PF prosthesis	C2			Interactive Lecture/SGD	1	MCQ's	5
82		Delivery	Expain Check-out, delivery for AD and PF prosthesis	C4						
83		Practical	Perform Cosmetic finishing		P4		Demo	6	OSPE	5
84			Perform Check-out, delivery		P4					
85		Protocols	Follow the protocols of handling the equipment with care			A	Role Play			

RSC-614 ENGLISH-II 3(3-0)

Course Description

The course gives a thorough understanding of the four skills: listening, speaking, reading and writing with special focus on skimming, scanning, intensive and extensive reading and presentation skill. In addition it encompasses the letter writing: memorandum, meeting minutes, job application and CV to assist them in their real life communication needs.

Cognitive Domain

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

1. **Distinguish Descriptive, narrative, expository and Narrative Paragraphs**
2. **Differentiate Narrative, Descriptive, Reflective and Expository Essay**
3. **Design the format of Job Application**
4. **Understand the types of translation**
5. **Discuss Skimming and Scanning, intensive and Extensive, and speed reading**
6. **Construct a formal format of letter and memo**
7. **Differentiate Letter and Memo**
8. **Understand the Do's and Don'ts in Presentation**

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 -RSC-614 ENGLISH-II 3(3-0)

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/Hours	Assesment	No of Items
				C	P	A				
TOPIC: PARAGRAPH WRITING										
1	Week-1	Definition	Define Paragraph	C1			Interactive Lecture/SGD	3	MCQ's	5
2		Principles	Explain Unity, Order and Variety of Paragraph	C2						
3		Structure/Organization	Identify Topic sentence, supporting sentences and concluding sentence	C2						
4		Loose and Periodic Sentences	Discuss Loose and Periodic Sentences.	C2						
5	Week-2	Types	Distinguish Descriptive, narrative, expository and Narrative Paragraphs	C4			Interactive Lecture/SGD	3	MCQ's	5
6		Essentials	Discuss echo words, connectives and diction in paragraph writing	C2						
TOPIC: ESSAY WRITING										
7	Week-3	Writing process	Explain writing process	C2			Interactive Lecture/SGD	3	MCQ's	5
8		Introduction	Explain Essay Writing							
9		Planning	Explain Brainstorming, Clustering, outline and Thesis Statement in Essay	C2						
10	Week-4	Essentials	Explain Unity, coherence and Balance/Proportion of an Essay	C2			Interactive Lecture/SGD	3	MCQ's	5
11		Structure/Format	Understand Introduction, Body and Conclusion of an Essay							
12	Week-5	Tone and Diction	Comprehend the tone and diction of an essay	C2			Interactive Lecture/SGD	3	MCQ's	5
13		Classes	Differentiate Narrative, Descriptive, Reflective and Expository Essay	C4						
TOPIC: CV AND JOB APPLICATION										
14	Week-6	Definition	Define CV and Job Application	C1			Interactive Lecture/SGD	3	MCQ's	5
15		CV Format	Design the format of CV	C6						
16		Job Application Format	Design the format of Job Application	C6						
17		Function	Understand the use of CV and Job Application	C2						
18	Week-7	Do's and Don'ts	Discuss the Do's and Don'ts in CV and Job Application	C2			Interactive Lecture/SGD	3	MCQ's	5
19		Differentiation	Differentiate CV and Résumé	C4						



S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/ Hours	Assesment	No of Items
				C	P	A				
TOPIC: TRANSLATION SKILLS										
20	Week-8	Definition	Define Translation	C1			Interactive Lecture/SGD	3	MCQ's	5
21		Function	Explain the function of translation	C2						
22		Classification	Understand the types of translation	C2						
TOPIC: PARAGRAPH WRITING										
23	Week-9	Exercise	Translate Idiomatic texts from Urdu to English	C2			Interactive Lecture/SGD	3	MCQ's	5
24		Meaning Types	Discuss different shades of meaning	C2						
25		Practice	Practice on translating texts from Source to Target Language		P4		Demo		Formative assessment	
TOPIC: STUDY SKILLS										
26	Week-10	Reading Process	Understand the Reading Process	C2			Interactive Lecture/SGD	3	MCQ's	5
27		Types of reading	Discuss Skimming and Scanning, intensive and Extensive, and speed reading	C2						
28		Comprehension procedure	Explain Comprehension and its procedure	C2						
29		Definition	Define Summary and précis writing	C1						
30		Essentials	Know the essentials in Summary and précis writing	C2						
31		Differentiation	Differentiate summary and précis	C4						
32	Week-11	Practice	Practice on different reading exercises		P4		Demo		Formative assessment	
TOPIC: ACADEMIC SKILLS										
33	Week-12	Introduction	Introduce academic skills	C1			Interactive Lecture/SGD	3	MCQ's	5
34		Formal Format	Construct a formal format of letter and memo	C6						
35		Differentiation	Differentiate Letter and Memo	C4						
36	Week-13	Abbreviation in formal letter	Understand the abbreviations used in writing a formal letter	C2			Interactive Lecture/SGD	3	MCQ's	5
37		Definition	Define Minutes of meeting	C1						
38		Contents in Meeting Minutes	Discuss the contents of meeting minutes	C2						
39	Week-14	Importance	Know the Importance of library and internet	C2			Interactive Lecture/SGD	3	MCQ's	5
40		Practice	Utilize the Library and internet		P4					

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/ Hours	Assesment	No of Items
				C	P	A				
TOPIC: PRESENTATION SKILLS										
41	Week-15	Definition	Define Presentation Skills	C1			Interactive Lecture/SGD	3	MCQ's	5
42		Types	Discuss different types of presentation	C2						
43		Structure	Explain the structure presentation	C2						
44		Essentials	Discuss the stage fright and its antidotes	C2						
45		Do's and Don'ts in Presentation	Understand the Do's and Don'ts in Presentation	C2						
46	Week-16	Practice	Give presentations individually and in groups to showcase the latent talent		P4		Demo	3	Formative assessment	5
47		Body Language	Communicate through body language		P1					
48		Communication Skills	Organize the procedure to improve their communication skills			A				
49		Q & A Session	Respond to different questions in the Q & A session			A				

RSC-615 ISLAMIC STUDIES / ETHICS 2(2-0)

Course Description

This course is aimed at To provide Basic information about Islamic Studies. IT enhance understanding of the students regarding Islamic Civilization. This course will improve Students skill to perform prayers and other worships. it also help and enhance the skill of the students for understanding of issues related to faith and religious life.

Cognitive Domain

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

1. **Discuss Pre-Islamic Arabia and Arabs**
2. **Describe the life and times of prophet Muhammad PBUH before prophet-hood.**
3. **Discuss the necessity of Divine guidance in the light of Quran.**
4. **Discuss concept of state in Islam**
5. **Discuss Prophet's mission in medina (Post Hijra Period)**
6. **Explain the concept of worship and spread of Islam**
7. **Explain the moral law of Islam (Qaanon - E - Ikhaq)**

Affective Domain

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

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

TOS -RSC-615 ISLAMIC STUDIES / ETHICS 2(2-0)

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/Hours	Assesment	No of Items
				C	P	A				
TOPIC: THE PRE-ISLAMIC ARABIA AND THE ARABS										
1	Week-1	Geography	Discuss the geography of Arabia	C2			Interactive Lecture/SGD	2	MCQ's	5
2		Peninsula	Explain peninsula	C2						
3		Nature of nomadic life	Discuss a nomadic life	C2						
4	Week-2	Trade	Explain the source of income of the Arabs	C2			Interactive Lecture/SGD	2	MCQ's	5
5		Religion, Politics.	Explain the life of romans.	C2						
6			Discuss the life of Persians.	C2						
7			Discuss the life of Egyptians.	C2						
8	Week-3	Concept of ignorance, Contemporary view.	Discuss the need of change in the age of ignorance	C2			Interactive Lecture/SGD	2	MCQ's	5
TOPIC: THE LIFE AND TIMES OF PROPHET MUHAMMAD PBUH BEFORE PROPHETHOOD.										
9	Week-4	Idol worship,Slavery, Female infanticide, Injustice,Discrimination, Tribal system.	Discuss the social order of the Arabs	C2			Interactive Lecture/SGD	2	MCQ's	5
10	Week-5	Purpose, Promised prophet, Secular level, Religious level.	Discuss the role of prophet.	C2			Interactive Lecture/SGD	2	MCQ's	5
11		570 AC Year of elephants. Quran's view of history.	Describe the major event in the year of birth	C2						
12	Week-6	Idol worship. The Family of Quraysh.	Discuss the background of idol worship.	C2			Interactive Lecture/SGD	2	MCQ's	5
13		Monotheist,Darunadwa,1st business trip,1st marriage Role of Abu talib, Illiterate prophet, Non gentile, In the cave.	Discuss the life of prophet Muhammad before prophet hood.	C2						
TOPIC: THE NECESSITY OF DIVINE GUIDANCE IN THE LIGHT OF QURAN.										
14	Week-7	Questions, Problems, Solutions, Contemporary view.	Discuss the need for divine guidance.	C2			Interactive Lecture/SGD	2	MCQ's	5
15		Reason, Science, Philosophy, Contemporary discoveries in the fields of science.	Discuss revelation with intellect.	C2						



S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/Hours	Assesment	No of Items
				C	P	A				
16	Week-8	Introduction, Temporary, Fabrication, Invalidity	Discuss Quran's view about the precious books	C2			Interactive Lecture/SGD	2	MCQ's	5
TOPIC: STATE IN ISLAM										
17	Week-9	Oral Tradition, Compilation, Preservation and propagation, Authenticity, Finality, Itmam e hujjat	Explain the process of perfection of the Qur'an.	C2			Interactive Lecture/SGD	2	MCQ's	5
18		Metaphorical, Makah surahs, Medina surah.	Discuss the style and structure of Qur'an	C2						
19		Definition, Its role in the early development of Islamic narrative, Contemporary world.	Discuss the scope of interfaith.	C2						
TOPIC: PROPHET'S MISSION IN MEDINA (POST HIJRA PERIOD)										
20	Week-10	Territory, Climate, Agriculture, The Ansar	Analyze the territory medina	C2			Interactive Lecture/SGD	2	MCQ's	5
21		Background, Significance, Scope.	Discuss the hijrah	C2						
22	Week-11	Change of qibla, Inter religious dialogue.	Discuss the qibla controversy.	C2			Interactive Lecture/SGD	2	MCQ's	5
23		Chief hypocrite.	Discuss the role of hypocrites	C1						
24		Incident of necklace.	Explain the moral teachings of Islam	C1						
25	Week-12	Banu Israel Difference between jews and banu Israel.	Discuss the history of the Jews (of medina).	C2			Interactive Lecture/SGD	2	MCQ's	5
26		Introduction, Significance, Sovereignty, Adam A.S and satan.	Discuss the concept of khilafat.	C2						
27		Purpose, Charter of medina People of the book, The Khilafat e Rashida period.	Discuss the concept of state.	C2						

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/Hours	Assesment	No of Items
				C	P	A				
TOPIC: THE CONCEPT OF WORSHIP AND SPREAD OF ISLAM										
28	Week-13	Definition, Scope, Philosophy of Unity. (TAWHEED)	To discuss the concept of worship	C2			Interactive Lecture/SGD	2	MCQ's	5
29		Spiritual Aspect,Social Aspect.	Discuss the scope of Namaz	C2						
30			Discuss the scope of Zakaat	C2						
31			Discuss the scope of hajj	C2						
32	Week-14	Preaching and Persuasion. Concept of IKRAH	Discuss the concept of da'wah	C2			Interactive Lecture/SGD	2	MCQ's	5
33		Letters of the prophet to the kings.	Discuss the letters of the prophet to the kings.	C2						
34		Purpose of da'wah.	Explain the purpose of da'wah.	C2						
35		From Medina to idea of Pakistan.	Explain the spread of Islam.	C2						
36			Purpose of da'wah.	Explain the purpose of da'wah.	C2					
TOPIC: THE MORAL LAW OF ISLAM (QAANON - E - IKHAQ)										
37	Week-15	Purpose of creation. Believe in Allah Believe in the last prophet	Discuss the purpose of creation.	C2			Interactive Lecture/SGD	2	MCQ's	5
38		Individual human rights.	Explain the basic rights of individual human.	C2						
39		Ethics	Discuss the importance of ethics	C2						
40	Week-16	Equality,Justice, Brotherhood, Respect, Empowerment	Discuss the dignity of human life	C2			Interactive Lecture/SGD	2	MCQ's	5
41		International level.	Explain the scope of Islam	C2						
42		Amar bil maroof, Nahi anil munkar, Hadd, Ta'zir, Role of qazi OR judge	Discuss the moral of Islam.	C2						

Recommended Text Books

MATERIAL SCIENCE

- Callister's Materials Science and Engineering by William D. Callister, Jr.
- The Science and Engineering of Materials by Donald R. Asklund
- Materials and Processes in Manufacturing by E. P. Degarmo
- A Text Book of Workshop Technology by R. S. Khurmi and J. K. Gupta
- Processes and Materials of Manufacturing by Linberg
- Biomaterials: An Introduction by Joon Park and R. S. Lakes, Springer

PATHOLOGY

- Robbins Basic Pathology by Kumar, Abbas and Aster. Saunders 9th Edition
- Pathophysiology by Lee-Allen C. Copstead and Jacquelyn L. Banasik. Saunders 5th Edition

ANATOMY

- Gray's Anatomy by Prof. Susan Standing 39th Ed., Elsevier.
- Clinical Anatomy for Medical Students by Richard S. Snell.
- Clinically Oriented Anatomy by Keith Moore.
- Clinical Anatomy by R. J. Last, Latest Ed.
- Cunningham's Manual of Practical Anatomy by G. J. Romanes, 15th Ed., Vol-I, II and III.
- The Developing Human. Clinically Oriented Embryology by Keith L. Moore, 6th Ed.
- Wheater's Functional Histology by Young and Heath, Latest Ed.
- Medical Histology by Prof. Laiq Hussain.
- Neuroanatomy by Richard S. Snell.

APPLIED PROSTHETICS AND ORTHOTICS - II

- ICRC Physical Rehabilitation Programme, Lower Limb Orthotics – Ankle Foot Orthotics – ICRC
- Trans-tibial Prosthetics (Tome 1 and 2) - ICRC/CSPO
- ICRC Physical Rehabilitation Programme Manufacturing Guidelines - Trans-tibial Prosthesis <https://www.icrc.org/eng/assets/files/other/eng-trans-tibial.pdf>
- Partial Foot Prosthetics Course Work Manual - ICRC/CSPO
- Ankle Disarticulation Course Work Manual – ICRC/CSPO
- ICRC Physical Rehabilitation Programme Manufacturing Guidelines - Ankle Foot Orthotics <https://www.icrc.org/eng/assets/files/other/eng-afo.pdf>
- ICRC Physical Rehabilitation Programme Manufacturing Guidelines - Partial Foot Prosthetics <https://www.icrc.org/eng/assets/files/other/eng-partial-foot.pdf>
- ICRC Physical Rehabilitation Programme Manufacturing Guidelines - Symes Prosthesis with Medial Window. <https://www.icrc.org/eng/assets/files/.../icrc-mg-symes-medwindow-web-0868.pdf>
- ICRC Physical Rehabilitation Programme Manufacturing Guidelines - Symes Prosthesis Push-fit. <https://www.icrc.org/eng/assets/files/.../icrc-mg-symes-pushfit-web-0868.pdf>
- AAOS Atlas of Orthoses and Assistive Devices by Hsu, Michael and Fisk, 4th Edition
- Atlas of Amputations and Limb Deficiencies by Smith, Michael and Bowker, 3rd Edition
- Orthotics and Prosthetics Rehabilitation by Lusardi, Jorge and Nielsen, Elsevier

ENGLISH

- Understanding and Using English Grammar by Betty Schramper (2nd Edition)
- Intermediate English Grammar by Raymond Murphy (2nd Edition)
- A Practical English Grammar by A. J. Thomson and A. V. Martinet (4th Edition)
- Paragraph Development – A practical guide for students of English as a Second Language by Martin L. Arnaudet and Mary Ellen Barret. English Language Institute the American university, Washington D.C.

- Essays by Keith S. False, A. Muchmore, Vokun and E. Vestri Solomon

ISLAMIC STUDIES/ ETHICS

- Hameed ullah Muhammad, "Emergence of Islam" , IRI, Islamabad
- Hameed ullah Muhammad, "Muslim Conduct of State"
- Hameed ullah Muhammad, "Introduction to Islam
- Mulana Muhammad Yousaf Islahi,"
- Hussain Hamid Hassan, "An Introduction to the Study of Islamic Law" leaf Publication Islamabad, Pakistan.
- Ahmad Hasan, "Principles of Islamic Jurisprudence" Islamic Research Institute, International Islamic University, Islamabad (1993)
- Mir Waliullah, "Muslim Jrisprudence and the Quranic Law of Crimes" Islamic Book Service (1982)
- H.S. Bhatia, "Studies in Islamic Law, Religion and Society" Deep & Deep Publications New Delhi (1989)
- Dr. Muhammad Zia-ul-Haq, "Introduction to Al Sharia Al Islamia" Allama Iqbal Open University, Islamabad (2001).



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