



DEPARTMENT OF MICROBIOLOGY

Hazara University Mansehra

May 26, 2025

MINUTES OF THE 1st MEETING OF BOARD OF STUDIES OF DPT

The 1st meeting of the Board of Studies of DPT Program was convened in the Microbiology Department on May 26, 2025, at 11: 00 AM. The meeting was chaired by Prof. Dr. Syed Kashif Haleem, Chairperson of Department. The following members attended the meeting:

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|---------------------------------|----------------|
| 1. Prof. Dr. Syed Kashif Haleem | Convener/Chair |
| 2. Dr. Isfahan Tauseef | Member |
| 3. Dr. Farhana Bibi | Member |
| 4. Dr. Faisal Siddiqui | Member |
| 5. Dr. Hamid Hussain PT | Member |
| 6. Dr. Rafiq Ahmad PT | Member |
| 7. Dr. Muhaammad Affan Iqbal PT | Member |
| 8. Dr. Irfanullah PT | Member |
| 9. Dr. Nawab Ali PT | Member |
| 10. Dr. Pirzada Khattak PT | Member |

After recitation of the Holy Quran by Dr. Irfanullah, the convener formally greeted and acknowledged the members for their participation at short notice. The Chair briefed the members about the background of the urgency. The chair presented the agenda items for discussion by the Board.

AGENDA ITEM NO 1: APPROVAL OF THE SCHEME OF STUDIES FOR DPT PROGRAM AS PER RECOMMENDATIONS OF HEC

The Chair informed the Board that the Doctor of Physical Therapy curriculum was revised in accordance with the updated HEC guidelines and Hazara University's academic framework. Members were briefed about the structure of the program, including the categorization of courses into Major, General Education, and Interdisciplinary domains.

Decision:

The Board unanimously approved the revised scheme of studies for the DPT program, to be implemented from Fall 2025. Furthermore, the Board recommended adopting Major, General Education, and Interdisciplinary courses in accordance with the guidelines of the Higher Education Commission (HEC) and the Academic Council of Hazara University. It was also

recommended that courses from Clusters I, II, III, IV, and V, developed by the University's curriculum committee, be followed in line with HEC directives. The Board agreed that students will undertake their Supervised Clinical Internship during the 8th semester. Approved scheme of studies is attached as Annexure I.

AGENDA ITEM NO 2: APPROVAL OF COURSE LEARNING OUTCOMES FOR DPT PROGRAM AS PER RECOMMENDATIONS OF HEC.

The Board reviewed the Course Learning Outcomes (CLOs) proposed for DPT courses. The importance of aligning CLOs with HEC's Outcome-Based Education (OBE) framework was emphasized, especially for major and clinical components.

Decision:

All Board of Studies members agreed on the Course Learning Outcomes (CLOs) for the major courses in the DPT program. They recommended adopting the CLOs for General Education and Interdisciplinary courses as developed by the respective departments, in alignment with HEC policy. The Board also endorsed the course codes approved by the Academic Council of Hazara University. Additionally, it was recommended that the content of major courses be updated with particular emphasis on practical components, laboratory work, and supervised clinical practice. The next BoS meeting will be held to review and finalize the detailed course content for the major subjects. Approved Course Learning Outcomes are attached as Annexure-II.

AGENDA ITEM NO 3: APPROVAL OF THE UPDATED LIST OF DPT EXPERTS

The updated list of subject experts for the DPT program was presented. Several previous members had been removed due to emigration or unavailability, while new experts from clinical and allied health sectors were proposed.

Decision:

The Board approved the revised panel of DPT experts. It was recommended that the final list be submitted to relevant statutory bodies, and the selection process follow HEC policies and criteria for subject experts

The meeting concluded with a vote of thanks to all members for their valuable input and participation.

Prof. Dr. Syed Kashif Haleem
Chairperson
Department of Microbiology

ANNEXURE-I
DPT REVISED
SCHEME OF
STUDIES

Program Structure

The Doctor of Physical Therapy program is structured in accordance with the provisions of the HEC Undergraduate Education Policy V 1.1. and comprises of minimum **189** credit hours spread over 10 regular semesters.

Minimum Credit Hours	189
General Education	34 credit hours (15 courses)
Major Requirement	96 credit hours (34 courses)
Interdisciplinary / Allied Courses	31 credit hours (12 courses)
Supervised Clinical Practice Requirement	22 credit hours (6 clinical practices)
Supervised Internship Requirement	3 credit hours
Capstone / Research Project Requirement	3 credit hours

AREA/FIELD SPECIALIZATION CODES AND PROPOSED COURSE CODES FOR DPT PROGRAM

AREA OF SPECIALIZATION	SPECIALIZATION CODE	SUBJECTS FALLING IN THE AREA	COURSE CODE
General/Fundamental	0	Human Physiology-I	PT100
		Anatomy-I	PT101
		Human Physiology-II	PT102
		Anatomy-II	PT103
		Medical Physics	PT204
		Anatomy-III	PT205
		Human Physiology-III	PT206
		Health & Wellness	PT207
		Anatomy-IV (Neuro Anatomy)	PT208
		Evidence Based Practice	PT509
Kinematics	1	Kinesiology-I	PT110
		Kinesiology-II	PT111
		Biomechanics & Ergonomics-I	PT212
		Biomechanics & Ergonomics-II	PT213
Basic Physical Therapeutics	2	Exercise Physiology	PT320
		Physical Agents & Electrotherapy-I	PT322
		Therapeutic Exercises & Techniques	PT323
		Physical Agents & Electrotherapy-II	PT324
		Musculoskeletal Based Physical Therapy	PT425
		Neurological Physical Therapy	PT426
		Cardiopulmonary Physical Therapy	PT527
Medicine/Surgery/Chemical Therapeutics	3	Pharmacology & Therapeutics-I	PT330
		Pharmacology & Therapeutics-II	PT331
		Community Medicine & Rehabilitation	PT332
		Medicine-I	PT433
		Surgery-I	PT434
		Medicine-II	PT435
		Surgery-II	PT436
Diagnostics/Inquiry	4	Supervised Clinical Practice-I	PT340
		Supervised Clinical Practice-II	PT341
		Radiology & Diagnostic Imaging	PT442
		Supervised Clinical Practice-III	PT443
		Emergency Procedures & Primary Care in Physical Therapy	PT544
		Supervised Clinical Practice-IV	PT445
		Clinical Decision Making & Differential Diagnosis	PT546
		Supervised Clinical Practice-V	PT547
		Scientific Inquiry & Research Methodology	PT448
		Supervised Internship	PT449
Supportive Care/Law	5	Prosthetics & Orthotics	PT550
		Professional Practice (Laws, Ethics & Administration)	PT451
Advanced Physical Therapy	6	Manual Therapy	PT560
		Integumentary Physical Therapy	PT561

		Women’s Health Physical Therapy	PT562
		Pediatric & Neonatal Physical Therapy	PT563
		Geriatric Physical Therapy	PT564
		Sports Physical Therapy	PT565
		Supervised Clinical Practice-VI	PT566
		Research Project /Capstone	PT567
Allied Courses to be taken from Other Departments	Biochemistry-I	Code of relevant Dept.	
	Biochemistry-II	Code of relevant Dept.	
	Molecular Biology & Genetics	Code of relevant Dept.	
	Pathology & Microbiology-I	MIC304	
	Pathology & Microbiology-II	MIC305	
	Behavioral Sciences (Psychology & Ethics)	Code of relevant Dept.	

SCHEME OF STUDIES DOCTOR OF PHYSICAL THERAPY

SEMESTER - I	
CATEGORY	CREDIT HOURS
Major I	3
Major II	3
Major III	3
Functional English (Clutser-4)	3
Natural Sciences* (Cluster-II)	3
Arts & Humanities (Cluster-1)	2
Understanding of Holy Quran-1 / Fehm-e-Quran-1	1
Total Credits Hours = 18	

SEMESTER - II	
CATEGORY	CREDIT HOURS
Major IV	3
Major V	3
Major VI	3
Quantitative Reasoning – I* (Cluster-V)	3
Expository Writing* (Cluster-IV)	3
Pakistan Studies* (Cluster-IV)	2
Understanding of Holy Quran – II* /Fehm-e-Quran-II	1
Total Credits Hours = 18	

SEMESTER - III	
CATEGORY	CREDIT HOURS
Major VII	3
Major VIII	3
Interdisciplinary I	3
Interdisciplinary II	3
Applications of ICT* (Cluster-IV)	3
Quantitative Reasoning – II * (Cluster-V)	3
Total Credits Hours = 18	

SEMESTER - IV	
CATEGORY	CREDIT HOURS
Major IX	3
Major X	3
Interdisciplinary III	2
Ideology & Constitution of Pakistan * (Cluster-IV)	2
Civics & Community Engagement *(Cluster-IV)	2
Entrepreneurship *(Cluster-IV)	2
Islamic Studies *	2
Social Sciences **** (Cluster-III)	2
Total Credits Hours = 18	

SEMESTER - V	
CATEGORY	CREDIT HOURS
Major XI	3
Major XII	2
Major XIII	3
Major XIV	3
Interdisciplinary IV	2
Interdisciplinary V	2
Clinical Practice I	3
Total Credits Hours = 18	

SEMESTER - VI	
CATEGORY	CREDIT HOURS
Major XV	2
Major XVI	3
Major XVII	3
Interdisciplinary VI	3
Interdisciplinary VII	3
Interdisciplinary VIII	2
Clinical Practice II	3
Total Credits Hours = 19	

SEMESTER - VII	
CATEGORY	CREDIT HOURS
Major XVIII	3
Major XIX	3
Major XX	3
Interdisciplinary IX	3
Interdisciplinary X	3
Clinical Practice III	4
Total Credits Hours = 19	

SEMESTER - VIII	
CATEGORY	CREDIT HOURS
Major XXI	3
Major XXII	3
Major XXIII	3
Interdisciplinary XI	3
Interdisciplinary XII	2
Internship	3
Clinical Practice IV	4
Total Credits Hours = 21	

SEMESTER - IX	
CATEGORY	CREDIT HOURS
Major XXIV	3
Major XXV	2
Major XXVI	3
Major XXVII	2
Major XXVIII	3
Clinical Practice V	4
Capstone / Research	3
Total Credits Hours = 20	

SEMESTER - X	
CATEGORY	CREDIT HOURS
Major XXIX	3 (2-1)
Major XXX	2 (1-1)
Major XXXI	3 (2-1)
Major XXXII	3 (2-1)
Major XXXIII	3 (2-1)
Major XXXIV	2 (1-1)
Clinical Practice VI	4 (0-4)
Total Credits Hours = 20	

*HEC designed **model courses** for general education may be used by the university.

** The university / concerned department may offer any course in the broader category of “**Natural Sciences**” which should have relevance to the purpose of the degree program.

*** The university / concerned department may offer any course in the broader category of “**Arts & Humanities**” including but not limited to a course of regional or international language such as Chinese, Arabic, French, Spanish etc. or any other course such as Philosophy, History etc.

**** The university / concerned department may offer any course in the broader category of “**Social Sciences**” including but not limited to a course of Sociology, Social Work, Anthropology, Psychology, Education etc.

DEGREE AWARD REQUIREMENTS

The following minimum requirements are prescribed for the award of Doctor of Physical Therapy:

- All courses in the General Education category with titles and credit hours as prescribed in HEC Undergraduate Education Policy V 1.1. including the courses of “Pakistan Studies”, “Understanding of Holy Quran – I & II” must be completed.
- A minimum of **189** credit hours as prescribed in this document must be completed.
- A capstone of 3 credit hours must be completed in accordance with HEC Undergraduate Education Policy V 1.1. This requirement can be substituted with research (conducted individually) of equal credit hours, but not with additional course work, internship, field experience or clinical practice.
- A supervised internship of 3 credit hours must be completed in accordance with HEC Undergraduate Education Policy V 1.1. This requirement cannot be substituted with additional course work, capstone, research work or clinical practice.
- CGPA must not be below 2.00/4.00 at the time of completion of the degree program. The university may, however, set a higher standard in this regard.
- The minimum duration to complete the degree is 10 regular semesters spread over 5 years whereas the maximum duration is 15 regular semesters spread over 7.5 years. The maximum duration may further be extended in accordance with HEC semester guidelines and subject to approval of university’s statutory body.

ANNEXURE-II
DPT COURSE
LEARNING
OUTCOMES

COURSE LEARNING OUTCOMES

(Arranged in Alphabetical Order)

ANATOMY – I

By the end of this course, the students will be able to:

- a) Identify major anatomical structures of upper extremity through spotting/virtual dissection and cadaver lab work.
- b) Demonstrate understanding of regional anatomy focusing on the upper extremity.
- c) Describe the structure, composition, and functions of major organ systems.
- d) Describe basic concepts of human embryology and histology.
- e) Explain applied anatomy and anatomical variations.

ANATOMY – II

By the end of this course, the students will be able to:

- a) Identify major anatomical structures of the lower extremity through spotting/virtual dissection and cadaver lab work.
- b) Demonstrate understanding of regional anatomy focusing on the lower extremity, abdomen, and pelvis.
- c) Explain applied anatomy and anatomical variations.
- d) Describe the anatomical organization of the abdominal and pelvic cavities in relation to major organ systems.
- e) Interpret functional anatomy of lower body structures in context of movement and rehabilitation.

ANATOMY – III

By the end of this course, the students will be able to:

- a) Identify major anatomical structures of head, neck, and thorax through spotting/virtual dissection and cadaver lab work.
- b) Demonstrate understanding of regional anatomy focusing on head, neck, and thorax.
- c) Explain applied anatomy and anatomical variations.
- d) Analyze the anatomical basis of common clinical conditions affecting the head, neck, and thorax.
- e) Describe the vascular and nervous supply to head and thoracic regions relevant to clinical application.

ARTIFICIAL INTELLIGENCE IN HEALTHCARE

By the end of this course, the students will be able to:

- a) Describe the role of artificial intelligence in improving diagnostic accuracy and treatment outcomes within physical therapy settings.
- b) Explain how machine learning algorithms analyze patient data to assist in developing personalized rehabilitation plans.
- c) Discuss the ethical considerations surrounding the integration of AI technologies in healthcare, particularly in physical therapy practice.
- d) Identify current AI applications in clinical decision support systems used in physiotherapy.
- e) Evaluate limitations and future trends of AI integration in healthcare service delivery.

BIOMECHANICS & ERGONOMICS

By the end of this course, the students will be able to:

- a) Explain and apply basic principles of biomechanics related to human movement.
- b) Demonstrate proficiency in using biomechanical tools and equipment for motion analysis.
- c) Discuss ergonomic principles and their application in injury prevention and workplace design.
- d) Analyze the biomechanics of various joints and their role in functional activities.
- e) Evaluate ergonomic factors contributing to functional disorders.

BIOSTATISTICS

By the end of this course, the students will be able to:

- a) Understand fundamental concepts of biostatistics.
- b) Apply statistical methods to analyze research findings and interpret statistical measures.
- c) Utilize appropriate statistical tools and software for data analysis.
- d) Interpret and present statistical results in healthcare research settings.
- e) Assess the validity and reliability of biostatistical data used in evidence-based practice.

CARDIOPULMONARY PHYSICAL THERAPY

By the end of this course, the students will be able to:

- a) Identify common cardiopulmonary pathologies and their impact on function.
- b) Perform cardiopulmonary assessment techniques.
- c) Develop exercise prescription for patients with cardiopulmonary conditions.
- d) Implement interventions to optimize cardiopulmonary function and improve patient outcomes.
- e) Monitor patient response to cardiopulmonary rehabilitation and adjust treatment accordingly.

CLINICAL DECISION MAKING & DIFFERENTIAL DIAGNOSIS

By the end of this course, the students will be able to:

- a) Utilize clinical reasoning to formulate differential diagnoses based on patient history and examination findings.
- b) Apply diagnostic tests and measures to support clinical decision making in physical therapy practice.
- c) Evaluate the effectiveness of interventions through ongoing assessment and modification of treatment plans.
- d) Integrate clinical evidence with patient values to guide diagnostic and therapeutic decisions.
- e) Prioritize differential diagnoses in complex cases using evidence-based protocols.

COMMUNITY MEDICINE & REHABILITATION

By the end of this course, the students will be able to:

- a) Identify community resources and referral networks to support patients' rehabilitation goals.
- b) Collaborate with interdisciplinary teams to develop comprehensive community-based rehabilitation plans.
- c) Implement strategies to promote health education and injury prevention within the community.
- d) Evaluate the impact of community rehabilitation programs on patient outcomes.
- e) Apply principles of inclusive rehabilitation to address the needs of marginalized and underserved populations.

EMERGENCY PROCEDURES IN PHYSICAL THERAPY

By the end of this course, the students will be able to:

- a) Demonstrate proficiency in basic life support techniques and first aid.
- b) Identify medical emergencies and initiate appropriate interventions.
- c) Perform emergency procedures within the scope of physical therapy practice.
- d) Collaborate with other healthcare providers in emergency settings to ensure timely and effective patient care.
- e) Apply protocols for managing acute injuries and trauma in outpatient or sports settings.

EVIDENCE BASED PRACTICE

By the end of this course, the students will be able to:

- a) Critically appraise research literature to determine its relevance and validity.
- b) Apply evidence-based guidelines and clinical practice recommendations in patient care.
- c) Incorporate patient preferences and values into clinical decision-making processes.
- d) Formulate clinical questions using PICO framework to guide evidence search.
- e) Integrate best research evidence with clinical expertise to optimize outcomes.

EXERCISE PHYSIOLOGY

By the end of this course, the students will be able to:

- a) Explain physiological responses to exercise.
- b) Demonstrate proficiency in exercise testing and prescription techniques.
- c) Apply principles of exercise physiology to design tailored exercise prescription.
- d) Monitor and evaluate physiological responses to exercise to optimize training outcomes.
- e) Interpret adaptations of body systems in response to acute and chronic exercise.

GERIATRIC PHYSICAL THERAPY

By the end of this course, the students will be able to:

- a) Identify age-related changes in human functions.
- b) Design and adapt physical therapy interventions to meet the needs of older adults with diverse functional abilities.
- c) Implement fall prevention strategies and promote safe mobility in geriatric populations.
- d) Collaborate with caregivers and interdisciplinary teams to optimize functional independence and ensure quality of life.
- e) Evaluate psychosocial and environmental factors affecting geriatric rehabilitation outcomes.

HUMAN PSYCHOLOGY

By the end of this course, the students will be able to:

- a) Describe basic principles of human behavior and psychological development.
- b) Understand clinical psychological theories to address patients' attitudes, beliefs, and motivations related to health behavior.
- c) Collaborate with mental health professionals to address psychosocial factors impacting patient care.
- d) Recognize psychological responses to injury and chronic illness in physical therapy patients.
- e) Apply communication strategies to foster patient engagement and behavior change.

INTEGUMENTARY PHYSICAL THERAPY

By the end of this course, the students will be able to:

- a) Identify common integumentary conditions and their underlying pathophysiology.
- b) Evaluate and implement interventions to promote tissue healing and prevent complications in patients.
- c) Perform wound assessment and wound care techniques according to evidence-based practice.
- d) Analyze factors influencing wound healing in acute and chronic conditions.
- e) Integrate infection control measures in integumentary rehabilitation practices.

KINESIOLOGY – I

By the end of this course, the students will be able to:

- a) Identify skeletal muscles and their actions in movement.
- b) Explain fundamental and derived positions and demonstrate surface anatomy for muscle identification.
- c) Analyze joint mechanics and movement patterns in functional activities.
- d) Perform manual muscle testing and goniometry of upper quadrant.
- e) Apply kinesiological principles to assess and treat movement impairments.

KINESIOLOGY – II

By the end of this course, the students will be able to:

- a) Explain the biomechanical principles underlying muscle contraction and joint stability.
- b) Explain the concepts of postures, and gait.
- c) Apply principles of joint arthrokinematics to clinical assessment and intervention.
- d) Analyze the relationship between muscle length, tension, and force production.
- e) Design therapeutic exercises and manual techniques to restore normal movement patterns.

MANUAL THERAPY

By the end of this course, the students will be able to:

- a) Demonstrate proficiency in manual therapy techniques including mobilization and manipulation.
- b) Apply manual therapy interventions to address joint and soft tissue dysfunctions.
- c) Evaluate the effectiveness of manual therapy techniques in improving range of motion and reducing pain.
- d) Incorporate patient education and self-management strategies into manual therapy.
- e) Integrate manual therapy approaches within a comprehensive treatment plan for musculoskeletal conditions.

MEDICAL PHYSICS

By the end of this course, the students will be able to:

- a) Explain basic principles of physics and their application to medical imaging and electrotherapy.
- b) Understand and apply diagnostic, therapeutic and electrotherapy modalities.
- c) Discuss safety measures and regulatory guidelines in medical physics practice.
- d) Describe the physical principles underlying commonly used imaging techniques such as Xrays, MRI, and ultrasound.
- e) Analyze the relevance of physics in physiotherapeutic equipment calibration and usage.

MEDICINE – I

By the end of this course, the students will be able to:

- a) Describe the pathophysiology and clinical manifestations of cardiovascular, respiratory, musculoskeletal and systemic conditions.
- b) Identify pharmacological interventions used in the management of medical conditions.
- c) Apply medical knowledge to recognize red flags and refer patients for further evaluation.
- d) Collaborate with physicians and other healthcare providers in interdisciplinary patient care.
- e) Evaluate the implications of medical conditions on physical therapy treatment planning.

MEDICINE – II

By the end of this course, the students will be able to:

- a) Describe the pathophysiology and clinical manifestations of dermatological, renal, hematological, and neurological medical conditions.
- b) Identify pharmacological interventions used in the management of medical conditions.
- c) Apply medical knowledge to recognize red flags and refer patients for further evaluation.
- d) Collaborate with physicians and other healthcare providers in interdisciplinary patient care.
- e) Evaluate how chronic and systemic medical conditions influence physiotherapy outcomes and planning.

MOLECULAR BIOLOGY & GENETICS

By the end of this course, the students will be able to:

- a) Describe fundamental concepts of molecular biology and genetics relevant to physical therapy practice.
- b) Apply knowledge of molecular mechanisms to understand tissue repair and regeneration.
- c) Analyze genetic factors contributing to health disorders.
- d) Interpret the impact of genetic variation on disease susceptibility and treatment outcomes.
- e) Examine gene-environment interactions relevant to musculoskeletal and neurological disorders.

MUSCULOSKELETAL PHYSICAL THERAPY

By the end of this course, the students will be able to:

- a) Demonstrate proficiency in musculoskeletal assessment techniques.
- b) Develop individualized treatment plans based on musculoskeletal impairments and functional limitations.
- c) Apply appropriate therapeutic techniques and exercises to improve musculoskeletal function.
- d) Evaluate treatment outcomes and modify interventions as needed to optimize patient progress.
- e) Integrate manual therapy, modalities, and exercise approaches to manage common orthopedic conditions.

NEUROANATOMY

By the end of this course, the students will be able to:

- a) Identify anatomical structures of the central and peripheral nervous systems.
- b) Describe the functional organization of the brain and spinal cord.

- c) Apply neuroanatomical knowledge to understand neurological disorders and their clinical manifestations.
- d) Perform neuroanatomical spotting/virtual dissection.
- e) Correlate neuroanatomical structures with diagnostic imaging and neurological assessment techniques.

NEUROLOGICAL PHYSICAL THERAPY

By the end of this course, the students will be able to:

- a) Assess sensory and motor impairments in patients with neurological conditions.
- b) Implement evidence-based interventions to improve neuroplasticity.
- c) Utilize assistive devices and adaptive techniques to facilitate functional independence.
- d) Collaborate with interdisciplinary teams to optimize rehabilitation outcomes.
- e) Develop individualized neurological rehabilitation plans based on patient needs and functional goals.

PATHOLOGY & MICROBIOLOGY – I

By the end of this course, the students will be able to:

- a) Describe the general principles of pathology and microbiology.
- b) Describe the etiology, pathophysiology, and clinical manifestations of infectious diseases.
- c) Identify microorganisms responsible for infectious diseases and their modes of transmission.
- d) Discuss principles of infection control and prevention in healthcare settings.
- e) Correlate pathological processes with clinical signs and implications for physical therapy.

PATHOLOGY & MICROBIOLOGY – II

By the end of this course, the students will be able to:

- a) Explain the pathogenesis and clinical features of neoplastic diseases.
- b) Describe the role of immunology in the body's defense against infectious and autoimmune diseases.
- c) Analyze laboratory test results to aid in the diagnosis and management of pathological conditions.
- d) Discuss the principles of tumor staging and grading in cancer diagnosis and treatment.
- e) Examine how pathological changes affect rehabilitation outcomes and physiotherapy management.

PEDIATRIC & NEONATAL PHYSICAL THERAPY

By the end of this course, the students will be able to:

- a) Assess developmental milestones and functional abilities in pediatrics.
- b) Implement physical therapy techniques to address pediatric & neonatal disorders.
- c) Design family-centered therapy plans tailored to pediatric patients' needs.
- d) Monitor growth-related changes and their implications for therapy planning.
- e) Collaborate with pediatricians and caregivers to ensure continuity of care in early intervention services.

PHARMACOLOGY & THERAPEUTICS – I

By the end of this course, the students will be able to:

- a) Describe pharmacokinetic and pharmacodynamic principles of commonly prescribed medications.

- b) Identify medication classes used to manage pain and inflammation in physical therapy practice.
- c) Discuss adverse drug reactions and drug interactions relevant to physical therapy interventions.
- d) Explain safe medication administration practices and dosage considerations in rehabilitation settings.
- e) Correlate medication effects with clinical decision-making in physical therapy interventions.

PHARMACOLOGY & THERAPEUTICS – II

By the end of this course, the students will be able to:

- a) Explain the mechanisms of action and therapeutic uses of medications for cardiovascular and pulmonary conditions.
- b) Discuss pharmacological interventions for musculoskeletal and neurological disorders.
- c) Evaluate the role of pharmacotherapy in the management of endocrine and metabolic disorders.
- d) Identify side effects of medications that may influence physical therapy planning.
- e) Integrate pharmacological considerations into patient education and care coordination.

PHYSICAL AGENTS & ELECTROTHERAPY – I

By the end of this course, the students will be able to:

- a) Explain the principles of electrical stimulation.
- b) Demonstrate safe and effective application of electrical currents.
- c) Discuss indications and contraindications for the use of electrical currents in rehabilitation.
- d) Evaluate physiological effects of various forms of electrotherapy on tissues and nerves.
- e) Integrate clinical reasoning to select appropriate electrotherapy modalities based on patient condition.

PHYSICAL AGENTS & ELECTROTHERAPY – II

By the end of this course, the students will be able to:

- a) Explain the principles of electrotherapy modalities and physical agents.
- b) Apply therapeutic modalities to manage pain, promote tissue healing, and improve neuromuscular functions.
- c) Monitor patient tolerance and response to electrotherapy treatments.
- d) Incorporate evidence-based guidelines and safety precautions into the use of electrotherapy modalities.
- e) Compare and contrast different physical agent modalities for clinical effectiveness and outcomes.

PHYSIOLOGY – I

By the end of this course, the students will be able to:

- a) Describe the cellular and molecular basis of physiological processes.
- b) Explain the physiological mechanisms regulating fluid and electrolyte balance in the body.
- c) Analyze the physiological responses to exercise and physical stress.
- d) Perform basic physiological measurements in laboratory settings.
- e) Evaluate the role of the nervous system in regulating organ function.

PHYSIOLOGY – II

By the end of this course, the students will be able to:

- a) Identify the functions of the cardiovascular and respiratory systems.
- b) Explain the regulation of cardiovascular and respiratory function under normal and pathological conditions.
- c) Analyze physiological responses to environmental stressors and changes in altitude.
- d) Interpret physiological data including vital signs and pulmonary function tests.
- e) Correlate alterations in respiratory and cardiovascular physiology with clinical symptoms.

PHYSIOLOGY – III

By the end of this course, the students will be able to:

- a) Describe the structure and function of the gastrointestinal, renal, and endocrine systems.
- b) Explain the physiological mechanisms regulating digestion, metabolism, and hormone secretion.
- c) Analyze the impact of physiological adaptations on homeostasis and health outcomes.
- d) Perform physiological experiments to investigate organ system function.
- e) Interpret laboratory data related to endocrine and metabolic functions in clinical scenarios.

PRINCIPLES OF BIOCHEMISTRY

By the end of this course, the students will be able to:

- a) Explain fundamental concepts of biochemistry including molecular structure and function.
- b) Demonstrate understanding of biochemical pathways involved in cellular metabolism.
- c) Apply knowledge of biochemistry to explain the physiological basis of therapeutic interventions.
- d) Understand the role of biochemistry in tissue repair and regeneration.
- e) Explain the relationship between nutrition, metabolism, and physical performance.

PROFESSIONAL PRACTICE IN HEALTHCARE

By the end of this course, the students will be able to:

- a) Demonstrate understanding of professional roles, responsibilities, and ethical standards in healthcare practice.
- b) Apply principles of effective communication, teamwork, and cultural competence within interprofessional healthcare environments.
- c) Interpret legal and regulatory frameworks governing physical therapy and broader healthcare services.
- d) Develop professional documentation, including patient records, reports, and referral communications, in accordance with clinical and legal standards.
- e) Reflect on personal and professional development needs to engage in lifelong learning and career growth in the healthcare sector.

PROSTHETICS & ORTHOTICS

By the end of this course, the students will be able to:

- a) Understand prosthetic and orthotic appliances.
- b) Identify indications for prosthetic and orthotic interventions in rehabilitation.
- c) Educate the patients regarding donning and doffing of prosthetic and orthotic devices.
- d) Assist in selection and fitting of prosthetic and orthotic devices appropriate to patient needs.

e) Monitor patient adaptation and functional outcomes following prosthetic and orthotic interventions.

RADIOLOGY & DIAGNOSTIC IMAGING

By the end of this course, the students will be able to:

- a) Identify radiographic anatomy and landmarks relevant to physical therapy practice.
- b) Interpret common radiographic findings and imaging studies including X-rays, ultrasound, CT Scan and MRIs.
- c) Recognize indications and contraindications for diagnostic imaging.
- d) Collaborate with radiologists and other healthcare providers to integrate imaging findings into treatment planning.
- e) Correlate imaging findings with physical examination results to enhance clinical reasoning and diagnosis.

SCIENTIFIC INQUIRY & RESEARCH METHODS

By the end of this course, the students will be able to:

- a) Describe basic research methodology.
- b) Formulate research questions and hypotheses based on clinical observations and literature review.
- c) Apply ethical principles and regulatory guidelines in research design and conduct.
- d) Collect, analyze, and interpret research data using appropriate statistical methods.
- e) Prepare and present research findings in written and oral formats suitable for academic and professional audiences.

SPORTS PHYSICAL THERAPY

By the end of this course, the students will be able to:

- a) Perform sports-specific assessments to identify biomechanical, neurological and musculoskeletal imbalances.
- b) Develop individualized rehabilitation programs to address sports injuries and optimize performance.
- c) Implement injury prevention strategies in sports.
- d) Apply return-to-play criteria and monitor athlete recovery following injury.
- e) Collaborate with coaches and athletic trainers to support injury management and performance enhancement.

SURGERY – I

By the end of this course, the students will be able to:

- a) Describe common surgical procedures and their indications in General Surgery, orthopedic and musculoskeletal conditions.
- b) Identify preoperative and postoperative considerations for physical therapy management.
- c) Discuss potential complications and rehabilitation challenges following orthopedic surgery.
- d) Collaborate with surgeons and other healthcare providers to optimize surgical outcomes for patients.
- e) Evaluate surgical outcomes and their implications for physiotherapy goals and progression.

SURGERY – II

By the end of this course, the students will be able to:

- a) Explain surgical techniques and interventions for neurological and cardiovascular conditions.
- b) Describe preoperative and postoperative care protocols for patients undergoing neurological and cardiovascular surgeries.
- c) Discuss potential complications and rehabilitation goals following neurosurgical and cardiovascular procedures.
- d) Implement evidence-based rehabilitation strategies to optimize functional outcomes postsurgery.
- e) Coordinate patient care with interdisciplinary teams to support recovery and long-term rehabilitation after complex surgeries.

SUSTAINABLE DEVELOPMENT GOALS: HEALTH & WELLBEING

By the end of this course, the students will be able to:

- a) Understand the sustainable development goals.
- b) Promote health and wellbeing.
- c) Assess individuals' health status and risk factors to design tailored wellbeing plans.
- d) Implement evidence-based interventions to prevent diseases and promote overall well-being.
- e) Evaluate the effectiveness of health promotion programs.

THERAPEUTIC EXERCISES & TECHNIQUES

By the end of this course, the students will be able to:

- a) Demonstrate proficiency in prescribing and progressing therapeutic exercises for various patient populations.
- b) Implement therapeutic techniques as per scientific therapeutic exercise progression (STEP).
- c) Adapt therapeutic exercises and techniques to address individual patient needs and goals.
- d) Monitor patient response to interventions and modify treatment plans as necessary to achieve desired outcomes.
- e) Integrate exercise prescription with functional training to support rehabilitation and performance enhancement.

WOMEN'S HEALTH PHYSICAL THERAPY

By the end of this course, the students will be able to:

- a) Identify physiological and physical changes during pregnancy and postpartum.
- b) Perform assessment and develop appropriate interventions for women health dysfunctions.
- c) Educate women health issues and complications and role of physical therapy.
- d) Implement physical therapy interventions to address pelvic floor dysfunction and related disorders.
- e) Collaborate with obstetric and gynecological professionals to ensure holistic care in women's health.

SUPERVISED CLINICAL PRACTICE

SUPERVISED CLINICAL PRACTICE – I

Minimum Performing Standards

Focus Area: History taking (IPD & OPD).

It is mandatory for each student to document a minimum of 16 cases per semester (1 case per week) in clinical logbook duly checked and signed by the clinical instructor on a weekly basis. This learning requirement must be supervised by a Physical Therapist.

Learning Outcomes

By the end of the practice, students will be able to:

- a) Demonstrate proficiency in reviewing pertinent medical records and conducting comprehensive patient interviews to collect essential data including past and current medical history, demographics, chief complaint, medications, and social history.
- b) Apply history taking skills across diverse patient populations including surgical, non-surgical, pediatric, geriatric, and those with musculoskeletal, integumentary, cardiovascular, pulmonary, and neurological conditions.
- c) Adapt history taking skills to different clinical settings including inpatient and outpatient environments, recognizing the unique challenges and requirements of each setting.
- d) Maintain accurate records of history-taking encounters, documenting all relevant information in a systematic and organized manner.
- e) Successfully perform history taking skills on real patients during the final evaluation of the course, demonstrating competency in collecting and documenting patient data across various systems and patient populations.

SUPERVISED CLINICAL PRACTICE – II

Minimum Performing Standards

Focus Area: System review (IPD & OPD).

It is mandatory for each student to document a minimum of 16 cases per semester (1 case per week) in clinical logbook duly checked and signed by the clinical instructor on a weekly basis. This learning requirement must be supervised by a Physical Therapist.

Learning Outcomes

By the end of the practice, students will be able to:

- a) Perform a thorough review of systems to assess the patient's general health condition, cardiovascular status, pulmonary function, gastrointestinal health, urinary function, reproductive health, and integumentary integrity.
- b) Recognize red and yellow flags indicating potential serious health concerns or conditions requiring referral to other healthcare professionals.
- c) Demonstrate proficiency in conducting systems reviews for screening various body systems including cardiovascular, pulmonary, integumentary, musculoskeletal, and neurological systems.
- d) Perform assessments of vital signs, cardiovascular and pulmonary function, integumentary integrity, musculoskeletal symmetry and mobility, and basic neurological function.
- e) Identify signs and symptoms during the review of systems that warrant referral to other healthcare professionals or specialists beyond the scope of physical therapy practice.
- f) Consult additional resources, such as evidence-based literature, healthcare colleagues, and community services, to ensure comprehensive patient care and appropriate management of identified concerns.

SUPERVISED CLINICAL PRACTICE – III

Minimum Performing Standards

Focus Area: Musculoskeletal, orthopedic and rheumatology.

It is mandatory for each student to document a minimum of 16 cases per semester (1 case per week) in clinical logbook duly checked and signed by the clinical instructor on a weekly basis. This learning requirement must be supervised by a Physical Therapist.

Learning Outcomes

By the end of the practice, students will be able to:

- a) Demonstrate the ability to perform a comprehensive examination by selecting appropriate tests and measures based on the best available evidence.
- b) Perform posture tests, gait analysis, and balance assessments utilizing both qualitative and quantitative measures across various functional activities and environments.
- c) Conduct musculoskeletal system tests and measures, including accessory movement tests, joint integrity assessments, muscle strength evaluations, and range of motion measurements.
- d) Perform thorough assessments of orthotic, prosthetic, and assistive devices, evaluating components, alignment, fit and functional use during activities of daily living.
- e) Determine appropriate interventions to address impairments and enhance function with the use of orthotic, prosthetic, and assistive devices, considering safety and patient/client preferences.
- f) Apply clinical reasoning skills to synthesize examination findings within the International Classification of Functioning, Disability, and Health (ICF) model, considering body functions and structures, activities, and participation.
- g) Utilize available evidence to interpret examination findings and formulate clinical decisions, including referral to other healthcare professionals when necessary

SUPERVISED CLINICAL PRACTICE – IV

Minimum Performing Standards

Focus Area: Neurological physical therapy (IPD & OPD).

It is mandatory for each student to document a minimum of 16 cases per semester (1 case per week) in clinical logbook duly checked and signed by the clinical instructor on a weekly basis. This learning requirement must be supervised by a Physical Therapist.

Learning Outcomes

By the end of the practice, students will be able to:

- a) Analyze patient/client data using evidence-based practices to select appropriate examination tests and measures.
- b) Perform posture tests, gait analysis, and balance assessments, including both qualitative and quantitative measures across various functional activities and environments.
- c) Conduct neurological tests and measures to assess arousal, cognition, motor function, sensory integrity, and reflexes, integrating findings into a comprehensive assessment.
- d) Synthesize patient/client data within the International Classification of Functioning, Disability, and Health (ICF) model to identify impairments in body functions and structures, activities, and participation.

- e) Utilize available evidence to interpret examination findings, verbalizing possible alternatives and cite relevant evidence to support clinical decisions.
- f) Integrate examination findings to classify patient/client problems, prioritize impairments, and determine specific intervention goals based on body functions and structures, activities, and participation.
- g) Determine the predicted level of optimal functioning and the time required to achieve it, considering potential barriers such as age, medication, socioeconomic status, and cognitive status.
- h) Design a patient-centered plan of care with measurable functional goals, short-term and long-term, incorporating patient/client goals, expectations, and preferences.
- i) Establish criteria for discharge based on patient goals and current functioning, ensuring coordination of care and identification of referral needs beyond the scope of physical therapy practice.

SUPERVISED CLINICAL PRACTICE – V

Minimum Performing Standards

Focus Area: Cardiopulmonary physical therapy (IPD & OPD).

It is mandatory for each student to document a minimum of 16 cases per semester (1 case per week) in clinical logbook duly checked and signed by the clinical instructor on a weekly basis. This learning requirement must be supervised by a Physical Therapist.

Learning Outcomes

By the end of the practice, students will be able to:

- a) Demonstrate proficiency in selecting appropriate examination tests and measures based on best available evidence for diverse patient/client populations.
- b) Perform comprehensive posture tests, gait analysis, and balance assessments, utilizing both quantitative and qualitative measures across various functional activities and environments.
- c) Characterize and quantify body mechanics, ergonomic performance, environmental barriers, and pain assessment to provide a thorough evaluation of the patient/client's physical status.
- d) Apply clinical reasoning and decision-making processes to synthesize patient/client data within the International Classification of Functioning, Disability, and Health (ICF) model, incorporating evidence-based practices.
- e) Interpret examination findings critically, verbalizing possible alternatives, and citing relevant evidence to support clinical decisions, fostering effective communication with patients/clients and other healthcare professionals.
- f) Utilize available evidence to develop a comprehensive evaluation, prioritizing impairments and formulating a precise diagnosis based on body functions and structures, activities, and participation.
- g) Determine the predicted level of optimal functioning and forecast the time required to achieve it, identifying potential barriers such as age, medication, socioeconomic status, and comorbidities.
- h) Develop a patient-centered plan of care with measurable functional goals, short-term and long-term, through collaborative decision-making with patients/clients and caregivers, integrating referrals and resources as needed.

- i) Establish criteria for discharge based on patient goals and current functioning, ensuring effective coordination of care and advocating for patient access to services.
- j) Implement interventions safely and effectively, encompassing safety measures, body mechanics, positioning, and therapeutic exercises tailored to individual patient/client needs and goals.
- k) Coordinate care with interdisciplinary teams, advocating for patient access to services, and ensuring accurate documentation of all aspects of care following established guidelines and standards.
- l) Monitor patient/client response to intervention, making necessary adjustments to the plan of care based on outcomes, environmental factors, and personal factors, demonstrating competency in clinical decision-making and intervention management.

SUPERVISED CLINICAL PRACTICE – VI

Minimum Performing Standards

Focus Area: Evaluation, examination and intervention of integumentary, women's health, pediatrics, geriatric, sports and metabolic disorders (IPD & OPD).

It is mandatory for each student to document a minimum of 16 cases per semester (1 case per week) in clinical logbook duly checked and signed by the clinical instructor on a weekly basis. This learning requirement must be supervised by a Physical Therapist.

Learning Outcomes

By the end of the practice, students will be able to:

- a) Demonstrate advanced proficiency in selecting appropriate examination tests and measures based on the best available evidence for diverse patient/client populations.
- b) Conduct comprehensive posture tests, gait analysis, and balance assessments, employing both quantitative and qualitative measures across various functional activities and environments.
- c) Skillfully perform integumentary integrity tests and measures, including assessment of skin characteristics, wound characteristics, signs of infection, and scar tissue characteristics.
- d) Apply evidence-based practices to recognize and characterize pain, including its location, intensity, and impact on functional activities, incorporating assessment of signs and symptoms of inflammation.
- e) Utilize clinical reasoning and decision-making processes to synthesize patient/client data within the International Classification of Functioning, Disability, and Health (ICF) model, integrating evidence-based practices.
- f) Interpret examination findings critically, verbalizing possible alternatives, and citing relevant evidence to support clinical decisions, fostering effective communication with patients/clients and interdisciplinary teams.
- g) Synthesize available data to formulate precise diagnoses based on body functions and structures, activities, and participation, prioritizing impairments and activity limitations for intervention planning.
- h) Determine the predicted level of optimal functioning and forecast the time required to achieve it, recognizing and addressing potential barriers such as age, medication, socioeconomic status, and comorbidities.

ANNEXURE-III
LIST OF EXPERTS
FOR DPT
PROGRAM

LIST OF EXPERTS FOR DPT PROGRAM (UPDATED)

AS PER HEC POLICY

S. NO	NAME	DESIGNATION	ADDRESS/CONTACT DETAILS
1.	Dr. Haider Darain	Professor	Dean Allied Health Sciences Khyber Medical University Email: haider.kmu@hotmail.com Ph: 03419990915
2.	Dr. Waqar Ahmed Awan	Professor	Faculty of Rehabilitation & Allied Health Sciences Riphah International University Islamabad Email: wawan01@gmail.com Ph: 03335348846
3.	Dr. Asghar Khan	Professor	Dean Faculty of Rehabilitation & Allied Health Sciences Riphah International University Islamabad Email: asghar.khan@riphah.edu.pk
4.	Dr. Naveed Babur	Professor	Dean Faculty of Allied Health Sciences Superior University Lahore Email: naveedphysio@gmail.com Ph: 03335118324
5.	Dr. Syed Shakil ur Rehman	Professor	Riphah College of Rehab & Allied Health Sciences Riphah International University, Lahore Campus, Lahore Email: shakil.urrehman@riphah.edu.pk
6.	Dr. Arshad Nawaz Malik	Professor	Principal Riphah college of Rehabilitation Islamabad Email: arshad.nawaz@riphah.edu.pk Ph: 03334503754
7.	Dr. Abdul Ghafoor Sajjad	Professor	Head of Department Islamabad Medical & Dental College Email: abdulghafoorsajjad@yahoo.com Ph: 03335468034
8.	Dr. Ashfaq Ahmed	Associate Professor	Head of Department, University Institute, Clinics & Centre of Research in Physical Therapy, University of Lahore Lahore Email: ashfaqpt@gmail.com Ph: 03009449192
9.	Dr. Anam Aftab	Associate Professor	Ibadat University Islamabad Email: anaam.dpt001@gmail.com Ph: 03200503300

10.	Dr. Muhammad Bin Afsar Jan	Associate Professor	HoD & Principle Physical Therapy and Rehabilitation Rehman Medical Institute Peshawar Email: afsarjan@yahoo.com Ph: 03339118440
11.	Dr. Abid Minhas?	Clinical Expert	Head, Department of Physiotherapy WAPDA Teaching Hospital Complex Lahore Ph: 03214016660
12.	Dr. Pir Zada Khattak	Clinical Manager	Helping Hand Comprehensive Physical Rehabilitation Center Mansehra Email: pirzada.khattak@hhrd.pk 03332284856
13.	Dr. Irfanullah	Assistant Professor/ Director IPMR	Khyber Medical University 03349898627 Email: irfanullah.ipmr@kmu.edu.pk
14.	Dr. Rafiq Ahmad	Clinical Expert	Special Education Department KP Email: afiqahmad81@gmail.com 03453004505
15.	Dr. Muhammad Affan Iqbal	Assistant Professor / HoD	FRAHS- Riphah International University Email: affan.iqbal@riphah.edu.pk 03336758837
16.	Dr. Nawab Ali	Associate professor/ HoD	FRAHS- Riphah International University Email: nawab.ali@riphah.edu.pk 03054158757