

# **Curriculum**

## **For**

### **Additional Doctor of Physical Therapy (A-DPT)**



**MAHBOOB INSTITUTE OF PHYSIOTHERAPY & REHABILITATION SCIENCES**

**Prepared & Designed by:**      **Dr. Muslim Khan** \_\_\_\_\_  
**Course Director**  
**MSP/GU**

**Approved by:**

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**Chairman**  
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## PROGRAM SPECIFICATION

<b>COURSE TITLE</b>	<b>Additional- Doctor of Physical Therapy (A-DPT)</b>
<b>SPECIALTY</b>	<b>Physical Therapy</b>
<b>COURSE DURATION</b>	<b>1 years</b>
<b>TYPE OF STUDY</b>	<b>Full time / Evening-based</b>
<b>STUDY SYSTEM</b>	<b>Semesters system</b> <ul style="list-style-type: none"> <li>• <b>2 Regular Semester / Year including clinical practice during the semester</b></li> </ul>
<b>DISTRIBUTION OF MODULES</b>	<b>General courses:</b> <ul style="list-style-type: none"> <li>• <b>1<sup>st</sup> semester – 7 modules</b></li> <li>• <b>2<sup>nd</sup> semester – 7 modules</b></li> </ul>
<b>TOTAL CREDIT HOURS</b>	<b>38 Credit hours (Course Work , Clinical Placement &amp; Research Work)</b>
<b>DEGREE AWARDING INSTITUTION</b>	<b>Gandhara University.</b> <b>Peshawar.</b>
<b>TEACHING INSTITUTION</b>	<b>Mahboob Institute of Physiotherapy &amp; Rehabilitation Sciences</b> <b>Peshawar.</b>

<b>ADMISSION CRITERIA</b>	<b>BS Physical Therapy (4 years) from HEC recognized University.</b>
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### **CREDIT AND CLOCK HOURS DETAILS**

<b>Course Title</b>	<b>A- DPT</b>
<b>Course Duration</b>	<b>1 year Full Time</b> <ul style="list-style-type: none"> <li>• 2 Regular Semesters</li> </ul>
<b>Credit Hours Distribution</b>	<p><b>Course work &amp; Research Work = 38 Credit hours</b></p> <p><b>Clinical Practice = 9 Credit hours</b></p> <p><b>Total Credit Hours = 38 Credit hours</b></p> <ul style="list-style-type: none"> <li>• Semester 1 = 16 Credit hours</li> <li>• Semester 2 = 16+6=22 Credit hours</li> </ul>
<b>Study Hours Distribution</b>	<p><b>Study Weeks per Semester = 16 weeks</b></p> <p><b>Examination = 2 weeks (01 week for Mid Term &amp; 01 week for Final Term)</b></p> <p><b>Semester Break = 2 weeks for compilation of results</b></p>

	<b>Working Days</b> = complete week
<b>Teaching Hours Distribution</b> (for each subject)	<ul style="list-style-type: none"><li>• Lecture hour</li><li>• Practical / lab. Hours</li><li>• Clinical practice hour</li><li>• Seminar hour</li><li>• Tutorial hour</li></ul>

# COURSES DESCRIPTION

## SEMESTER-1

Course code	Course Title	Credit Hours			Clock Hours	
		Theory	Practical / Labs.	Total	(Theory + Practical / Labs.)	Total
<b>ADD-701</b>	Evidence based practice	2	1	3	(2+2)	4
<b>ADD-702</b>	Prosthetics and Orthotics	2	0	2	(2+0)	2
<b>ADD-703</b>	Emergency Procedures and Primary Care in Physiotherapy	2	0	2	(2+0)	2
<b>ADD-704</b>	Professional Practice in Physical Therapy	2	0	2	(2+0)	2
<b>ADD-705</b>	Sports Physical Therapy	2	0	2	(2+0)	2

<b>ADD-706</b>	Gerontology and Geriatric Physical Therapy	2	0	2	(2+0)	2
<b>ADD-707</b>	Supervised Clinical Practice- I	0	3	3	(0+6)	6
<b>Total Credit Hours of Third Semester = 16</b>						
<b>Total Clock Hours of Third Semester = 20</b>						

## **SEMESTER-2**

<b>Course code</b>	<b>Course Title</b>	<b>Credit Hours</b>			<b>Clock Hours</b>	
		<b>Theory</b>	<b>Practical / Labs.</b>	<b>Total</b>	<b>(Theory + Practical / Labs.)</b>	<b>Total</b>
<b>ADD-711</b>	Cardiopulmonary Physical Therapy	2	1	3	(2+2)	4
<b>ADD-712</b>	Clinical Decision Making and Differential Diagnosis	3	0	3	(3+0)	3
<b>ADD-713</b>	Integumentary Physiotherapy	2	0	2	(2+0)	2
<b>ADD-714</b>	Supervised Clinical Practice II	0	3	3	(0+6)	6
<b>ADD-715</b>	Research Project	-	-	6	-	6
<b>ADD-716</b>	Manual Therapy	2	1	3	(2+2)	4

<b>ADD-717</b>	Pediatric Physical Therapy	2	0	2	(2+0)	2
<b>Total Credit Hours of 2<sup>nd</sup> Semester = 16+6=22</b>						
<b>Total Clock Hours of 2<sup>nd</sup> Semester = 27</b>						

## **Additional Doctor of Physical Therapy Curriculum**

Physical therapy is an essential segment of modern health care system. It is a science of healing and art of caring. It pertains to the clinical examination, evaluation, assessment, diagnosis and treatment of musculoskeletal, Neurological, Cardio-Vascular and Respiratory systems 'functional disorders including symptoms of pain, edema, physiological, structural and psychosomatic ailments. It deals with methods of treatment based on movement, manual therapy, physical agents, and therapeutics modalities to relieve the pain and other complications.

Hence, Physical therapy covers basic parameters of healing sciences i.e. preventive, promotive, diagnostic, rehabilitative, and curative.

### **GOALS OF THE PROGRAMME:**

**THE PURPOSE OF THE ADDITIONAL DOCTOR OF PHYSICAL THERAPY PROGRAMME (ADPT) IS TO FULFILL THE DEFICIENT COURSE OF BACHELOR OF SCIENCE (PHYSIOTHERAPY) AND TO PREPARE PHYSICAL THERAPISTS WHO WILL:**

1. Be 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 PROGRAMME:  
BS PHYSICAL THERAPY GRADUATES AFTER DOING ADDITIONAL DOCTOR OF  
PHYSICAL THERAPY PROGRAMME 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. Prepared to influence the development of human health care regulations and policies that are consistent with the needs of the patient and of the 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 to changing health care environments to effectively provide physical therapy care.

<b>ONE PROFESSIONAL YEAR</b>	
<b>FIRST SEMESTER</b>	
<b><i>NAME OF SUBJECT</i></b>	<b><i>CREDITS</i></b>
GERONTOLOGY & GERIATRIC PHYSICAL THERAPY	2(2-0)
PROFESSIONAL PRACTICE (LAWS , ETHICS &ADMINISTRATION)	2(2-0)
EVIDENCE BASED PRACTICE	3(2-1)
PROSTHETICS & ORTHOTICS	2(2-0)
EMERGENCY PROCEDURES & PRIMARY CARE IN PHYSICAL THERAPY	2(2-0)
SPORTS PHYSICAL THERAPY	2(2-0)
SUPERVISED CLINICAL PRACTICE	3(0-3)
<b>16</b>	
<b>SECOND SEMESTER</b>	
<b><i>NAME OF SUBJECT</i></b>	<b><i>CREDITS</i></b>

CARDIOPULMONARY PHYSICAL THERAPY	3(2-1)
PAEDIATRIC PHYSICAL THERAPY	2(2-0)
MANUAL THERAPY	3(2-1)
CLINICAL DECISION MAKING & DIFFERENTIAL DIAGNOSIS	3(3-0)
INTEGUMENTRY PHYSICAL THERAPY	2(2-0)
SUPERVISED CLINICAL PRACTICE	3(0-3)
RESEARCH PROJECT	6
<b>22</b>	
<b>TOTAL CREDITS</b>	<b>38</b>

Note:

*Credit hours distribution is as following:*

- **Theory:** one credit hour shall be equal to one hour of teaching per week throughout the semester.
- **Practical / lab:** one credit hour shall be equal to two hours of lab work per week throughout the semester.
- **Clinical:** one credit hour shall be equal to three hours of clinical work per week throughout the semester.
- **Research:** One credit hour shall be equal to three hours of research work per week throughout the semester.

### **FIRST SEMESTER**

1. GERONTOLOGY & GERIATRIC PHYSICAL THERAPY
2. PROFESSIONAL PRACTICE
3. EVIDENCE BASED PRACTICE
4. PROSTHETICS & ORTHOTICS
5. EMERGENCY PROCEDURES & PRIMARY CARE IN PHYSICAL THERAPY
6. SPORTS PHYSICAL THERAPY
7. SUPERVISED CLINICAL PRACTICE

### **GERONTOLOGY & GERIATRIC PHYSICAL THERAPY**

**CREDIT HOURS 2 (2-0)**

#### **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 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 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. Topics will focus on medical terminology, clinical examination, evaluation, comparing contemporary, traditional interventions and the impact of evolving technology in this area.

### **COURSE OUT LINE:**

#### **GERONTOLOGY**

- Introduction to Gerontology
- Demographic Trends of an Aging Society
- Social Gerontology
- The Physiology and Pathology of Aging
- The Cognitive and Psychological Changes Associated with Aging
- Functional Performance in Later Life: Basic Sensory, Perceptual, and Physical Changes Associated with Aging
- Geriatric Pharmacotherapy
- Sexuality and Aging
- Living Options and the Continuum of Care
- Legal and Financial Issues Related to Health Care for Older People
- Health Care Providers Working With Older Adults
- Future Concerns in an Aging Society
- Health Literacy and Clear Health Communication

#### **GERIATRIC PHYSICAL THERAPY**

#### **MEDICAL TERMINOLOGY REGARDING GERIATRICS**

#### **ATTITUDES AND AGEISM**

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

#### **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

#### **PSYCHOLOGICAL CHANGES**

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

### **OLDER ADULT ABUSE AND NEGLECT**

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

### **TRIAGE AND ASSESSMENT**

- ABCs of Geriatric Assessment
- Assessment Techniques and Atypical Presentations

### **PAIN**

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

### **EFFECTS OF AGE**

- Task Complexity,
- Exercise
- Ambulation.

### **PHYSICAL THERAPY FOR GERIATRICS IN VARIOUS NEUROMUSCULAR DISORDERS**

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

## **PRE-OPERATIVE AND POST OPERATIVE PHYSICAL THERAPY FOR GERIATRICS IN VARIOUS MUSCULOSKELETAL DISORDERS**

- Hip & Knee Joint replacements
- Soft tissue injuries.

## **BALANCE AND FALL IN ELDERLY: ISSUES IN EVALUATION AND TREATMENT**

- Introduction
- Defining the problem of falls, risk factors, aging theory concept pertinent to falls in the elderly
- Multi faceted approach to the falls problem
- Postural control theory, physiology of balance ,
- Summary influence of age on postural control, relationship between postural control and falls, A model, examination and evaluation, history, biological assessment, sensory effectors, strength, ROM, endurance, central processing, functional assessment, environmental assessment, psychosocial assessment, intervention

## **MEDICATIONS:**

### **NUTRITIONAL DEFICIENCIES**

- Primary nutritional problems, limited fixed incomes, severely limited food choices and availability.

## **CASE HISTORIES**

- Principles of assessment and outcome measures.
- Documentation in SOAP notes format.
- Evidence based geriatric Physical Therapy Treatment protocols.

## **RECOMMENDED TEXT BOOKS:**

1. Geriatric Physical Therapy by Andrew A. Guccione.
2. Fundamentals of Geriatric Medicine.
3. Gerontology for health care professional by regula H robbnet/ walter.
4. Handbook of gerontology by James A Blackburn and Catherine N Dulmus.

## **PROFESSIONAL PRACTICE IN PHYSICAL THERAPY (Law , Ethics & Administration)**

**CREDIT HOURS 2 (2-0)**

### **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 OUTLINE:**

#### **THE PHYSICAL THERAPIST AS PROFESSIONAL**

- What does professional mean?

- Preliminary definitions of profession and professional
- Sociological perspective
- Structural approach
- Processual approach
- Characteristics of professions cited in the literature
- Power approach
- Dimensions of occupation & profession
- Autonomy, self-regulation of ethical standards, and accountability
- Privileges of autonomous practice in 2020
- Self-regulation of ethical standards
- Accountability of professionals
- Individual professionalism—professionalism without professions?
- The history of a profession
- Professional recognition.

### **CONTEMPORARY PRACTICE ISSUES**

- A vision for the future
- The doctorate in physical therapy
- Perspective of the profession
- Perspective of the practitioner
- Direct access issue
- Selected curriculum requirements from evaluative criteria for physical therapist
- Plan of care
- Social responsibility
- Career development
- Physical therapy practice patterns
- Components of a practice pattern
- Important factors that affect health.

### **THE FIVE ROLES OF THE PHYSICAL THERAPIST**

#### **THE PHYSICAL THERAPIST AS PATIENT/CLIENT MANAGER**

- evaluation and diagnosis
- Diagnosis as clinical decision making
- Prognosis
- Discharge planning and discontinuance of care
- Discontinuance of care
- Outcomes
- Clinical decision making
- Referral relationships
- Interpersonal relationships
- Ethical and legal issues

- Informed consent
- Managed care and fidelity.

### **THE PHYSICAL THERAPIST AS CONSULTANT**

- Physical therapy consultation
- Building a consulting business
- The consulting process
- The skills of a good consultant
- Trust in the consultant/client relationship
- Ethical and legal issues in consultation
- Components of a consulting agreement.

### **THE PHYSICAL THERAPIST AS CRITICAL INQUIRER**

- History of critical inquiry
- Evidence-based medicine
- Outcomes research
- Whose responsibility is research?
- Roles of the staff physical therapist in critical inquiry
- Collaboration in clinical research
- Ethical and legal issues in critical inquiry.

### **THE PHYSICAL THERAPIST AS EDUCATOR**

- History of physical therapy education
- Contemporary educational roles of the physical therapist
- Teaching opportunities in continuing education
- Academic teaching opportunities
- Theories of teaching and learning in professional education
- Ethical and legal issues in physical therapy education.

### **THE PHYSICAL THERAPIST AS ADMINISTRATOR**

- History of physical therapy administration
- Contemporary physical therapy administration
- Patient/client management
- First-line management
- Midlevel managers and chief executive officers
- Leadership
- Ethical and legal issues.

### **PROFESSIONAL DEVELOPMENT, COMPETENCE, AND EXPERTISE**

- Lifelong process of skill enhancement
- The professional development continuum: from competence to expertise
- Activities that promote professional development



- Evaluation of competence and professional development
- Professional development planning
- Possible evaluators of professional achievement
- Career advancement
- Organizational impact on professional development.

## **FUTURE CHALLENGES IN PHYSICAL THERAPY**

- Physical therapy's moral mission
- The future in three realms, individual, institutional & societal.
- Professionalism and the physical therapist.

## **RECOMMENDED TEXT BOOKS:**

1. *Professionalism in Physical Therapy: History, Practice, & Development*, Lisa L. Dutton, PT, PhD.
2. APTA. *Guide to Physical Therapy Practice: Revised second edition*. Alexandria, VA: American Physical Therapy Association; 2003. ISBN: 978-1-887759-85.

## **EVIDENCE BASED PRACTICE**

**CREDIT HOURS 3 (2-1)**

### **COURSE DESCRIPTION:**

This course introduces the concept of evidence-based practice in physical therapy including the formulation of answerable clinical questions, methods of obtaining peer-reviewed evidence to those clinical questions, and how to critically appraise evidence once located. This course is a lecture and seminar course that will focus on developing the skills need for evaluating, critiquing, and consuming the literature germane to physical therapy practice. Current journal articles, texts, and online resources will be used in the course to develop critical reading and writing skills.

### **COURSE OUTLINE:**

#### **EVIDENCE-BASED PHYSIOTHERAPY**

- An introduction about evidencebased Physiotherapy:
  - What do we mean by 'high quality clinical research'?
  - What do we mean by 'patient preferences'?
  - What do we mean by 'practice knowledge'?
  - Additional factors
  - The process of clinical decision-making
- Importance of evidence-based Physiotherapy:
  - For patients
  - For physiotherapists and the profession
  - For funders of physiotherapy services
  - History of Evidence-Based Health Care
  - Steps for practicing evidence-based Physiotherapy.

## **WHAT DO WE NEED TO KNOW?**

- Relevant clinical questions
- Refining your question
- Effects of intervention
- Experiences
- Prognosis
- Diagnosis.

## **WHAT CONSTITUTES EVIDENCE?**

- Evidence about effects of interventions
- Different forms of evidence
- Different sources of evidence
- Hierarchy of evidence
- Research study design.

## **FINDING THE EVIDENCE**

- Search Strategies
  - The World Wide Web
  - Selecting search terms AND OR
- Finding Evidence of Effects of Interventions
  - PEDro
  - The Cochrane Library
- Finding Evidence of Prognosis and Diagnostic Tests
- Finding Evidence of Experiences
  - CINAHL
  - Pub Med
- Getting full text
- Finding evidence of advances in clinical
- Practice (Browsing).

## **TRUST UPON EVIDENCE**

- A process for critical appraisal of evidence
- Critical appraisal of evidence about the Effects of intervention
  - Randomized trials
  - Systematic reviews of randomized trials
- Critical appraisal of evidence about experiences
- Critical appraisal of evidence about prognosis
  - Individual studies of prognosis
  - Systematic reviews of prognosis
- Critical Appraisal of Evidence about Diagnostic Tests
  - Individual studies of diagnostic tests
  - Systematic reviews of diagnostic tests.

## **CLINICAL GUIDELINES AS A RESOURCE FOR EVIDENCE-BASED PHYSIOTHERAPY**

- What are clinical guidelines?

- History of clinical guidelines and why they are important
- Where can I find clinical guidelines?
- How do I know if I can trust the recommendations in a clinical Guideline?
  - Scope and purpose
  - Stakeholder involvement
  - Rigor of development
  - Clarity and presentation
  - Applicability
  - Editorial independence
  - What do the results of the critical appraisal mean for my practice?
- Legal Implications of Clinical Guidelines
  - Clinical guidelines or ‘reasonable care’: which do the courts consider more important?
  - Documenting the use of a clinical guideline in practice: legal implications
- Reflections on the Future of Guideline Development
  - Who should develop clinical guidelines?
  - Collaboration in guideline development
  - Uniprofessional or multiprofessional guideline development?.

### **CRITICAL THINKING**

- The Benefit of Asking the Right Questions
- What Are the Issue and the Conclusion?
- What Are the Reasons?
- What Words or Phrases Are Ambiguous?
- What Are the Value Conflicts and Assumptions?
- What Are the Descriptive Assumptions?
- Are There Any Fallacies in the Reasoning?
- How Good Is the Evidence: Intuition, Personal Experience?
- Testimonials, and Appeals to Authority?
- How Good Is the Evidence: Personal Observation, Research?
- Studies, Case Examples, and Analogies
- Are There Rival Causes?
- Are the Statistics Deceptive?
- What Significant Information Is Omitted?
- What Reasonable Conclusions Are Possible?
- Practice and Review
- The Tone of Your Critical Thinking
- Strategies for Effective Critical Thinking.

### **PRACTICAL:**

- Identify the different sources of evidence
- Critically appraised topics (CAT)
- How to evaluate web page
- Ways of searching strategies for different databases
- Selection of search terminology
- Retrieving of articles from data bases

## **RECOMMENDED TEXT BOOKS:**

1. *Practical Evidence based physiotherapy* By, Rob Herbert, GroJamtdvedt, Judy Mead & Kare Birger Hagen.
2. *Asking the right question-A guide to critical thinking*, 8<sup>th</sup> Edition By, M. Neil. Browne & Stuart M Keeley.
3. *Additional reading material as assigned.*

## **PROSTHETICS & ORTHOTICS**

**CREDIT HOURS 2 (2-0)**

### **COURSE DESCRIPTION:**

This course intends to study prosthetic and orthotic management as applied to a variety of patient populations across a life span. It also addresses the considerations of various pathologies and medical, surgical management to formulate appropriate patient examinations, evaluation, diagnosis, prognosis and intervention that are consistent with physical therapy practice guidelines. Principles of normal biomechanics, pathomechanics, physiology and Pathophysiology will be a major focus for evaluation, intervention and education of the vascular, neuromuscular, and / or musculoskeletal compromised patient who may utilize prosthetic or orthotic devices. Basic principles of mechanical physics and material characteristics will be applied.

### **COURSE OUTLINE:**

#### **ORTHOTICS**

##### **INTRODUCTION TO ORTHOTICS**

- Basic Terminology
- Historical Background
- Factors In Prescription Orthotics
- Nomenclature of Orthotics
- Biomechanical Principles
- Materials Used in Orthotics Manufacturing
- Methods of Construction.

##### **FOOT ORTHOSES**

- Shoe Style
- Parts of Shoes
- Special Purpose Shoes
- Foot Examination
- Orthotics Interventions
- Fabrication Options
- Pediatric Foot Orthoses
- Guideline for Prescription Foot Orthoses.

##### **ANKLE FOOT ORTHOSES**

- Plastic Ankle Foot Orthoses
- Lather Metal Ankle Foot Orthoses

- Composite Materials
- Weight Relieving Ankle Foot Orthoses
- Support (Fabric , Leather, Gel And Air )
- Contracture Reducing Ankle Foot Orthoses
- Guidelines for Prescription Ankle Foot Orthoses.

### **KNEE ANKLE FOOT ORTHOSES AND KNEE ORTHOSES**

- Plastic Metal Knee Ankle Foot Orthoses
- Knee Immobilizer
- Supra Condylar Knee Ankle Foot Orthoses
- Weight Relieving Orthoses, Fracture Orthoses
- Lather Metal Knee Ankle Foot Orthoses
- Knee Orthoses
- Guidelines For Prescription Knee Ankle Foot Orthoses.

### **ORTHOSES FOR PARAPLEGIA AND HIP DISORDERS**

- Paraplegia
- Standing Frames
- Orthoses Designed For Ambulation
- Functional Electrical Stimulation
- Specific Devices for Paraplegia
- Hip Orthoses
- Guidelines for Prescription.

### **EVALUATION PROCEDURES FOR LOWER LIMB ORTHOSES**

- Need of Evaluation
- Static Evaluation
- Dynamic Evaluation
- Gait Disorders with Orthoses Usage.

### **TRUNK AND CERVICAL ORTHOSES**

- Trunk Orthoses
- Trunk Orthoses Evaluation
- Scoliosis and Kyphosis Orthoses
- Scoliosis And Kyphosis Orthoses Evaluation
- Cervical Orthoses
- Cervical Orthoses Evaluation
- Guideline For Prescription.

### **UPPER LIMB ORTHOSES**

- Hand And Wrist Hand Orthoses
- Forearm And Elbow Orthoses
- Shoulder Orthoses, Fabrication Option
- Upper limb Orthoses Evaluation (Hand, Wrist, Fingers, Shoulder and Elbow)
- Guideline For Prescription.

## **ORTHOSES FOR BURNS AND OTHER SOFT TISSUE DISORDERS**

- Importance of Orthoses for Burns and Other Soft Tissue Disorders
- Orthoses for Burn Management
- Orthoses for Patients with Soft Tissues Problem Associated With Neuromuscular Disorders.

## **GOAL SETTING AND TREATMENT PLAN**

- LongTerm Goals
- ShortTerm Goals
- Treatment Planning
- Criteria for Discharge
- Care of Orthoses.

## **PROSTHETICS:**

### **EARLY MANAGEMENT**

- Clinic Team Approach to Rehabilitation
- Amputation Surgery: Osteomyoplastic Reconstructive Technique
- Postoperative Management
- Pain Management
- Skin Disorders and Their Management
- Psychological Consequences of Amputation.

### **REHABILITATION OF ADULTS WITH LOWER-LIMB AMPUTATIONS**

- Partial Foot and Syme's Amputations and Prosthetic Designs
- Transtibial Prosthetic Designs
- Transfemoral Prosthetic Designs
- Hip Disarticulations and Transpelvic Prosthetic Designs
- Basic LowerLimb Prosthetic Training.

### **REHABILITATION OF ADULTS WITH UPPER-LIMB AMPUTATIONS**

- BodyPowered Upper-Limb Prosthetic Designs
- UpperLimb Externally Powered Prosthetic Designs
- Training Patients with UpperLimb Amputations.

### **BEYOND THE BASICS**

- Special Considerations with Children
- Rehabilitation Outcomes
- Adaptive Prostheses for Recreation
- Future Prosthetic Advances and Challenges
- Future Surgical and Educational Advances and Challenges.

### **RECOMMENDED TEXT BOOKS:**

1. Prosthetics and Patient Management: A Comprehensive Clinical Approach By: Kevin Carroll; Joan Edelstein.

2. Orthotics a comprehensive clinical approach By: Joan E Eldestein& Jan Bruckner.

## **EMERGENCY PROCEDURES & PRIMARY CARE IN PHYSICAL THERAPY**

**CREDIT HOURS 2 (2-0)**

### **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.

### **COURSE OUT LINE:**

#### **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
- Sickle 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 and dislocations of upper extremity
- Fractures and dislocations of lower extremity
- Fractures and dislocations of spine.

### **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.

### **PRIMARY CARE:**

#### **FOUNDATION**

- Primary care: physical therapy modes 1
- Evidence- Based examination of diagnostic information
- Cultural competence: An essential of primary health care
- Pharmacologic considerations for the physical therapist
- The patient interview: the science behind the art.

#### **EXAMINATION/EVALUATION**

- Prologue
- Symptoms investigation, Part I: Chief complaint by body region
- Symptoms investigation, Part II: Chief complaint by symptom
- Patient health history including identifying health risk factor

- Review of systems
- Patient interview: the physical examination begins
- Review of cardiovascular and pulmonary systems and vital signs
- Upper quadrant screening examination
- Lower quadrant screening examination\ Diagnostic imaging
- Laboratory tests and values.

## **DISORDERS AND MANAGEMENT**

- Acute Care Physical Therapy Examination and Discharge Planning.
- Clinical Laboratory Values and Diagnostic Testing.
- Physiologic Monitors and Patient Support Equipment.
- Bed Rest, Deconditioning, and Hospital-Acquired Neuromuscular Disorders.
- The Immune System and Infectious Diseases and Disorders.
- Cardiovascular Diseases and Disorders.
- Pulmonary Diseases and Disorders.
- Musculoskeletal/Orthopedic Diseases and Disorders
- Neurologic and Neurosurgical Diseases and Disorders.
- Endocrine Diseases and Disorders.
- Gastrointestinal Diseases and Disorders.
- Genitourinary Diseases and Disorders.
- Oncological Diseases and Disorders.
- Transplantation.
- Integumentary Diseases and Disorders
- Wound Management.

## **SPECIAL POPULATIONS**

- The Pediatric and adolescent population
- The obstetric client
- The geriatric population
- Health and wellness perspective in primary care.

## **RECOMMENDED TEXT BOOKS:**

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

## **SPORTS PHYSICAL THERAPY**

**CREDIT HOURS 2 (2-0)**

### **COURSE DESCRIPTION:**

The main focus of this course is related to the understanding of the role that physical therapists play in both the industrial continuum and sports physical therapy. Emphasis is placed on acute management of traumatic injuries and/or sudden illness. In addition, injury

prevention with an emphasis on the advanced clinical competencies related to the practice of sports physical therapy will also be covered.

## **COURSE OUT LINE:**

### **MEDICAL TERMINOLOGY RELATED TO SPORTS PHYSICAL THERAPY INTRODUCTION TO SPORTS REHABILITATION**

- Introduction to sport injury management.

### **INJURY SCREENING AND ASSESSMENT OF PERFORMANCE**

- Injury prevention and screening
- Assessment and needs analysis.

### **PATHOPHYSIOLOGY OF MUSCULOSKELETAL INJURIES**

- Pathophysiology of skeletal muscle injuries
- Pathophysiology of tendon injuries
- Pathophysiology of ligament injuries
- Pathophysiology of skeletal injuries
- Peripheral nerve injuries.

### **EFFECTIVE CLINICAL DECISION MAKING**

- An introduction to periodisation
- Management of acute sport injury
- Musculoskeletal assessment
- Progressive systematic functional rehabilitation
- Strength and conditioning
- Nutritional considerations for performance and rehabilitation
- Psychology and sports rehabilitation
- Clinical reasoning.

### **JOINT SPECIFIC SPORT INJURIES AND PATHOLOGIES**

- Shoulder injuries in sport
- The elbow
- Wrist and hand injuries in sport
- The groin in sport
- The knee
- Ankle complex injuries in sport
- The foot in sport.

### **TRAVELING WITH A TEAM DRUGS AND THE ATHLETE ETHICS AND SPORTS MEDICINE CASE HISTORIES**

- Principles of assessment and outcome measures
- Documentation in SOAP notes format
- Evidence based sports Physical Therapy Treatment protocols.

### **RECOMMENDED TEXT BOOKS:**

1. *Sports Rehabilitation and Injury Prevention* by: Paul Comfort & Earle Abrahamson, 1<sup>st</sup> Edition, 2010, Wiley Blackwell Publishers.
2. *Clinical Sports Medicine* by: Brukner & Khan, 4<sup>ed</sup>, McGraw-Hill Publishers.
3. *A guide to sports and injury management* by: Mike Bundy & Andy Leaver, 1<sup>st</sup> edition, 2010, Churchill Livingstone.

## **SUPERVISED CLINICAL PRACTICE**

**CREDIT HOURS 3(3-0)**

### **COURSE DESCRIPTION:**

During this supervised clinical practice, students are responsible for successful execution of examination, evaluation, and interventions relating to cardiovascular and pulmonary disorders. Students become familiar with performance of these skills in all settings (inpatient and outpatient) as well as on all types of conditions (surgical, non-surgical, pediatric and geriatric)

Students learn to objectively perform these skills under the supervision of trained physical therapists. Student is required to keep a performance record of all listed competencies and successfully perform on real patients during the final evaluation of the course.

### **COMPETENCIES:**

#### **EXAMINATION:**

- Based on best available evidence select examination tests and measures that are appropriate for the patient/client.
- Perform posture tests and measures of postural alignment and positioning
- Perform gait, locomotion and balance tests including quantitative and qualitative measures such as:
  - Balance during functional activities with or without the use of assistive, adaptive, orthotic, protective, supportive, or prosthetic devices or equipment
  - Balance (dynamic and static) with or without the use of assistive, adaptive, orthotic, protective, supportive, or prosthetic devices or equipment
  - Gait and locomotion during functional activities with or without the use of assistive, adaptive, orthotic, protective, supportive, or prosthetic devices or equipment to include:
    - Bed mobility
    - Transfers (level surfaces and floor)
    - Wheelchair management
    - Uneven surfaces
    - Safety during gait, locomotion, and balance
    - Perform gait assessment including step length, speed, characteristics of gait, and abnormal gait patterns. 177

- Characterize or quantify body mechanics during selfcare, homemanagement, work, community, tasks, or leisure activities.
- Characterize or quantify ergonomic performance during work(job/school/play):
- Dexterityand coordination during work
- Safety in work environment
- Specific work conditions or activities
- Tools, devices, equipment, and workstations related to workactions, tasks, or activities
- Characterize or quantify environmental home andwork (job/school/play) barriers:
- Current and potential barriers
- Physical space and environment
- Community access
- Observe selfcare and home management (including ADL and IADL)
- Measure and characterize pain to include:
- Pain, soreness, and nociception
- Specific body parts
- Recognize and characterize signs and symptoms of inflammation.
- Perform cardiovascular/pulmonary tests and measures including:
- Heart rate
- Respiratory rate, pattern and quality\*
- Blood pressure
- Aerobic capacity test\* (functionalor standardized) such as the 6- minute walk test
- Pulse Oximetry
- Breath sounds– normal/abnormal
- Response to exercise (RPE)
- Signs and symptoms of hypoxia
- Peripheral circulation (deep vein thrombosis, pulse, venous stasis,lymphedema)

#### EVALUATION:

- Clinical reasoning
- Clinical decision making
- Synthesize available data on a patient/client expressed in terms of the International Classification of Function, Disability and Health (ICF) model to include body functions and structures, activities, and participation.
- Use available evidence in interpreting the examination findings.
- Verbalize possible alternatives when interpreting the examinationfindings.
- Cite the evidence (patient/client history, lab diagnostics, tests andmeasures and scientific literature) to support a clinical decision.

#### DIAGNOSIS:

- Integrate the examination findings to classify the patient/client problemin terms of body functions and structures, and activities and participation (ie, practice patterns in the Guide)
- Identify andprioritize impairments in body functions and structures,and activity limitations and participation restrictions to determine specific body function and structure, and activities and participation towards which the intervention will be directed.

#### PROGNOSIS:

- Determine the predicted level of optimal functioning and the amount oftime required to achieve that level.

- Recognize barriers that may impact the achievement of optimal functioning within a predicted time frame including
  - Age
  - Medication(s)
  - Socioeconomic status
  - Comorbidities
  - Cognitive status
  - Nutrition
  - Social Support
  - Environment

#### PLAN OF CARE:

- Goal setting
- Coordination of Care
- Progression of care
- Discharge
- Design a Plan of Care
- Write measurable functional goals (short-term and long-term) that are time referenced with expected outcomes.
- Consult patient/client and/or caregivers to develop a mutually agreed to plan of care.
- Identify patient/client goals and expectations.
- Identify indications for consultation with other professionals.
- Make referral to resources needed by the patient/client (assume knowledge of referral sources).
- Select and prioritize the essential interventions that are safe and meet the specified functional goals and outcomes in the plan of care (ie, (a) identify precautions and contraindications, (b) provide evidence for patient-centered interventions that are identified and selected, (c) define the specificity of the intervention (time, intensity, duration, and frequency), and (d) set realistic priorities that consider relative time duration in conjunction with family, caregivers, and other health care professionals).
- Establish criteria for discharge based on patient goals and current functioning and disability.
- Coordination of Care 179
- Identify who needs to collaborate in the plan of care.
- Identify additional patient/client needs that are beyond the scope of physical therapist practice, level of experience and expertise, and warrant referral.
- Refer and discuss coordination of care with other healthcare professionals.
- Articulate a specific rationale for a referral.
- Advocate for patient/client access to services.
- Progression of Care
- Identify outcome measures of progress relative to when to progress the patient further.
- Measure patient/client response to intervention.
- Monitor patient/client response to intervention.
- Modify elements of the plan of care and goals in response to changing patient/client status, as needed.\*
- Make ongoing adjustments to interventions according to outcomes including environmental factors and personal factors and, medical therapeutic interventions.

- Make accurate decisions regarding intensity and frequency when adjusting interventions in the plan of care.
- Discharge Plan
- Reexamine patient/client if not meeting established criteria for discharge based on the plan of care.
- Differentiate between discharge of the patient/client, discontinuation of service, and transfer of care with re-evaluation.\*
- Prepare needed resources for patient/client to ensure timely discharge, including follow-up care.
- Include patient/client and family/caregiver as a partner in discharge.\*
- Discontinue care when services are no longer indicated.
- When services are still needed, seek resources and/or consult with others to identify alternative resources that may be available.
- Determine the need for equipment and initiate requests to obtain.

#### INTERVENTIONS:

- Safety, Emergency Care, CPR and First Aid
- Standard Precautions
- Body Mechanics and
- Positioning
- Categories of Interventions
- Safety, Cardiopulmonary Resuscitation Emergency Care, First Aid
- Ensure patient safety and safe application of patient/client care.
- Perform first aid.
- Perform emergency procedures.
- Perform Cardiopulmonary Resuscitation (CPR).
- Precautions 180
- Demonstrate appropriate sequencing of events related to universal precautions.
- Use Universal Precautions.
- Determine equipment to be used and assemble all sterile and nonsterile materials.
- Use transmission-based precautions.
- Demonstrate aseptic techniques.\*
- Apply sterile procedures.\*
- Properly discard soiled items.\*
- Body Mechanics and Positioning
- Apply proper body mechanics (utilize, teach, reinforce, and observe).\*
- Properly position, drape, and stabilize a patient/client when providing physical therapy.\*
- Interventions
- Coordination, communication, and documentation may include:

#### Addressing required functions:

- Establish and maintain an ongoing collaborative process of decision-making with patients/clients, families, or caregivers prior to initiating care and throughout the provision of services.
- Discern the need to perform mandatory communication and reporting (eg, incident reports, patient advocacy and abuse reporting).
- Follow advance directives.

- B. Admission and discharge planning.
- C. Case management.
- D. Collaboration and coordination with agencies, including:
  - (1) Home care agencies
  - (2) Equipment suppliers
  - (3) Schools
  - (4) Transportation agencies
  - (5) Payer groups
- E. Communication across settings, including:
  - (1) Case conferences
  - (2) Documentation
  - (3) Education plans
- F. Cost-effective resource utilization.
- G. Data collection, analysis, and reporting of:
  - (1) Outcome data
  - (2) Peer review findings
  - (3) Record reviews
- H. Documentation across settings, following APTA's Guidelines for Physical Therapy Documentation, including:
  - (1) Elements of examination, evaluation, diagnosis, prognosis, and Intervention
  - (2) Changes in body structure and function, activities and participation.
  - (3) Changes in interventions
  - (4) Outcomes of intervention
  - Interdisciplinary teamwork:
    - (1) Patient/client family meetings
    - (2) Patient care rounds
    - (3) Case conferences
- J. Referrals to other professionals or resources.\*
- K. Patient/client-related instruction may include:
  - A. Instruction, education, and training of patients/clients and caregivers regarding:
    - (1) Current condition, health condition, impairments in body structure and function, and activity limitations, and participation restrictions)\*
    - (2) Enhancement of performance
    - (3) Plan of care:
      - a. Risk factors for health condition, impairments in body structure and function, and activity limitations, and participation restrictions.
      - b. Preferred interventions, alternative interventions, and alternative modes of delivery
      - c. Expected outcomes
    - (4) Health, wellness, and fitness programs (management of risk factors)
    - (5) Transitions across settings
- Therapeutic exercise may include performing:
  - Aerobic capacity/endurance conditioning or reconditioning\*:
    - (1) Gait and locomotor training\*
    - (2) Increased workload over time (modify workload progression)
    - (3) Movement efficiency and energy conservation training



- (4) Walking and wheelchair propulsion programs
- (5) Cardiovascular conditioning programs
- B. Relaxation:
  - (1) Breathing strategies\*
  - (2) Movement strategies
  - (3) Relaxation techniques
- C. Airway clearance techniques may include\*:
  - A. Breathing strategies\*:
    - (1) Active cycle of breathing or forced expiratory techniques\*
    - (2) Assisted cough/huff techniques\*
    - (3) Paced breathing\*
    - (4) Pursed lip breathing
    - (5) Techniques to maximize ventilation (eg, maximum inspiratory hold, breath stacking, manual hyperinflation)
  - B. Manual/mechanical techniques\*:
    - (1) Assistive devices<sup>182</sup>
  - C. Positioning\*:
    - (1) Positioning to alter work of breathing
    - (2) Positioning to maximize ventilation and perfusion
- o Functional training in self-care and home management may include\*:
  - o Functional training in work (job/school/play), community, and leisure integration or reintegration may include\*:
    - Activities of daily living (ADL) training:
      - (1) Bed mobility and transfer training\*
      - (2) Age appropriate functional skills
    - Barrier accommodations or modifications\*
    - Device and equipment use and training:
      - (1) Assistive and adaptive device or equipment training during ADL (specifically for bed mobility and transfer training, gait and locomotion, and dressing)\*
      - (2) Orthotic, protective, or supportive device or equipment training during self-care and home management\*
      - (3) Prosthetic device or equipment training during ADL (specifically for bed mobility and transfer training, gait and locomotion, and dressing)\*
    - Functional training programs\*:
      - (1) Simulated environments and tasks\*
      - (2) Task adaptation
    - Injury prevention or reduction:
      - (1) Safety awareness training during self-care and home management\*
      - (2) Injury prevention education during self-care and home management
      - (3) Injury prevention or reduction with use of devices and equipment
    - Prescription, application, and, as appropriate, fabrication of devices and equipment may include\*:
    - Adaptive devices\*:
      - (1) Hospital beds
      - (2) Raised toilet seats
      - (3) Seating systems – prefabricated

- Assistive devices\*:
  - (1) Canes
  - (2) Crutches
  - (3) Long-handled reachers
  - (4) Static and dynamic splints – prefabricated
  - (5) Walkers
  - (6) Wheelchairs
- Orthotic devices\*:
  - (1) Prefabricated braces
  - (2) Prefabricated shoe inserts
  - (3) Prefabricated splints
- Prosthetic devices (lower extremity)\*183
- Protective devices\*:
  - (1) Braces
  - (2) Cushions
  - (3) Helmets
  - (4) Protective taping
- Supportive devices\*:
  - (1) Prefabricated compression garments
  - (2) Corsets
  - (3) Elastic wraps
  - (4) Neck collars
  - (5) Slings
  - (6) Supplemental oxygen - apply and adjust
  - (7) Supportive taping
- Electrotherapeutic modalities may include:
  - A. Biofeedback\*
  - B. Electrotherapeutic delivery of medications (eg, iontophoresis)\*
  - C. Electrical stimulation\*:
    - (1) Electrical muscle stimulation (EMS)\*
    - (2) Functional electrical stimulation (FES)
    - (3) High voltage pulsed current (HVPC)
    - (4) Neuromuscular electrical stimulation (NMES)
    - (5) Transcutaneous electrical nerve stimulation (TENS)
- Physical agents and mechanical modalities may include: Physical agents:
  - A. Cryotherapy\*:
    - (1) Cold packs
    - (2) Ice massage
    - (3) Vapocoolant spray
  - B. Hydrotherapy\*:
    - (1) Contrast bath
    - (2) Pools
    - (3) Whirlpool tanks\*
  - C. Sound agents\*:
    - (1) Phonophoresis\*
    - (2) Ultrasound\*

D. Thermotherapy\*:

- (1) Dry heat
- (2) Hot packs\*
- (3) Paraffin baths\*

Mechanical modalities:

A. Compression therapies (prefabricated)\*

- (1) Compression garments
  - Skill Category Description of Minimum Skills
- (2) Vasopneumatic compression devices\*
- (3) Taping
- (4) Compression bandaging (excluding lymphedema)

B. Gravity-assisted compression devices:

- (1) Standing frame\*
- (2) Tilt table\*

C. Mechanical motion devices\*:

- (1) Continuous passive motion (CPM)\*

D. Traction devices\*:

- (1) Intermittent
- (2) Positional
- (3) Sustained

- Documentation of all listed competencies in SOAP notes format

**SECOND SEMESTER**

1. CARDIOPULMONARY PHYSICAL THERAPY
2. PAEDIATRIC PHYSICAL THERAPY
3. MANUAL THERAPY
4. CLINICAL DECISION MAKING & DIFFERENTIAL DIAGNOSIS
5. INTEGUMENTARY PHYSICAL THERAPY
6. SUPERVISED CLINICAL PRACTICE
7. RESEARCH PROJECT

## **CARDIOPULMONARY PHYSICAL THERAPY**

**CREDIT HOURS 3(2-1)**

### **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 medical terminology, clinical examination, evaluation, comparing contemporary, traditional interventions and the impact of evolving technology in this area.

### **DETAILED COURSE OUTLINE**

#### **MEDICAL TERMINOLOGY REGARDING CARDIOPULMONARY SYSTEM**

##### **INTRODUCTION**

##### **ANATOMY AND PHYSIOLOGY**

- Anatomy of the Cardiovascular and Respiratory Systems
- Physiology of the Cardiovascular and Respiratory Systems

##### **PATHO-PHYSIOLOGY**

- Ischemic Cardiac Condition
- Cardiac Muscle Dysfunction
- Restrictve Lung Dysfunction
- Chronic Obstructive Pulmonary Diseases
- Cardiopulmonary Implications of Specific Diseases

##### **DIAGNOSTIC TESTS AND PROCEDURES**

- Cardiovascular Diagnostic Tests and procedures
- Electro cardiography
- Pulmonary Diagnostic Tests andProcedures

##### **SURGICAL INTERVENTIONS, MONITORING AND SUPPORT**

- Cardiovascular and Thoracic interventions
- Thoracic Organ Transplantation; Heart, Lung, and heartLung
- Monitoring and LifeSupport Equipment

##### **PHARMACOLOGY**

- Cardiovascular Medications
- Pulmonary Medications

##### **CARDIOPULMONARY ASSESSMENT AND INTERVENTION**

- Assessment Procedures
- Treatment of Acute Cardiopulmonary Conditions
- Therapeutic Interventions in Cardiac Rehabilitation and Prevention
- Pulmonary Rehabilitation
- Outcome Measures

##### **THE NEEDS OF SPECIFIC PATIENTS**

##### **INTENSIVE CARE FOR THE CRITICALLY ILL ADULT**

- Assessment of the critically ill patient in the intensive care unit (ICU)

- Mechanical ventilation- implications for physiotherapy
- Musculoskeletal problems
- Patient groups with specific needs
- Systemic inflammatory response syndrome (SIRS) and sepsis
- Acute respiratory distress syndrome (ARDS)
- Disseminated intravascular coagulation (DIC)
- Inhalation burns
- Trauma
- Neurological conditions requiring intensive care
- Physiotherapy techniques
- Emergency situations

#### PULMONARY REHABILITATION

- Definition and aims of pulmonary rehabilitation
- Benefits of pulmonary rehabilitation
- Setting up pulmonary rehabilitation
- Resources
- Selection of patients
- Patient assessment for pulmonary rehabilitation
- Structure of pulmonary rehabilitation
- Pulmonary rehabilitation team
- Exercise component
- Outcome measures

#### CARDIAC REHABILITATION

- Introduction
- Goals of cardiac rehabilitation
- Cardiac rehabilitation team
- Role of the physiotherapist
- Rationale for cardiac rehabilitation
- Early ambulation
- Exercise training
- Secondary prevention
- Education
- Manifestations of ischaemic heart disease
- Cardiac arrest
- Angina pectoris
- Myocardial infarction
- Cardiac surgery
- Drugs to control the cardiovascular system
- Physiotherapy
- Assessment
- Recording
- Treatment
- Outcome evaluation
- Complications of exercise
- Other considerations
- The older patient

- Cardiac failure
- Valvular heart disease
- Congenital heart disease
- Compliance
- Costeffectiveness
- Legal aspects

## CARDIOPULMONARY TRANSPLANTATION

- Introduction
- Assessment
- The transplantation process
- Donors
- Operative procedures
- Postoperative care
- Rejection of the transplanted organs
- Immunosuppression
- Infections
- Special considerations for the physiotherapist
- Denervation of the heart/lungs
- Immunosuppression
- Infection/rejection
- Physiotherapy management

## HYPERVENTILATION

- Introduction
- Signs and symptoms
- Causes of hyperventilation
- Personality
- Diagnostic tests
- Breathing patterns
- Treatment
- The assessment
- Treatment plan
- Breathing education
- Breathing pattern reeducation
- Compensatory procedures in the short term
- Planned rebreathing
- Speech
- Home programme
- Exercise and fitness programmes
- Group therapy

## BRONCHIECTASIS, PRIMARY CILIARY DYSKINESIA AND CYSTIC FIBROSIS

- Bronchiectasis
- Medical management
- Physiotherapy
- Evaluation of physiotherapy
- Primary ciliary dyskinesia

- Medical management
- Physiotherapy
- Evaluation of physiotherapy
- Cystic fibrosis
- Medical management
- Physiotherapy
- Evaluation of physiotherapy
- Continuity of care

#### CASE HISTORIES

- Principles of assessment and outcome measures
- Documentation in SOAP notes format
- Evidence based cardiopulmonary Physical Therapy Treatment protocols

#### Recommended Text Book:

- Essentials of Cardiopulmonary Physical Therapy (2Nd Edition)By Hillegass and Sadowsky
- Physiotherapy for respiratory and cardiac problems, By: Jennifer A. Pryor & Barbara A. Webber, 2<sup>nd</sup> edition, Churchill Livingstone.
- Tidy's Physiotherapy by Thomas A Skinner & Piercy
- Therapeutics Exercises and Technique by Carolyn Kisner & Laynn Allen Colby 5th edition
- Cash's Text book of General Medical & Surgical Condition for Physiotherapist by Patrica A. Downie
- Cash's Textbook of chest , heart and vascular condition for physiotherapist by Patrica A. Downie

## **PEDIATRIC PHYSICAL THERAPY**

**CREDIT HOURS 2 (2-0)**

### **COURSE DESCRIPTION:**

This course addresses both the medical and rehabilitation management of the pediatric patient. Foundation lectures on normal development and psychological issues provide the students with a model to use when learning about pediatric pathologies, assessments and interventions. This course also involves the examination and treatment of the pediatric population using an interdisciplinary approach. The etiology and clinical features of common diseases/ disorders observed in the pediatric population will be emphasized. Lab: Methods for examination, goal setting, and intervention are emphasized. Students will participate in interdisciplinary case studies and an interdisciplinary evaluation project. Topics will focus on medical terminology, clinical examination, evaluation, comparing contemporary, traditional interventions and the impact of evolving technology in this area.

### **COURSE OUT LINE:**

#### **MEDICAL TERMINOLOGY REGARDING PEDIATRICS**

- History and Examination / Pediatric Examination
- Assessment and outcome measurement
- Theories of Development
- Medical Care of Children with Disabilities
- Psychological Assessment in Pediatric Rehabilitation
- Approaches to working with children
- Normal Developmental Milestones
- Language Development in Disorders of Communication and Oral Motor Function

#### **Adaptive Sports and Recreation**

- Orthotic and Assistive Devices
- Electrodiagnosis in Pediatrics
- Motor Learning & Principles of Motor Learning
- The Child Parents and Physiotherapist
- Aging With Pediatric Onset Disability and Diseases
- The Assessment of Human Gait, Motion, and Motor Function
- Psychosocial Aspects of Pediatric Rehabilitation
- Pediatric and Neonatal Intensive Therapy
- Disorders of Respiratory System
- Cystic Fibrosis Duchene Muscular
- Hemophilia
- Lower Limb Deformities
- Orthopedics and Musculoskeletal Conditions
- Talipes Equino Varus
- Torticollis
- Pediatric Limb Deficiencies
- Neuromuscular Diseases
- Myopathies
- Traumatic Brain Injury



- Cerebral Palsy
- Spinal Cord Injuries
- Spina Bifida
- Oncology and palliative care.

### **CASE HISTORIES**

- Principles of assessment and outcome measures
- Documentation in SOAP notes format
- Evidence based pediatric Physical Therapy Treatment protocols

### **RECOMMENDED TEXT BOOKS:**

1. *Physical Therapy for Children* By, Suzann K. Campbell, Robert J. Palisano&Darl W. Vander Linden.
2. *Paediatric Rehabilitation Principles and practice* (Fourth Edition) By, Michael A Alexander & Dennis j. Matthews.
3. *Additional reading material as assigned.*

## **MANUAL THERAPY**

**CREDIT HOURS 3 (2-1)**

### **COURSE DESCRIPTION:**

Through the utilization of instruction, demonstration, practical exercises, research article critical review and case study discussions and presentations this course will provide the best evidence in state of the art advanced manual therapy A detailed overall review of all Manual Therapy techniques, along with manual therapy techniques covering spine and Temporo-Mandibular joint, will take place Techniques covered are: advanced myofascial trigger point therapy, Proprioceptive training, muscle energy combination techniques, strain counter strain, neuromobilization combination techniques and mobilization, manipulation techniques with emphasis on thrust manipulation Thorough evaluation, assessment and technique selection training will take place utilizing evidence based models such as APTAs —Open Doorll and —Hooked in Evidencell programs All skills will be introduced through on-site demonstration and hands-on practice Students will also get significant exposure in critical review of research articles pertaining to application of manual therapy techniques Case review, discussion and case presentations are an important component of this course.

### **COURSE OUTLINE:**

#### **INTRODUCTION TO MANUAL THERAPY**

#### **OMT (ORTHOPEDIC MANUAL THERAPY) KALTENBORN-EVJENTH CONCEPT**

- History
- Special features
- Overview.

## **PRINCIPLES**

### **SPINAL MOVEMENT**

- The mobile segment
- Spinal range of movement
- Joint positioning for evaluation and treatment
- Threedimensional joint positioning
  - Resting position
  - Actual resting position
  - Nonresting positions
- Joint locking
- Bone and joint movement
- Rotations of a vertebral bone
  - Standard bone movements
  - Combined bone movements
  - Coupled movements
  - Noncoupled movements
- Joint roll-gliding associated with bone rotations
  - Joint roll-gliding
  - Abnormal roll-gliding
- Translation of vertebral bone
- Joint play associated with bone translation.

### **TRANSLATORIC JOINT PLAY**

- TheKaltenbom Treatment Plane
- Translatoric Joint Play Movements
- Determining the direction of restricted gliding
- Glide test
- Kaltenbom ConvexConcave Rule
- Grades of translatoric movement
- Normal grades of translatoric movement (Grades I- III)
  - Palpating resistance to normal movement
- Pathological grades of translatoric movement
- Using translatoric grades of movement.

### **TESTS OF FUNCTION**

- Principles of function testing
- Assessingquantity of movement
  - Measuring rotatoric movement with a device
  - Manual grading of rotatoric movement ( - scale)
- Assessing quality of movement
  - Quality of movement to the first stop

- End-feel: Quality of movement after the first stop
- ☐ Elements of function testing
- ☐ Active and passive rotatoric movements
- Testing rotatoric movement
- Localization tests
- Differentiating articular from extra-articular dysfunction
- Differentiating muscle shortening from muscle spasm
- ☐ Translatory jointplay tests
- ☐ Resisted movements
- ☐ Passive soft tissue movements
- ☐ Additional tests.

### **OMT EVALUATION**

- ☐ Goals of the OMT evaluation
- ☐ Physical diagnosis
- ☐ Indications and contraindications
- ☐ Measuring progress
- ☐ Elements of the OMT evaluation
- ☐ Screening exam
- ☐ Detailed exam
- History
- inspection
- Tests of function
- Palpation
- Neurologic and vascular tests
- ☐ Medical diagnostic studies
- ☐ Diagnosis and trial treatment.

### **SPINAL JOINT MOBILIZATION**

- ☐ Goals of joint mobilization
- ☐ Mobilization techniques
- ☐ Pain relief mobilization
- Pain-relief traction mobilization (Grade I -IISZ)
- Vibrations and oscillations
- ☐ Relaxation mobilization
- Relaxation-traction mobilization (Grade I -II)
- ☐ Stretch mobilization
- Stretch-traction mobilization (Grade III)
- Stretch-glide mobilization (Grade I)
- ☐ Manipulation
- ☐ If traction exacerbates symptoms

- Avoiding high-risk manual treatment
- Rotation mobilization
- Joint compression.

### **OMT TREATMENT**

- Elements of OMT
- Treatment to relieve symptoms
  - Immobilization
  - Thermo-Hydro-Electric (T-H-E) therapy
  - Pain-relief mobilization
  - Special procedures for pain relief
- Treatment to increase mobility
  - Soft tissue mobilization
  - Passive soft tissue mobilization
  - Active-facilitated soft tissue mobilization
  - Muscle stretching principles
  - Joint mobilization to increase mobility
  - Neural tissue mobilization
- Specialized exercise to increase mobility
- Treatment to limit movement
- To inform, instruct and train
- Research.

### **SPINAL SYNDROMES**

- Notes on spinal syndromes
- Cervical syndromes
- Thoracic syndromes
- Lumbar syndromes
- Neurologic evaluation of nerve root syndromes
- Sensory innervation of the skin
- Sensory innervation of deep structures
- Motor innervation
- Common nerve root syndromes.

### **MANUAL THERAPY ASSESSMENT**

- The Maitland's and Mulligan concept
- Subjective examination
- Physical examination
- Examination of the temporomandibular joint
- Examination of the upper cervical spine
- Examination of the cervicothoracic spine
- Examination of the thoracic spine

- Examination of the lumbar spine.

## **THE SUBJECTIVE EXAMINATION STEP BY STEP**

- Introduction
- Body chart
- Behavior of symptoms
- Special questions
- History of the present condition (HPC)
- Past medical history (PM H)
- Social and family history (SH, FH)
- Plan of the physical examination
- Case scenarios
- Counterfeit clinical presentations.

## **PHYSICAL EXAMINATION STEP- BY-STEP**

- Introduction
- Observation
- Joint tests
- Muscle tests
- Neurological tests
- Special tests
- Functional ability
- Palpation
- Accessory movements
- Completion of the physical examination.

## **TECHNIQUES**

### **TECHNIQUE PRINCIPLES**

- Learning manual techniques
- Applying manual techniques
- Objective
- Starting position
  - Patient's position
  - Therapist's position
- Hand placement and fixation/stabilization
  - Grip
  - Therapist 's stable hand
  - Therapist's moving hand
- Procedure
  - Joint pre-positioning
  - Mobilization technique

- Symbols
- Recording
- Identifying an intervertebral segment
- The Star Diagram.

## **PELVIS**

- Functional anatomy and movement
- Notes on evaluation and treatment
- Pelvis tests and mobilizations.

## **LUMBAR SPINE**

- Functional anatomy and movement
- Notes on evaluation and treatment
- Lumbar tests and mobilizations

## **THORACIC SPINE AND RIBS**

- Functional anatomy and movement
- Notes on evaluation and treatment
- Thoracic tests and mobilizations.

## **CERVICAL SPINE**

- Functional anatomy and movement
- Notes on evaluation and treatment
- Cervical tests and mobilizations.

## **UPPER CERVICAL SPINE**

- Functional anatomy and movement
- Notes on evaluation and treatment
- Upper cervical tests and mobilizations.

## **JAW**

- Functional anatomy and movement
- Jaw examination scheme
- Jaw tests and mobilizations.

## **SPINAL MOBILIZATIONS**

### **THE CERVICAL AND UPPER THORACIC SPINES**

- NAGS
- REVERSE NAGS
- SNAGS
- SELF SNAGS
- Spinal Mobilization with arm Movement

- Other mobilization with movement techniques (MWMS) for the Cervical and Upper Thoracic Spines.

### **THE UPPER CERVICAL SPINE SPECIAL TECHNIQUES**

- The acute Wry Neck
- Headaches
- Vertigo, Nausea and other vertebral artery Signs.

### **THE LUMBAR SPINE**

- SNAGS
- SELF SNAGS.

### **THE SACROILIAC JOINTS (S/I) JOINTS**

### **THE THORACIC SPINE**

### **THE RIB CAGE**

### **CONCLUSION**

### **INTEGRATIVE MANUAL THERAPY**

- Postural Compensations of the spine
- Muscle Energy and 'Beyond' Technique for the spine
- Treatment of spine Hypertonicity for Synergic Pattern
- Release with Strain and Counter strain Technique
- Myofascial Release
- Tendon Release Therapy for Treatment of Tendon Tissue Tension with Advanced Strain and Counter strain Technique
- Ligaments: a Tensile Force Guidance System: Treatment with Ligament Fiber Therapy
- Procedures and Protocols to correct spinal Dysfunction with Integrative Manual Therapy.

### **PRACTICAL/CLINICAL TRAINING:**

In the laboratory sessions, Supervised evaluation and manual therapy treatment techniques will be demonstrated and practiced, including joint and soft-tissue mobilization, manipulations, and posture and movement retraining in the physiotherapy clinic/Ward and Orthopaedic clinic/Ward, Indoor as well as outdoor. Various reflective case studies related to manual therapy of the spine and TM joint will be assigned to the students.

#### **Note:**

The students are expected to make a record of his/her achievements in the log book. The log book is a collection of evidence that learning has taken place. It is a reflective record of achievements. The log book shall also contain a record of the procedures which student would have performed/observed.

### **RECOMMENDED TEXT BOOKS:**

1. *Manual Mobilization of the Joints TheKaltenborn Method of Joint. Examination and Treatment Volume I, The Extremities* By: Freddy M. Kaltenbom in collaboration with Olaf Evjenth, TraudiBaldauf. Kaltenbom, Dennis Morgan, and Eileen Vollowitz, OPTP Minneapolis, Minnesota, USA.

2. *Manual Therapy* By: Ola Grimsby, the Ola Grimsby institute San Diego.
3. *Integrative Manual therapy for the upper and lower extremities* By: Sharon weiselfish, North Atlantic books Berkeley, California.
4. *Orthopedic manual therapy an evidence-based approach* by: Chad Cook.
5. *Orthopaedic Manual Therapy Diagnosis Spine and Temporomandibular Joints* By: Aad van der.
6. *Translatoric Spinal Manipulation* By: John R. Krauss, Olaf Evjenth, and Doug Creighton John R. Krauss A Lakeview Media L. L.C. Publication.
7. *Neuromusculoskeletal Examination and Assessment A Handbook for Therapists*.
8. By: Nicola J Petty, Ann P Moore & G D Maitland, Second Edition Churchill Livingstone.
9. *Myofascial Manipulation Theory and Clinical Application*, Second Edition By: Robert I. Cantu, Alan J. Grodin an Aspen Publication Aspen Publishers, Inc. Gaithersburg, Maryland 2001.
10. *Maitland's Vertebral Manipulation* Seventh Edition By: Geoffrey D. Maitland.
11. *Musculoskeletal manual medicine, diagnosis and treatment* by Jiri Dovark, Vaclav Dovark, Werner Schneider etc.
12. *Manual therapy, NAGS, SNAGS, MWMS etc* by Brian R Mulligan fifth edition.

## **CLINICAL DECISION MAKING & DIFFERENTIAL DIAGNOSIS**

**CREDIT HOURS 3(3-0)**

### **COURSE DESCRIPTION:**

The course will cover the principles and methods of clinical screening in physical therapy practice. A basic format for musculoskeletal, neuromuscular, Integumentary, and cardiopulmonary screening in physical therapy will be presented, with a focus on differential diagnosis within the scope of physical therapy practice, and incorporation of the role of the physical therapist as it interfaces with the role of the physician. A clarification of red-flags that differentiate a systemic condition from a neuro-musculoskeletal condition will be a continuing theme throughout the course. Decision-making skills related to physical therapy will be emphasized through the use of patient case scenarios with a focus on when to treat, and when to refer. Strategies to effectively and appropriately communicate with health care colleagues and patients regarding medical diagnostic information and medical status will be introduced.

### **COURSE OUTLINE:**

#### **SCREENING AND INTERVIEWING, THE PT SCOPE OF PRACTICE: TO REFER OR TREAT?**

#### **INTRODUCTION TO SCREENING FOR REFERRAL IN PHYSICAL THERAPY**

- Reasons to Screen
- Screenings and Surveillance
- Diagnosis by the Physical Therapist



- Differential Diagnosis Versus Screening
- Direct Access
- Decision-Making Process
- Case Examples and Case Studies.

## **INTRODUCTION TO THE INTERVIEWING PROCESS**

- Concepts in Communication
- Cultural Competence
- The Screening Interview
- Subjective Examination
- Core Interview
- Hospital Inpatient Information
- Physician Referral.

## **OVERVIEW OF THE PHYSIOLOGY OF PAIN AND SYSTEMIC CAUSES OF PAIN**

- Mechanisms of Referred Visceral Pain
- Multisegmental Innervations
- Assessment of Pain and Symptoms
- Sources of Pain
- Types of Pain
- Comparison of Systemic Versus Musculoskeletal Pain
- Patterns
- Characteristics of Viscerogenic Pain,
- Screening for Emotional and Psychologic Overlay
- Screening for Systemic Versus Psychogenic
- Symptoms
- Physician Referral.

## **PHYSICAL ASSESSMENT AS A SCREENING TOOL**

- General Survey
- Techniques of Physical Examination
- Integumentary Screening Examination
- Nail Bed Assessment
- Lymph Node Palpation
- Musculoskeletal Screening Examination
- Neurologic Screening Examination
- Regional Screening Examination
- Systems Review
- Physician Referral.

## **SCREENING FOR HEMATOLOGIC DISEASE**

- Signs and Symptoms of Hematologic Disorders
- Classification of Blood Disorders
- Physician Referral.

### **SCREENING FOR CARDIOVASCULAR DISEASE**

- Signs and Symptoms of Cardiovascular Disease
- Cardiac Pathophysiology
- Cardiovascular Disorders
- Laboratory Values.

### **SCREENING FOR THE EFFECTS OF CARDIOVASCULAR MEDICATIONS**

- Physician Referral.

### **SCREENING FOR PULMONARY DISEASE**

- Signs and Symptoms of Pulmonary Disorders
- Inflammatory/Infectious Disease
- Genetic Disease of the Lung
- Occupational Lung Diseases
- Pleuropulmonary Disorders
- Physician Referral.

### **SCREENING FOR GASTROINTESTINAL DISEASE**

- Signs and Symptoms of Gastrointestinal Disorders
- Gastrointestinal Disorders
- Physician Referral.

### **SCREENING FOR HEPATIC AND BILIARY DISEASE**

- Hepatic and Biliary Signs and Symptoms
- Hepatic and Biliary Pathophysiology
- Gallbladder and Duct Diseases
- Physician Referral.

### **SCREENING FOR UROGENITAL DISEASE**

- Signs and Symptoms of Renal and Urological Disorders,
- The Urinary Tract
- Renal and Urological Pain
- Renal and Urinary Tract Problems
- Physician Referral.

### **SCREENING FOR ENDOCRINE AND METABOLIC DISEASE**

- Associated Neuromuscular and Musculoskeletal Signs and Symptoms
- Endocrine Pathophysiology
- Introduction to Metabolism

- Physician Referral.

## **SCREENING FOR IMMUNOLOGIC DISEASE**

- Using the Screening Model
- Immune System Pathophysiology
- Physician Referral
- Screening for Cancer
- Cancer Statistics
- Risk Factor Assessment
- Cancer Prevention

### **Major Types of Cancer**

- Metastases
- Clinical Manifestations of Malignancy
- Oncologic Pain
- Side Effects of Cancer Treatment
- Cancers of the Musculoskeletal System
- Primary Central Nervous System Tumors
- Cancers of the Blood and Lymph System
- Physician Referral.

## **SCREENING THE HEAD, NECK, AND BACK**

- Using the Screening Model to Evaluate the Head, Neck, or Back,
- Location of Pain and Symptoms
- Sources of Pain and Symptoms
- Screening for Oncologic Causes of Back Pain
- Screening for Cardiac Causes of Neck and Back Pain
- Screening for Peripheral Vascular Causes of Back Pain
- Screening for Pulmonary Causes of Neck and Back Pain
- Screening for Renal and Urologic Causes of Back Pain,
- Screening for Gastrointestinal Causes of Back Pain
- Screening for Liver and Biliary Causes of Back Pain
- Screening for Gynecologic Causes of Back Pain
- Screening for Male Reproductive Causes of Back Pain
- Screening for Infectious Causes of Back Pain
- Physician Referral.

## **SCREENING THE SACRUM, SACROILIAC, AND PELVIS**

- The Sacrum and Sacroiliac Joint
- The Coccyx
- The Pelvis
- Physician Referral.

## **SCREENING THE LOWER QUADRANT: BUTTOCK, HIP, GROIN, THIGH, AND LEG**

- Using the Screening Model to Evaluate the Lower Quadrant
- Trauma as a Cause of Hip, Groin, or Lower Quadrant Pain
- Screening for Systemic Causes of Sciatica
- Screening for Oncologic Causes of Lower Quadrant Pain
- Screening for Urologic Causes of Buttock, Hip, Groin, or Thigh Pain
- Screening for Male Reproductive Causes of Groin Pain
- Screening for Infectious and Inflammatory Causes of Lower Quadrant Pain
- Screening for Gastrointestinal Causes of Lower Quadrant Pain
- Screening for Vascular Causes of Lower Quadrant Pain
- Screening for Other Causes of Lower Quadrant Pain
- Physician Referral.

## **SCREENING THE CHEST, BREASTS, AND RIBS**

- Using the Screening Model to Evaluate the Chest, Breasts, or Ribs
- Screening for Oncologic Causes of Chest or Rib Pain
- Screening for Cardiovascular Causes of Chest, Breast, or Rib Pain
- Screening for Pleuropulmonary Causes of Chest, Breast, or Rib Pain
- Screening for Gastrointestinal Causes of Chest, Breast, or Rib Pain
- Screening for Breast Conditions that Cause Chest or Breast Pain
- Screening for Other Conditions as a Cause of Chest, Breast, or Rib Pain
- Screening for Musculoskeletal Causes of Chest, Breast, or Rib Pain
- Screening for Neuromuscular or Neurologic Causes of Chest, Breast, or Rib Pain
- Physician Referral.

## **SCREENING THE SHOULDER AND UPPER EXTREMITY**

- Using the Screening Model to Evaluate Shoulder and Upper Extremity
- Screening for Pulmonary Causes of Shoulder Pain
- Screening for Cardiac Causes of Shoulder Pain
- Screening for Gastrointestinal Causes of Shoulder Pain
- Screening for Liver and Biliary Causes of Shoulder Pain
- Screening for Rheumatic Causes of Shoulder Pain
- Screening for Infectious Causes of Shoulder Pain
- Screening for Oncologic Causes of Shoulder Pain
- Screening for Gynecologic Causes of Shoulder Pain
- Physician Referral.

## **RECOMMENDED TEXT BOOKS:**

1. Goodman CC, Snyder TEK. *Differential Diagnostics for Physical Therapists: Screening for Referral*. Saint Louis, MO: Saunders: Elsevier; 2006. ISBN: 978-0-7216-0619-4.

2. APTA. *Guide to Physical Therapy Practice: Revised second edition*. Alexandria, VA: American Physical Therapy Association; 2003. ISBN: 978-1-887759-85.
3. Additional readings as assigned by the instructors.

## **INTEGUMENTARY PHYSICAL THERAPY**

**CREDIT HOURS 2 (2-0)**

### **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. Topics will focus on medical terminology, clinical examination, evaluation, comparing contemporary, traditional interventions and the impact of evolving technology in this area.

### **MEDICAL TERMINOLOGY REGARDING INTEGUMENTARY SYSTEM**

#### **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.

#### **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?.

## **CASE HISTORIES**

- Principles of assessment and outcome measures
- Documentation in SOAP notes format
- Evidence based integumentary Physical Therapy Treatment protocols.

## **RECOMMENDED TEXT BOOKS:**

1. Wound Care Essentials, practice principles, By Sharon Baranoski & Elizabeth A. Ayello.
2. APTA. *Guide to Physical Therapy Practice: Revised second edition*. Alexandria, VA: American Physical Therapy Association; 2003. ISBN: 978-1-887759-85.

## **SUPERVISED CLINICAL PRACTICE II**

**CREDIT HOURS 3 (0-3)**

### **COURSE DESCRIPTION:**

During this supervised clinical practice, students are responsible for successful execution of examination, evaluation, and interventions relating to Integumentary, gynecology and obstetrics, sports and metabolic disorders. Students become familiar with performance of these skills in all settings (inpatient and outpatient) as well as on all types of conditions (surgical, non-surgical, pediatric, geriatric, obstetrics & gynecology, sports etc.) Students learn to objectively perform these skills under the supervision of trained physical therapists. Student is required to keep a performance record of all listed competencies and successfully perform on real patients during the final evaluation of the course.

### **COMPETENCIES:**

#### **EXAMINATION**

- Based on best available evidence select examination tests and measures that are appropriate for the patient/client.
- Perform posture tests and measures of postural alignment and positioning.\*
- Perform gait, locomotion and balance tests including quantitative and qualitative measures such as\*:
  - Balance during functional activities with or without the use of assistive, adaptive, orthotic, protective, supportive, or prosthetic devices or equipment
  - Balance (dynamic and static) with or without the use of assistive, adaptive, orthotic, protective, supportive, or prosthetic devices or equipment
  - Gait and locomotion during functional activities with or without the use of assistive, adaptive, orthotic, protective, supportive, or prosthetic devices or equipment to include:
    - ❖ Bed mobility
    - ❖ Transfers (level surfaces and floor)\*
    - ❖ Wheelchair management
    - ❖ Uneven surfaces
    - ❖ Safety during gait, locomotion, and balance
  - Perform gait assessment including step length, speed, characteristics of gait, and abnormal gait patterns.

- Characterize or quantify body mechanics during selfcare, home management, work, community, tasks, or leisure activities.
- Characterize or quantify ergonomic performance during work (job/school/play)\*:
  - Dexterity and coordination during work
  - Safety in work environment
  - Specific work conditions or activities
  - Tools, devices, equipment, and workstations related to work actions, tasks, or activities
- Characterize or quantify environmental home and work (job/school/play) barriers:
  - Current and potential barriers
  - Physical space and environment
  - Community access
- Observe selfcare and home management (including ADL and IADL)\*
- Measure and characterize pain\* to include:
  - Pain, soreness, and nociception
  - Specific body parts
- Recognize and characterize signs and symptoms of inflammation.
- Perform integumentary integrity tests and measures including\*:

- A. Activities, positioning, and postures that produce or relieve trauma to the skin.
- B. Assistive, adaptive, orthotic, protective, supportive, or prosthetic devices and equipment that may produce or relieve trauma to the skin.
- C. Skin characteristics, including blistering, continuity of skin color, dermatitis, hair growth, mobility, nail growth, sensation, temperature, texture and turgor.
- D. Activities, positioning, and postures that aggravate the wound or scar or that produce or relieve trauma.
- E. Signs of infection.
- F. Wound characteristics: bleeding, depth, drainage, location, odor, size, and color. 184
- G. Wound scar tissue characteristics including banding, pliability, sensation, and texture.

### **Evaluation:**

- Clinical reasoning
- Clinical decision making
- 1. Synthesize available data on a patient/client expressed in terms of the International Classification of Function, Disability and Health (ICF) model to include body functions and structures, activities, and participation.
- 2. Use available evidence in interpreting the examination findings.
- 3. Verbalize possible alternatives when interpreting the examination findings.
- 4. Cite the evidence (patient/client history, lab diagnostics, tests and measures and scientific literature) to support a clinical decision.

### **Diagnosis:**

- 1. Integrate the examination findings to classify the patient/client problem in terms of body functions and structures, and activities and participation (ie, practice patterns in the Guide)

2. Identify and prioritize impairments in body functions and structures, and activity limitations and participation restrictions to determine specific body function and structure, and activities and participation towards which the intervention will be directed.\*

### **Prognosis:**

1. Determine the predicted level of optimal functioning and the amount of time required to achieve that level.\*

2. Recognize barriers that may impact the achievement of optimal functioning within a predicted time frame including\*:

A. Age

B. Medication(s)

C. Socioeconomic status

D. Co-morbidities

E. Cognitive status

F. Nutrition

G. Social Support

H. Environment.

### **Plan of Care:**

- Goal setting

- Coordination of Care

- Progression of care

- Discharge

- Design a Plan of Care

1. Write measurable functional goals (short-term and long-term) that are time referenced with expected outcomes.

2. Consult patient/client and/or caregivers to develop a mutually agreed to plan of care.\*

3. Identify patient/client goals and expectations.\*

4. Identify indications for consultation with other professionals.\*

5. Make referral to resources needed by the patient/client (assumes knowledge of referral sources).\*

6. Select and prioritize the essential interventions that are safe and meet the specified functional goals and outcomes in the plan of care\* (ie, (a) identify precautions and contraindications, (b) provide evidence for patient-centered interventions that are identified and selected, (c) define the specificity of the intervention (time, intensity, duration, and frequency), and (d) set realistic priorities that consider relative time duration in conjunction with family, caregivers, and other health care professionals).

7. Establish criteria for discharge based on patient goals and current functioning and disability.\*

- Coordination of Care

1. Identify who needs to collaborate in the plan of care.

2. Identify additional patient/client needs that are beyond the scope of physical therapist practice, level of experience and expertise, and warrant referral.\*

3. Refer and discuss coordination of care with other health care professionals.\*



4. Articulate a specific rationale for a referral.
5. Advocate for patient/client access to services.

Progression of Care

1. Identify outcome measures of progress relative to when to progress the patient further.\*
2. Measure patient/client response to intervention.\*
3. Monitor patient/client response to intervention.
4. Modify elements of the plan of care and goals in response to changing patient/client status, as needed.\*
5. Make on-going adjustments to interventions according to outcomes including environmental factors and personal factors and, medical therapeutic interventions.
6. Make accurate decisions regarding intensity and frequency when adjusting interventions in the plan of care.

Discharge Plan

1. Re-examine patient/client if not meeting established criteria for discharge based on the plan of care.
2. Differentiate between discharge of the patient/client, discontinuation of service, and transfer of care with re-evaluation.\*
3. Prepare needed resources for patient/client to ensure timely discharge, including follow-up care.
4. Include patient/client and family/caregiver as a partner in discharge.\*

5. Discontinue care when services are no longer indicated.

6. When services are still needed, seek resources and/or consult with others to identify alternative resources that may be available.

7. Determine the need for equipment and initiate requests to obtain.

**Interventions:**

- Safety, Emergency Care, CPR and First Aid
- Standard Precautions
- Body Mechanics and
- Positioning
- Categories of Interventions
  - Safety, Cardiopulmonary Resuscitation Emergency Care, First Aid
  - ❖ Ensure patient safety and safe application of patient/client care.\*
  - ❖ Perform first aid.\*
  - ❖ Perform emergency procedures.\*
  - ❖ Perform Cardiopulmonary Resuscitation (CPR).\*
  - ❖ Precautions

1. Demonstrate appropriate sequencing of events related to universal precautions.\*
2. Use Universal Precautions.
3. Determine equipment to be used and assemble all sterile and non-sterile materials.\*
4. Use transmission-based precautions.

5. Demonstrate aseptic techniques.\*

6. Apply sterile procedures.\*

7. Properly discard soiled items.\*

Body Mechanics and Positioning

1. Apply proper body mechanics (utilize, teach, reinforce, and observe).\*

2. Properly position, drape, and stabilize a patient/client when providing physical therapy.\*

Interventions

1. Coordination, communication, and documentation may include:

A. Addressing required functions:

(1) Establish and maintain an ongoing collaborative process of decision-making with patients/clients, families, or caregivers prior to initiating care and throughout the provision of services.\*

(2) Discern the need to perform mandatory communication and reporting (eg, incident reports, patient advocacy and abuse reporting).

(3) Follow advance directives.

B. Admission and discharge planning.

C. Case management.

D. Collaboration and coordination with agencies, including:

(1) Home care agencies

(2) Equipment suppliers

(3) Schools

(4) Transportation agencies

(5) Payer groups

E. Communication across settings, including:

(1) Case conferences

(2) Documentation

(3) Education plans

F. Cost-effective resource utilization.

G. Data collection, analysis, and reporting of:

(1) Outcome data

(2) Peer review findings

(3) Record reviews

H. Documentation across settings, following APTA's Guidelines for Physical Therapy Documentation, including:

(1) Elements of examination, evaluation, diagnosis, prognosis, and Intervention

(2) Changes in body structure and function, activities and participation.

(3) Changes in interventions

(4) Outcomes of intervention

I. Interdisciplinary teamwork:

(1) Patient/client family meetings

- (2) Patient care rounds
- (3) Case conferences
- J. Referrals to other professionals or resources.\*
- K. Patient/client-related instruction may include:
  - A. Instruction, education, and training of patients/clients and caregivers regarding:
    - (1) Current condition, health condition, impairments in body structure and function, and activity limitations, and participation restrictions)\*
    - (2) Enhancement of performance
    - (3) Plan of care:
      - a. Risk factors for health condition, impairments in body structure and function, and activity limitations, and participation restrictions.
      - b. Preferred interventions, alternative interventions, and alternative modes of delivery
      - c. Expected outcomes
    - (4) Health, wellness, and fitness programs (management of risk factors)
    - (5) Transitions across settings

Therapeutic exercise may include performing:

- Integumentary repair and protection techniques may include\*:

A. Debridement\*—nonselective:

- (1) Enzymatic debridement
- (2) Wet dressings
- (3) Wet-to-dry dressings
- (4) Wet-to-moist dressings

B. Dressings\*:

- (1) Hydrogels
- (2) Wound coverings

C. Topical agents\*:

- (1) Cleansers
- (2) Creams
- (3) Moisturizers
- (4) Ointments
- (5) Sealants

- Functional training in self-care and home management may include\*:
- Functional training in work (job/school/play), community, and leisure integration or reintegration may include\*:
- Activities of daily living (ADL) training:

- (1) Bed mobility and transfer training\*
- (2) Age appropriate functional skills
  - Barrier accommodations or modifications\*
  - Device and equipment use and training:

(1) Assistive and adaptive device or equipment training during ADL (specifically for bed mobility and transfer training, gait and locomotion, and dressing)\*

(2) Orthotic, protective, or supportive device or equipment training during self-care and home management\*

(3) Prosthetic device or equipment training during ADL (specifically for bed mobility and transfer training, gait and locomotion, and dressing)\*

Functional training programs\*:

(1) Simulated environments and tasks\*

(2) Task adaptation

Injury prevention or reduction:

(1) Safety awareness training during self-care and home management\*

(2) Injury prevention education during self-care and home management

(3) Injury prevention or reduction with use of devices and equipment

Prescription, application, and, as appropriate, fabrication of devices and equipment may include\*:

Adaptive devices\*:

(1) Hospital beds

(2) Raised toilet seats

(3) Seating systems – prefabricated

Assistive devices\*:

(1) Canes

(2) Crutches

(3) Long-handled reachers

(4) Static and dynamic splints – prefabricated

(5) Walkers

(6) Wheelchairs

Orthotic devices\*:

(1) Prefabricated braces

(2) Prefabricated shoe inserts

(3) Prefabricated splints

Prosthetic devices (lower extremity)\*

Protective devices\*:

(1) Braces

(2) Cushions

(3) Helmets

(4) Protective taping

Supportive devices\*:

- (1) Prefabricated compression garments
- (2) Corsets
- (3) Elastic wraps
- (4) Neck collars
- (5) Slings
- (6) Supplemental oxygen - apply and adjust
- (7) Supportive taping

Electrotherapeutic modalities may include:

A. Biofeedback\*

B. Electrotherapeutic delivery of medications (eg, iontophoresis)\*

C. Electrical stimulation\*:

- (1) Electrical muscle stimulation (EMS)\*
- (2) Functional electrical stimulation (FES)
- (3) High voltage pulsed current (HVPC)
- (4) Neuromuscular electrical stimulation (NMES)
- (5) Transcutaneous electrical nerve stimulation (TENS)

Physical agents and mechanical modalities may include: *Physical agents*:

A. Cryotherapy\*:

- (1) Cold packs
- (2) Ice massage
- (3) Vapocoolant spray

B. Hydrotherapy\*:

- (1) Contrast bath
- (2) Pools
- (3) Whirlpool tanks\*

C. Sound agents\*:

- (1) Phonophoresis\*
- (2) Ultrasound\*

D. Thermotherapy\*:

- (1) Dry heat
- (2) Hot packs\*
- (3) Paraffin baths\*

*Mechanical modalities:*

A. Compression therapies (prefabricated)\*

- (1) Compression garments

Skill Category Description of Minimum Skills

- (2) Vasopneumatic compression devices\*

- (3) Taping

- (4) Compression bandaging (excluding lymphedema)

B. Gravity-assisted compression devices:

- (1) Standing frame\*

- (2) Tilt table\*

C. Mechanical motion devices\*:

- (1) Continuous passive motion (CPM)\*

D. Traction devices\*:

- (1) Intermittent

- (2) Positional

- (3) Sustained

Documentation of all listed competencies in SOAP notes format