

Curriculum

Syllabus/Course of Study

For

Post Professional DOCTOR OF PHYSICAL THERAPY (PP-DPT)

2-years Postgraduate Degree Program
For Practicing Physical Therapists



(Mahboob College of Physiotherapy)



**Gandhara University, Peshawar
Pakistan**

Mission Statement

This program is designed keeping in mind the mission statement of MSP-GU

The Mahboob School of Physiotherapy Gandhara University is committed to a holistic and integrated approach in education Character building, intellectual and academic development, for us, are equally important. We want to build total human personality of our youth with concern for the welfare of humanity. A value based education alone, in our view can produce a generation of dynamic, committed and progressive, leaders and builders of the Ummah.”

Goals of the Program:

The purposes of the Post Professional Doctor of Physical Therapy Program are to prepare physical therapists who:

1. Are primary providers of physical therapy care.
2. Serve as responsible members in the professional community and are willing and able to assume leadership roles in the communities they serve.
3. Identify researchable problems, advocate and participate in research, and incorporate research findings into clinical practice.
4. Understand and place in context the social, economic and cultural issues of practice and effectively advocate for changes in policy
5. Correlate theory with practice and think creatively about, react to, adapt or shape new practice environments.
6. Participate in and provide education for communities, patients, peers, students and others.

Objectives of the Program:

Graduates of the Post Professional Doctor of Physical Therapy Program will:-

1. Demonstrate in-depth knowledge of the basic and clinical sciences relevant to physical therapy, both in their fundamental context and in their application to the discipline of physical therapy.

2. Understand, correlate and apply theoretical foundations of knowledge to the practice of physical therapy; evaluate and clarify new or evolving theory relevant to physical therapy.
3. Demonstrate the behaviors of the scholarly clinician by developing and utilizing the process of critical thinking and inquiry, particularly focused on the improvement of the practice of physical therapy and the delivery of health care.
4. Engage in reflective practice through sound clinical decision making, critical self-assessment and commitment to lifelong learning.
5. Demonstrate mastery of entry level professional clinical skills. Provision of these services is based on the best available evidence and includes physical therapy examination, evaluation, diagnosis, prognosis, intervention, prevention activities, wellness initiatives and appropriate health care utilization.
6. Are prepared to influence the development human health care regulations and policies that are consistent with the needs of the patient and of society.
7. Demonstrate leadership, management, and communication skills to effectively participate in physical therapy practice and the health care team.
8. Incorporate and demonstrate positive attitudes and behaviors to all persons.
9. Demonstrate the professional and social skills to adapt the changes in health care environment.
10. Contribute to the evolution of the physical therapy profession.

Detail description of the program:

Program:	Post Professional Doctor of Physical Therapy
Duration:	Two-years, full time, 68 credit hours with 6 credit hours thesis
Level:	Postgraduate
Eligibility:	Bachelor of Science in Physical Therapy (B.S.P.T) minimum 50%marks in aggregate with HEC equivalency.
Course:	Semester Based (4-Semesters) duration (18-weeks each)
Credit Hours:	68- credit Hours

Description of the Post Professional Degree Program:-

A Post Professional Doctor of Physical therapy (PP- D.P.T) is a postgraduate degree (equivalent to 18 years of schooling/M.Phil according to HEC criteria), a higher level qualification after a four years BS.PT degree program, offering more intense clinical training and preparing graduates for higher-level work and better career outcomes. Graduates will possess the most current knowledge in the field of physical therapy. The post professional Doctor of Physical therapy is a clinical degree clearly distinguished from the academic research-based degree Doctor of Philosophy (PhD).

Pre-requisites for Post Professional-DPT program:

- Four-year Bachelor of Science in Physical therapy (B.S, PT) or equivalent qualification from any HEC recognized university minimum unadjusted 50% marks.
- Transcripts from all professional and post professional degree programs.
- Completion of an academic institution application.
- GAT-Graduate Admission Test by NTS with at least 50 % score

Why is it important for clinicians to acquire the PP-DPT?

The PP-DPT is not required for the practice of physical therapy. Currently B.S, PT is the minimum requirement for an individual to be called physical therapist but since the physical therapy profession is growing nationally and internationally and there are new developments in the field of physical therapy, so due to those changes physical therapists will have to acquire higher qualification and new skills to face new challenges. There are several reasons for acquiring a post professional DPT:

- There is value in any educational experience that augments knowledge, skills, and behaviors in a way that will help better position a practitioner in a very uncertain health care environment.
- The Post Professional-DPT program will provide practitioners with a degree-based opportunity to acquire new knowledge, skills, and behaviors and to do so with colleagues who bring a wealth of experience in the application of the science and art of physical therapy.
- The doctorally-prepared practitioner will be perceived as possessing all of the rights, privileges, and obligations associated with being a member of a doctoring profession.

Assessment Criteria/Plan

- Sessional Exam after 8 weeks
- Final semester Exam after 18 weeks

❖ **Subjects with theory,viva and practical:**

- | | | |
|-----------------------------|---|-------------|
| a) Theory paper : 100% MCQs | = | marks = 100 |
| b) Duration of paper | = | 2 hours |
| Assessment Criteria: | | |
| c) Assignments | = | 10% |
| d) Sessional Exam | = | 30% |
| e) Final Exam | = | 40 % |
| f) Viva & practical | = | 20 % |
| g) Cumulative 60% | = | pass |

❖ **Subjects only have theory papers:**

- | | | |
|-----------------------------|---|-------------|
| a) Theory paper : 100% MCQs | = | marks = 100 |
| b) Duration of paper | = | 2 hours |
| Assessment Criteria: | | |
| d) Assignments | = | 10% |
| e) Sessional Exam | = | 40% |
| f) Final Exam | = | 50% |
| g) Cumulative 60% | = | pass |

Grading System:

Sr.No	Letter Grade	Grade Point Value	Numerical Grade (%)
1.	A	4.0	80% to 100%
2.	B	3.0	70% to 79.9%
3.	C	2.0	60% to 69.9%
4.	F	0	Below 60% considered FAIL

Detail Contents:

Break down of Semesters with subject codes & credit hours

1st Semester

Subject code	Courses	Credit Hours
PPDPT-003	Medical Informatics	3(3+0) Credit Hours
PPDPT-004	Statistics in Physical Therapy	3(3+0) Credit Hours
PPDPT-001	Geriatrics Physical therapy	4(3+1) Credit Hours
PPDPT-002	Gender Health care Physical Therapy	4(3+1) Credit Hours
PPDPT-005	Evidence Based Practice in Rehabilitation	3(2+1) Credit Hours
Total Credit Hours		17-Credit Hours

2nd Semester

Subject code	Courses	Credit Hours
PPDPT-008	Neuromuscular Physical Therapy	4(3+1) Credit Hours
PPDPT-006	Extremity Manual Therapy	4(2+2) Credit Hours
PPDPT-009	Spinal Manual Therapy	4(2+2) Credit Hours
PPDPT-007	Cardiovascular & Pulmonary Physical Therapy	4(3+1) Credit Hours
Total Credit Hours		16-Credit Hours

3rd Semester

Subject code	Courses	Credit Hours
PPDPT-011	Radiology and Imaging	3(2+1) Credit Hours
PPDPT-012	Musculoskeletal Physical Therapy	4(3+1) Credit Hours
PPDPT-013	Integumentary Physical Therapy	4(3+1) Credit Hours
PPDPT-014	Professional Practice in Physical Therapy	3(3+0) Credit Hours
PPDPT-015	Quantitative Research Methods & Design in Rehabilitation	3(3+0) Credit Hours
Total Credit Hours		17-Credit Hours

4th (Final) Semester

Subject code	Courses	Credit Hours
PPDPT-018	Differential Diagnosis in Rehabilitation	3(2+1) Credit Hours
PPDPT-017	Pediatrics Physical Therapy	3(2+1) Credit Hours
PPDPT-019	Pharmacology in Rehabilitation	3(2+1) Credit Hours
PPDPT-016	Emergency procedure and patient care	3(2+1)Credit Hours
PPDPT-020	Terminal Project(Thesis Based)	6(6+0) Credit Hours
Total Credit Hours		18-Credit Hours

Total Credit Hours PP-DPT	68-Credit Hours
----------------------------------	------------------------

Medical Informatics

Subject code	Course	Credit Hours
PPDPT-003	Medical Informatics	3(3-0) Credit Hours

Course Description:

This course includes an introduction to the use of technology in health care as well as the concept of telemedicine in current medical practice in hospitals.

Course Objectives:

- To describe terminology concepts and characteristics.
- To identify the component disciplines within the field of biomedical informatics.
- To examine the state of the art with respect to current standards
- To identify the basics for object-oriented database design.
- To understand telemedicine as an information process.
- To understand the technical, regulatory and societal impediments to the utilization of telemedicine.
- To understand the hospital management system and standards of health system.
- To provide examples of coding clinical data.

Course contents:

1. Medical informatics:

- Introduction to Medical Informatics
- Clinical Terminologies & Informatics Standards

2. *Data and Information:*

- Introduction and Overview
- Information and Communication

3. *Data in Computers:*

- Data Processing
- Database Management
- Telecommunication, Networking and Integration

4. **Data from Patients:**

- Coding and Classification
- The Patient Record
- Biosignal Analysis
- Medical Imaging
- Image Processing and Analysis

5. Patient-Centered Information Systems:

- Primary Care
- Clinical Departmental Systems
- Clinical Support Systems
- Nursing Information Systems

6. Medical Knowledge and Decision Support:

- Methods for Decision Support
- Clinical Decision-Support Systems
- Strategies for Medical Knowledge Acquisition
- Predictive Tools for Clinical Decision Support

7. Institutional Information Systems:

- Modeling of Health Care for Information Systems Development
- Hospital Information Systems: Clinical Use
- Hospital Information Systems; Technical Choices
- Health Information Resources

8. Methodology for Information Processing:

- Logical Operations
- Biostatistical Methods
- Biosignal Processing Methods
- Advances in Image Processing
- Pattern Recognition
- Structuring the Computer-based Patient Record

9. Methodology for Information Systems:

- Human-Computer Interaction in Health Care
- Costs and Benefits of Information Systems
- Security in Medical Information Systems
- Standards in Health-care Informatics

10. Medical Informatics as a Profession:

- Education and Training in Medical Informatics
- International Developments in Medical Informatics

Text book: Evaluation Methods in Medical Informatics
By Charles P.Friedman, et al.

Statistics in Physical Therapy

PPDPT-004	Statistics in Physical Therapy	3(3-0) Credit Hours
-----------	--------------------------------	---------------------

Course Description:

This course will cover basic statistics including central tendency, probability, percentile ranks, confidence interval, and interpretation of results. This course is design for Post professional Doctor of Physical Therapy (PP-DPT) students to provide them knowledge and skills in critical inquiry, including review and analysis of articles in professional and medical journals and books.

COURSE OBJECTIVES:

- To identify the role of statistics in Health Services and their application in the practice of Physical Therapy.
- To introduce the basic concepts of statistical procedures and drawing inferences from it.
- To develop an understanding of statistical formulae and techniques based on statistical methodology and practice the statistical procedures by using real health situations.
- To enable the students to understand the published research papers particularly from statistical point of view.
- To enable the students to initiate, undertake and participate in questionnaire design small-scale study.

COURSE CONTENTS:

1.INTRODUCTION OF STATISTICS:

- Statistical data, condensation, Presentation by graphs.
- Health related data, Rates and their relative importance,
- Presentation of quantitative data.

2. SAMPLING:

- The concept of the sampling

- Types and methods of drawing ideal sample
- Sampling distribution of sample mean
- Error of sampling,
- Standard Error
- Chi Squars
- T-test and their uses in health.

3. CENTRAL TENDENCY:

- Concepts of central tendency, mean, median and mode, and their value in health. Percentiles. Measures of dispersion
- Coefficient of variation.
- Normal distribution, range, standard deviation and relative deviation.

4. HYPOTHESIS:

- Concepts of Hypothesis testing.
- Null and alternative hypothesis, two types of errors.
- Acceptance and rejection regions.
- Two sided and one-sided tests
- Test about means, Confidence interval for mean.
- Meaning of significance in statistical procedures and methods of inferential statistics.

5. REGRESSION AND CORRELATION:

- Scatter diagram, straight-line regression model.
- Method of least squares.
- Sample correlation coefficient.
- Inference about regression coefficient and correlation coefficient.

6. INTRODUCTION TO RESEARCH:

- The question of legitimate knowledge. Knowledge and decision making.
- The scientific method.
- Quantitative Vs Qualitative research.
- Application of scientific method. Positivistic Vs naturalistic paradigm.

7. CLASSIFICATION OF RESEARCH:

- Basic Vs applied research.
- Evaluation research.

- Research and development (R & D) Action research.

8. SELECTION & FORMULATION OF A PROBLEM:

- From generic to a specific program.
- Program Statement. Getting an access to primary and secondary resources.
- Note taking and information to management.
- Review of related literature.
- Questions and/or hypothesis of the study.

9. DEVELOPMENT OF A RESEARCH PLAN:

- The ethical, legal, and professional obligations.
- The rationale of the study.
- The research plan.
- Evaluation of a research plan.

10. SELECTION OF A RESEARCH PLAN:

- Sample & population.
- Basic considerations in sampling
- Random sampling.
- Stratified random sampling.
- Cluster sampling. Systematic sampling,
- Determination of sample size.
- Elimination of sampling bias.

11. INSTRUMENTATION AND DATA COLLECTION:

- Test and scales.
- Objectivity and standardization.
- Types of test and scales.
- Validity & reliability of an instrument
- Assessment of validity and reliability.
- Development of tests/scale.

12. DATA ANALYSIS & INTERPRETATION:

- Preparing data analysis
- Types of measurement scales.
- Descriptive statistics.

- Using computer for data analysis.

13. PREPARATION OF A RESEARCH REPORT:

- Format & style.
- Citation, references & bibliography.
- Writing thesis, dissertations & journal articles.

PRESCRIBED BOOKS:

1. Gay, L.R. (1987) Educational Research, Competencies for Analysis and Application Columbus; Merrill.

2. Walpole, R.E. Introduction to Statistics, Publishing Co. Inc. New York.

Geriatrics Physical Therapy

PPDPT-001	Geriatrics Physical therapy	4(3-1) Credit Hours
-----------	-----------------------------	---------------------

Course Description:

The course covers normal aging process, physiological and psychological changes and their effects on daily living activities (ADL) and instrumental daily living activities (IADL). Relevant testes and measures for determining impairment and differentiating the diagnosis based on the specificity and sensitivity of the assessment instruments as related to patients with geriatric conditions are discussed. The use of evidence-based physical therapy intervention for geriatric conditions is emphasized. Topics will focus on comparing contemporary and traditional interventions and the impact of evolving technology in this area.

Course Objective:

- To identify the normal ageing process and its effects on the human body.
- To identify how ageism affects functional activities of a human being(ADLs & IADLs)
- To compare the contemporary and traditional care for quality treatment of geriatric population.
- To identify the evidence based intervention of physical therapy for geriatric conditions.

Course contents:

1. Attitudes and Ageism

- Ageism
- Myths and Facts about Older Adults
- Age Bias in Healthcare
- Geriatric Training and Role of Physical Therapist

2. Normal Physical Changes in Older Adults

- Breathing — the Respiratory System
- Beating — the Cardiovascular System
- Thinking and Reacting — the Nervous System
- Moving — the Musculoskeletal System
- Eating & Eliminating — the Gastrointestinal and Urinary Systems
- Metabolizing — the Endocrine System
- Responding — the Sensory System
- Sleeping and Other Physical Changes

3. Psychological Changes:

- The 3 Ds and Suicide in Older Adults
- Delirium
- Dementia
- Depression

4. Older Adult Abuse and Neglect:

- Scope of Older Adult Abuse and Neglect
- Clues to Abuse and Interventions

5. Triage and Assessment:

- ABCs of Geriatric Assessment
- Assessment Techniques and Atypical Presentations

6. Pain

- Pain in Older Adults
- Pain Assessment and Challenges
- Impact of Physiological Changes
- Medication and Pain Management
- Medication Interactions
- Medication and Food

7. Effects of Age:

- Task Complexity,
- Exercise
- Ambulation.

8. Physical therapy for geriatrics in various neuromuscular disorders:

- Alzheimer’s disease
- Parkinsonism
- Cerebrovascular accident (C.V.A)
- Poly neuropathies etc.

9. Pre-operative and post operative Physical Therapy for geriatrics in various musculoskeletal disorders:

- Hip & Knee Joint replacements
- Soft tissue injuries.

Recommended Books:

1-Geriatric Physical Therapy (Hardcover)

by Andrew A. Guccione (Author)

2-Fundamentals of Geriatric Medicine

Gender Health Care Physical Therapy

PPDPT-002	Gender Health care Physical Therapy	4(3-1) Credit Hours
-----------	-------------------------------------	---------------------

Course Description:

This course discusses relevant literature and research studies about current management approaches for condition with gender specific characteristics. Topics will focus on analyzing and comparing contemporary and traditional interventions and the impact of evolving knowledge in this area. This course focuses on how the health of women differs from the health of men and the relevance of those differences to Physical Therapy Practice. Evidence from the scientific literature and case examples will be used to illustrate how and why the unique characteristics associated with men's and women's health matter across all physical therapy practice settings.

Course Objectives:

- To identify gender specific characteristics and how these influence the physical therapy practice.
- To identify the current and evidence based physical therapy management approaches for conditions with gender specific characteristics.
- To identify the sex and gender differences in the management of pain in physical therapy
- To identify the sex and gender differences in different systems of the human body including; musculoskeletal, cardiovascular, pulmonary, urogenital, gastrointestinal and endocrine systems.

Course Contents:

1. Overview & Participant Introductions.

2. Gender Based Health Care in Physical Therapy and Medicine:

- History,
- Definitions
- Research
- Current Practices.

3. Sex and Gender Differences and pain management in physical therapy

4. Sex and Gender Differences: Use and Response to Medications

5. Sex and Gender Differences: Musculoskeletal System.

6. Sex and Gender Differences: Cardiovascular and Pulmonary Systems.

7. Sex and Gender Differences: Psychosocial Aspects of Health

8. Sex and Gender Differences: Urogenital, Gastrointestinal & Endocrine Systems.

9. How to Address Benign Hyper-mobility Syndrome.

10. What is a female triad and how female athlete triad could be prevented?

11. Physical Therapy management for chronic Pelvic Pain.

- 12. Pregnancy Related Low Back Pain and physical therapy management.**
- 13. Pregnancy Related Incontinence and physical therapy management**
- 14. Sex and Gender Differences: Osteoporosis and physical therapy management.**
- 15. Musculoskeletal and neuromuscular problems in adolescence and physical therapy management.**
- 16. Gender health Care and differential diagnosis.**
- 17. Testicular Cancer and physical therapy management**
- 18. Musculoskeletal factors contributing to incontinence in men and women and conduct a non-invasive, evidence based screening examination ;**
 - a) Identify presence and type of incontinence and
 - b) Determine the need for referral and/or further physical therapy examination.
- 19. Implement screening procedures during physical therapy examination to determine the need for referral to a physical therapist or physician or other practitioner with a practice focus or specialty in women's or men's health.**

Recommended Books:

Evidence Based Practice in Physical Therapy

PPDPT-005	Evidence Based Practice in Rehabilitation	3(2+1) Credit Hours
-----------	---	---------------------

Course Description:

This course will cover evidence based clinical decision making skills including locating and accessing source of evidence , evaluate the levels of evidence, applying evidence to clinical practice and integrating patient values ,performance and clinical experience. This course is design for Post Professional Doctor of Physical Therapy (PP-DPT) students to provide them knowledge and skills in critical inquiry, including review and analysis of articles and writing in professional and medical journals and books. Literature review and data collection methods for professional literature will be included.

Course Objectives:

- To identify the sources of evidences
- To understand the hierarchy of evidences
- To understand how to critically appraise a topic.
- To learn the essential knowledge and skills, how to search and where to search for evidences
- To understand the evidence based practice in physical therapy

Course Contents:

1. Introduction and course overview including; what is EBM/EBP, the importance of EBP (Evidence based practice) and introduction to evidenced based practice in physical therapy.

2. Development Of evidence-Based Knowledge.

Learning Objectives:

- a) Recognize and understand the multiple levels at which knowledge develops with in a discipline.
- b) Define the different periods of development for the practitioner.
- c) Understand the subsequent responsibilities and challenges of the practitioner as an individual, a member of the discipline, and a representative of a discipline.

3. How to be evidence based practitioner?

Learning Objectives:

- a) Understand the relationship that reflexivity plays in evidence-based practice.
- b) Define the various components of the E model and how it acts as an organizing frame-work for decision-making.
- c) Recognize the role that technology plays in improving opportunities for evidence based practice.

4. Outcomes in evidence-based practice.

Learning Objectives:

- a) Identify and understand the conceptual models of disablement and how outcome measurement relates to these modals.
- b) Distinguish between descriptive and inferential statistics and understand how these apply to outcome measurements.
- c) Define and understand evidence-based terminology.

5. Searching for the evidence.

Learning Objectives:

- a) Explain the origins of clinical research questions between various sources of evidence.
- b) Critically evaluate the value of web-based sources.
- c) Outline the key components and effective methods for a literature search.

- d) Describe different electronic databases and their various search mechanisms.

6. Evaluating the evidence.

Learning Objectives:

- a) Critically evaluate evidence by assessing the significance of different study designs.
- b) Critically evaluate assessment tools used in quantitative research.
- c) Define the various types of evidence and recognize the benefits and limitations of various evidence-ranking systems.
- d) Understand the differences in design and application of quantitative and qualitative methodologies.

7. Systematically Reviewing the Evidence.

Learning Objectives:

- a) Understand the various methodologies for preparing a systematic review interpret the findings of meta-analysis.
- b) Illustrate the role of the Cochrane collaboration in evidence-based practice.

8. The Effectiveness of cognitive behavioral interventions with people with chronic pain. Examples of critical reviews of the literature.

9. Evaluating the Evidence (Economic Analysis).

Learning Objectives:

- a) Recognize the importance of assessing the value of intervention to ensure that it offers the most efficient treatment.
- b) Identify the different types of economic evaluations and when they are appropriate for use.

10. Building Evidence in Practice.

Learning Objectives:

- a) Develop an understanding of building evidence for practice.
- b) Identify the essential components and different types of critically appraised topics (CATs).
- c) Understand and explain the use of CATs in evidence-based practice.

11. Practice Guidelines, Algorithms, and Clinical Pathways.

Learning objectives:

- a) Critically evaluate the need for clinical practice guidelines and care pathways in the more challenging health care environment.
- b) Identify the key characteristics of clinical practice guidelines, algorithms, and clinical pathways.
- c) Recognize some of the barriers to develop these guidelines and identifying ways to circumvent these obstacles.
- d) Use the appropriate terminology associated with care pathways.

12. Communicating Evidence to clients, Managers, and funders.

Learning Objectives:

- a) Recognize the role that effective communication about evidence plays in being an evidence-based practitioner.
- b) Understand the various clinical roles of potential decision makers.
- c) Critically evaluate the body of evidence on a clinical situation, including distinguishing between different types of evidence.

13. Health Care Delivery of Rehabilitation Services for acute post acute stroke.

Learning objectives:

- a) Understand the challenges within randomized controlled trails.
- b) Critically evaluate the research studies in post acute stroke rehabilitation and recognize some of the deficiencies.
- c) Identify the characteristics of stroke that increase the importance of environmental settings in rehabilitation.

14. Outcome Measures Rating Form design

15. Critical Review Form for the Quantitative Studies.

16. Guidelines for Critical Review Form (Quantitative Studies)

17. Guidelines for Critical Review Form (Qualitative Studies)

18. Instructions for the use of the functional independence (Measure Decision Trees)

**Textbook: Evidence-Based Rehabilitation Guide to Practice,
By Mary Law**

Neuromuscular Physical Therapy

PPDPT-008	Neuromuscular Physical Therapy	4(3-1)Credit Hours
-----------	--------------------------------	--------------------

Course Description:

This course includes a study of neuro anatomy and physiology of the neuromuscular system and pathological changes of the system and function, including diagnostic tests and measurements. Relevant testes and measures for determining impairment and differentiating the diagnosis based on the specificity and sensitivity of the assessment instruments as related to patients with neuromuscular conditions are discussed. The use of evidence-based physical therapy intervention for neuromuscular conditions is emphasized. Topics will focus on comparing contemporary and traditional interventions and the impact of evolving technology in this area.

Course Contents:

Section 1: Theoretical Framework:

1. Motor control: Issues and Theories
2. Motor Learning and Recovery of Function
3. Physiology of Motor Control
4. Physiological Basis of Motor Learning
5. A Conceptual Framework for Clinical Practice
6. Constraints on Motor Control; an Overview of Neurological Impairments.

Section 2:

Postural Control:

7. Normal Postural Control
8. Development of Postural Control
9. Aging and postural Control
10. Abnormal Postural Control
11. Clinical Management of the Patient with a Postural Control

Section 3:

Mobility Function:

- 12. Control of Normal Mobility
- 13. A life Span Perspective of Mobility
- 14. Abnormal Mobility
- 15. Clinical Management of the Patient with a Mobility Disorders

Section 4:

Reach, Grasp, and Manipulation:

- 16. Normal Reach, Grasp, and Manipulation
- 17. Reach, Grasp, and Manipulation: Changes across the Life Span
- 18. Abnormal Reach, Grasp, and Manipulation
- 19. Clinical Management of the patient With Reach, Grasp, and Manipulation Disorders

**Text Book: Motor Control (Theory and Practical Applications) 2nd Edition
By Anne Shumway-Cook & Marjorie H. Woollacott**

Extremity Manual Therapy

PPDPT-006	Extremity Manual Therapy	4(2-2)Credit Hours
-----------	--------------------------	--------------------

Course Description:

This course covers the theory and techniques of manual therapeutics as applied to the upper and lower extremities. The course introducing the basic concepts of joint evaluation and mobilization. It provides a detailed study of the anatomy and biomechanics of all extremity joints.

Course Objectives:

- **Understand how the anatomy, biomechanics and arthro-kinematics of a joint contribute to its function or dysfunction.**
- **Relate the neurology, pathophysiology and pain to the dysfunction and to the appropriate treatment.**

- **Evaluate dysfunction of the different tissues in all extremity joints and identify the signs and symptoms of joint pathology.**
- **Select and apply an appropriate treatment program utilizing the optimal stimuli for the histological regeneration of all extremity tissues.**
- **Apply various techniques for articulation and mobilization as well as other current PT modalities with skill and accuracy.**
- **Recognize the indications and contraindications for the use of articulation and mobilization procedures.**

Course Contents:

1. Biomechanics:

- basis of Physical Therapy
- Human Kinesiology
- Roll and Glide
- Spin & Swing
- Joint positions
- Rules for Concave joint Surfaces
- Rules for Convex Joint Surfaces
- Examination
- Grading Joint Mobility
- Mobilization Methods
- Guidelines for Choice of Articulation

2. Functional Histology:

- Wolff's Law
- Arterial Anastomosing
- Venous Drainage
- Chondrosynovial Membrane
- Articular Hyaline Cartilage
- Connective Tissue
- Immobilization
- Ligaments and Connective Tissue
- Absorption of Elastic Energy
- Receptors in Collagen
- Scar Tissue

3. Neurophysiology:

- Innervations of Segmental Tissues
- Mechanoreceptor Types
- Dorsal Horn Inhibition
- The pathway of Pain
- Elasticity/Plasticity
- The Manual Therapy Lesion
- Segmental Facilitation

4. Traumatology

- Capillary pressure
- Trauma; Acute Stage, Settled Stage, Chronic Stage

5. Exercise Physiology

- The principle of Overload
- Types of Muscle Fibers
- Stress Effects
- Calculation of 1RM
- Pulley Resistance
- Length Tension and Speed
- Contractile Elements
- Progressions; Hypomobilities, Hypermobilities

6. Hand & Fingers:

- IP Joints
- MP Joints
- CMC Osteology
- Thumb CMC Osteology
- Normal Range of Motion
- Open and closed pack Positions
- Ligaments & Muscles
- Mechanoreceptors type(Treatment Technique)

7. Wrist Joint:

- The Radiocarpal Joint
- Carpal Pillars
- Ligaments
- Wrist Osteology
- Open and closed pack Positions
- Normal Range of Motion
- The carpal Tunnel
- Common Wrist Disorders

- Mechanoreceptors type

8. Elbow Joint:

- The Elbow Joint(Name & Type of joints)
- Osteology
- Open and closed pack Positions
- Normal Range of Motion
- Ligaments
- Muscles
- Common Elbow Disorders
- Mechanoreceptors type

9. Shoulder:

- Name and type of shoulder Joints
- Open and closed pack Positions
- Normal Range of Motion
- Ligaments
- Muscles
- Common Disorders
- Mechanoreceptors type(Treatment technique)

10. Foot & Ankle:

- Foot Osteology
- Name & Types of Joints
- Normal Range of Motion
- Open and closed pack Positions
- Ligaments & Muscles
- Common disorders
- Mechanoreceptors type(Treatment technique)

11. The Knee:

- Knee Osteology
- Name & Types of Joints
- Normal Range of Motion
- Open and closed pack Positions
- Ligaments & Muscles
- Common disorders

- Mechanoreceptors type(Treatment technique)

12. Hip Joint:

- Hip Osteology
- Name & Types of Joints
- Normal Range of Motion
- Open and closed pack Positions
- Ligaments & Muscles
- Common disorders
- Mechanoreceptors type(Treatment technique)

**Text Book: Evidence Based Manual Therapy of the Extremities
By Ola Grimsby (San Diego, California, USA**

Spinal Manual Therapy

PPDPT-009	Spinal Manual Therapy	4(2-2)Credit Hours
-----------	-----------------------	--------------------

Course Description:

This course covers the theory and application of evaluation and treatment techniques to spinal conditions. Included in this course will be evaluation and treatment of spinal dysfunction, spinal manual therapeutics, and spinal stabilization exercises. This is a current method of diagnostic tissue differentiation and treatment progressions of spinal pathology, which includes cervical, thoracic, lumber, and S.I. joint.

Course Objectives:

- **Describe the optimal stimuli for neuro-musculoskeletal regeneration.**
- **Describe the basic biomechanics and pathology of the spine**
- **Evaluate the spine with accessory joint motion and treat the spinal conditions with exercises and mobilization.**

- **Apply various techniques for articulation and mobilization as well as other current PT modalities with skill and accuracy.**
- **Recognize the indications and contraindications for the use of articulation and mobilization procedures.**

Course Contents:

1. Introduction:

- Nordic System Orthopedic Manual Therapy
- History
- Special Features
- Overview

2. Spinal Movement:

- The mobile Segment
- Spinal Range of Movement
- Bone and Joint Movement
- Rotation of Bone
- Joint Movement Associated with Bone Rotations
- Joint Positioning For Evaluation and Treatment
- Three-Dimensional Joint positioning and Joint Locking

3. Genral Evaluation of the spine

- History and Interview
- Examination
- Structural Inspection
- Active Gross Movements
- Passive Gross Movements
- Resisted Examination

4. Treatment:

- Treating Symptoms
- Nerve Root Findings
- Hypermobility
- Hypomobility
- Prophylactic Management for all Conditions

5. Spinal Syndromes:

- Special Spinal Syndromes
- Neurological Evaluation of Nerve Root Syndromes
- Sensory Innervations of the skin
- Sensory Innervations of the Deep Structures
- Motor Innervations
- Common Nerve Root Syndromes

6. Techniques Application:

- Techniques Skills
- Learning Specific Manual Mobility Testing in the Spine
- Recording

7. Pelvis:

- Evaluation
- Mobilization

8. Lumber Spine:

- Evaluation
- Mobilization

9. Thoracic Spine and Ribs:

- Evaluation
- Mobilization

10. Cervical Spine:

- Evaluation
- Mobilization

11. Upper Cervical Spine:

- Evaluation
- Mobilization

**Text Book: The Spine (Basic Evaluation and Mobilization Techniques)
By Freddy M. Kaltenborn**

Cardiovascular & Pulmonary Physical Therapy

PPDPT-007	Cardiovascular & Pulmonary Physical Therapy	4(3-1)Credit Hours
-----------	---	--------------------

Course Description:

This course includes a study of anatomy and physiology of the cardiovascular, pulmonary, and lymphatic systems and pathological changes of the systems and function, including diagnostic tests and measurements. This course discuss relevant testes and measures for determining impairment and differentiating the diagnosis based on the specificity and sensitivity of the assessment instruments as related to patients with cardiovascular, pulmonary, and lymphatic systems disorders. The use of evidence-based physical therapy intervention for cardiovascular, pulmonary, and lymphatic systems disorders is emphasized. Topics will focus on comparing contemporary and traditional interventions and the impact of evolving technology in this area.

Course Contents:

Section 1: Anatomy and Physiology

1. Anatomy of the Cardiovascular and Respiratory Systems
2. Physiology of the Cardiovascular and Respiratory Systems

Section 2: Pathophysiology

3. Ischemic Cardiac Condition
4. Cardiac Muscle Dysfunction
5. Restrictive Lung Dysfunction
6. Chronic Obstructive Pulmonary Diseases
7. Cardiopulmonary Implications of Specific Diseases

Section 3: Diagnostic Tests and Procedures

8. Cardiovascular Diagnostic Tests and procedures
9. Electro cardiography

10. Pulmonary Diagnostic Tests and Procedures

Section 4: Surgical Interventions, Monitoring and Support

11. Cardiovascular and Thoracic interventions

12. Thoracic Organ Transplantation; Heart, Lung, and heart-Lung

13. Monitoring and Life-Support Equipment

Section 5: Pharmacology

14. Cardiovascular Medications

15. Pulmonary Medications

Section 6: Cardiopulmonary Assessment and Intervention

16. Assessment Procedures

17. Treatment of Acute Cardiopulmonary Conditions

18. Therapeutic Interventions in Cardiac Rehabilitation and Prevention

19. Pulmonary Rehabilitation

20. Outcome Measures

Text Book: Essentials of Cardiopulmonary Physical Therapy (2nd Edition)

By Hillegass and Sadowsky

Radiology and Imaging

PPDPT-011	Radiology and Imaging	3(2-1)Credit Hours
-----------	-----------------------	--------------------

Course Description:

This course covers the study of common diagnostic and therapeutic imaging tests. At the end of the course students will be aware of the indications and implications of commonly used diagnostic imaging tests as they pertain to patient's management. The course will cover that how X-Ray, CT, MRI, Ultrasound and Other Medical Images are created and how they help the health professionals to save lives.

Course Contents:

1. Course Introduction and over view:

2. from the Watching of Shadows:

- History
- A New Kind of Ray
- How a Medical Image Helps
- What Imaging Studies Reveal
- Radiography
- Fluoroscopy
- Computed Tomography (CT)
- Magnetic Resonance Imaging (MRI)
- Ultrasound
- Endoscopy

2. Radiography and Mammography:

- Equipment components
- Procedures for Radiography & Mammography
- Benefits versus Risks and Costs
- Indications and contraindications

3. Fluoroscopy:

- What is Fluoroscopy?
- Equipment used for fluoroscopy
- Indications and Contra indications
- How it helps in diagnosis
- The Findings in Fluoroscopy
- Benefits versus Risks and Costs

4. Computed Tomography (CT):

- What is Computed Tomography?
- Equipment used for Computed Tomography
- Indications and Contra indications

- How it helps in diagnosis
- The Findings in Computed Tomography
- Benefits versus Risks and Costs

5. Magnetic Resonance Imaging (MRI)

- What is MRI?
- Equipment used for MRI
- Indications and Contra indications
- How it helps in diagnosis
- The Findings in MRI
- Benefits versus Risks and Costs

6. Ultrasound:

- What is Ultrasound?
- Equipment used for Ultrasound
- Indications and Contra indications
- How it helps in diagnosis
- The Findings in Ultrasound
- Benefits versus Risks and Costs

7. Endoscopy:

- What is Endoscopy?
- Equipment used for Endoscopy
- Indications and Contra indications
- How it helps in diagnosis
- The Findings in Endoscopy
- Benefits versus Risks and Costs

8. Nuclear Medicine:

- What is Nuclear Medicine?
- Equipment used for Nuclear Medicine
- Indications and Contra indications
- How it helps in diagnosis.
- Benefits versus Risks and Costs

Text Book: Looking Within (How X-ray, CT, MRI, Ultrasound and Other Medical Images Created and How They Help Physicians Save Lives) By Anthony Brinton Wolbarst.

Musculoskeletal Physical Therapy

PPDPT-012	Musculoskeletal Physical Therapy	4(3-1)Credit Hours
-----------	----------------------------------	--------------------

Course Description:

This course includes a study of anatomy and physiology of the musculoskeletal system and pathological changes of the system and function, including diagnostic tests and measurements. Relevant tests and measures for determining impairment and differentiating the diagnosis based on the specificity and sensitivity of the assessment instruments as related to patients with musculoskeletal conditions are discussed. The use of evidence-based physical therapy intervention for musculoskeletal conditions is emphasized. Topics will focus on comparing contemporary and traditional interventions and the impact of evolving technology in this area.

Course Contents:

1. Genral Concepts:

- Rheumatism
- Primary Fibrositis
- Secondary Fibrositis (Traumatic Fibrositis, Rheumatoid Fibrosits, Infectious Fibrosits, Parasitic Fibrositis and Myositis)
- Muscle Tone
- Muscle Wasting

2. Trauma to Soft Tissues:

- Rest & Pain
- Self-Perpetuating Inflammation
- Physical Therapy Treatment protocol for Traumatic Inflammation including acute and chronic conditions.

3. Referred Pain:

- The Segments
- Dermatomes
- Myotomes
- Embryological Derivation
- Referred Pain as clue to Segmental Origin
- Diagnosis of the Referred Pain
- Physical Therapy Treatment protocol for Referred pain

4. Pressure on Nerves:

- Pain and Numbness due to Compression
- Stretching the Nerve Root
- Signs of Pressure on a nerve
- Physical Therapy Treatment protocol for pain relief due to pressure on nerve Roots

5. The Diagnosis of Soft Tissue Lesions:

- Subjective Information including past medical history, present medical complaint and family history,
- Objective information including observation, inspection and palpation
- Lab tests and Imaging tests.

6. The Head, Neck and Scapular Area:

- Theoretical Considerations
- Cervical Spondylosis
- Headache
- Pain in the Face
- Paraesthesia
- Misleading Tenderness
- Temporal Arthritis
- The Basilar Syndrome
- Migraine
- Tinnitus and vertigo
- Auricular Neuralgia
- Types of torticollis
- Arthritis
- Physical Therapy Treatment protocol for pain relief due musculoskeletal conditions in the cervical area.

7. Cervical Intervertebral Disc Lesions:

- Anatomy of the cervical spine
- Articular Signs
- Nerve Root Signs
- Whiplash Injury
- Physical Therapy Treatment protocol for pain relief due whiplash injuries and cervical disc lesions.

8. The Jaw, the Thoracic Outlet, the Sternoclavicular Area:

- Clicking Jaw

- Arthritis of the TMJ
- Thoracic Outlet syndrome
- Sternoclavicular joint pain
- Physical Therapy Treatment protocol for pain relief.

9. The Shoulder pain:

- Causes
- Effects of range limitation on functional activities
- Physical Therapy Treatment protocol for pain relief and movement dysfunctions

10. The Elbow Pain and movement dysfunction:

- Causes
- Effects of range limitation on functional activities
- Physical Therapy Treatment protocol for pain relief and movement dysfunctions.

11. The Wrist and Hand pain & Movement dysfunctions:

- Causes
- Effects of range limitation on functional activities
- Physical Therapy Treatment protocol for pain relief and movement dysfunctions.

12. Pain in the Thorax and Abdomen area:

- Causes
- Effects of pain on functional activities
- Physical Therapy Treatment protocol for pain relief and movement dysfunctions.

13. The Lumbar Region pain:

- Causes
- Effects of range limitation on functional activities
- Physical Therapy Treatment protocol for pain relief and movement dysfunctions.

14. The Sacroiliac Joint Pain:

- Causes
- Effects of pain on functional activities
- Physical Therapy Treatment protocol for pain relief and movement dysfunctions.

15. The Buttock and Hip Pain:

- Causes
- Effects of range limitation on functional activities
- Physical Therapy Treatment protocol for pain relief and movement dysfunctions.

16. The Knee pain and Movement dysfunctions:

- Causes
- Effects of range limitation on functional activities
- Physical Therapy Treatment protocol for pain relief and movement dysfunctions.

17. The Ankle and Foot pain:

- Causes
- Effects of range limitation on functional activities
- Physical Therapy Treatment protocol for pain relief and movement dysfunctions.

Textbook: Textbook of Orthopedic Medicine, 8th Edition by James Cyriax

Integumentary Physical Therapy

PPDPT-013	Integumentary Physical Therapy	4(3-1)Credit Hours
-----------	--------------------------------	--------------------

Course Description:

This course includes a study of anatomy and physiology of the integumentary system and pathological changes of the system and function, including diagnostic tests and measurements. The use of evidence-based physical therapy intervention

for integumentary conditions is emphasized. Topics will focus on comparing contemporary and traditional interventions and the impact of evolving technology in this area.

Course Contents:

Section 1: Wound Care Concepts

- Quality of Life and Ethical Issues
- Regulation and wound Care
- Skin, an Essential Organ
- Acute and Chronic Wound Healing
- Wound assessment
- Wound Bioburden
- Wound Debridement
- Wound Treatment Options
- Nutrition and wound care
- Seating, Positioning and support surfaces
- Pain Management and wounds

Section 2: Wound Classifications and Management Strategies

Pressure Ulcers

Vascular Ulcers

Diabetic Foot Ulcers

Sickle Cell Ulcers

Wounds in special Populations

Complex wounds

Atypical Wounds

Wound Care; where we were, where we are, and where we are going

**Textbook: Wound Care Essentials, practice principles,
By Sharon Baranoski & Elizabeth A. Ayello**

Professional Practice in Physical Therapy

PPDPT-014	Professional Practice in Physical Therapy	3(3-0)Credit Hours
-----------	---	--------------------

Course Description:

The course will discuss the role, responsibility, ethics administration issues and accountability of the physical therapists. The course will also cover the change in the profession to the doctoral level and responsibilities of the professional to the profession, the public and to the health care team. The topic of health care system in Pakistan with comparison with current health system abroad will be discussed too.

Course Contents and Learning Objectives:

Class introduction and course over view.

Learning Objectives:

- To define ethics in physical therapy practice.
- To identify practice issues in physical therapy.
- To know the responsibilities of a physical therapist to words the patient, genral public and to the health care team.

The Importance of Ethics in physical therapy practice.

Learning Objectives:

- To understand the importance of Ethical practice in physical therapy.
- To understand practical tips for ethical practice set up.
- To be aware of the consequences of none ethical practice.

Administrative issues in different settings.

Learning Objectives:

- To be aware of the role and responsibilities of physical therapist in different settings.
- To understand management issues and ability to mange daily practice issues in different settings.
- To identify administrative problems and understand the health care environment.

Contemporary Practice Issues:

A vision for the Future; Perspective of the profession and perspective of the practitioner on the following issues:

1. The Doctor of Physical Therapy (DPT) & Post professional DPT
2. Board certification of specialists
3. Direct Access
4. Physical Therapist assistants
5. Practice patterns
6. Broadening the practice context

Personal and professional development.

Learning Objectives:

- To identify ways for personal development in the country.
- To identify ways for professional development in the country

- To identify ways to have exposure in the community

Physical therapy is integral part of the health care

Learning Objectives:

- To understand the involvement of physical therapist in different specialties.
- To identify ways how a physical therapist can help the community in general.
- To gain capabilities to find ways for practice growth in physical therapy.

Professionalism In Physical Therapy

- What Does Professional Mean?
- Preliminary Definition of profession and professional
- Sociological Perspective
- Structural Approach
- Processual Approach
- Power approach

Contemporary Practice Issues:

A vision for the Future; Perspective of the profession and perspective of the practitioner on the following issues:

1. The Doctor of Physical Therapy (DPT) and post professional DPT
2. Board certification of specialists
3. Direct Access
4. Physical Therapist assistants
5. Practice patterns
6. Broadening the practice context

Ethical analysis and decision-making in physical therapy

Learning Objectives:

- To identify ethical and none ethical values in the physical therapy practice
- To be aware the new developments in the field nationally and internationally
- To be aware of the medico legal issues in the health care.

Influence of values on patient Care (Foundation for decision making)

Learning Objectives:

- Identify what a value is and how it directs human behavior.
- Recognize how humans acquire values.

- Identify how values influence the choices of patients, clients, and health professionals.

Code of Ethics in Physical Therapy practice

Learning Objectives:

- To understand what should be code of ethics for physical therapists.
- To understand the importance of ethical practice.
- To know the ethical principles of American physical Therapy Association (APTA).

Clinical decision making for planning effective treatments.

Learning Objectives:

- Describe the key steps in the clinical decision making process.
- Define the major responsibilities of the physical therapist in planning effective treatments.
- Identify potential problems that could adversely affect the physical therapist's clinical reasoning g.

Psychosocial Concomitants to disability and rehabilitation

Learning Objectives:

- Recognize the impact of psychological functioning and social interaction on health, disease, accident proneness, and adjustment to illness and physical trauma.
- Recognize the physical cause of disability.
- Identify the psychological impact on disablement on patient.
- Identify the stages of psychological adjustment to loss and disability outcome.
- Identify crisis points in the rehabilitation process

Comparison of health care system in Pakistan with international health care systems.

Learning Objectives:

- To understand the health care system in Pakistan.
- To identify weakness of our health care system
- To identify ways to improve the existing health care system
- To understand the current health care system internationally
- To identify necessary steps for Quality improvement in health care.

The excellent centre for rehabilitation.

Learning Objectives:

- To understand the key components of an excellent rehabilitation Centre
- To understand the role and responsibilities of physical therapist in the rehab set up.
- To understand the functional capabilities of the physical therapist in the rehab set up and coordination with other disciplines.

Textbook: Management Principles for Physical Therapists

By Larry J. Nosse & Deborah G. Friberg.

Quantitative Research Methods and Designs in Rehabilitation

PPDPT-015	Quantitative Research Methods & Design in Rehabilitation	3(3-0)Credit Hours
-----------	--	--------------------

Course Description:

This course includes discussion on basic quantitative methods and designs, including concepts of reliability and validity, interpretation of inferential statistics related to research designs, co relational statistic & designs, interclass correlation coefficients, and critical appraisal of the literature.

Course Contents:

Section 1. Research Fundamentals:

- Rehabilitation Research
- Theory in Rehabilitation Research
- Research Ethics

Section 2. Research Design:

- Research Problems, Questions, and Hypotheses
- Research Paradigms
- Design Overview
- Research Validity

Section 3. Experimental Designs:

- Group Designs
- Single-System Design

Section 4. Nonexperimental Research:

- Overview of Nonexperimental Research
- Clinical Case Reports
- Qualitative Research
- Epidemiology
- Outcomes Research
- Survey Research

Section 5. Measurement:

- Measurement Theory
- Methodological Research

Section 6. Data Analysis:

- Statistical Reasoning

- Statistical Analysis of Differences; The basics
- Statistical Analysis of Differences; Advanced and special Techniques
- Statistical Analysis of Relationships; The basics
- Statistical Analysis of Relationships; Advanced and special Techniques

Section 7. Being a Consumer

- Locating the Literature
- Evaluating Evidence One Article at a time
- Synthesizing Bodies of Evidence

Section 8. Implementing Research:

- Implementing a Research Project
- Publishing and Presenting Research

**Textbook: Rehabilitation Research (Principles and Applications) 3rd Edition
By Elizabeth Domholdt**

Differential Diagnosis in Rehabilitation

PPDPT-018	Differential Diagnosis in Rehabilitation	3(2-1)Credit Hours
-----------	--	--------------------

Course Description:

This course is designed for the Post Professional- Doctor Of Physical Therapy Program (PP-DPT) to discuss how to conduct a physical therapy interview and analyze the information to identify pertinent personal/family history, risk factors, system reviews to identify anatomical and physiological status of the body systems and communication affect, cognition and learning styles.

The course also discusses the physical therapy intervention for gastrointestinal, hepatic, genitourinary, immunology, hematology and endocrine system conditions. Normal and abnormal structures and functions of the gastrointestinal, hepatic, genitourinary, immunology, hematology and endocrine systems and pathological alteration of structure and function including diagnostic tests and measurements.

Course Contents:

1. Introduction of the participants, course overview and the importance of differential diagnosis in physical therapy.

2. Introduction to differential screening in physical therapy.

- **Case Examples (a, b, c)**
- **Physical Therapy Diagnosis (Historical Perspective)**
- **Classification System**
- **Scope of Practice**
- **Decision-Making Process (Client History, pain patterns/Pain Types, associated signs and symptoms of systemic diseases and systemic review)**
- **Physician Referral**
- **Practice Questions.**

3. Introduction to the interviewing process.

- **Interviewing Techniques (Open-Ended and Closed-Ended Questions, Follow-up Questions and Paraphrasing Technique)**
- **Interviewing Tools; a) Subjective Examination (Family/Personal History, Core Interview). b) Hospital Information (Medical Chart)**
- **c) Objective Examination (Physical Therapy Evaluation & Assessment)**
- **Physician Referral**
- **Practice Questions**

4. Overview of Cardiovascular Signs & Symptoms.

- **Signs & Symptoms of cardiovascular disease.**
- **Cardiac Pathophysiology.**
- **Cardiovascular disorders.**
- **Laboratory Values**
- **Effects of cardiovascular medication**
- **Physician referral.**
- **Practice Questions.**

5. Overview of pulmonary signs & symptoms.

- **Pulmonary pain patterns.**
- **Pulmonary physiology.**
- **Pulmonary pathophysiology.**
- **Neoplastic disease.**
- **Genetic disease of the lung.**
- **Occupational lung disease.**
- **Pleuropulmonary disorders**

- **Physician referral**
- **Practice questions.**

6. Overview of Hematological signs and symptoms.

- **Classification of blood disorders. (Erythrocyte disorders, leukocyte disorders, platelet disorders and coagulation disorders).**
- **Systemic signs & symptoms.**
- **Physician referral.**
- **Practice questions.**

7. Overview of Gastrointestinal signs & symptoms.

- **Gastrointestinal Organ symptoms.**
- **Gastrointestinal disorders.**
- **Gastrointestinal complication of NSAIDs.**
- **Diverticular disease.**
- **Appendicitis, pancreatitis, pancreatic carcinoma, and inflammatory bowel disease.**
- **Crohn's disease, ulcerative colitis, irritable bowel syndrome, colorectal cancer.**
- **Physician referral.**
- **Practice question.**

8. Overview of renal & urologic signs & symptoms.

- **Urinary Tract**
- **Renal and urologic pain**
- **Renal and urinary tract problems.**
- **Diagnostic testing.**
- **Physician referral.**
- **Practice question.**

9. Overview of hepatic and biliary signs and symptoms.

- **Hepatic and biliary symptoms.**
- **Hepatic and biliary pathophysiology**
- **Liver diseases.**
- **Gallbladder and duct diseases.**
- **Physician referral.**
- **Practice questions.**

10. Overview of endocrine and metabolic signs and symptoms.

- **Associated neuromusculoskeletal signs and symptoms.**
- **Endocrine pathophysiology.**
- **Introduction to metabolism.**
- **Metabolic disorders.**
- **Physician referral.**
- **Practice questions.**

11. Overview of oncology signs and symptoms.

- **Metastases.**
- **Clinical manifestations of malignancy.**
- **Oncologic pain.**
- **Side effects of cancer treatment.**
- **Skin & breast cancer.**
- **Gynecologic Cancer.**
- **Cancer of the blood and lymph system.**
- **Sarcoma.**
- **Primary central nervous system tumors.**
- **Physician referral.**
- **Practice question.**

12. Overview of immunologic signs and symptoms.

- **Signs and symptoms of immune system dysfunction.**
- **Immune system pathophysiology.**
- **Physician referral.**
- **Practice questions.**

13. Systemic origins of musculoskeletal pain.

- **Decision-Making process (Client History, pain patterns/Pain Types, associated signs and symptoms of systemic diseases and systemic review)**
- **Back pain (Effect of position, night pain, age, classification of pain and signs and symptoms).**
- **Hip pain. (Cancer, cardiovascular conditions, urologic conditions, inflammatory and infectious diseases).**
- **Pelvic Pain (Types of pelvic pain, causes of pelvic pain).**
- **Groin Pain (Musculoskeletal causes & systemic causes).**
- **Chest pain (Parietal pain, systemic causes of chest pain, neurologic and musculoskeletal causes).**

- **Shoulder pain(Pulmonary diseases and shoulder pain, cardiac diseases and shoulder pain, hepatic and biliary diseases and shoulder pain, rheumatic diseases and shoulder pain, cancer pain).**
- **Physician referral.**
- **Practice questions.**

**Text book: Differential Diagnosis in Physical Therapy (3rd Edition)
By Goodman Snyder. Saunders (An Imprint of Elsevier).**

Pediatric Physical Therapy

PPDPT-017	Pediatrics Physical Therapy	3(2-1) Credit Hours
-----------	-----------------------------	---------------------

Course description:

This course includes a study of anatomy and physiology of the musculoskeletal system and pathological changes of the system and function, including diagnostic tests and measurements in children. Relevant testes and measures for determining impairment and differentiating the diagnosis based on the specificity and sensitivity of the assessment instruments as related to patients with pediatric conditions are discussed. The use of evidence-based physical therapy intervention for pediatric conditions is emphasized. Topics will focus on comparing contemporary and traditional interventions and the impact of evolving technology in this area.

Course Contents:

Section A: Understanding Motor Performance in Children;

- 1) Evidence-Based Decision Making in Pediatric Physical Therapy
- 2) The child developments of functional Movements.
- 3) Motor control; Developmental Aspects of Motor Control Skill acquisition.
- 4) Motor Learning; Theories and Strategies for the practitioner.
- 5) Gait; Development and analysis.
- 6) Musculoskeletal Development and adaptation.
- 7) Genomic and Genetic Syndromes and Affecting Movements.
- 8) Physical Fitness during Childhood and Adolescence.

Section B: Management of Musculoskeletal Impairments;

- 9) Juvenile Rheumatoid Arthritis.
- 10) Hemophilia
- 11) Spinal Conditions
- 12) Congenital Muscular Torticollis
- 13) Arthrogyrosis Multiplex Congenita
- 14) Ontogenesis Imperfecta
- 15) Muscular Dystrophy and Spinal Muscular Atrophy
- 16) Limb Deficiencies and Amputations
- 17) Orthopedic Conditions.
- 18) Sports injuries in children.

Section C: Management of Neurologic Impairment;

- 19) Developmental Coordination Disorders.
- 20) Children with Motor and Cognitive Impairments.
- 21) Cerebral Palsy.
- 22) Brachial Plexus Injury
- 23) Spinal Cord Injury
- 24) Brain Injuries; Traumatic Brain Injury, Near-Drowning, and Brain Tumors.
- 25) Myelodysplasia

Section D: Management of Cardiopulmonary Conditions;

- 26) Children Requiring Long Term Ventilator assistance.
- 27) Cystic Fibrosis
- 28) Asthma; Multisystem Implications
- 29) Thoracic Surgery

Section E: Special Setting and Special Considerations;

- 30) The environment of Intervention
- 31) Early intervention Services
- 32) The Educational Environment
- 33) Assistive Technology
- 34) The Burn Unit
- 35) The social Care Nursery
- 36) Private Practice Pediatric Physical Therapy; A quest for Independence and Success

Textbook: Physical Therapy for Children (3rd Edition)

By Suzann K. Campbell, Darl W.Vander Linden, Robert J. Palisa

Pharmacology in Physical Therapy

PPDPT-019	Pharmacology in Rehabilitation	3(2-1)Credit Hours
-----------	--------------------------------	--------------------

Course Description:

This course covers the basic knowledge of pharmacology including administration, physiologic response and adverse effects of drugs under normal and pathologic conditions. Topics focus on the influence of drugs in rehabilitation patient/client management. Drugs used in iontophoresis and phonophoresis will be discussed in detail.

Course Contents:

Section 1: General Principles of Pharmacology;

- **Basic Principles of Pharmacology**
- **Pharmacokinetics; Drug Administration, Absorption, and Distribution**
- **Pharmacokinetics; Drug Elimination**
- **Drug Receptors**

Section 2: Pharmacology of the Central Nervous System;

- **Central Nervous System Pharmacology, General Principles**
- **Sedative-Hypnotic and Anxiety Agents**
- **Drugs used to treat affective Disorders; Depression and Manic-Depression**
- **Antipsychotic Drugs**

- **Antiepileptic Drugs**
- **Pharmacologic Management of Parkinson Disease**
- **General Anesthetics**
- **Local Anesthetics**

Section 3: Drugs Affecting Skeletal Muscle;

- **Skeletal Muscle Relaxants**

Section 4: Drugs Used to treat pain and Inflammation

- **Opioid Analgesics**
- **Nonsteroidal Anti-Inflammatory Drugs (NASID)**
- **Pharmacologic Management of Rheumatoid Arthritis and Osteoarthritis**
- **Patient-Controlled Analgesia**

Section 5: Autonomic and Cardiovascular Pharmacology

- **Introduction to Autonomic Pharmacology**
- **Cholinergic Drugs**
- **Adrenergic Drugs**
- **Antihypertensive Drugs**
- **Treatment of Angina Pectoris**
- **Treatment of Cardiac Arrhythmias**
- **Treatment of Congestive Heart Failure**
- **Treatment of Coagulation Disorders and Hyperlipidemia**

Section 6: Respiratory and Gastrointestinal Pharmacology;

- **Respiratory drugs**
- **Gastrointestinal Drugs**

Section 7: Endocrine Pharmacology;

- **Introduction to Endocrine Pharmacology**
- **Adrenocorticosteroids**
- **Male and Female hormones**
- **Thyroid and Parathyroid Drugs; Agents affecting bone mineralization**
- **Pancreatic Hormones and the Treatment of Diabetes Mellitus**

Section 8: Chemotherapy of Infectious and Neoplastic Diseases;

- **Treatment of Infections; Antibacterial Drugs**
- **Treatment of Infections; Antiviral Drugs**

- **Treatment of Infections; Antifungal and Ant parasitic drugs**
- **Cancer Chemotherapy**
- **Immunomodulating Agents**

Section 9: Drugs used in current physical therapy practice:

- **Drugs administered by Iontophoresis and Phonophoresis**
- **Potential Interactions Between Physical Agents and Therapeutic drugs**

Textbook: Pharmacology in Rehabilitation (3rd Edition)
By Charles D. Ciccone

EMERGENCY PROCEDURES

PPDPT-016	EMERGENCY PROCEDURES AND PATIENT CARE	3(2-1)Credit hours
-----------	--	--------------------

Course Description:

This course provides the student with all of the skills necessary to take appropriate action in an emergency in any practice setting. Basic life support, advanced cardiac life support, and first aid and emergency preparedness are the content areas of this course. The course is designed to provide knowledge and skill in emergency techniques and in the application of appropriate action necessary to take care of the patient/client.

Detailed Course Outline:

✚ Organization and Administration of Emergency Care

- Develop and implement emergency action plan
- Emergency team
- Initial patient assessment and care
- Emergency communication
- Emergency equipment and supplies
- Venue location
- Emergency transportation
- Emergency care facilities
- Legal need and documentation

✚ Physical Examination of the Critically Injured Patient/Athlete

- Scene assessment and safety
- Body substance isolation precautions
- Primary survey
- Secondary survey
- Vital signs

✚ Airway Management

- Air way anatomy
- Air way compromise
- Oxygen therapy
- Advanced airway devices

✚ Sudden Cardiac Death

- Incidence and etiology of sudden death in general population
- Sudden cardiac arrest in athletes
- Screening and recognition of cardiac warning signs
- Preparation for cardiac emergencies
- Management of sudden cardiac arrest

✚ Head Injuries

- Pathomechanics of brain injuries
- Types of pathology
- Classification of cerebral concussion
- Cerebral contusion
- Cerebral hematoma
- Second impact syndrome
- Initial on site assessment
- Sideline assessment
- Special tests for assessment of coordination
- Special tests for assessment of cognition
- Other tests

- Medications
- Wake ups and rest

✚ Emergency Care of Cervical Spine Injuries

- Anatomy
- Mechanism of injuries
- Injuries to the spinal cord
- Assessment
- Management

✚ Emergent General Medical Conditions

- Sudden death
- Exercise induced anaphylaxis
- Acute asthma
- Diabetes mellitus
- Mononucleosis
- Sick cell traits
- Hypertension

✚ Environment-Related Conditions

- Heat related emergencies and their prevention
- Cold related injuries
- Lightning
- Altitude related emergencies

✚ Orthopedic Injuries

- Basic emergency medical care
- Fundamentals of skeletal fractures
- Splinting techniques
- Fractures of hand and wrist
- Fractures of the forearm
- Fractures of the elbow
- Fractures of Humerus and shoulder
- Fractures of thorax
- Fractures of the lower extremity
- Fractures of foot and ankle
- Fundamentals of joint dislocation
- Dislocations of the hand
- Dislocations of the elbow
- Dislocations of the shoulder

- Dislocations of the thorax
- Dislocations of the hip
- Dislocations of the knee
- Dislocations of the ankle

✚ **Abdominal Injuries**

- Initial evaluation
- Specific injuries: abdominal wall contusions, splenic injuries, liver injuries, renal injuries, intestinal injuries, pancreatic injuries
- Non-traumatic abdominal injuries: Appendicitis, ectopic pregnancy

✚ **Thoracic Injuries**

- Assessment
- Management of different Types of injuries: fractures, Pneumothorax, hemothorax, pulmonary embolism

✚ **Spine Boarding in Challenging Environments**

- The soft foam pit in gymnastics
- The pole vault pit
- The swimming pole and diving well
- The ice hockey rink

✚ **The Psychological and Emotional Impact of Emergency Situations**

- Defining psychological trauma
- Psychological interventions in crisis situations
- Psychological trauma in athletic environment
- The psychological emergency response team
- Internal team members
- External team members
- The psychological interventions recommendations.

Recommended Books:

- *Emergency Care in Athletic Training* by: Keith M.Gorse, Robert O. Blanc, Francis Feld, Matthew Radelet, 1st edition, 2010, FA Davis Company
- *Acute care hand book for Physical Therapists* by: Jaime C paz, Michelle P West, 2nd edition, 2002, Butterworth Heinemann

Terminal Project /Thesis/Dissertation

PPDPT-020	Terminal Project(Thesis Based)	6(6-0)Credit hours
-----------	--------------------------------	--------------------

The student will participate in research and manuscript preparation under faculty direction or Supervisor. The student will be expected to integrate physical therapy theory and techniques into the evaluation and treatment of patient during their course Work. The student will be expected to submit the complete thesis or project in one of the following specialties.

- 1-Neuromuscular Physical Therapy**
- 2-Orthopaedic Physical Therapy**
- 3-Paediatric Physical Therapy**
- 4-Geriatric physical Therapy**
- 5-Musculoskeletal Physical Therapy**
- 6-Sports Physical Therapy**
- 7-Manual Physical Therapy**
- 8-Fitness and wellness Physical Therapy**
- 9-Cardiovascular & Pulmonary Physical Therapy**

This will considered the specialty of the student in Post Professional Doctor of Physical therapy Degree course.