2021-22

Detailed Syllabus for Bachelor of Physiotherapy(BPT)

DEPARTMENT OF PHYSIOTHERAPY

UNIVERSITY OF ENGINEERING AND MANAGEMENT,JAIPUR

PREAMBLE

Physiotherapy (PT) is a Movement Science with an established theoretical and scientific base and widespread clinical applications in the Prevention, Restoration & Rehabilitation, Maintenance and Promotion of optimal physical function. Physiotherapists diagnose and manage movement dysfunction and enhance physical and functional abilities. This physical dysfunction may be the sequelae of involvement of any of the systems like Musculoskeletal, Neurological, Cardiovascular, Respiratory, or other body systems.

These practitioners contribute to society and the profession through practice, teaching, administration, and the discovery and application of new knowledge about physiotherapy experiences of sufficient excellence and breadth by research to allow the acquisition and application of essential knowledge, skills, and behaviors as applied to the practice of physiotherapy.

Physiotherapists (PT) are autonomous, effective, and compassionate professionals, who practice collaboratively in a variety of healthcare set ups such as neonatal to geriatric, from critical careto community fitness to sports training. Emerging graduate and post graduate students are required to demonstrate a substantial knowledge base, possess skills related to Physiotherapy practices, possess high emotional quotient to address family health and meet community responsibilities, demonstrate gender sensitivity and sociocultural relevant competence. They should be aware of legal issues governing professional practice and follow evidence-based clinical practices.

INTRODUCTION

Physiotherapy is a branch of modern medical science which includes examination, assessment, interpretation, physical diagnosis, planning and execution of treatment and advice to any person for the purpose of preventing, correcting, alleviating and limiting dysfunction, acute and chronic bodily malfunction including life saving measures via chest physiotherapy in the intensive care unit, curing physical disorders or disability, promoting physical fitness, facilitating healing and pain relief and treatment of physical and psychological disorders through modulating psychological and physical response using physical agents, activities and devices including exercise, mobilization, manipulations, therapeutic ultrasound, electrical and thermal agents and electrotherapy for diagnosis, treatment and prevention.

Physiotherapist' is a qualified professional who has acquired all the above-mentioned knowledge and skills for entry into practice after being awarded a bachelor's degree in the subject of "Physiotherapy" from a recognized institute affiliated to the University conducting afulltime course not less than four years and six months of internship.

OBJECTIVES OF THE BACHELOR'S IN PHYSIOTHERAPY (BPT) PROGRAM

This program is formulated to enable students to gain adequate knowledge, skills and clinical hands-on experience leading to an ability to establish independent professional practice. The overall content of the curriculum focuses on learning experiences and clinical education experiences for each student that encompasses the following:

1. Ethical, evidence-based, efficient Physiotherapy treatment of adult as well as pediatric patients/clients with an array of conditions (e.g., musculoskeletal, neuromuscular, cardiovascular/pulmonary, integumentary etc) across the lifespan and the continuum of care, to all people irrespective of gender, caste, nation, states and territories, region, minority groups or other groups.

2. Ability to prevent movement dysfunction or maintain/restore optimal function and quality of life in individuals with movement disorders.

3. Ability to operate as independent practitioners, as well as members of health service provider teams, act as first contact practitioners, from whom patients/clients may seek direct services without referral from another health care professional.

4. Ability to promote the health and wellbeing of individuals and the public/society, emphasizing the importance of physical activity and exercise.

5. Prevent impairments, activity limitations, participatory restrictions, and disabilities in individuals at risk of altered movement behaviors due to health factors, socio-economic stressors,environmental factors and lifestyle factors.

6. Provide interventions/treatment to restore integrity of body systems essential for movement, maximize function and recuperation, minimize incapacity, and enhance the quality of life, independent living and workability in individuals and groups of individuals with altered movement behaviors resulting from impairments, activity limitations, participatory restrictions, and disabilities.

7. Ability to modify environmental, home and work access and barriers to ensure full participation in one is normal and expected societal roles.

8. Become an essential part of the health and community/welfare services delivery systems, practice independently of other health care/service providers and also within interdisciplinary rehabilitation/habilitation programs, independent professional practice in self-employed set up oremployment at the multiple settings such as hospitals, nursing homes, institutions catering services to specific conditions (like paraplegic /geriatric homes), primary as well as rural & urban health care set up, community health , domiciliary practice like residential areas, education& research centers, fitness /wellness centers like health clubs, occupational health centers, Schools including special schools, geriatric care units, and others.

PROGRAM OUTCOMES (PO)

The program learning outcomes relating to BPT degree program are summarized below:

PO1	To demonstrate behavioral skills and humanitarian approach while communicating with patients, relatives, society at large and co-professionals
PO2	To develop healthy Physiotherapist – Patient relationship
PO3	To demonstrate and relate moral, ethical values and legal aspects concerned with Physiotherapy management
PO4	To demonstrate academic skills and knowledge related to understanding the structural and functional of human body and applied anatomy, physiology in physiotherapy practice
PO5	To apply and outline pathology of medical conditions in context with Physiotherapy, interpret& use medical communication.
PO6	To apply knowledge of biomechanics of human movement in musculoskeletal, neurological, and cardio-respiratory conditions in planning, recommending, and executing Physiotherapy management.
PO7	To outline and implement Physiotherapy management by co-relating assessment and examination skills of clinical subjects like Orthopedics, General Surgery, Medicine, Neurology, Pediatrics, Dermatology & Gynecology & Obstetrics, Community Medicine and Sociology
PO8	To demonstrate skill in maneuvers of passive movements, massage, stretching, strengthening, and various manual therapy techniques. Students will integrate Physiotherapy evaluation skills including electro diagnosis on patients to arrive at a Functional/ Physical Diagnosis in musculoskeletal, neurological, cardiovascular, and pulmonary conditions.

PROGRAM SPECIFIC OBJECTIVES

PSO1	Employability: The students can work in the following: Defense Ministry of India, in central and state level governmental hospitals, private multi-specialty hospitals and academic institutes, in private companies like MNCs, BSNL, Amazon, Infosys etc.
PSO2	Environment and Sustainability: Student can work and sustain in his field in country and as well as abroad it has vast field across the globe.
PSO3	Modern Tool Usage: The student would be able to use different physiotherapeutic modalities as well as techniques (MFR, TAPING, CUPPING, NEEDLING, NDT, PNF) etc.
PSO4	Lifelong learning: The student would be able to deal with patient, take history of the patient, differentially diagnose the patient, and prescribe the treatment accordingly.
PSO5	Entrepreneurship: The student would be able to set up his/her own clinic or joint ventures.
PSO6	Understand basic life sciences: The student would be able to know anatomical, physiological, and biomechanical working of human body.
PSO7	Skill development: The student would be able to perform various manual techniques to treat the patients.

BACHELOR OF PHYSIOTHERAPY FINAL YEAR (4TH YEAR)

S.NO.	SUBJECT CODE	SUBJECT	CREDIT HOURS
1.	PTN401	PT in Neurology & Neurosurgery	**4**
2.	PTN491	PT in Neurology & Neurosurgery Practical	**2**
3.	PTM401	PT in Medical Conditions including Pediatrics	**4**
4.	PTM491	PT in Medical Conditions including Pediatrics Practical	**2**
5.	PTS401	PT in Surgical Conditions	**4**
6.	PTS491	PT in Surgical Conditions Practical	**2**
7.	PTO401	PT in Orthopedics Conditions	**4**
8.	PTO491	PT in Orthopedics Conditions Practical	**2**
9.	CLR401	Clinical Rehabilitation-II	**4**
10.	CLR491	Clinical Rehabilitation-II Practical	**2**
11.	ESR401	Exercise Physiology & Sports Physiotherapy	**4**
12.	PRJ491	Mini Project	**1s**
		TOTAL	**34**

SUBJECT: PT in NEUROLOGY & NEUROSURGERY
SUBJECT CODE: PTN401

Credits 4

Course Objectives:

The course deals with physiotherapeutic management of neurological and neurosurgical conditions. The subject serves to integrate the knowledge gained by the students in neurology and neurosurgery with skills to apply these in clinical situations of dysfunction and neurological pathology. The objective of the course is that after the specified hours of lectures and demonstrations the student will be able to identify disabilities due to neurological dysfunction, plan and set treatment goals and apply the skills gained in exercise therapy and electrotherapy in these clinical situations to restore neurological function.

COURSE OUTCOMES

After taking this course a student will:

CO1: Acquire the knowledge of normal neurodevelopment with specific reference to locomotion.

CO2: Assess, identify, and analyze neuro motor and psychosomatic dysfunction in terms of alteration in the muscle tone, power, coordination, involuntary movements, sensations, perceptions etc.

CO3: Correlate the assessment findings with provisional diagnosis and investigations such as EMG/NCS and arrive at Physical and functional diagnosis with clinical reasoning in various neuromuscular disorders.

CO4: Plan, prescribe and execute short term and long-term treatment with special reference to relief of neuropathic and psychosomatic pain and use of various physiotherapeutic techniques/ modalities, including ergonomic advice and parent education in neuro pediatric cases.

CO5: Prescribe appropriate orthoses/splints and fabricate temporary protective and functional splints.

Mapping of Course Outcomes (CO) and Program Outcomes (PO):

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1		✓		✓	✓		✓	✓
CO2		✓		✓	✓		✓	✓
CO3		✓					✓	✓
CO4		✓				✓	✓	✓
CO5		✓				✓	✓	✓

Course Contents:

S. No.	Topics	Hours
1	**Unit I**	5 H
	Review the basic anatomy of the brain and spinal cord including Blood supply of the brain and spinal cord, anatomy of the visual pathway,	
	connections of the cerebellum and extra-pyramidal system	
	Relationship of the spinal cord segments, long tracts of the spinal cord, the brachial and lumbar plexuses, and cranial nerves.	
2	**Unit II**	5 H
	Review in brief the Neurophysiological basis of tone and disorders of tone and posture, bladder control, muscle contraction and movement and pain	
3	**Unit III**	30 H
	Hydrocephalus	
	Spina Bifida	
	Carnio-vertebral junction anomalies	
	Arnold Chiari malformation, Dandy Walker Syndrome etc	
	Cerebrovascular accidents	
	Head Injury	
	Spinal Cord Injury	
	Unit IV	25 H
	Syringomyelia	
	Tumors	
	Spinal arachnoiditis	
	Transverse myelitis	
	T.B. Spine	
	Multiple sclerosis	

4	Parkinson's disease	
	Dementia	
	Meningitis and encephalitis	
	Tuberculosis infection of central nervous system.	
	Poliomyelitis	
	Brain abscess	
	Tabes Dorsalis	
	Acute disseminated encephalomyelitis	
5	**Unit V**	25 H
	Myopathies	
	Epilepsy	
	Myasthenia Gravis	
	Intracranial tumors	
	Motor neuron disease	
	Extra pyramidal tract lesions	
	Ataxia	
	Polyneuropathy	
	Bell's Palsy, facial palsy, and Trigeminal Neuralgia	
	Disc Prolapse	
	Herniation of Brain	
	Cerebral Palsy	
6	**Unit VI**	10 H
	Approaches applied in management of neurological conditions	
	Bobath, Brunnstorm, Roods, PNF	

SUBJECT: PT in NEUROLOGY & NEUROSURGERY PRACTICAL:

SUBJECT CODE: PTN491

CREDITS:2

PRACTICAL:
1. Various techniques of Physiotherapy of the above-mentioned conditions/diseases should be demonstrated and practiced by the students.
2. Assessment planning and management of Neurological conditions
3. General viva
4. Case Study

Essential Readings:

1. Tidy's physiotherapy.
2. Cash’s Textbook of Neurology for Physiotherapists
3. Neurological Rehabilitation by D Umphred
4. Physical Rehabilitation Assessment and Treatment – O’Sullivan Schmitz
5. Elements of Pediatric Physiotherapy-Eckersley

SUBJECT: PT in MEDICAL CONDITIONS INCLUDING PEDIATRICS

SUBJECT CODE: PTM401

CREDITS:4

Course Objectives:

The course provides knowledge in assessing and planning physiotherapy interventions for various Medical and Pediatric conditions. The student must be able to reassess the patient as necessary, to monitor the patient regarding treatment, to monitor the patient's vital signs, and to provide appropriate interventions to the patient.

Course Outcomes (CO):

After taking this course a student will:

CO1: Identify, discuss and analyze cardiovascular and pulmonary dysfunction based on pathophysiological principles and arrive at the appropriate physical and functional diagnosis.

CO2: Acquire knowledge of rationale of basic investigative approaches in the medical systemand surgical intervention regimes related to cardiovascular and pulmonary impairment.

CO3: Execute the effective physiotherapeutic measures (with appropriate clinical reasoning) with special emphasis to breathing retraining, nebulization, humidification, bronchial hygiene, general mobilization, and exercise conditioning in general medical and surgical conditions.

CO4: Acquire knowledge of the overview of patients care at the intensive care area, artificial ventilation, suctioning, positioning for bronchial hygiene and continuous monitoring of the patient at the intensive care area.

CO5: Acquire the skill of evaluation and interpretation of functional capacity using simple exercise tolerance tests, symptom limited tests.

CO6: Select strategies for cure, care, and prevention to adopt restorative and rehabilitative measures for maximum possible functional independence of a patient at home, workplace and in community.

CO7: Acquire the skill of basic cardiopulmonary resuscitation.

CO8: Acquire the knowledge of evaluation and physiotherapy treatment for obstetrics and gynecological conditions.

CO9: Acquire the knowledge of various conditions where physiotherapy plays a vital role in the

rehabilitation (psychiatry, dermatology, and ENT conditions)

CO10: Assess the various degrees of burns, plan and implement physiotherapy techniques for the rehabilitation of a burn and wound patient.

Mapping of Course Outcomes (CO) and Program Outcomes (PO):

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1		✓		✓	✓		✓	✓
CO2		✓		✓	✓		✓	✓
CO3		✓		✓	✓		✓	✓
CO4		✓		✓	✓		✓	✓
CO5		✓				✓	✓	✓
CO6		✓				✓	✓	✓
CO7		✓				✓	✓	✓
CO8		✓					✓	✓
CO9		✓					✓	✓
CO10		✓					✓	✓

Course Contents:

S. No.	Topics	Hours
1	**Unit I (General Medicine)**	20 H
	Brief review of the following medical condition and various modalities of physiotherapy, aims, mean and techniques of physiotherapy should be taught.	
	Edema- classification and management	
	Skin Conditions - Acne, psoriasis, alopecia, leucoderma, leprosy, STDs	
	Deficiency disease- Rickets, Vitamin Deficiency Syndrome, osteoporosis, osteomalacia etc.	
	Obesity	
	Non-articular rheumatism	
	Connective tissue disorders	
	Unit II (Respiratory)	20 H
	Review of mechanism of normal respiration	
	Chest examination including auscultation	
	Pulmonary function testing	

2	Physiotherapy management of • COPD, asthma, lung abscess, bronchiectasis, emphysema etc • Pleurisy, empyma, pneumonia etc • Bacterial diseases • Paralysis of diaphragm and vocal cords • Chest deformities	
3	**Unit III (Cardiovascular)**	20 H
	Congestive Heart Failure	
	Myocardial Infraction	
	Peripheral vascular diseases	
	Gangrene	
	DVT	
4	**Unit IV (Pediatrics)**	15 H
	Common congenital and acquired musculoskeletal, neurological, hereditary, metabolic disorders	
5	**Unit V (Psychiatric disorders)**	10 H
	Senile dementia	
	Psychosis	
	Psychoneurosis	
6	**Unit VI (Geriatrics)**	15 H
	Identification, assessment, and management of geriatric musculoskeletal, cardio-pulmonary, neurological, somatosensory; injuries and accidents specifically to aged	

Essential Readings:

1. Tidy's physiotherapy.
2. Cash’s Textbook of Chest, Heart, Vascular Disorders for Physiotherapists.
3. The Brompton Guide to chest physiotherapy DU Gasket [Completed]
4. Physical Rehabilitation Assessment and Treament – O’Sullivan Schmitz
5. Elements in Pediatric Physiotherapy – Pamela M Eckersley
6. Essentials of Cardiopulmonary Physical Therapy by Hillegass and Sadowsky
7. Cardiao pulmonary Symptoms in physical Therapy practice Cohen and Michel
8. Chest Physiotherapy in Intensive Care Unit by Mackenzi
9. Cash’s Textbook of General Medicine and Surgical conditions for Physiotherapists.
10. Physiotherapy in Psychiatry
11. Physical Therapy for the Cancer patient by M.C Garvey
12. Physiotherapy in Obstetrics and Gynecology by Polden

SUBJECT:
PT in SURGICAL CONDITIONS
SUBJECT CODE: PTS401

CREDITS:4

Course Objectives:

The course provides knowledge in assessing and planning physiotherapy interventions for various General, Medical and Surgical conditions. The student must be able to reassess the patient as necessary, to monitor the patient regarding treatment, to monitor the patient's vitalsigns, and to provide appropriate interventions to the patient.

Course Outcomes (CO):

After taking this course a student will:

CO1: Identify, discuss, and analyze cardiovascular and pulmonary dysfunction based on pathophysiological principles and arrive at the appropriate physical and functional diagnosis. CO2: Acquire knowledge of rationale of basic investigative approaches in the medical systemand surgical intervention regimes related to cardiovascular and pulmonary impairment.

CO3: Execute the effective physiotherapeutic measures (with appropriate clinical reasoning) with special emphasis to breathing retraining, nebulization, humidification, bronchial hygiene,general mobilization, and exercise conditioning in general medical and surgical conditions.

CO4: Acquire knowledge of the overview of patients care at the intensive care area, artificial ventilation, suctioning, positioning for bronchial hygiene and continuous monitoring of the patient at the intensive care area.

CO5: Acquire the skill of evaluation and interpretation of functional capacity using simpleexercise tolerance tests, symptom limited tests.

CO6: Select strategies for cure, care, and prevention to adopt restorative and rehabilitative measures for maximum possible functional independence of a patient at home, workplace and incommunity.

CO7: Acquire the skill of basic cardiopulmonary resuscitation.

CO8: Acquire the knowledge of evaluation and physiotherapy treatment for obstetrics and gynecological conditions.

CO9: Acquire the knowledge of various conditions where physiotherapy plays a vital role in the rehabilitation (psychiatry, dermatology, and ENT conditions)

CO10: Assess the various degrees of burns, plan and implement physiotherapy techniques for the rehabilitation of a burn and wound patient.

Mapping of Course Outcomes (CO) and Program Outcomes (PO)

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1		✓		✓	✓		✓	✓
CO2		✓		✓	✓		✓	✓
CO3		✓		✓	✓		✓	✓
CO4		✓		✓	✓		✓	✓
CO5		✓				✓	✓	✓
CO6		✓				✓	✓	✓
CO7		✓				✓	✓	✓
CO8		✓					✓	✓
CO9		✓					✓	✓
CO10		✓					✓	✓

Course Contents:

S. No.	Topics	Hours
1.	Brief review of the following surgical conditions and various physiotherapeutic modalities, aims, means and techniques of physiotherapy should be taught	10 H
2.	Postural drainage & respiratory physiotherapy in CVTS including principles of cardiac rehabilitation	10 H
3.	Physiotherapy in patients on ventilators	10 H
4.	Pre- and post-operative physiotherapy management of followingconditions. a. Thoracotomy b. Lobectomy c. Thoracoplasty d. Pneumonectomy e. Decortication f. Herniorrhaphy g. Nephrectomy h. Radical Mastectomy i. Abdominal Surgeries	15 H
5.	Orientation about atelectasis, pneumothorax & pneumothorax & another post-operative Complications	10 H
6.	Pre- and post-operative physiotherapy management of pediatrics and adult cardiac surgery including vascular surgery	10 H
7.	Burn & its classification Physiotherapy management	2 H
8.	Pre and Postoperative Physiotherapy of skin grafting	5 H
9.	Physiotherapy of cases after Reconstructive surgery of hand	5 H
10.	Physiotherapy in obstetrics	10 H
11.	Physiotherapy in PID, stress incontinence, prolapse uterus, etc	10 H
12.	PT in Wound management	3 H

Essential Readings:

1. Tidy's physiotherapy.
2. Cash’s Textbook of Chest, Heart, Vascular Disorders for Physiotherapists.
3. The Brompton Guide to chest physiotherapy DU Gasket [Completed]
4. Physical Rehabilitation Assessment and Treatment – O’Sullivan Schmitz
5. Elements in Pediatric Physiotherapy – Pamela M Eckersley
6. Essentials of Cardiopulmonary Physical Therapy by Hillegass and Sadowsky
7. Cardiopulmonary Symptoms in physical Therapy practice Cohen and Michel
8. Chest Physiotherapy in Intensive Care Unit by Mackenzi
9. Cash’s Textbook of General Medicine and Surgical conditions for Physiotherapists.
10. Physiotherapy in Psychiatry
11. Physical Therapy for the Cancer patient by M.C Garvey
12. Physiotherapy in Obstetrics and Gynecology by Polden

SUBJECT: PT in ORTHOPAEDIC CONDITIONS

SUBJECT CODE: PTO401

CREDITS:4

Course Objectives:

The course integrates the knowledge gained by the students in orthopedics and traumatology with skills to apply these in clinical situations of dysfunction and musculoskeletal pathology. The objective of the course is that after the specified hours of lectures and demonstrations the student will be able to identify disabilities due to musculoskeletal dysfunction, plan and set treatment goals and apply the skills gained in exercise therapy and electrotherapy in these clinical situations to restore musculoskeletal function.

Course Outcomes (CO):

After taking this course a student will:

CO1: Identify, discuss, and analyze the musculoskeletal dysfunction in terms of biomechanical, kinesiological and biophysical basis and correlate the same with the provisional diagnosis, routine radiological and electro physiological investigations and arrive at appropriate physical and functional diagnosis with clinical reasoning.

CO2: Describe as well as acquire the skill of executing short- and long-term physiotherapy treatment by selecting appropriate modes of mobilization/ manipulation, electrotherapy, therapeutic exercise and appropriate ergonomic advice for the relief of pain, restoration / maintenance of function & / or rehabilitation for maximum functional independence in ADLs at home & workplace.

CO3: Understand the nature of sports injuries, able to evaluate and treat sports injuries, understand the role of physiotherapist in training and rehabilitating a sports person.

CO4: Prescribe appropriate walking aids, orthoses, and prosthesis

Mapping of Course Outcomes (CO) and Program Outcomes (PO):

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1		✓			✓	✓		
CO2		✓				✓	✓	✓
CO3	✓	✓					✓	✓
CO4	✓	✓	✓				✓	✓

Course Contents:

S. No.	Topics	Hours
1	**Unit I (Introduction)**	15 H
	Brief review of the orthopedic conditions and various physiotherapeutic modalities, aim, means and techniques of physiotherapy should be taught	
	Detailed orthopedic assessment Performa	
2	**Unit II (Dislocation)**	85 H
	Classification – types of displacements methods of immobilization	
	Healing of fractures and factor influencing union, non-union, delayed union etc.	
	Specific fracture of U/L & L/L Bones and their complete physiotherapeutic management	
	Physiotherapeutic management of fracture of spine with paraplegia and without neuro deficit.	
	Physiotherapy in relation to soft tissue injuries	
	Physiotherapy in relation to amputation	
	Physiotherapy in relation to various deformities example- CTEV, Pes planus, Pes cavus etc.	
	Physiotherapy in various acquired & congenital spinal deformities	
	Physiotherapy in Peripheral nerve injury, plexus injury etc.	
	Physiotherapy in relation to arthritis	
	Fracture cast, bracing and mobilization	
	Physiotherapy in relation to Arthroplasty & Osteotomy	
	Physiotherapy in relation to Tendon Transfer	

Suggested Readings:

Textbooks:

1. Orthopedic physical therapy by Donatelli
2. Cash's Textbook of Orthopedics and Rheumatology for Physio Therapists Jaypee bros
3. Manual mobilization of extremity joints by Fredy Kaltenborn, Maitland.
4. Therapeutic Exercise by Kolby and Kisner
5. Therapeutic Exercises by O'Sullivan
6. Taping Techniques – Rose Mac Donald

References:

1. Neural tissue mobilization -Butler.
2. Zulunga et al. Sports Physiotherapy-W.B. Saunders.
3. Brokner and Khan, Clinical sports medicine -McGraw Hill
4. Reed Sports injuries, Assessment and Rehabilitation- W.B. Sounders.
5. Gould: Orthopedic sports physical therapy

SUBJECT: CLINICAL REHABILITATION-II
SUBJECT CODE: CLR401
CREDITS:4

Course Objectives:

This course introduces the student to education and prevention from various disabilities.The students will be able to learn about clinical rehabilitation protocol.

Course Outcomes (CO):

After taking this course a student will:

CO1: Be able to understand the phase of disability process, explanation of its aims and principles. scope of rehabilitation.

CO2: Be able to find the phase of disability process, explanation of its aims and principles. scope of rehabilitation.

CO3: Be able to understand legislations for rehabilitation services for the disabled and P.W.D. acts & recent amendments.

CO4: Be able to know the contribution of social workers towards rehabilitation.

CO5: Be able to describe the principles of Management at the Medical Intensive Care Unit.CO6: Acquire knowledge in vocational evaluation & goals for disabled, role of vocational counselor.

CO7: Be able to describe behavioral problems in the disabled, and its principle of management.

CO8: Be able to describe socio-economic rehabilitation: Outline of social implications of disability for the individual and for the community pre-vocational evaluation & role of V.C.GOVT. & NGO.

CO9: Discuss methods and team involvement in pre-vocational evaluation and training.

Mapping of Course Outcomes (CO) and Program Outcomes (PO):

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	✓		✓					
CO2	✓		✓					
CO3	✓		✓					
CO4	✓		✓					
CO5	✓	✓	✓				✓	✓
CO6	✓	✓	✓				✓	✓
CO7	✓	✓	✓				✓	✓
CO8	✓	✓	✓				✓	✓
CO9	✓	✓	✓				✓	✓

Course Contents:

S. No.	Topics	Hours
1	**Unit I Prosthesis and Orthosis**	**40 H**
	Definition and Basic Principles	
	Designing and Construction of Upper & Lower extremity Orthosis& Spinal Orthosis.	
	Prescription and design of footwear & its modification	
	Wheelchairs	
	Ambulatory Aids & Assistive Devices	
	Measurement and P.O.P. cast techniques	
	Low-cost thermo-labile material for construction of orthosis	
2	**Unit II Ethics**	**30 H**
	The implications of and confirmation to the roles of professional conduct	
	Legal responsibility for their actions in the professional context and understanding liability and obligations in case of medico legal action	
	A wider knowledge of ethics relating to current social and medical policy in the provision of health care	
3	**Unit III Functional Outcome Measures**	**20 H**
	Functional Assessment scales & its clinical uses e.g, functional independent measure, Sylivan index, PEDI, Gross Motor Function, etc.	
4	**Unit IV Women's health and Child Care**	**10H**
	Women in India and Social issue having impact on physical Function Legal rights and benefits related to health Immunization and breast-feeding	

Suggested Reading:

1. Textbook of Clinical Rehabilitation- S. Sunder
2. Textbook of community-based rehabilitation S. Nagar

SUBJECT: EXERCISE PHYSIOLOGY AND SPORTS PHYSIOTHERAPY SUBJECT CODE: ESP401

CREDITS:4

Course Objectives:

The course integrates the study and application of the components of sports medicine including but not limited to sports medicine related careers, prevention of athletic injuries, recognition, evaluation, and immediate care of athletic injuries, rehabilitation, and management skills, taping and wrapping techniques, emergency procedures, nutrition, sports psychology, therapeutic modalities, and therapeutic exercise.

Course Outcomes (CO):

After taking this course a student will:

CO1: Assess and provide physiotherapeutic techniques in Sports conditions for relief of pain, relaxation, conditioning, and posture.

CO2: Able to recognize, evaluate, and provide immediate care to athletic injuries, rehabilitation.

Mapping of Course Outcomes (CO) and Program Outcomes (PO):

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	✓	✓	✓				✓	✓
CO2	✓	✓	✓				✓	✓

Course Contents:

S. No.	Topics	Hours
1	**Unit I**	30 H
	Pre-exercise evaluation	
	Diet and nutrition	
	Measurement of fitness components and sports skills • Measurement of muscular strength and endurance • Measurement of flexibility • Determination exercise endurance	
	Physiological effects of exercise on body systems • Muscular system • Endocrine system • Cardio-respiratory system • Nervous system	
2	**Unit II**	35 H
	Sports injuries	
	Spine – PIVD, Kissing spine, cervical whiplash injuries, facet joint syndrome, SI joint dysfunction	
	Hip – muscle strain, piriformis syndrome, ITB syndrome, osteitis pubis	
	Knee – menisci, cruciate, collateral, osteochondritis, chondromalacia patellae, biceps femoris tendonitis, swimmers' knee, patellofemoral pain syndrome	
	Leg & ankle – shin splint, Achilli's tendonitis & rupture, TA bursitis, ankle sprain, plantar fasciitis, turf toe syndrome	
	Head & face- maxilla-facial injuries, helmet compression syndrome	
3	**Unit III**	35 H
	Sports injuries: Shoulder – instability, rotator cuff injury, biceps tendonitis and rupture, pectoralis major rupture, scapular dyskinesis and acromioclavicular joint injuries	
	Elbow – tennis elbow, golfer's elbow	
	Wrist and hand – carpal tunnel syndrome, gamekeeper's thumb	
	Principles of injury prevention	
	Principles of training & Rehabilitation in sports injuries	
	Sports in Special age groups: Female athletic triad	
	Younger athlete- Musculo-skeletal problems, management, children with chronic illness and nutrition	
	Older athlete- Physiological changes with aging, benefits, risks of exercise in elderly, exercise prescription guidelines for elderly	

Essential Readings:

1. Taping Techniques – Rose Mac Donald
2. Zuluaga et al. Sports Physiotherapy- W.B. Saunders.
3. Brukner and Khan, Clinical sports medicine McGraw Hill
4. Reed Sports injuries, Assessment and Rehabilitation W.B. Sounders.
5. Gould: Orthopedic sports physical therapy Moshy
6. C Norris Sports injuries Diagnosis and Management
7. Principles of athletic training- William Prentice
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